Focus and Alternative Sensitivity in Ngamo (West-Chadic)

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eingereicht bei der humanwissenschaftlichen Fakultät der Universität Potsdam, 2015

Published online at the
Institutional Repository of the University of Potsdam:
URN urn:nbn:de:kobv:517-opus4- 81666
http://nbn-resolving.de/urn:nbn:de:kobv:517-opus4- 81666

Dedicated to Jibir Audu and Zakari Yusuf

Acknowledgments

First and foremost, I would like to thank Jibir Audu and Zakari Yusuf, my main Ngamo language consultants, for not only being the most thoughtful and patient language consultants that anybody could wish for, but also travelling many miles and getting into uncomfortable situations in order to work with me; for organizing meetings with other Ngamo speakers when it was still possible for me to travel to Yobe State, and for travelling to several different places in order to distribute and collect written questionnaires when the Boko Haram uprising made it impossible for me to travel to this region. This dissertation is as much your work as it is mine (barring any mistakes I made, of course!), and I would like to dedicate it to you.

I would like to thank my supervisor Malte Zimmermann for the trust placed in me and the unshakable confidence that I would somehow finish this dissertation, even when I wasn't confident myself; for making time to read and discuss parts of the dissertation with me at various stages, for his fast grasp of ideas and problems, and the clever solutions; and for nevertheless giving me the freedom to pursue my own ideas and solutions at my own pace. I would also like to thank the rest of the examination board. I am especially grateful to Angelika Kratzer for agreeing to be an external reviewer for this thesis — I am very honored.

I would also like to thank everybody who helped me concerning the fieldwork in Nigeria. Many thanks to Prof. Russell Schuh and to Prof. Alhaji Maina Gimba for sharing their expertise, and for helping me when I started doing fieldwork in Nigeria. In addition, the Yobe Languages project of Prof. Schuh & Prof. Gimba (`http://aflang.humnet.ucla.edu/Yobe/yobe.html`) was a invaluable source of information on Ngamo. Apart from Jibir Audu and Zakari Yusuf, I would also like to thank the other Ngamo language consultants I worked with: Adamu Idirisa Banale, Abubakar Hussaini, Madu Hussaini, Saidu Ibrahim Janga Dole, Abdullahi Salisu Janga, Mammadi Kalla, Danjuma Mamman, Jibril Batele Mohammed. I also thank all other language consultants and contact persons. Special thanks to Chris Mtaku, Ibrahim Baba Fika, Madu Bah and his family, especially Jummai S. Gimba, Hajiya Adama Malam Boyi and her family, Usman Babayo Garba Potiskum, Tandom'lara Wilfred Nerus, Bitrus Tasimda Nudamu, Hajara Njidda, and Hassana and Ibrahim Waziri. I also thank HRH Mai Potiskum, Alhaji Umaru Bubaram, HRH Mai Fika, Alhaji Muhammadu Abali, and HRH Mai Gudi, Alhaji Isa Bunuwo. In addition, I thank Andreas Haida for arranging his own field trips in a way that we could share part of the journey on the first two times I travelled to Nigeria. Even though we were rarely in the same place, it was helpful — linguistically and otherwise — to have a fellow researcher close-by.

The work on this dissertation, including the fieldwork expenses, was funded by the DFG as part of the collaborative research centre 632 "Information Structure", project A5 "Focus realization, focus interpretation, and focus use from a cross-linguistic perspective". I am very lucky to have had such a long-term financial stability, to be able to concentrate on research,

and to have the possibility of participating in conferences, workshops and summer schools. I am extremely grateful for this support. I also thank the other participants of said conferences, workshops and summer schools for their comments and questions, and for the warm and friendly attitude that thankfully seems so pervasive in the linguistic community. The CRC632 was a great place to work because of all of the inspiring work, and because of all of the nice researchers and staff. I thank everybody there for the shared experiences, for example Júlia Bácskai-Atkári, Maria Balbach, Frauke Berger, Felix Bildhauer, Christian Chiarcos, Nikos Engonopoulos, Suse Genzel, Lena Jäger, Jane Kühn, Pavel Ozerov, Kilu von Prince, Julia Ritz, Antje Sauermann, Sören Schalowski, Maja Stegenwallner-Schütz, and Amir Zeldes. In addition, I want to thank Elke Pigorsch, Jutta Boethke, Ralf Ditsch, Simone Pfeil, and Maria Blickensdorff for all their help.

The colleagues I want to thank the most are my current officemates Anne Mucha, Agata Renans, Marta Wierzba, Radek Simik, Claudius Klose and the honorary officemate Joe DeVaugh-Geiss — thank you for reading parts of my dissertation, for interesting discussions concerning these and other topics, and thanks especially for being my friends, and making our working life fun and productive. Thanks to all other friends, who saw much less of me than they ought to. The *I am writing my dissertation* excuse is getting old, and I'm very happy that I won't need it anymore. Last, but not least, I thank my family. My parents, for their support over the years, especially for valuing learning interesting things over, say, earning a lot of money. And I thank Thomas, for his support, his humour and love.

Contents

List of glosses

1	*first person*
2	*second person*
3	*third person*
ADD	*additive extension*
BM	*background marker*
DEF	*definite*
DEM	*demonstrative*
DEP	*dependent pronoun*
DET	*determiner*
DIST	*distal*
F	*feminine*
FUT	*future*
HAB	*habitual*
I	*i/ye marker*
ICP	*intransitive copy pronoun*
INDEP	*independent pronoun*
INDF	*indefinite*
IPFV	*imperfective*
LINK	*linking morpheme*
M	*masculine*
NEG	*negation*
NMLZ	*nominalization*
PFV	*perfective*
PL	*plural*
POSS	*possessive*
PROX	*proximal*
PRT	*particle*
REL	*relative*
SBJV	*subjunctive*
SG	*singular*
STAT	*stative*
TOT	*totality extension*
VENT	*ventive extension*

Notational conventions

*	ungrammatical
#	semantically/pragmatically unacceptable
?	marginally acceptable
??	very marginally acceptable
*(α)	only grammatical with α
(*α)	only grammatical without α

Chapter 1

Introduction

1.1 Focus and Alternative-Sensitivity in Ngamo

The topic of this thesis is the realization, interpretation, and use of focus in Ngamo, including association with focus. Ngamo is especially interesting in this respect for several reasons. First, focus can remain entirely unmarked. For example, the answer in (1-a) is syntactically, morphologically, and prosodically the same as the corresponding all-new sentence. This is unexpected from the view of intonation languages like English and German, where marking of the focus/background distinction is obligatory. Second, instances of apparent focus marking have been classified as *background* marking instead (Schuh, 2005b). In (1-b), the morphological marker *=i/ye* was classified as a background marker related to the definite determiner *=i/ye* (Schuh, 2005b). This is unusual, since usually languages are assumed to mark focus and/or givenness (cf. e.g. Kratzer and Selkirk, 2010), but not backgrounding. Third, so-called *focus-sensitive particles* like *only*, *also* and *even* do not necessarily associate with focus in Ngamo. Whereas *yak('i)* (= "only") associates with focus in *=i/ye* constructions, *ke('e)* (= "also") and *har('i)* (= "even") cannot associate with focus in these constructions, e.g. (2). This is a challenge for existing theories of focus-sensitivity, because focus-sensitive particles are often used as a diagnostic for identifying the focus of a sentence (cf. e.g. Kadmon and Sevi 2011 for discussion).

(1) (What did Kule build in Potiskum?)
   a. Kule salko **bano** a Potiskum
      Kule build.PFV house at Potiskum
   b. Kule salko **=i bano** a Potiskum
      Kule build.PFV BM house at Potiskum
      "Kule built A HOUSE in Potiskum."

(2) (Hawwa built a house.)
   #Salko bano=i *ke* **Kule**
   build.PFV house=BM also Kule
   "KULE also built a house."
   (Consultant comment: Where there is 'salko bano=i', this means that the other person did something else.)

The first part of this thesis thus investigates under which circumstances the unmarked form in (2-a) and the background-marked form in (2-b) are used, i.e., whether there is a semantic or pragmatic difference between the different kinds of focus realization. The background marker is analysed as a definite determiner of situations, similar to the morphological markers discussed in Hole (2011), Onea (t.a.). In contrast to these approaches, however, I propose that the background is a definite description of the *Austinian topic situation*, the situation that the utterance is about.

This thesis is thus in line with approaches assuming a direct connection between the *question under discussion* that a sentence answers and its topic situation (Kratzer, 2011, Schwarz, 2009b).

In the second part of the thesis, the association behaviour of focus-sensitive operators in Ngamo is explored. This part discusses exclusive and additive focus-sensitive particles in Ngamo, and presents an analysis within a situation-semantic framework. In addition, general properties of exclusion, exhaustivity, and exhaustivity cancellation are discussed. The main descriptive finding is that the additive particle *ke('e)* and the scalar particle *har('i)* are not necessarily focus-sensitive, but merely what Hartmann and Zimmermann (2008) call *alternative-sensitive*: they can associate with out-of-focus constituents. Additionally, they cannot associate with focus in *=i/ye* constructions, as shown in (2) above. This is explained by the anaphoric properties of the background: the *=i/ye*-marked background obligatorily refers back to the previously introduced situation of the same kind. For this reason, marked backgrounds must differ in sentences with *ke('e)* and *har('i)*.

To sum up, this thesis proposes that grammatical marking of background exists, and that its function, at least in Ngamo, is to provide a definite description of the topic situation, via a description of the current QUD. This is used to account for other properties of Ngamo, for example the fact that additive particles cannot associate with focus in *=i/ye* constructions.

1.2 Overview of the thesis

This thesis can roughly be divided into three parts. The first two chapters, chapters 2 and 3, provide an introduction to the important information-structural notions and the general properties of the language, respectively. Chapters 4 and 5 discuss the realization and interpretation of focus in Ngamo. The final chapters 6 and 7 present and analyse association with focus in Ngamo, concentrating on the association behaviour of *yak('i)*, *ke('e)*, and *har('i)*. In the following, I give a brief overview of the different chapters and their main findings.

Chapter 2 provides the theoretical background for all information-structural notions used in the thesis. Following an alternative-semantic approach to focus, focus is defined as the part of an utterance that indicates alternatives (Rooth, 1985, 1992, 1996, Krifka, 2008). Anything that is not in focus is *backgrounded*. Importantly, the category of focus is defined in terms of its discourse-semantic meaning contribution rather than in terms of its linguistic realization.

Chapter 2 also introduces the *question under discussion* approach to focus used in the thesis (Roberts, 1998, Büring, 2003, Beaver and Clark, 2008, i.a.). This approach assumes that the reason that focus indicates alternatives lies in the contexts in which it is used. Given that the denotation of *wh*-question like (3-a) is the set of its possible answers (3-b) (Hamblin, 1973), the QUD approach suggests that focus indicates a relevant informational need on the part of the addressee. For example, an utterance like (3-c) indicates a speaker belief that the addressee currently needs to know the answer to (3-a) — even if the question is only implicit. The focus/background distinction is thus a means of indicating which part of the communicated information the speaker assumes to be controversial (or 'at-issue'), and which uncontroversial ('not-at-issue').

(3) a. Who arrived?
b. { Bill arrived, Mary arrived, John arrived, . . . }
c. $\textsc{Bill}_F$ arrived_{BG}.

Focus-sensitivity is also modelled in a QUD approach. For example, following Beaver and Clark (2008), the lexical entry of *only* is assumed to make reference not to focus alternatives directly, but to the QUD. Similar lexical entries are proposed for *also* and *even* in English.

(4) Only BILL arrived.
≈ Any true answer to the QUD is at most as strong as "Bill arrived",
defined iff any true answer to the QUD is at least as strong as "Bill arrived".

The chapter discusses that focus interpretation and realization are not always straightforwardly linked: sometimes marking is partial, e.g. due to default prosody, or due to partial givenness of the focus. Sometimes more than the actual focus is marked, e.g. in focus pied piping. In addition, many languages have several possible realization patterns for focus, with the more marked realization being used e.g. for more contrastive or more exhaustive focus. In addition, the associate of so-called focus-sensitive particles need not always be the focus of the utterance — there is a growing body of evidence that additive particles, crosslinguistically, can be more flexible in their association behaviour (Krifka, 1998, Hartmann and Zimmermann, 2008, Koch and Zimmermann, 2010, Karvovskaya, 2013, van Putten, 2013). This chapter thus provides a first introduction to the relationship between focus and focus realization on the one hand, and between focus and association with focus on the other hand.

Chapter 3 discusses the most important properties of the Gudi Ngamo dialect needed for the remainder of the thesis. First, it discusses the tone and tone sandhi phenomena found in Gudi Ngamo. It is suggested, following Schuh (2009a), that high tone spread helps identify prosodic boundaries in Ngamo, as found for similar languages. The strict SVO word order of Ngamo all-focus sentences is discussed, as well as possible positions for the negation marker *bu* and adverbs. The final two subsections provide an overview over the verbal and the nominal system of Gudi Ngamo. In the discussion of the verbal system of Ngamo, the *totality extension* is of particular relevance. It is a clitic added to the verb stem which indicates that the action was "done completely" (Schuh, 2003), and which plays a role for predicate focus (Schuh, 2005a). In the discussion of the nominal system of Ngamo, definiteness and indefiniteness are especially relevant, because the definite determiner is related to the background marker *=i/ye* (Schuh, 2005b).

Chapter 4 provides an introduction to focus realization in Ngamo. For non-subject term focus, there are three structural ways of realizing the same focus structure: (i) entirely unmarked (even prosodically) (5-a), (ii) insertion of a background marker *=i/ye* in canonical word order (5-b), (iii) non-canonical word order, with a background marker *=i/ye* (5-c). For subjects, only the third option is available (6). Predicate focus, i.e. focus on verbs, VPs, TAMs, Verum or the whole sentence, usually remains unmarked (7). The one exception to this is focus on the perfective aspect, which is marked using the totality extension.

(5) (What did Kule build in Potiskum?)
a. Kule salko **bano** a Potiskum
Kule build.PFV house at Potiskum
b. Kule salko**=i** **bano** a Potiskum
Kule build.PFV=BM house at Potiskum
c. Kule salko a Potiskum**=i bano**
Kule build.PFV at Potiskum=I house
"Kule built A HOUSE in Potiskum."

(6) (Who built a house?)
Salko bano**=i** **Shuwa**.
build.PFV house=I Shuwa
"SHUWA built a house."

(7) (What did Shuwa do to the house?)
Salko (te)
build.PFV 3SG.F
"She BUILT it."

This chapter also includes a battery of tests used to test for the correspondence between focus/background marking and focus interpretation. First, several phenomena that influence accent placement in intonation languages are investigated for Ngamo: (i) focus projection, (ii) the given/new distinction, and (iii) additional emphasis, e.g. due to noteworthiness. No influence on marked focus/background constructions was found, i.e. the focus on *bano* in (8) cannot project to the VP-level, not even if *salko* were given, or if *bano* were additionally emphasized. Second, additional interpretations often found crosslinguistically with marked focus constructions are tested for *=i/ye* constructions: (i) contrast, (ii) exhaustivity, and (iii) existence presuppositions. The results show that *=i/ye*-marked constructions are neither more contrastive than unmarked constructions, nor do they trigger any stronger exhaustive or existential inferences.

(8) (What did Shuwa do?)
#Shuwa salko**=i** **bano**.
Shuwa build.PFV=BM house
"Shuwa built a house."

The chapter then turns to an investigation of the *=i/ye* background marker. First, a subsection discusses the related definite determiner, showing that it is not used to mark all kinds of definites, but only the *hearer-salient* ones (Barlew, 2014). It can be used to refer to (i) recently prementioned individuals, (ii) individuals present in the non-linguistic context which the addressee is clearly attending to, and (iii) individuals that are important to the speaker's aims and goals. This section argues that *=i/ye* marked backgrounds are used in the same contexts: when there is a hearer-salient QUD. The section ends with the proposal that the background marker is a definite determiner of the topic situation indicated by this QUD. This is tentatively connected with the occurrence of *=i/ye* morphemes marking *if* and *when*-clauses: as Schuh (2005b) already notes, there are previous proposals of conditional antecedents as definite descriptions of possible worlds (Schein, 2003, Schlenker, 2004, Ebert et al., 2014).

Chapter 5 presents the analysis of the focus phenomena discussed in the previous part. After a brief introduction to situation semantics, the section discusses the general relation between the topic situation and focus. The section adopts the proposals in Kratzer (2011) and Schwarz (2009b) concerning the close relation between the QUD of a sentence and its topic situation. The topic situation of a QUD and its answer are assumed to be the same. In addition, the topic situation of a QUD is a subsituation of its superquestion in the QUD hierarchy. For example, while Q1 in (9) is about the actual world w_0, Q2 is already about a much more spatiotemporally restricted situation ("last weekend"), and CQ is about a further subsituation of the situation talked about in Q2.

(9)
Q1: What is the way things are?
Q2: What is the way things were last weekend? ...
CQ: What did Jason catch?
A: Jason caught a mouse

Apart from topic situations, so-called *resource situations* are also proposed to be relevant for the interpretation of QUDs. These situations are usually used to model quantifier restriction, and are used here to model the restriction of *wh*-words to certain relevant salient individuals, and thus,

indirectly, the restriction of focus alternatives.

The section then turns to the notions of exhaustivity, existence and contrast, and discusses how the properties found in Ngamo can be explained in a situation semantic approach. For exhaustivity, Kratzer (2011)'s proposal that exhaustive answers exemplify the topic situation is adopted. Exhaustivity cancellation is attributed to a reconsideration of the QUD: it is either posed again with respect to a new resource situation (i.e. taking new alternatives into account), or with respect to a new topic situation. The existential inferences are explained by reference to the mechanism underlying QUD attribution: The QUD is assumed to have an existential presupposition, and by attributing the QUD to the hearer, the speaker also attributes its presuppositions to the hearer. The phenomena usually discussed under the heading of contrast, e.g. the difference between answers to *wh*-questions and corrective focus, are partly due to differences in exhaustivity and possible exhaustivity cancellation strategies, partly due to a different level of commitment.

The final part of this section discusses the analysis of background marking. The main idea is that the background is a definite description of the topic situation. This part first discusses the DP in Ngamo, presenting a proposal for the *=i/ye* definite article that the background marker is related to. Then, a similar proposal for the background marker is presented. The relation between the different kinds of focus/background marking (e.g. short answers with elided backgrounds, *=i/ye* constructions, and unmarked constructions) is discussed, in analogy to similar cases in the DP domain (i.e. pronouns, *=i/ye* definites, and bare nominals).

Chapter 6 presents an overview of the alternative-sensitive operators *yak('i)*, *ke('e)*, and *har('i)* in Ngamo. The first part of this section shows the syntactic positions, different possible associates, and the meaning contribution of these particles. All three particles can associate from a distance, and can be used adverbially as well as adnominally. They differ in two respects: (i) The exclusive particle *yak('i)* cannot associate with preverbal subjects, while *ke('e)* and *har('i)* can (10), and (ii) association of *ke('e)* and *har('i)* with focus in *=i/ye*-marked constructions is marginal, whereas *yak('i)* can associate with focus in any kind of focus construction (11). The inacceptability of *ke('e)* and *har('i)* in *=i/ye* constructions is independent of whether the antecedent (here e.g. "Kule built a school last year") is a *=i/ye* construction, too, or not.

(10) a. (Shuwa/Many people built a house last year) (*ke/har* + S, SVO)
Ke/Har **Kule** salko bano mano
also/even Kule build.PFV house last.year
"KULE also built a house last year."

b. (Kule and Shuwa wanted to build a house, but...) (*yak* + S, SVO)
#*Yak* **Shuwa** salko bano mano
only Shuwa build.PFV house last.year
(intended:) "Only SHUWA built a house last year."

(11) a. (Kule built a school/many things last year) (*ke/har* + DO, SV=iO)
Kule *ke/har* salko(??=i) **bano** mano.
Kule also build.PFV=BM house last.year
"Kule also built a HOUSE last year."

b. (Kule wanted to build a house and a granary last year, but...) (*yak* + DO, SV=iO)
Kule *yak* salko(=i) **bano** mano.
Kule only build.PFV=BM house last.year
"Kule only built A HOUSE last year."

The ban on *ke('e)* and *har('i)* in *=i/ye* constructions only holds if the backgrounds are parallel, when they differ, *=i/ye* is possible, e.g. (12).

(12) a. Yura esha Hasha, esha Lakka=i ke Kule
Yura call.PFV Hasha call.PFV Lakka=BM also Kule
b. Esha Hasha=i Yura, esha Lakka=i ke Kule
call.PFV Hasha=BM Yura call.PFV Lakka=BM also Kule
"Yura called Hasha, and KULE called Lakka."

The section shows, first, that the meaning contributed by *yak('i)* is just like the meaning of English *only*. Second, the meaning contributions of *ke('e)* and *har('i)* are different from their English counterparts: They differ in that they are allowed in more contexts, e.g. *ke('e)* is used in some contexts where English uses *and* instead of *also*. *Har('i)*, in addition to its use as *even*, has other uses as *until*, *as far as*, and *already*.

In the second part, the association behaviour of the particles is tested, in particular, whether they associate with focus *conventionally* (Beaver and Clark, 2008). If they do, they are semantically restricted to associate with focus, and thus always need a focus in their scope.

Chapter 7 proposes an analysis for the alternative-sensitive particles *yak('i)*, *ke('e)* and *har('i)* in a Beaver and Clark (2008)-style QUD account. *Yak('i)* and *har('i)* are analysed as presupposing that the relevant alternatives are ranked on a salient scale. *Yak*(p), following Beaver and Clark (2008) and Coppock and Beaver (2014)'s proposal for *only*, presupposes that at least p is true, and asserts that at most p is true. *Har*(p), presupposes that a (contextual) implication of p is ranked high on a salient scale, and asserts p. *Ke*(p) is suggested to presuppose that an alternative of p about a different topic situation is *given*.

The chapter also discusses what this means for a situation-semantic account of focus. First, it is assumed that at least the scalar particles have an influence on the resource situation, indicating that the prejacent p is the strongest (*har('i)*) or the weakest (*yak('i)*) considered alternative. The notion of exhaustivity cancellation is also taken up again. It is shown that the QUD can be reopened with respect to previously unconsidered alternatives, i.e. with respect to a new resource situation, or with respect to a new topic situation. The notion of addressee belief is also taken up again. The discussion of alternative-sensitive particles shows that discourse participants do not only keep track of the QUDs that their addressee's are attending to, but also estimate which alternatives the addressee consider to be more likely than others.

Chapter 8 concludes the dissertation by summarizing its most important findings, and giving an outlook to possible further work on focus and alternative-sensitivity in Ngamo.

1.3 Data Collection: Methodology

The data presented in this thesis were collected in Yobe State in two fieldwork trips in the winters of 2009 and 2010/2011, and in Abuja in two fieldwork trips in 2013 and 2014/2015. Due to logistic difficulties resulting from the difficult political situation in the North-East of Nigeria, most of the data was elicited with only two main language consultants, apart from recordings done in the winter of 2010/2011 with three further speakers, and a written questionnaire distributed by the

main language consultants to six further Ngamo speakers in 2013.

Most of the data presented here was elicited following the methodological guidelines in Matthewson (2004, 2006a). Following this method, speakers are asked to judge whether sentences are felicitous in a given context. For example, in (13) (from Matthewson 2004), the context in (13-a) would be presented with sentence (13-b), asking whether it is appropriate to utter (13-b) in this context.

(13) a. There are two cats in the room, and they are both asleep.
b. The cat is asleep.

For the most part, an English context and a Ngamo test sentence, elicited in a previous translation task, were presented orally, discussed with the speakers, and the resulting judgment and comments were written down. Usually, the speakers were asked separately from each other in order to ensure that they did not influence each other, but elicitation sessions together about less important data proved to be more interesting to the speakers, and yielded useful judgments, too.

In 2013, written questionnaire tasks were added to the repertoire. These consisted of felicity judgment tasks, ranking tasks, and inference tasks. Written felicity judgment tasks were similar to the oral tasks: the participants were presented with English contexts and Ngamo test sentences, and were asked to rate the felicity of the test sentence in the context[1]. In the ranking tasks, the participants were asked to rank several different test sentences according to their acceptability in a given context. While the results didn't show which sentences were actually acceptable and which weren't, and thus can only be used in addition to the judgment tests, they nevertheless yielded clear results. The inference tasks were modeled after similar tests in e.g. Tonhauser et al. (2011), Tonhauser (2014). These tests were used to test for projection, or, more generally, to indirectly test for the entailments of a given test sentence. For example, in order to test whether *Sabina's grandfather has a white beard* follows from (14-a), the speakers are presented with the following context, and then asked the question in (14-b) (example from Tonhauser et al. (2011)).

(14) Pamela is an art student who wants to take black and white portraits of old men with white beards. Her friend Sabina says to her:
a. My grandfather, who has a white beard, doesn't live far away.
b. *Will Pamela try to take pictures of Sabina's grandfather?*

Written felicity judgment tasks were found to be not ideal. First, Ngamo is not a written language, which might be a potential problem. Second, it was hard to understand what the judgments meant. For example, it happened several times that the sentences were judged to be perfectly acceptable, but the comments revealed that the speakers deemed the example to be semantically odd. The written ranking tests and inference tasks, on the other hand, yielded very clear results.

In addition to elicited data, I also collected some natural data with the help of storyboards[2]. These are pictures without text that help the viewer to tell a short story. The stories are constructed in a way that enforces some occurrences of constructions that one is interested in — for example question-answer sequences. After hearing the story in English several times, my main consultants were asked to repeat it in Ngamo. Further natural data was found in the text collection of the

[1]The options were: "perfect", "good", "rarely used", "not used, but still understandable", "not understandable". The speakers were asked to provide a comment if the sentence was not judged "perfect" in the context.
[2]See the Totem Fields Storyboard homepage for examples: `http://totemfieldstoryboards.org`

Yobe Languages Research Project[3], who published collections of Ngamo stories, descriptions of their traditions in Ngamo, and idioms and riddles, which were a very valuable source of data.

1.4 How to read this dissertation

Readers interested in the **focus/background distinction** in Ngamo should read sections 2.1.1 and 2.1.3 for the basic notions, section 4.1 for a first overview of focus realization, and section 5.2 for a first discussion of focus in a situation semantic account — the latter uses situation semantic notions introduced in section 5.1. For the **relation between focus/background marking and focus interpretation**, section 2.2.1 provides the theoretical background, while section 4.2 provides the Ngamo data. Section 5.3, and, partially, 7.4, come back to the important notions of contrast, exhaustivity, and existence. For the sections on **background marking**, cf. section 4.3, where the main data is introduced, and section 5.4 for the analysis as a definite determiner of situations.

Information on **alternative-sensitivity** in Ngamo can be found in Chapter 6, the analysis in chapter 7. In the theoretical background, chapters 2.1.2, 2.1.4, and 2.2.2 discuss focus-sensitivity. The **exclusive particle** *yak('i)* in Ngamo is first discussed in section 4.2.2, where it is used as a baseline for comparison for exhaustivity tests. Section 6.1.1 presents all the relevant data concerning its association behaviour and meaning contribution, while section 6.2.1 provides evidence that *yak('i) conventionally* associates with focus. The **additive particle** *ke('e)* and the **scalar particle** *har('i)* are also first mentioned in the section on exhaustivity, section 4.2.2, in particular the puzzle that they cannot associate with focus in *=i/ye* constructions, even though these constructions are not more exhaustive than their unmarked counterparts. This puzzle is briefly taken up again in section 4.3.2, where a similar phenomenon in the nominal domain is discussed. The main data on *ke('e)* and *har('i)* are presented in sections 6.1.2 and 6.1.3, respectively. Section 6.1.3 also discusses the scalar particle *lei*, which is also used in universal quantification, cf. 3.4.2. Section 6.2.2 shows that *ke('e)* and *har('i)* do not conventionally associate with focus. Sections 7.2 and 7.3 present the analyses of *har('i)* and *ke('e)*, partly referring to section 5.3.1 on exhaustivity cancellation. Section 7.4 concludes with some general properties of alternative-sensitive particles.

A discussion of **focus and alternative-sensitivity in a situation semantic approach** can be found in chapter 5 and section 7.4. Most of this, with the exception of the semantics of the background marker in section 5.4 and some special properties of the alternative-sensitive particles in Ngamo, is probably applicable cross-linguistically.

Finally, readers interested mainly in the **Ngamo data** should read chapter 3, which briefly discusses general properties of the language and some related languages, where necessary, chapter 4, which provides the relevant data for focus realization and interpretation, and chapter 6, which presents the relevant focus-sensitivity data. For data on **definiteness** in Ngamo, sections 3.4.1 provide 4.3.1 some data, an analysis of the definite determiner can be found in section 5.4.1.

[3] `http://aflang.humnet.ucla.edu/Ngamo/ngamo.html`

Chapter 2

Theoretical Background

This section discusses the notion of *focus*, and how to model it. This is done in two steps: in part 2.1, a preliminary, 'simple picture' is provided — part 2.2 then summarizes the problems of the simple picture, i.e. it discusses cases where focus realization and interpretation do not match, and cases where the constituent that is interpreted as focus is not the associate of a focus-sensitive particle. Section 2.3 concludes this overview by presenting the resulting research questions for Ngamo.

In 2.1.1, a first characterization of focus is proposed. It summarizes the observations that (i) focus realization involves greater prominence, (ii) focus interpretation involves invoking alternatives, (iii) focus contexts are such that the focused constituents are in a way controversial, or *at-issue*, whereas its complement, the *background*, is uncontroversial, or *not-at-issue*. For example, in the answer A in (1), *Bill*, is realized with greater prosodic prominence (indicated by small capitals), marking *Bill* as the focus, and the rest of the sentence as the background. Possible alternatives to A might be something like *'Mary introduced* Jane *to Sue'*, but not '*Peter introduced Bill to Sue*'. The reason for this is that, in this context, the identity of the person that Mary introduced to Sue is under discussion, whereas that Mary introduced someone to Sue is uncontroversial.

(1) Q: Who did Mary introduce to Sue?
A: Mary introduced Bill to Sue.

Part 2.1.2 discusses *focus-sensitivity*. This is the property of some operators to shift their meaning contribution when the focus is shifted. For example, in a scenario from Rooth (1992, p.77) where Mary introduced Bill and Tom to Sue, but didn't introduce anybody else to anybody else, (2-a) would be false, but (2-b), differing only in the position of the focus, would be true. Without the operator *only*, both sentences would be true (although (2-a) would be infelicitous out-of-the-blue).

(2) a. Mary only introduced Bill to Sue.
b. Mary only introduced Bill to Sue.

In the preliminary characterization of focus, it will be assumed that the meanings of operators like *only* involve reference to the alternatives introduced by focus.

Section 2.1.3 then introduces the *question under discussion* approach that will be used for the remainder of the thesis (Roberts, 1998). The main idea is that, since discourse is information exchange, every sentence answers an explicit or implicit request for information. Focus indicates the speaker's assumptions about what this implicit question is. For example, when (3) is not preceded by an explicit question, focus on *Bill* indicates that the speaker assumes an implicit question 'Who did Mary introduce to Sue?'.

(3) Mary introduced BILL to Sue.

It is shown how the question under discussion account links the interpretation of focus with the contexts in which focus occurs, and what role focus realization plays in evoking the question under discussion.

Section 2.1.4 completes this first overview of focus, Beaver and Clark (2008)'s account of how the focus-sensitive operators *only*, *even* and *also* associate with focus via the question under discussion will be presented. This concludes the 'simple picture' of focus, under which the part of the sentence with the most prominence in realization corresponds to that which evokes alternatives, which again corresponds to the part focus-sensitive operators associate with.

In section 2.2, problems with this 1:1 correspondence will be discussed. It was pointed out numerous times that there are other factors influencing focus realization, so that not all that is focus is prominent, and not all that is prominent is focus (Schwarzschild, 1999, Bolinger, 1972, É. Kiss, 1998, i.a.). It was also pointed out by several researchers that 'focus-sensitive' operators do not necessarily need to associate with focus (e.g. Beaver and Clark, 2008, Krifka, 1998, Roberts, 2011). Thus, two important cues to what the focus of a sentence is, namely focus realization and focus-sensitivity, are not as reliable as one might wish.

Section 2.3 discusses what research questions this literature overview leads to, i.e. what will be investigated in the chapters to come. Ngamo is interesting in this respect. First, because focus can remain entirely unmarked, leaving it entirely up to the context to identify the focus. Second, there are other constructions which are morphologically and syntactically marked, and unambiguously indicate what is focused and backgrounded, giving rise to the question of which factors influence how focus is realized. Third, not all 'focus-sensitive' operators always need to associate with focus in Ngamo.

2.1 The simple picture

2.1.1 Focus realization, interpretation, and use

Focus realization

In the simple picture, focus in English is indicated by greater prosodic prominence with respect to the background. For example in (4-a), *Mary* is the prosodically most prominent part of the sentence, and thus its focus, whereas in (4-b), *ate* is the focus of the sentence.

(4) a. MARY ate an apple.
b. Mary ATE an apple.

Focus is not indicated in the same way crosslinguistically: there are other means, e.g. prosodic phrasing, word order, and morphological marking (see Büring (2010) and Zimmermann and Onea (2011) for an overview). In most languages, however, there is some kind of grammatical means for making focus more prominent than the other, backgrounded constituents in the sentence.

Focus interpretation

This focus is then interpreted in a certain way: on a non-truth-conditional level of meaning, focus induces *alternatives* (Rooth, 1985, 1992, 1996). For (4-a), an appropriate alternative would e.g. be *Sue ate an apple*, for (4-b), *Mary bought an apple* would be more appropriate.

(5) Focus indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions. (Krifka (2008, p.18))

In Rooth's Alternative Semantics approach, focus contributes a second, non-truthconditional, level of meaning, the so-called *focus value*. Thereby, the *normal value* of an expression α (written $[\![\alpha]\!]^0$) is just the regular truth-conditional meaning of α, and the *focus value* of α (written $[\![\alpha]\!]^f$) is (i) the set including just the normal value of α if α is out-of-focus, or (ii) a set consisting of the normal semantic value and other elements of the same semantic type, its *alternatives*, when α is in focus[1]. For example, in (6-a), the focus value of *Bill* consists of a set containing only its normal value (6-b), because it is out-of-focus, whereas the focus value of the focused Sue_F contains further alternatives.

(6) a. SUE_F loves Bill.
b. $[\![\text{Bill}]\!]^f$ = {Bill}
c. $[\![\text{SUE}_F]\!]^f$ = {Sue, John, Amy ...}

The focus value of an utterance is computed compositionally: the focus values of an expression α and an expression β are combinded via a standard composition of each element in $[\![\alpha]\!]^f$ with each element in $[\![\beta]\!]^f$ (e.g. via pointwise functional application). Thus, the focus value of (6-a) would be the set of alternative propositions in (7).

(7) $[\![(6\text{-a})]\!]^f$ = {Sue loves Bill, John loves Bill, Amy loves Bill, ...}

Since *wh*-questions like 'Who loves Bill?' are also analysable as sets of propositions, the set of possible answers to the question (Hamblin, 1973), it is then possible to require that these sets are identical (Roberts, 1998, p.24 — see the discussion in section 2.1.3). For example, (6-a), evoking the alternatives in (7), would be an appropriate answer to the question in (8), but not to the question in (9).

[1] Schwarzschild (1999, p.155) notes that, depending on the types assumed for proper names, the assumption that alternatives are of the same type might be problematic for examples like (i).

(i) A: John laughed.
B: No, EVERYBODY laughed.

This problem will be ignored here.

(8) [[Who loves Bill?]]^0
= {Sue loves Bill, John loves Bill, Amy loves Bill, ...}

(9) [[Who does Sue love?]]^0
= {Sue loves Bill, Sue loves Mo, Sue loves Jill, ...}

Rooth (1992) notes that focus alternatives are *restricted*: they are not the set of all elements of the same type as the focused constituent, but just a contextually restricted subset. He uses example (10) to show that there are cases in which the focus alternatives are restricted to only two alternatives: when uttering (10-a), the speaker wants to convey that Mary read the novel *The Recognitions*, but she didn't understand it (Rooth, 1992, p.92). On the level of the VP, then, the only other considered alternative, apart from the one provided by the normal value, is *understand The Recognitions* (10-b)[2].

(10) a. Mary only READ The Recognitions
b. [[READ The Recognitions]]^f = {read The Recognitions, understand The Recognitions}

To model this restriction, Rooth proposes that the set of salient focus alternatives are introduced at LF via an expression $\sim C$ consisting of an operator ($\sim$) and a covert variable (C), whereby the variable introduces the set of salient focus alternatives for the sister node, and the operator introduces a presupposition that these salient focus alternatives are a subset of the focus alternatives of the sister node, which contains its normal value, and at least one other alternative.

Focus contexts

The most important focus contexts are the following (e.g. Dik, 1997, p. 331): *wh*-questions and their answers (11), answers to disjunctive questions (12), and corrections (13). What all these contexts have in common is that one speaker has incorrect or insufficient information about what Mary ate, and the other speaker provides this information.

(11) Q: What did Mary eat?
A: She ate an APPLE$_F$

(12) Q: Did Mary eat an apple or a pear?
A: She ate an APPLE$_F$

(13) A: Mary ate a pear.
B: No, she ate an APPLE$_F$.

Focus is thus an *information-structural* device: it facilitates the transmittal of information between participants in a conversation, by drawing the attention of the hearer to the part of the utterance which provides the information needed by the hearer (adopting the terminology of Simons et al. (2011), this will be called the *at-issue* part), and drawing it away from the part of the utterance which does not provide this information (the *not-at-issue* part). In section 2.1.3, the *question under discussion* approach will be introduced, which — in order to capture the fact that information is transmitted to reduce a perceived difference in knowledge — models all of (11)–(13) as answers

[2] In §2.1.4, an account for *only* will be adopted that assumes plural alternatives like *read and understand The Recognitions* in addition to the singular alternatives.

to an implicit (in (12) to (13)) or explicit (in (11)) question *What did she eat?*[3].

Before discussing this approach, the following section 2.1.2 discusses further focus contexts, namely contexts which involve *focus-sensitive* operators like *only* and *also*, e.g. (14).

(14) a. Mary ate a pear, and
she **also** ate an APPLE$_F$
b. We expected Mary to eat an apple and a pear, but...
she **only** ate an APPLE$_F$

These are contexts involving operators which — in the simple picture — are all focus-sensitive, and thus are in need of further discussion.

2.1.2 Focus-sensitivity

This section introduces the notion of *focus-sensitive operators*, i.e. operators whose contribution to the interpretation of their containing sentence changes when the focus of the sentence changes. For example, in (15-a) (from Rooth 1992, p.77), the focus on *Bill* leads to the interpretation that Mary did not introduce anybody else to Sue, whereas in (15-b), focus on *Sue* yields the interpretation that Mary did not introduce Bill to anybody else.

(15) a. Mary only introduced BILL to Sue.
b. Mary only introduced Bill to SUE.

Similar effects can be observed with the operators *also* and *even*, with the difference that the focus-sensitive meaning component is not truth-conditional in these cases, but presuppositional. For example, (16-a) is felicitous in contexts in which Mary introduced somebody else to Sue, and (16-b) is felicitous in contexts in which Mary introduced Bill to somebody else. *Even* in (17) is said to have similar felicity constraints, with the additional condition that the other true alternatives are ranked lower on a salient scale, here possibly a scale of unlikelihood.

(16) a. Mary also introduced BILL to Sue.
b. Mary also introduced Bill to SUE.

(17) a. Mary even introduced BILL to Sue.
b. Mary even introduced Bill to SUE.

All three operators, then, have a meaning component which makes reference to the alternative set introduced by focus: in the case of *only*, other alternatives are excluded, making it an *exclusive* particle, in the case of *also* and *even*, other alternatives are included, making them *inclusive* or *additive* particles (König, 1991, p.33).

In semantic approaches to association with focus, this reference to the alternative set introduced by focus is hard-wired into the meaning of the focus-sensitive operator. An example of this is

[3]The disjunctive question can actually have a number of different underlying questions — for a discussion of this, see e.g. Roberts (1998, § 2.2.2.3.), and Roelofsen and van Gool (2010).

(18), due to Rooth (1996, p.277)[4].

(18) MEANING OF ONLY: (Preliminary)
only combining with a clause φ yields the assertion $\forall p[p \in [\, [\![\varphi]\!]^f\,] \wedge \check{}p \rightarrow p = [\![\varphi]\!]^0]$ and the presupposition $[\varphi]$.

According to this proposal, the exclusive is a propositional operator, combining with a proposition φ, its so-called *prejacent*, and excluding all focus alternatives of φ except for φ itself. In this proposal, the prejacent is presupposed[5]. For example in (19-a), (19-b) is presupposed, and (19-c) is asserted.

(19) a. Mary only likes SUE.
b. Mary likes Sue.
c. Mary doesn't like anybody else (from a salient set of alternatives)

Similar proposals can be made for the additive operator *also* and the (so-called) additive-scalar operator *even*.

(20) MEANING OF ALSO: (Preliminary)
$[\![also(\varphi)]\!] = [\![\varphi]\!]$, defined iff $\exists p[p \in [\![\varphi]\!]^f \wedge \check{}p \wedge p \neq [\![\varphi]\!]^0]$.

(21) MEANING OF EVEN: (Preliminary)
$[\![even(\varphi)]\!] = [\![\varphi]\!]$,
defined iff $\exists p[p \in [\![\varphi]\!]^f \wedge \check{}p \wedge p \neq [\![\varphi]\!]^0 \wedge$ p is lower than φ on a salient scale].

Here, *also* and *even* are propositional operators. They make no truth-conditional contribution, but presuppose that some other alternative holds in addition. For example, (22-a) asserts (22-b) (the prejacent), and presupposes (22-c). The additive-scalar operator *even* contributes a further presupposition, which adds that the prejacent is high on a scale compared to other alternatives (König 1991, p. 69, Karttunen and Peters 1979, p. 33, Jacobs 1983, p.147), e.g. (22-d) [6].

(22) a. Mary also/even likes SUE.
b. Mary likes Sue.
c. Mary likes somebody else (from a salient set of alternatives)
d. That other person or group of people is more likely to be liked by Mary than Sue is.

The exact nature of the scalar meaning component of *even* is under debate. In some proposals, the scale is a scale of likelihood, e.g. Karttunen and Peters (1979). It has however been suggested that the scale cannot be a likelihood scale in all cases (e.g. Fauconnier 1976, p.262, Kay 1990, p.71,

[4]This is a corrected version of Rooth's semantically focus-sensitive operator. Rooth however argues for a pragmatic approach to association with focus, via a context variable which takes a salient set of alternatives as its antecedent (see the discussion in Rooth 1992, 1996).

[5]For similar proposals, see Horn (1969), Rooth (1985), König (1991). There have been numerous alternative proposals for the presupposition of *only*, e.g. that it is an existential presupposition (e.g. *Mary introduced somebody to Sue*) (Horn, 1996, von Fintel, 1997), an implication that if the existential holds, the prejacent holds, *If Mary introduced somebody to Sue, then she introduced Bill to Sue* (Ippolito, 2008), and many more, see Beaver and Clark (2008) for a discussion. In section 2.1.4, a different account of *only* will be adopted, namely that of Beaver and Clark (2008), Coppock and Beaver (2014).

[6]Note that in the literature on *even*, one or both of its presuppositions have also been called conventional implicatures, e.g. in Karttunen and Peters (1979, p.12) and König (1991, p.69).

Gast and van der Auwera 2011, p.7) — most accounts thus assume that the ordering relation of the scale is determined by the context (e.g. Fauconnier, 1976, Jacobs, 1983).

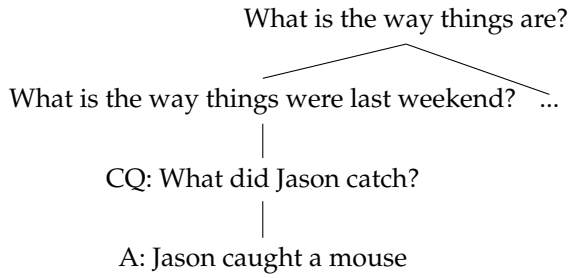
According to the proposals in (18), (20), and (21), the operators *only*, *also*, and *even* thus obligatorily need a focus in their scope, and exclude or include focus alternatives which differ from the prejacent. In §2.1.4 and §2.2.2, more elaborate proposals for association of these operators with focus will be discussed, which — in using the notion of *questions under discussion* — can account for some problems that the above proposals have.

2.1.3 Focus in a 'question under discussion' account

I will adopt the *question under discussion* approach to focus (Roberts, 1998, Büring, 2003, Beaver and Clark, 2008), cf. also Klein and von Stutterheim (1987), van Kuppevelt (1995), Ginzburg (1996). This approach combines Roothian alternative semantics with the main function of focus neglected in the Roothian approach: *discourse management*. Taking as a starting point that the goal of discourse is to share previously unshared information, the QUD theory models discourse as driven by implicit (hearer-) questions: The (eternally unreachable) goal of each new conversation is to cooperatively answer the super-question "What is the way things are?". This question is tackled by splitting it up into subquestions, which each ask for a partial answer to the superquestion. Every new assertion is then an answer to the currently salient most specific question, the *Current Question*[7].

I will adopt the notational convention used in Büring (2003) to display the hierarchy of super- and subquestions in a 'discourse tree', cf. (23), whereby the dominating nodes are superquestions, the daughter nodes subquestions, and sister nodes are in a temporal order: questions further to the right are asked or presupposed later, and will thus usually not be represented unless the tree represents a longer stretch of discourse. When the Current Question is answered, it is 'closed', and the next highest question will become relevant again, possibly leading to a new subquestion.

(23)



A complete subtree of subquestions of a higher question is called its *strategy*. Full answers to the subquestions of a superquestion yield the answer to the superquestion. There are in principle an infinite number of strategies possible to answer the question "what is the way things are?", which strategy is chosen depends on the other goals of the interlocutors - "goals in the real world" (Roberts, 2012, p.7).

The focus-background structure of an utterance indicates what the Current Question is. For example, in the corrective focus context (13) above (repeated here) the Current Question is *What did she eat?*:

[7] This term is taken from Beaver and Clark (2008).

(13) A: Mary ate a pear.
B: No, she ate an APPLE$_F$.

The *focus* of the declarative utterance corresponds to the part asked for in the Current Question. This is modeled by the requirement that an utterance must be *relevant* and *congruent* to the Current Question (Roberts, 1998, Büring, 2003, Beaver and Clark, 2008)[8]. Relevance of declarative utterances is defined via answerhood.

(24) RELEVANCE (Büring, 2003, p.518):
An assertion A is relevant in a discourse tree D iff A is an answer to the Current Question CQ for A in D.

Roberts and Büring differ in their definitions of answerhood. For Roberts, it is defined as in (25) (Roberts, 2012, p.11).

(25) Answerhood (Roberts):
a. A partial answer to [a CQ] is a proposition which contextually entails the evaluation either true or false of at least one [of the alternatives in the CQ].
b. A complete answer [to a CQ] is a proposition which contextually entails an evaluation for each [of the alternatives in the CQ]

For Büring, this is too strong, due to the possibility of answers like A in (26), which are not even partial answers according to (25). He thus proposes (27) as a definition of answerhood.

(26) Q: Will you come to the party?
A: Presumably.

(27) A is an answer to [a CQ] if A shifts the probabilistic weights among the propositions denoted by [the CQ].

In the following chapters, the question of the proper definition of answerhood will be taken up again and discussed — for now, I assume Roberts' more strict definition of answerhood. Relevance for assertions thus has to do with the *content*: The answer has to settle the issue raised in the question, at least partly.

In addition, the assertion must be *congruent* to the Current Question at the time when it is uttered; this has to do with the *form* of the utterance. Under the assumption that a question denotes a set of propositions, namely the set of possible answers to the question (Hamblin, 1973, p.48), congruence is a relation between the focus alternatives indicated by focus marking and the alternatives denoted by the Current Question. I follow Roberts (1998, p.24), who cites von Stechow (1989, p. 36) as original reference, in assuming that two sets must be identical[9], but follow Beaver and Clark (2008, p.37) in weakening this relation by suggesting that it needn't be the whole utterance which evokes the alternatives corresponding to the CQ, but only a part of the utterance:

[8] Büring (2003) also includes a requirement of answers to be informative — this will be left undiscussed here.

[9] For Rooth (1992), Beaver and Clark (2008), the focus alternatives can be a superset of the CQ alternatives. Since the answer often "creates" the question, by indicating what the speaker believes the Current Question to be, it would be counterintuitive to assume that the answer can involve more salient individuals than the corresponding question.

(28) CONGRUENCE, adapted from Beaver and Clark (2008)'s *Focus Principle*:
Some part of a declarative utterance should evoke a set of alternatives [corresponding to] all the Rooth-Hamblin alternatives of the CQ.

For example, the focus in (29-c) might indicate either a Current Question like (29-a) or (29-b), cf. Beaver and Clark (2008, p.37).

(29) a. Who do you think laughed?
b. Who laughed?
c. I think that [Mary]$_F$ laughed.

Relevance and Congruence are too weak up to now, cf. example (30) (by Andreas Haida, p.c.): they wrongly predict the exchange in (30) to be felicitous, since (i) it provides the desired information that Özil scored the goal, as required by Relevance, and (ii) part of the sentence evokes alternatives which correspond to those indicated by the question, as required by Congruence.

(30) Q: Who scored the goal?
A: #I think that Peter was on the balcony when ÖZIL scored the goal, because he didn't believe that the German team could still win.

This suggests that a further constraint is needed, an *at-issueness* constraint, cf. the definition of at-issueness in (31) (by Simons et al., 2011, p. 323).

(31) Definition of at-issueness (Simons et al., 2011, p. 323)
a. A proposition p is at-issue iff the speaker intends to address the CQ via ?p.
b. An intention to address the QUD via ?p is felicitous only if:
(i) ?p is relevant to the QUD, and
(ii) the speaker can reasonably expect the addressee to recognize this intention.

Thereby, **?p** is the corresponding yes/no-question for the proposition **p**. One question is relevant to another iff it is part of a strategy to answer this other question, cf. (32), adapted from Büring (2003, p. 513)'s and Roberts (1998)'s definitions:

(32) RELEVANCE of questions: A question Q is relevant in a discourse tree D iff Q is part of a strategy to answer its Current Question CQ in D

The answer 'ÖZIL *scored the goal*' in (30), is not-at-issue, because the speaker cannot expect the hearer to recognize that she wants to address the CQ with the question '*Did* ÖZIL *score the goal?*' in this syntactic configuration: projective parts of utterances are usually not-at-issue, and can thus usually not contain answers to the Current Question (Simons et al., 2011, p. 322)[10].

[10]Examples where the answer to the overt question is embedded under a presupposition trigger are only felicitous because the hearer recognizes the speaker's intention to answer another CQ, e.g. "*Why did Bob give me this amount of money*?" in the following example (Simons et al., 2011, p. 320).

(i) *Quentin, Ann and Bob [ate] at a restaurant where the tip is usually incorporated into the bill. Bob handed Quentin what he said was his share of the bill, then left the table. [...]*
Quentin [(confused)]: Are we supposed to leave a tip?
Ann: Bob doesn't realize that the tip is included in the price.

A declarative utterance is thus not only required to be congruent and relevant to the CQ, but the part that answers the CQ must also be at-issue. (33) is a formulation of such a constraint.

(33) At-issueness constraint The part of a declarative utterance U that is congruent to the CQ must be at-issue with respect to the CQ.

This constraint also regulates the form of the answer, requiring it to be formulated in a way that the hearer can easily recognize the part that answers the Current Question.

So, to sum up, the speaker, by deaccentuation and accentuation, chooses to ascribe certain knowledge to the hearer(s): namely, what is under discussion — the deaccented part — and what is the case about this — the accented part. This is modeled via Relevance, Congruence, and At-issueness.

2.1.4 Focus-sensitivity in a 'question under discussion' account

Section 2.1.3 discussed how focus realization indicates alternatives via the Current Question — the most immediate question under discussion. In this section, it will be discussed how focus-sensitive operators like *only*, *also*, and *even* interact with the Current Question.

On the semantic approach to association with focus presented in section 2.1.2, focus-sensitive operators make direct reference to the alternatives $[\![\varphi]\!]^f$, cf. (18), repeated from page 14 — originally from Rooth (1996, p.277)):

(18) Meaning of only: (Preliminary)
only combining with a clause φ yields the assertion $\forall p[p \in [\![\varphi]\!]^f] \wedge \check{}p \rightarrow p = [\![\varphi]\!]^0]$ and the presupposition $[\varphi]$.

In this section, the proposal of Beaver and Clark (2008) that focus-sensitive operators make reference to focus alternatives via the Current Question will be discussed. If we modify Rooth's original definition of *only* to quantify over alternatives introduced via the CQ, this yields the following meaning for *only*:

(34) Meaning of only II: (Still preliminary)
only combining with a clause φ yields the assertion $\forall p[p \in CQ \wedge \check{}p \rightarrow p = [\![\varphi]\!]^0]$ and the presupposition $[\varphi]$.

In a theory where the focus alternatives are exactly the same as the alternatives introduced via the CQ, this doesn't look like a big change. However, we gain some explanatory force. According to Rooth (1996, p.278, 1992, p.107–113), a theory of focus-sensitivity that uses lexical entries like (18), in which direct reference to focus alternatives is made, is a weak theory, since it has little explanatory force. Such an approach cannot predict which constructions are focus-sensitive and which aren't, any word could be given a focus-sensitive meaning. A QUD approach to focus-sensitivity is still a semantic account, since dependency on the alternatives introduced via the CQ is coded into the lexical entry of the operator. However, it is stronger than the 'weak' account above, since it makes predictions with respect to the kinds of contexts in which the operators can be used, and since QUDs are independently needed to account for other

information-structural phenomena. In the following, a QUD-account of the focus-sensitive elements *only*, *even* and *also* is discussed.

Only in a QUD account

Beaver and Clark (2008)'s final proposal for English *only* is more elaborate than the proposal above. One reason for this is that the proposal in (34) makes wrong predictions for examples in which the prejacent entails some of its focus alternatives, like in (35).

(35) CQ: Who smokes?
A: Only AMY AND BILL smoke.

Under the proposal above, all alternative answers to the CQ are excluded. Under the reasonable assumption that the alternatives *Amy smokes* and *Bill smokes* are alternative answers to the CQ, (35-b) would wrongly be taken to assert that these alternatives are false. For this reason, Beaver and Clark (2008, p.316f) assume that the assertion should be that the prejacent is the most informative true answer to the CQ.

A second problem with the proposal in (34) is that it fails to account for the non-standard behaviour of the prejacent presupposition. One example which shows that the prejacent is not presupposed are so-called *scalar* or *evaluative* uses of ONLY[11]. The evaluative reading of (36) doesn't indicate that Amy only has one occupation (rather than two or three), but that being a PhD student is ranked lower on a salient scale of occupations than other more important or prestigeous occupations. Under this reading, (36) is thus compatible with Amy being a waitress in addition to being a PhD student.

(36) Amy is only *a PhD student*.

When (36) is negated, as in (37), the prejacent does not pass a standard test for presupposition: survival under negation (cf. Beaver and Clark 2008, p.235ff.).

(37) Amy isn't *only* a PHD STUDENT.
↛ Amy is a PhD student.

A unified account of *only* can thus not assume the presupposition in (34).

In addition, the proposal in (34) fails to capture that *only* is *mirative* (a proposal first made in Zeevat 1994 as far as I know, see also Zeevat 2009): use of the particle expresses a discrepancy between the expected answer to the CQ and the actual answer: the answer is unexpectedly weak (on a salient scale). The following example, adapted from Roberts (2011, p.40), shows this clearly. Here, B's answer suggests that there was an expectation (shared by A) that Sarah would have more children. Note that without *only*, there is no such expectation: the sentence could mean that the speaker is surprised that Sarah had more than one child.

(38) A: You looked surprised. What's up?
B: Sarah only had TWO babies.

[11] Since Beaver and Clark propose an account according to which all uses of *only* are scalar, I will refer to uses of *only* as in (35) as 'evaluative' uses of *only*, instead of calling them 'scalar'.

Beaver and Clark (2008) take mirativity marking to be the central function of exclusive particles, they informally describe the function of exclusives as follows (Beaver and Clark, 2008, p.251)[12]:

(39) **Discourse function [of exclusives]**: To make a comment on the Current Question (CQ), a comment which weakens a salient or natural expectation. To achieve this function, the prejacent must be weaker than the expected answer to the CQ on a salient scale.

The lexical entry *only* is shown in (40) (from Coppock and Beaver (2014, p.24), a version of the proposal in Beaver and Clark (2008, p.261)).

(40) $[\![\text{only}]\!]^S = \lambda p.\lambda w\text{: } \textsc{min}_S(p)(w).\ \textsc{max}_S(p)(w).$

Thereby, $\textsc{min}_S$ is defined as in (41)[13]. *Only*, according to this proposal, introduces the presupposition that there is a true answer to the current question under discussion that is at least as strong as the prejacent p, on a salient scale S. This models the 'salient or natural expectation' above: of the set of answers that the hearer considers possible or expectable, the prejacent is the weakest.

(41) $\textsc{min}_S(p) = \lambda w.\ \exists p' \in CQ_S\ [p'(w) \wedge p' \geq_S p]$

The operator $\textsc{max}_S$, needed for the asserted meaning contribution of *only*, is defined as in (42). A sentence with *only* thus asserts that every true answer to the current question is as weak as the prejacent or weaker.

(42) $\textsc{max}_S(p) = \lambda w.\ \forall p' \in CQ_S\ [p'(w) \rightarrow p \geq_S p']$

Mirativity is thus provided by the presupposition that *[t]he strongest true alternatives in the CQ are at least as strong as the prejacent* (Beaver and Clark, 2008, p.251). For a sentence like (38), the presupposition determines that the CQ contains stronger alternatives (e.g. *Sarah had three babies*) but not weaker alternatives (e.g. *Sarah had one baby*). The answers in the CQ are ranked on a scale of strength as in (43). According to this proposal, *only* is thus always scalar: The alternatives induced by the presupposed CQ are ranked in partial order.

(43)
Sarah had four babies
|
Sarah had three babies
|
Sarah had two babies

By asserting (38), stronger alternatives are excluded, leaving *Sarah had two babies* as the strongest true alternative.

[12] Beaver and Clark analyse *only*, *also*, and *even* as sentential operators, so that the Current Question is introduced by (some part of) the proposition in its scope (cf. the *Focus Principle* above). This means that for (i-a), the CQ would be (i-b) rather than (i-c).

(i) a. Only Amy smokes. b. Who smokes? c. Only who smokes?

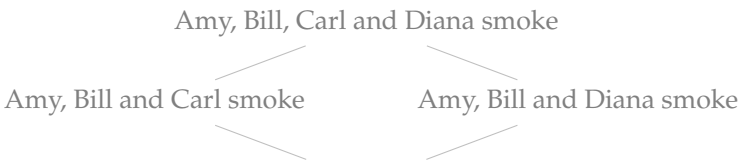
[13] This is Coppock and Beaver (2014)'s corrected version of the MIN operator in Beaver and Clark (2008, p.261), which required that weaker alternatives be false, and thus made the wrong predictions for entailment scales.

Similarly, in a sentence like (35) (repeated below), where Amy, Bill, Carl and Diana are salient individuals, the presupposed CQ contains stronger alternatives (e.g. *Amy, Bill and Carl smoke*) but not weaker alternatives (e.g. *Amy smokes*).

(35) CQ: Who smokes?
A: Only AMY AND BILL smoke.

Like in (43), the ranking criterium for the scale is entailment: each stronger alternative entails the weaker alternatives. Since the prejacent is the weakest alternative, it is entailed by all other alternatives in the CQ. Again, the assertion then excludes all propositions stronger than the prejacent, leaving the prejacent as the only true alternative in the CQ.

(44)



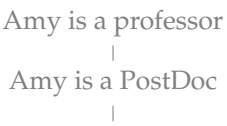
Beaver and Clark (2008)'s proposal thus suggests that the focus-sensitive operators have a discourse management function: they shape the CQ. Compare (35) with the exchange in (45) without the particle *only*. Here, the CQ includes the full range of alternatives, including e.g. *Bill smokes* and *Carl and Diana smoke*.

(45) CQ: Who smokes?
A: AMY AND BILL smoke.

This proposal can easily capture the different behaviour of the examples with *evaluative only* (Beaver and Clark, 2008, p.269), e.g. (36), repeated here. Here, "importance of job" is the ranking criterium, leading to a presupposed scale like (46), with the prejacent *Amy is a PhD student* being the weakest salient alternative.

(36) Amy is only *a PhD student*.

(46)



When (36) is negated, the presupposed scale remains, but it is asserted that a stronger alternative than *Amy is a PhD student* is true — Amy is e.g. a PostDoc or a professor, rather than a PhD student. Compare this to (35): when (35) is negated, it is also asserted that a stronger alternative than the prejacent (*Amy and Bill smoke*) is true. However, the prejacent survives embedding under negation, because all stronger alternatives under consideration entail it. Importantly, this is not due to a prejacent presupposition, but rather due to the kind of scale involved. The proposal of Beaver and Clark (2008) thus provides a unified explanation for these puzzling facts.

Also and *even* in a QUD account

The focus-sensitive particles *even* and *also* are only briefly discussed in Beaver and Clark (2008). Without providing a concrete proposal for the meanings of *even* and *also*, they provide suggestions on the interaction of the particles with the CQ. First, they propose that the particles conventionally associate with the focus, i.e. they make direct reference to the CQ in their lexical entries.

For additive particles like *also*, Beaver and Clark (2008, p.73) suggest that they mark that there is a previous partial answer to the CQ, and that the current utterance extends this previous answer. There is an additional requirement that the current answer may not entail the previous answer, and vice-versa, cf. (47) from Beaver and Clark (2008, p.73).

(47) Sam is happy. # [Sam and Jane]$_F$ are happy too.

The meaning of additives can be informally described as follows:

(48) **Meaning of additives**
The lexical meaning of additives is exhaustively described by:
Discourse function: To mark that a previous answer to the Current Question (CQ) must be extended, i.e. that the previous answer was not the strongest true answer to the CQ.
Presupposition: There is a previous true answer to the CQ in the immediate context which is logically independent from the prejacent.
Descriptive Content: The prejacent is a true answer to the CQ.

This yields the contextual implication that the previous true answer together with the prejacent provide the strongest true answer to the CQ. When embedded under negation, so that the prejacent is not a true answer to the CQ, the previous answer is taken to be the strongest true answer to the CQ.

For an additive-scalar operator like *even*, Beaver and Clark suggest that its discourse function, like that of *only*, is mirative: where *only* corrects an overly strong expectation, *even* corrects an overly weak expectation (Beaver and Clark, 2008, p.71) — I will assume that this amounts to something like (49) .

(49) **Meaning of scalar additives**
The lexical meaning of scalar additives is exhaustively described by:
Discourse function: To make a comment on the Current Question (CQ), a comment which indicates that a salient or natural expectation was exceeded. To achieve this function, the prejacent must be stronger than the expected answer to the CQ on a salient scale.
Presupposition: The strongest true alternatives in the CQ are at most as strong as the prejacent.
Descriptive Content: The prejacent is a true answer to the CQ.

Note that in contrast to the proposal in (21) there is no additive presupposition in (49)[14].

[14]There are other proposals in the literature which also do not assume an independent additive meaning component, but rather assume that the additivity follows from the interaction of the assertion and the presupposed scalar component (Horn, 1969, Fauconnier, 1976, Gast and van der Auwera, 2011). This will be further discussed in section 7.

I propose the following lexical entries for *also* and *even* to capture Beaver and Clark (2008)'s intended meaning[15].

(50) $[\![\text{also}]\!]^S = \lambda p.\lambda w$: $\exists p' \in CQ_S\ [p'(w) \wedge \textsc{indep}(p)(p')].p(w)$
whereby: $\textsc{indep}(p)(p') = [\ p \nrightarrow p' \wedge p \nrightarrow p']$

(51) $[\![\text{even}]\!]^S = \lambda p.\lambda w$: $\textsc{max}_S(p)(w).\ p(w)$

In this section, association with focus was linked to the preceding discussion of focus realization using the notion of the *current question under discussion* (CQ). Beaver and Clark (2008)'s idea that the focus-sensitive operators *only*, *even* and *also* semantically associate with focus via the CQ was discussed. The QUD-based proposals for focus-sensitive particles are discussed further in §2.2.2, and refined in chapter 7.

2.1.5 Summary

According to the simple picture of focus, focus is grammatically marked in order to make it more prominent than the background. Thus focus marking serves to establish discourse coherence, in order to facilitate the understanding of the current utterance. Discourse coherence can be modeled using a hierarchy of questions under discussion: focus marking indicates focus alternatives, which are identical to the possible answers to the Current Question, the immediately relevant question under discussion. This Current Question must be closely related to the last Current Question in order to preserve discourse coherence. Narrow focus thus typically occurs in contexts in which there is an overt *wh-* or disjunctive question, or in corrections. Focus-sensitive particles like *only*, *even* and *also* interact with the CQ: they exclude (*only*) or include (*even/also*) other possible answers to the CQ.

Thus, according to the simple picture, the focus is the part of an utterance which is (i) focus marked, (ii) provides the information requested by the Current Question, and (iii) is thus that part of the utterance focus-sensitive particles associate with. The rest of this chapter is devoted to discussing some problems with this view.

2.2 Problems with the simple picture

In more complex cases, it is not always so easy to define what the focus is. Kadmon and Sevi (2011, p.7) provide the following example in order to illustrate that the answer to an overt question under discussion, the focus-accented part of the utterance, and the associate of a focus-sensitive particle need not correspond to each other in an utterance.

(52) A: What's peculiar about Granny's dog?
B: [She [only likes [John]$_{F_3}$]$_{F_2}$]$_{F_1}$

In example (52), the answer to the overt question under discussion is the whole of B's utterance, marked by a subscript F_1. According to Kadmon and Sevi, the whole part marked by F_2 is

[15] These formalizations do not entirely account for all relevant data, and are refined in chapter 7.

accented, including the focus-sensitive operator *only*. The associate of *only* is the part marked by F_3, *John*.

If we assume that there is a single Current Question which is congruent to the focus, there are two questions to resolve: (i) what is the correspondence between focus realization and the Current Question? and (ii) what is the correspondence between association with focus and the Current Question? These questions will be discussed in sections 2.2.1 and 2.2.2, respectively.

2.2.1 Focus realization and the QUD

As seen in example (52), the answer to the QUD does not always correspond to the accented part. In the first part of this section, I will briefly review three reasons for this: *givenness* and *focus projection* (Kadmon and Sevi, 2011), and *noteworthiness* (Skopeteas and Fanselow, 2011). Additionally, there are crosslinguistic findings that focus is not always realized the same way in one and the same language. In fact, focus may be marked in different ways due to other discourse-semantic factors, such as e.g. *contrast*, *exhaustivity*, and *existence* inferences. This is not predicted by the 'simple picture', either.

Focus projection, Noteworthiness, Givenness

This section discusses examples in which one and the same focus realization pattern can be used in an answer to different QUDs, i.e. for different foci. Phenomena that are discussed are e.g. *focus projection*, where only part of the focus is marked, what role *givenness*, i.e. premention of part of the focus plays for this, and what role emphasis due to *noteworthiness* of part of the focus can play.

Focus projection The realization of a sentence, e.g. its accent pattern, does not always unambiguously show how it should be interpreted, i.e. what the current question under discussion is. For example, the statement in (53), with a main accent on *John*, can have any of the questions in (54) as its current QUD — the accent placement does not tell us which one should be preferred.

(53) Mary met JOHN.

(54) a. What happened?
b. What did Mary do?
c. Who did Mary meet?

This phenomenon has been explained as *focus projection* (e.g. Selkirk, 1984, 1995, Rochemont, 1986, i.a.), i.e. the constituent with the main accent is taken to have a focus feature which can spread (*project*) to the whole constituent that is in focus, e.g. the S node in the answer to (54-a) and the VP in the answer to (54-b).

The literature on focus projection is concerned with finding rules that explain which accent patterns are admissible for a given QUD, more specifically, from which constituents focus can project and from which it cannot. For example, out of the blue, neither (55-a) nor (55-b) is a felicitous answer to any of the questions in (54), i.e. even when the whole sentence is interpreted as focused, there seem to be restrictions as to which constituents can carry the main accent in wide focus contexts.

(55) a. MARY met John.
b. Mary MET John.

This is usually explained syntactically: if the constituent bearing the main accent is (i) the head of a phrase, its F-marking can project 'vertically' to the phrase, if it is (ii) an internal argument of a head, its F-marking can project 'horizontally' to this head. The largest F-marked constituent is the constituent that is interpreted as the focus, and that is required to be congruent to the QUD (Selkirk 1995, p.555, Büring 2006). Therefore, in an all-focus interpretation of (53), focus projects from the internal argument *John* to the verb, and from there vertically upward to the VP, and from there, via different intervening inflectional heads, to the sentence (Selkirk, 1995, p.556).

Givenness When part of the focus is *given*, where givenness might preliminarily be understood as *being in the (recent) linguistic or non-linguistic context*, this has direct effects on the focus realization in English (cf. e.g. Schwarzschild 1999, Wagner 2006, Katz and Selkirk 2011 — for an overview of different ways givenness is understood in the literature, see e.g. Prince 1981). Any prementioned/given constituent cannot carry an accent. This lack of accent due to givenness is called *de-accentuation*.

The examples considered in section 2.1 above were all like (56), where the focus, i.e. the part that replaces the *wh*-element in the answer, is all-new. Therefore, within this focused part, indicated by brackets in (56), the placement of the main accent is determined by the default accenting pattern.

(56) Q: What did Mary do?
A: She [voted for JOHN]$_F$.

However, when part of the focus is given, and part of it is new, the given part is deaccented (Schwarzschild, 1999). For example, in the answer in (57), the whole VP is in focus, but the direct object *John* is given, and thus deaccented[16]. This means that the generalization that the accented part of the utterance corresponds to the focus breaks down in cases where part of the focus is given. When the whole of the focus is given, it is not deaccented, cf. (58), where *John* is the only focused constituent, and must thus be accented, even though it is given. Longer all-given foci have default intonation, like longer all-new foci (Schwarzschild, 1999, p.171).

(57) Q: What did John's mother do?
A: She [VOTED FOR John]$_F$

(58) Q: Who did John's mother vote for?
A: She voted for [JOHN]$_F$

Givenness can refer either to strings of words (I will call this STRING-GIVENNESS), or to a specific referent (REFERENT-GIVENNESS) (see also Baumann and Riester (2012) for a similar distinction). For example, in (59), even if it is the first time in this stretch of discourse that a speaker is referring to the referent of the expression *Bill's mother*, in A the speaker will deaccent *mother*, because the word is given. In contrast, in (60), because the referent of *him*, namely *John*, is prementioned, the word *him* is deaccented although this word isn't prementioned.

(59) Q: What did John's mother do?
A: She [voted for BILL's mother]$_F$

(60) Q: What did John's mother do?
A: She [VOTED FOR him]$_F$

REFERENT-GIVENNESS seems relatively free; in these cases, deaccenting can also be used to give rise to identity inferences. See e.g. (61), from Büring (2007, p.448): in answer A, the hearer must

[16] Givenness will be indicated by underlining of the relevant given material.

conclude that 'the butcher' refers back to Dr. Cremer, whereas answer A' is infelicitous because the hearer cannot come to this conclusion, and the utterance thus seems irrelevant[17].

(61) Q: (Did you see Dr. Cremer to get your root canal?)
A: (Don't remind me.) I'd like to STRANGLE the butcher.
A': #(Don't remind me.) I'd like to strangle the BUTCHER.

Puzzlingly, STRING-GIVENNESS, as Schwarzschild (1999, p.148) (citing Rochemont (1986, p.50)) notes[18], also allows for cases where there is no exact string-identity, if the antecedent is a hyponym of the given expression (or, as Baumann and Riester (2012) note, a synonym). For example, in (62), *parent* is a hypernym of *mother* and can thus be deaccented, whereas the co-hyponym *father* cannot be deaccented.

(62) Q: What did John's mother do?
A: She [voted for BILL's parent]$_F$
A': #She [voted for BILL's father]$_F$

In addition, the deaccenting of STRING-GIVEN constituents seems to depend on further considerations. Wagner (2006, p. 297) demonstrates this using the following example:

(63) Mary's uncle, who produces high-end convertibles, is coming to her wedding. I wonder what he brought as a present.
a. He brought [a CHEAP convertible].
b. #He brought [a RED convertible].
c. He brought [a red CONVERTIBLE].

He suggests that "there must be an alternative x to its sister, such that [x convertible] is given" (Wagner, 2006, p. 297), and that *red* and *high-end* are not suitable alternatives. Kadmon and Sevi argue that destressing has less to do with givenness than with salient expectations: in (63), *convertible* can be destressed because the natural expectation that the wedding present that Mary's uncle brought for her is a high-end convertible produced in his factory is denied. See Kadmon and Sevi (2011) for further discussion.

For the discussion of focus projection, givenness examples are crucial. For example, Selkirk's focus projection theory, under the assumption that given and thus deaccented constituents are not F-marked, can account for focus projection from the verb in (64) to the whole sentence, if it answers e.g. (65-a), or to the VP, if it answers e.g. (65-b) (Selkirk 1995, p.557, cf. also Büring 2006).

(64) Mary MET John.

(65) a. Sarah phoned John. What happened then?
b. Sarah phoned John. What did Mary do?

[17] I believe that deaccenting is not obligatory when the REFERENT-GIVEN constituent is string-identical to its antecedent, as in (57) above, because deaccenting is not needed to connect the constituent and its antecedent — in examples like (61), it is however obligatory.

[18] Although Schwarzschild doesn't explicitly differentiate between STRING-GIVENNESS and REFERENT-GIVENNESS.

As Büring (2006, p.324-325) notes, examples like (66) are however wrongly predicted to never be able to answer questions like *What happened?*, i.e. to never allow projection. Büring (2006, p.327) presents the following counterexample where a subject carries the main accent in an all-focus sentence, because the rest is given.

(66) MARY met John.

(67) Q: Why did Helen buy bananas?
A: Because JOHN bought bananas.

Apart from (67), Büring (2006) shows numerous other examples which are felicitous although the standard focus projection theories would predict infelicity. He proposes an alternative theory which assumes that the distribution of the main accent within all-new focused constituents can be explained by default prominence, noting that it is the same default pattern as in the focus background, or in all-given foci (cf. also Schwarzschild, 1999), which are not explainable with F-marking[19]. He concludes that a theory of F-marking and focus projection rules is not necessary: accent patterns can be explained by a combination of default prosody and givenness/premention, an idea that he adopts and adapts from Schwarzschild (1999, section 6)[20]. This is thus, in contrast to Selkirk's F-marking account, a givenness- or G-marking account: all focus realization patterns are explained with G-marking, focus does not play a role.

There is however evidence that both focus marking and givenness marking play a role for the realization of sentences: First, there is evidence from prosodic studies on second occurrence focus (SOF), that given associates of focus-sensitive operators are still realized differently from out-of-focus constituents (cf. Beaver and Clark 2008, p.142ff. for English, Féry and Ishihara 2009 for German, and references therein): Beaver and Clark cite an earlier experiment published in Beaver et al. (2007), in which they show that in examples like (68) and (69), the focus on *Sid* and *in court* in the respective (c) sentences was still realized significantly different from the corresponding out-of-focus counterparts, even though they were deaccented. This study found significant differences in duration and energy.

(68) a. Both Sid and his accomplices should have been named in this morning's court session.
b. But the defendant only named $[\text{Sid}]_F$ in court today.
c. Even $[\text{the state prosecutor}]_F$ only named $[\text{Sid}]_{SOF}$ in court today.

(69) a. Defense and Prosecution had agreed to implicate Sid both in court and on television.
b. Still, the defense attorney only named Sid $[\text{in court}]_F$ today.
c. Even $[\text{the state prosecutor}]_F$ only named Sid $[\text{in court}]_{SOF}$ today.

Féry and Ishihara (2009), apart from corroborating Beaver et al. (2007)'s results for post-nuclear second occurrence focus in German, cf. (70-b), found that pre-nuclear second occurrence foci as in (70-c) also significantly differ from the corresponding given out-of-focus constituents in pitch.

[19] cf. Büring (2006, appendix), for a second possible account for all-given foci.

[20] Büring (2006) acknowledges that there must be further, possibly semantic, constraints on the default prominence pattern, e.g. to explain that when the main accent lies on the direct object, some verbs preferably carry a secondary accent, whereas others don't.

(70) Most of our colleagues were dressed casually at the staff outing.

a. Nur Peter hat eine Krawatte getragen.
only Peter has a tie wore
"Only PETER wore a tie."

b. Sogar [einen Anzug]$_F$ hat nur [Peter]$_{SOF}$ getragen.
even a suit has only Peter wore
"Only Peter even wore a SUIT."

c. Nur [Peter]$_{SOF}$ hat sogar [einen Anzug]$_F$ getragen.
only Peter has even a suit wore
"Only Peter even wore a SUIT."

In their study, the pitch height of pre-nuclear second occurrence foci was found to be inbetween that of backgrounded given constituents and new foci, leading them to the conclusion that both givenness and focushood have prosodic effects. They therefore conclude that both are needed to accurately describe realization patterns.

Second, according to e.g. Katz and Selkirk (2011), Kratzer and Selkirk (2010), *new backgrounded parts of an utterance* are realized differently from given backgrounded constituents on the one hand, since they carry pitch accents. On the other hand, they are also realized differently from (new) focused parts of the utterance: with lower pitch, lower intensity and shorter duration than the focus. This shows that neither focus alone nor givenness alone can explain focus realization in English. They tested this by using minimal pairs of all-new sentences in which there was either (i) a focus-sensitive particle associating with the direct object, (ii) a focus-sensitive particle associating with an indirect object or adjunct, or (iii) no focus-sensitive particle (i.e. no focus under their terminology), e.g. (71) (from Katz and Selkirk, 2011, p.809). In this study, the focus was identified as the part which the focus-sensitive operator *only* associates with.

(71) a. John's supposed to handle relations between the students and the Jordanian visitors who will be involved in the seminar. But he's neglected to set up meetings for Mike. And Sarah's out of town. **So he's only introduced ANNIE to Abdullah**. He hasn't introduced anyone else to him.

b. John's been handling the Jordanian exchange students. Hussein and Khalil are pretty intimidated by the atmosphere in the department here, and he's giving them time to get adjusted. **So he's only introduced Annie to ABDULLAH**. Abdullah's more outgoing and doesn't mind being interviewed.

c. John's been handling the Jordanian exchange students. He organized an orientation seminar for them, where they talked about some of the differences that they might notice at our school. **He introduced Annie to Abdullah**. They seem to be getting along very well.

This observation is also a very important methodological observation: only these kinds of data with new backgrounds can help to distinguish whether a certain focus/background realization strategy is actually due to focus marking or due to givenness marking. In the following, it will be assumed that the information-structural notions of given/new and focus/background are orthogonal, i.e. both givenness and focus can play a role for focus realization (Kratzer and Selkirk, 2010, Krifka, 2008).

Noteworthiness Apart from givenness, counter-expectation/noteworthiness can also influence focus realization (cf. Skopeteas and Fanselow 2011 for German, Spanish, and Greek [21]).

The idea is that a marked word order as in (72-b) can be licensed by the unexpectedness of the fronted constituent — i.e. fronting can happen for pragmatic reasons.

(72) (Context: Granny is eating lunch with the family. On the table, there are carrots, tomatoes, artichokes, eggplants and of course cutlery and napkins. Uncle Robin says:)

a. CANONICAL WORD-ORDER
Oma hat eine SERVIETTE gegessen
granny has a napkin eaten
"Granny ate a NAPKIN."

b. MARKED WORD-ORDER
Eine SERVIETTE hat Oma gegessen.
a napkin has granny eaten
"Granny ate a NAPKIN!"

Similar examples were found in Hausa (West Chadic) (73) (from Zimmermann (2008a, p.350)). In these cases, there is a sentence focus context (e.g. an answer to 'what happened?'), but the focus construction looks like a narrow focus. For example, (73) looks like a subject focus[22].

(73) PARTIAL FOCUS MOVEMENT (Hausa)

A: What happened?
Q: Bàràayii nèe su-kà yi mîn saatàa
robbers PRT 3PL-REL.PERF do to.me theft
"ROBBERS have stolen from me!"

Zimmermann suggests that this is possible in cases where the fronted part is especially surprising, and that this is further evidence that the reason for the marked structure is not focus. Skopeteas and Fanselow (2011) found that sentences with *unexpected* fronted constituents (e.g. (b) in example (72)) were judged as less exhaustive than the same sentences with expected fronted constituents (e.g. in *Eine Tomate hat Oma gegessen* = "Granny ate a tomato."). They suggest that this shows that unpredictability can motivate fronting of the unpredictable constituents — they call this fronting *focus-fronting*, but since the contexts are wide-focus contexts, it might as well be that the sentences with unexpected fronted constituents are cases of partial focus movement like (73), and thus not narrowly focused (explaining the lower exhaustivity judgments).

The general problem for the 'simple' theory of focus remains: examples like the ones discussed in this section show that there is no unambiguous correspondence between focus realization and focus interpretation, i.e. one and the same realization pattern allows for several possible QUDs.

Contrast, Exhaustivity, and Existence

A further complication is that focus realization is not always the same — not only is there a variety of possible realizations for prosodically marked focus in languages like English , there are

[21] Skopeteas and Fanselow (2011) also tested Hungarian, but could not find evidence of a noteworthiness effect.

[22] Subject focus in Hausa is characterized by the so-called *relative* form of the person-aspect-marker in the perfective/progressive, and may be accompanied by the particle *nee* (m./pl.) / *cee* (f).

also languages with two or more possible morpho-syntactic realizations of focus. Especially for these languages, it has been argued that further semantic and pragmatic properties of the focus influence the way it is realized; I will discuss three of these properties in the next paragraphs: *contrast*, *exhaustivity*, and, connected to the discussion of exhaustivity, *existence*.

Contrast In an alternative semantics of focus, there is always the implicit assumption that when one alternative is chosen, there is (at least) an implicature to the effect that other alternatives are not the case (Umbach, 2004, Rooth, 1992, Vallduví and Vilkuna, 1998). This has been discussed in the focus literature under the heading of *contrast* or *exhaustivity*. The notion of *contrast* has to do with the *function* of focus, i.e. with what it does in the context in which it occurs (e.g. answering a *wh*-question vs. correcting a previous utterance), whereas the notion of *exhaustivity* has to do with the *interpretation* of focus (e.g. semantic vs. pragmatic exclusion of alternatives). For both contrast and exhaustivity, there are proposals suggesting an effect on focus realization, especially in languages with two syntactic means of focus realization. For example, Vallduví and Vilkuna (1998) propose that contrastive focus in Finnish is realized differently from non-contrastive focus, and É. Kiss (1998) discusses a difference in the realization of exhaustive and non-exhaustive foci. In the following, both notions will be discussed in more detail.

There have been a variety of proposals of what contrast is (see Umbach (2004), Repp (2010) for an overview). In the following, three main groups of approaches will be differentiated: (i) contrast due to the existence of alternatives (AlternativesContrast), (ii) contrast due to the fact that the set of alternatives is closed (ClosedSet), (iii) contrast with respect to the public belief of the speakers (CGcontent). I will briefly discuss each of the approaches.

In AlternativesContrast approaches, contrast is a relation between the different alternatives induced by focus (Umbach, 2004, Rooth, 1992, Vallduví and Vilkuna, 1998). There are two ways to interpret this. On the one hand, all approaches that assume that every declarative utterance carries an (alternative-inducing) focus would have to assume that this focus is contrastive. Thus, under the QUD approach assumed here, even an utterance with sentence focus like (74-a) would be contrastive: since this is focus on the whole proposition, its alternatives could in principle include any alternative of type <s,t>, e.g. (74-b).

(74) a. [Mary ate an apple]$_F$
b. [John slept]$_F$

One the other hand, most AlternativesContrast approaches claim that only narrow focus — i.e. focus on a subsentential constituent — induces alternatives, whereas broad focus like in (74-a) purely presents new information, without inducing alternatives.

The ClosedSet approaches (e.g. Chafe (1976), É. Kiss (1998)) assume that only focus with a 'limited number' of focus alternatives is contrastive. Whereas in Chafe's account, these alternatives do not have to be known to the addressee, not even clearly to the speaker himself (Chafe, 1976, p. 34), in É. Kiss's definition, the alternatives have to be known to both speaker and hearer (É. Kiss, 1998, p.267). In both accounts, focus in an answer to a *wh*-question would not be contrastive, since the alternatives are unlimited (according to Chafe) and not known to both speaker and hearer (according to É. Kiss).

The CGcontent approach (Krifka, 2008) is the most restrictive view of contrast with respect to the contexts in which it is predicted to appear. In Krifka's account, contrastive focus is focus which in a sense contests something which is part of the public commitment of at least one

of the discourse participants. Typical instances of this are corrections of assertions (75) and presuppositions (76)[23].

(75) A: John wants coffee.
B: No, John wants TEA.

(76) Q: How much coffee does John want?
A: John wants TEA.

Repp (2010) suggests to include corrections of content that is proferred, but not part of the public commitment of a discourse participant, e.g. correction of *y/n*-questions (77).

(77) Q: Did John drink tea?
A: PETER drank tea.

Repp proposes that questions can introduce propositional content into the CG, albeit without any claim that the proposition is true (Repp, 2010, p.1337). This allows her to retain Krifka's definition of contrastive focus.

Under the assumption that contrastive focus and non-contrastive focus are realized differently, these accounts therefore make different predictions for in which kinds of contexts one would expect a difference in realization, cf. table 2.1, where the ALTERNATIVESCONTRAST approach is approach A, CLOSEDSET is B, and CGCONTENT is C.

	Sentence focus	Answers to		Corrections of		
		wh-questions	alternative questions	*y/n* Q	Assertions	Presuppositions
A	?	✓	✓	✓	✓	✓
B		?	✓	✓	✓	✓
C				?	✓	✓

Table 2.1: Predicted contexts for contrastive focus marking

I am assuming that the generalizations that these different theories aim to capture are the following: First, wide focus seem to be less exclusive than narrow focus cases, i.e. in (78), a variant of (74) above, A's answer does not seem to say anything about the truth of alternative propositions like e.g. *John slept*, whereas A's utterance in (11) does seem to suggest that alternatives like *She ate a pear* are wrong.

[23] Krifka suggests that additive examples like (i) are also contrastive. Repp rejects this, claiming that the only possibility for such sentences to occur with a contrastive reading are corrective second occurrence uses like (ii).

(i) A: John wants coffee.
B: MARY wants coffee, TOO.

(ii) (Context e.g.: John visited his sister on Tuesday)
A: John also visited his FATHER on Tuesday.
B: No, John also visited his MOTHER on Tuesday.

(78) Q: What happened?
A: [Mary ate an apple]$_F$

(11) Q: What did Mary eat?
A: She ate an APPLE$_F$

Second, the more overtly the focus alternatives are expressed, the more one feels that they are excluded. For (11), because the focus alternatives are not overt, there is still the possibility that *she ate a pear* is not included in the set of focus alternatives, and that A's utterance thus does not say anything about its truth. In (12), this possibility is less felicitous.

(12) Q: Did Mary eat an apple or a pear?
A: She ate an APPLE$_F$

Third, it seems as though commitment plays a role, too: if the hearer is committed towards another alternative, the correction is contrastive. There is evidence that the realization of corrective focus is more marked, the more committed the hearer (Greif, 2010): Utterances like (79-b), which correct part of what the first speaker treats as part of the Common Ground (i.e. a public commitment of both speaker and addressee), are more marked than utterances like (80), in which the corrected utterance is a question, of which the correction is the awaited answer. Focus realization seems to be more pronounced when the speaker anticipates that the hearer will reject her utterance.

(79) a. How did Mary like the pear that she ate?
b. Mary ate an APPLE$_F$.

(80) a. Was it a PEAR$_F$ that Mary ate?
b. No, Mary ate an APPLE$_F$

For this reason, these kinds of phenomena are sometimes discussed in connection with counter-expectation or noteworthiness (e.g. Hartmann and Zimmermann 2007c for Hausa, Hartmann and Zimmermann 2009 for Gùrùntùm (both West Chadic), Destruel and Velleman 2014 for English), which, in contrast to many of the examples discussed in the literature on mirativity (e.g. DeLancey 1997), has to do with *expected hearer surprise* rather than speaker surprise[24]. Zimmermann (2008a, p.354) sums this up in the hypothesis in (81).

(81) [A marked realization of] a focus constituent α expresses the speaker's assumption that the hearer **will not consider** the content of α or the speech act containing α **likely to be(come) common ground**.

Zimmermann shows that (81) can explain puzzling data from Hausa and Bole, two languages with two ways of realizing focus (one marked, one canonical). In these languages, there is a tendency to use marked focus structures with corrections and the canonical word order in answers to *wh*-questions (Hartmann and Zimmermann, 2007c). Zimmermann notes that this is predicted under the hypothesis in (81): corrections are usually hearer-unexpected speech acts, whereas answers to questions are usually expected. Hypothesis (81) additionally predicts that (i) when corrections use the canonical word-order, they are expected speech acts (e.g. in the Hausa

[24]This notion is thus similar to the notion of *mirativity* in the discussion of *only* (see §2.1.4).

example (82) from Zimmermann 2008a, p.351), which is an institutionalized bargaining context, according to Zimmermann), and that (ii) questions use the marked word order when the answer is hearer-unexpected.

(82) CORRECTION WITH CANONICAL WORD ORDER (Hausa)
A: You will pay 20 Naira.
B: A'a, zâ-n biyaa shâ bìyar nèe.
no FUT-1SG pay fifteen PRT
"No, I will pay fifteen."

Thus, to sum up, there are three important theories of *contrast*: according the the ALTERNATIVESCONTRAST approach, contrast is a relation between alternatives in the alternative set. According to the CLOSEDSET approach, this relation only holds between explicit alternatives. The CGCONTENT approach restricts this further, saying that contrast is a relation between the asserted alternative and an alternative which is part of the public commitment of a speaker. At least for the latter two approaches, it is predicted that if contrast plays a role for focus realization, then focus is realized differently in more contrastive contexts (e.g. corrections) than in less contrastive contexts (e.g. answers to *wh*-questions).

Exhaustivity The second semantic factor which has been argued to effect the realization of focus is *exhaustivity*. Exhaustivity is closely related to contrast: It is the property of, by the choice of one alternative, excluding all other alternatives not entailed by it. The main difference to contrast is that it is often not linked to a certain kind of focus use (e.g. corrections), but that it is seen as a property that focus can have across use types. For example, there can be exhaustive or non-exhaustive answers to *wh*-questions. These are often said to be realized differently. For example, in (83) (from É. Kiss 1998, p.249–250), answer (a), with postverbal focus, is said to be a mention-some answer, whereas answer (b), with preverbal focus, is said to be exhaustive[25].

(83) (Context: Where did you go in the summer?)
a. Jártam OLASZORSZÁGBAN
went.I Italy.to
"I went TO ITALY [among other places]."
b. OLASZORSZÁGBAN jártam
Italy.to went.I
"It was Italy where I went."

In the literature on exhaustivity following É.Kiss, it is often discussed as a dichotomy (exhaustive vs. non-exhaustive), but I assume exhaustivity to be a gradable notion (following e.g. Onea and Beaver 2011, Horn 2013). On the one end of the scale, utterances in general tend to be pragmatically exhaustive in the sense of the first Gricean maxim of quantity "Make your contribution as informative as is required " and the second maxim of quality "do not say what you believe to be false" (Grice, 1975, p.45-46), which require a speaker to choose the most informative true alternative. I assume utterances involving narrow focus to be more contrastive/exhaustive because of an additional effect of the Gricean maxim of manner, more specifically the submaxim "Be brief" (Grice, 1975): since it is possible to give a more concise answer like A' in (84), the longer answer A is dispreferred (Krifka, 1998). For wide focus as in (85), no shorter way of answering the question is available.

[25]For a discussion of whether Hungarian preverbal focus is actually semantically exhaustive, as É. Kiss suggests, see e.g. Szendrői (2003), Wedgwood et al. (2006), Onea (2007), Onea and Beaver (2011), Onea (t.a.), i.a.

(84) Q: What did Mary eat?
A: Mary ate a pear and she also ate an apple.
A': Mary ate a pear and an apple.

(85) Q: What happened?
A: John bought some fruit and Mary ate an apple.

On the other end of the exhaustivity scale is É. Kiss (1998)'s *semantic* exhaustivity, which is similar to the exhaustivity induced by the focus-sensitive particle *only*. In a semantically exhaustive utterance, it is part of the assertion that all excluded alternatives are false. Note however that there is some leeway for semantic exhaustivity, too, in that only salient focus alternatives are excluded — allowing e.g. the property of being at the party in (86) to hold for somebody that the hearer (according to the speaker's belief) does not know or care about, and thus does not consider as a focus alternative[26].

(86) a. Did you see Bill at Mary's party?
b. No, only JOHN was there.

Research on exhaustivity is thus a very delicate matter: on the one hand, all utterances with narrow focus are at least pragmatically exhaustive, on the other hand, due to the restrictiveness of focus, even semantic exhaustivity does not exclude every possible focus alternative, but just the salient ones.

It-clefts are interesting because they seem to constitute an intermediate case: On the one hand, they are more exhaustive than simple narrow focus, as exemplified by examples like (87) (Percus 1997, p.341, É. Kiss 1998, p.252, Krifka 2008, p.259, Drenhaus et al. 2011, p.321). According to these authors, the focus-sensitive particle *even* cannot associate with the clefted constituent in (87-a), because its additive meaning component (*Somebody apart from John stole a cookie*) clashes with the exhaustive meaning component of the cleft (*Nobody apart from John stole a cookie*). The pragmatic exhaustivity of narrow focus is weaker, and is cancelled in (87-b).

(87) a. *It was even JOHN$_F$ who stole a cookie.
b. Even JOHN$_F$ stole a cookie.

On the other hand, clefts are not truth-conditionally exhaustive[27]. Evidence for this comes from experimental research (e.g. Onea and Beaver 2011, Drenhaus et al. 2011), as well as from tests for distinguishing at-issue and not-at-issue meaning contributions (Horn, 1981): According to Karttunen and Peters (1979), *I just discovered that X* commits the speaker to *I just discovered that assertion-of-X* but not to *I just discovered that "conventional-implicature"-of-X*. So, if the exhaustivity of clefts were truth-conditional, (88) (from Horn (1981, p.130)) should be as fine as the corresponding example with *only*, which is is actually semantically exhaustive[28].

[26] This restriction is a typical property of quantifiers, which can also be seen with e.g. *no one* (cf. (i) from Barwise and Perry 1983, as cited in Kratzer 2011).

(i) (Context: a sleep lab. All patients are asleep and all research assistants are awake, and ready to conduct an experiment. The researcher says:)
No one is asleep. Let's begin.

[27] Refuting some accounts of clefts or other marked focus structures as truth-conditionally exhaustive, e.g. Szabolcsi (1981b), Atlas and Levinson (1981), É. Kiss (1998), Rooth (1999).

[28] Horn (1981) only uses a clefted example with *only* here — the same can however be shown with the simple cases.

(88) # I know Mary ate a pizza, but I've just discovered that it was a pizza that she ate!

(89) a. I know Mary ate a pizza, but I've just discovered that it was only a pizza that she ate!
b. I know Mary ate a pizza, but I've just discovered that Mary only ate a pizza!

Thus, clefts seem more exhaustive than plain narrow focus, but not as exhaustive as the exclusive particle *only*. In the rest of this section, two different families of accounts for clefts will be presented, both assuming that the exhaustivity is due to a presupposition of the cleft.

Exhaustive presupposition accounts Many researchers account for the greater exhaustivity in clefts and other marked focus structures by assuming a presupposition to this effect (Delin and Oberlander, 1995, Percus, 1997, Wedgwood et al., 2006, Velleman et al., 2012, Büring and Križ, 2013), or a conventional implicature (Halvorsen, 1978). In most current accounts, it is assumed that the cleft is underlyingly a definite description (cf. e.g. Akmajian (1970), Percus (1997), Hedberg (2000), Büring and Križ (2013), Szabolcsi (1994)[29]; Percus cites Jespersen (1928) as the originator of the idea). Under this analysis, it-clefts like (90) have the same meaning as the corresponding definite in (91).

(90) It is Bill that stole a cookie.

(91) The one who stole a cookie is Bill.

The exhaustivity of the cleft then originates in the *uniqueness* or *maximality presupposition* of the definite. The exact formulation of these presuppositions is not agreed upon, e.g. Percus (1997) would assume the presuppositions in (92) for (90)/(91)[30], e.g. Büring and Križ (2013, p.5f) propose a new maximality presupposition for clefts as well as for definites, cf. (93), whereas Velleman et al. (2012, p.452f.) propose the presupposition in (94), which is equivalent to the asserted meaning component in *only* sentences in Beaver and Clark (2008), Coppock and Beaver (2014) (discussed in §2.1.4 above).

(92) a. Exhaustivity: Bill is the unique/maximal individual that stole the cookie
b. Existence: There is an individual that stole a cookie

(93) Exhaustivity: Bill is not a proper part of the individuals that stole the cookie

(94) Exhaustivity: No answer stronger than *Bill stole the cookie* is true.

Whatever the exact formulation of the presuppositions, the prediction of all of these definiteness accounts is that clefts have an exhaustive and existential presuppositions in those contexts in which definites have them, i.e. in standard contexts, these presuppositions are expected.

Existential presupposition accounts In other accounts, the perceived greater exhaustivity is actually an effect of an existential presupposition (Onea (2007), Onea and Guntsetseg (2011), Hole (2011), Horn (2013), Onea (t.a.)). That clefts have an existence presupposition can be seen in examples like (95) (from Rooth 1996, p.292f and Rooth 1999, p.241).

[29] More accurately, Szabolcsi (1994), drawing on Kenesei (1986), proposed this analysis for Hungarian marked focus — Wedgwood et al. (2006) proposed that this is the right analysis for English it-clefts (but not for Hungarian).

[30] Note that the proposal does not make the right predictions, since the proposed exhaustive inference is not projective.

(95) (In my department, a football pool is held each week, and people bet on the outcomes of games. It is set up so that at most one person can win; if nobody wins, the prize money is carried over to the next week.)
A: Did anyone win the football pool this week?
B: #Probably not, because it's unlikely that it's [Mary]$_F$ who won it, and she's the only person who ever wins.
B′: Probably not, because it's unlikely that [Mary]$_F$ won it, and she's the only person who ever wins.

In (95), the cleft is embedded under "*it's unlikely that*", which is a hole for presuppositions (Karttunen, 1973), so that its existential presupposition projects. This existential presupposition clashes with the fact that the discourse participants are overtly uncommitted to somebody having won the football pool, making utterance B infelicitous. In contrast, an answer with narrow intonational focus is fine, suggesting that narrow focus does not trigger an existential presupposition[31,32].

One formalization of this idea is the one proposed in Hole (2011) for Mandarin *shì ... de* clefts. Hole proposes that such a cleft encodes uniqueness and familiarity for *events*, making this a variant of the idea that clefts are underlyingly definite. Applied to English it-clefts, a cleft like (90) (repeated here) would thus get an interpretation as in (97).

(90) It is Bill that stole a cookie.

(96) The maximal event of someone stealing a cookie is the event of Bill stealing a cookie.

Hole's semantics of *de* is given in (97) . The crucial difference, according to Hole, between a definite determiner and his definite determiner over events, *de*, is that the latter only contributes the presupposition that exactly one maximal event of this kind exists, but does not contribute any referential truth-conditional meaning.

(97) $[\![\text{de}+\emptyset]\!] = \lambda f_{\langle\tau,\langle s,t\rangle\rangle}$: $\exists! e_{max} \in C\ \exists u_\tau$ [f(u)(e)=1] $\lambda u_\tau'.\lambda e'$. f(u′)(e′)=1

Similarly, Edgar Onea (Onea (2007), Onea and Beaver (2011), Onea (t.a.)) assumes for marked focus in Hungarian that an event is presupposed or "previously salient" — see Onea and Guntsetseg (2011) for a similar proposal for Khalkha-Mongolian. In Onea (t.a.), this is modeled by assuming that focused constituents are in the specifier of a certain syntactic phrase ("the event argument position" EP), the head E_1^0 of which introduces the requirement that the event

[31] See also the discussion in Büring (2004, p.70/72), Schwarzschild (2004, p.138), Gawron (2004, p.89/91), and other replies to the existential presupposition claim in Geurts and van der Sandt (2004), including a discussion of why local accommodation of the purported existential presupposition in answer B′ does also not yield the right result (Büring (2004, p.72), Jäger (2004, p.112))

[32] Note that Beaver and Clark's Current Question Rule, together with their Focus Principle, makes an existential prediction (Beaver and Clark, 2008, p.36f). Due to the variability of the focus principle, this prediction is however weaker than the existential presupposition claim of Geurts and van der Sandt (2004).

(i) **Focus Principle:** Some part of a declarative utterance should evoke a set of alternatives containing all the RoothHamblin alternatives of the CQ.

(ii) **Current Question Rule:** The Current Question must contain at least one true alternative, and contain multiple alternatives which are not resolved as true or false in the common ground.

be given/presupposed, thereby binding the event argument of its complement TP using the ι-operator[33]:

(98) $[[E_1^0]]_M^g = \lambda\phi.\lambda\psi.\psi(\lambda x.\phi(x)(\iota e.e \in C \wedge max(e) \wedge \exists y \in D_e.\phi(y)(e)))$

For example, the marked focus on *Marit* in (99-a) is interpreted as in (99-b), making reference to a previously mentioned unique event of Peter kissing someone (Onea (t.a.), p.6-7)[34].

(99) a. Péter [Marit]$_F$ csókolta meg.
Peter Mary.ACC kissed PRT
"Peter kissed MARY (and noone else)."
b. *kissed*(*Peter*, *Mary*, $\iota e.e \in C \wedge \exists y \in D_e.$*kissed*(*Peter*, y, e))
$\approx$"In the unique event of Peter kissing someone, Peter kissed Mary"

Since Onea assumes that an event is always maximal with regard to its arguments, the exhaustivity comes for free with names, definite descriptions and downward monotonic quantifiers — in contrast, upward monotonic quantifiers (as well as adjuncts that do not individuate events, cf. Onea and Guntsetseg 2011, p.474/479) are not predicted to be exhaustive (or maximally weakly exhaustive, via Gricean reasoning) (Onea (t.a.), p.8). So, whereas the marked focus construction isn't predicted to always yield an exhaustiveness inference, it should always yield an existential inference.

To sum up, for some marked focus constructions in different languages (e.g. English Clefts, Hungarian preverbal focus, Mandarin *shi...de* clefts, i.a.) it was proposed that they have a stronger exhaustive inference than other focus constructions in the same language. This section discussed some accounts that assume an exhaustive presupposition, either because the cleft is underlyingly a definite description of an individual, or because it is a definite description of an event. In the former accounts, this predicts that these focus constructions are always exhaustive and existential[35]. In the latter accounts, this predicts that there is always an existence presupposition that an event of this kind occurred (but possibly, as Onea notes, not always an exhaustive interpretation).

Summary This section discussed why the idea that there is a tight link between focus realization and the Current Question is oversimplified for most cases.

First, there are numerous examples where only part of the answer to the CQ is marked, for example in the case of focus projection, givenness of part of the focus, or special marking of part of the focus due to noteworthiness. In addition, the not-at-issue part is not always realized the same, it is thus necessary to control for the effects of both givenness and noteworthiness.

Second, there are different realization options for answers to the same CQ. For some languages, it has been proposed that the realization differs for different focus contexts (e.g. corrections vs. answers to *wh*-questions, even though the QUD approach would predict the same CQ for both) — this was discussed under the heading of *Contrast*, and might be linked to noteworthiness, since corrections are more noteworthy than answers to questions. For other languages, it was proposed

[33]This only happens in the case of focus. When a verbal particle or bare noun occupies this position, the head existentially binds the event argument of the TP.

[34]The value assigned for ψ, i.e. the focused constituent, is treated as a generalized quantifier (λP.P(Mary)), and the value for ϕ is the backgrounded VP, treated as a relation between individuals and events (λz.λe'.kissed(Peter,z,e')).

[35]With the exception of Büring and Križ (2013), who do not assume an existential inference in all cases.

that the focus realization differs for different interpretations (e.g. exhaustive vs. non-exhaustive focus).

The first kind of cases are problematic because since the CQ can be implicit, it becomes very hard to consistently predict what the CQ looks like, when the focus realization is not tightly connected to it. The second kind of cases is less problematic for a theory of focus, but it calls for a systematic study of the additional factors that play a role in focus realization.

As will be discussed in section 2.3 and in later chapters of this dissertation , Ngamo is especially interesting because (i) there are two kinds of focus realization, but (ii) one of them is structurally unmarked, making it impossible to predict what the CQ is without preceding context.

2.2.2 Association with focus and the QUD

As mentioned above, there are also cases in which the associate of a focus-sensitive operator and the overt question under discussion seem to lead to different predictions about what the focus is: In (52), repeated below, the focus-sensitive operator *only* associates with *John*, whereas the overt question under discussion A predicts focus on the whole sentence B.

(52) A: What's peculiar about Granny's dog?
B: [She [only likes [John]$_{F_3}$]$_{F_2}$]$_{F_1}$

This is not predicted in the "simple picture", because, according to the account of Beaver and Clark (2008), presented in §2.1.4, exclusives, additives, and scalar additives all make reference to the CQ in their lexical entry, thus predicting that in (52), the alternatives in the CQ correspond to those that *only* quantifies over.

Other findings of Beaver and Clark (2008) however suggest that this is only a problem for some of the focus sensitive-operators, namely those that they call *conventionally* focus-sensitive. They propose that apart from this semantic association with the alternatives in the CQ (which they call *conventional association*), there are two other, pragmatic, ways of (seemingly) associating with alternatives: *free association*, in which alternatives are introduced via a covert variable, and *quasi-association*, in which focus effects arise as a by-product of the scope of focus with respect to non-veridical operators (Beaver and Clark, 2008) . They suggest that alternative-sensitive operators can be classified according to their way of association with alternatives (see table 2.2, emphasis mine). Since only conventionally focus-sensitive operators in fact necessarily associate with focus, only the behaviour of these operators is problematic in examples like (52).

Evidence for different kinds of association with focus comes from the behaviour of the adverbial quantifier (*q-adverb*) *always* and the exclusive *only* (Beaver and Clark, 2003, 2008). Both are, in a sense, exclusive: intuitively, both sentences in (100) mean that whenever Sandy feeds somebody Nutrapup, this somebody is Fido. Beaver and Clark (2008) claim, however, that their association behaviour systematically differs: while *only* is semantically restricted to associate with focus, the association of *always* with focus is pragmatic.

(100) a. Sandy always feeds Fido Nutrapup.
b. Sandy only feeds Fido Nutrapup.

Quasi-association	Free association	Conventional association
negation	q-adverbs	**exclusives**
disjunction	q-determiners	**scalar additives**
verbs of appearance	generics	**non-scalar additives**
modals	counterfactuals	particularizers
	reason clauses	minimizing downtoners
	emotive factives	maximizing downtoners
	verbs of desire	intensifiers
	modals (via modal base)	

Table 2.2: Taxonomy of alternative-sensitive expressions (Beaver & Clark 2008, p.78)

Beaver and Clark show that *only* must associate with focused material in its scope, whereas the association behaviour of *always* is more free. For example, *always* can associate with a prosodically weak — and thus out-of-focus — pronoun *'im*. *Only*, on the other hand, cannot associate with a weak, out-of-focus pronoun, but has to associate with a strong, focused pronoun (e.g. *him*, cf. (101) and (102) from Beaver and Clark (2008, p.150).

(101) **Context:** You had many discussions with Sandy, but what I want to know is the extent to which you talked about Fred. Of all the times you talked with Sandy, how often was Fred the person you talked about?

a. I ALWAYS discussed'im with Sandy.
'Whenever I discussed someone with Sandy, I discussed Fred.'

b. I ONLY discussed'im with Sandy.
Cannot mean: 'I only discussed Fred (and no one else) with Sandy.'

This test is called ASSOCIATION WITH LEANERS. Example (102) from Beaver and Clark (2008, p.158) shows that *even* and *also* seem to pattern like *only* in this respect.

(102) You can see Bush, but do you see Cheney?

a. Yes, I ALways see'im / see HIM
b. I can ONLY/EVEN/ ALSO # see'im / see HIM

A similar test is used to refute Rooth (1992, p.109)'s example for a pragmatic account of *only* in (103). Here, what is excluded are actually alternatives of the form {People who grow rice generally eat pasta, people who grow rice generally eat potatoes, ...}, even though the focus accent seems to be on *eat* rather than on *rice*. Rooth explains that *eat* is accented to contrast it with *grow*, and suggests that here the domain of quantification for *only* is restricted pragmatically.

(103) People who GROW rice generally *only* EAT rice.

However, as already noted by Rooth himself, there must be an additional, weaker focus on *rice* (Rooth, 1992, p.110). As shown in (104) (from von Fintel (1994), who attributes the test of replacing suspected foci with unstressable pronouns to Susanne Tunstall), this is conventional association with focus: The sentence is infelicitous because *only* cannot associate with the unstressed constituent *it*, and it also cannot associate with *eat*, because this would lead to a

contradiction[36].

(104) ??People who GROW rice only EAT it.

In contrast, the corresponding sentence with freely associating *always* is fine (Beaver and Clark, 2008, p.153)

(105) People who GROW rice always EAT it.

This pattern repeats itself in ASSOCIATION WITH EXTRACTED MATERIAL: the constituent *only* associates with cannot be extracted, whereas the same structure is acceptable with *always* (106) and (107) (from Beaver and Clark (2008, p.162)).

(106) Kim's is the tank I said I only stock with clownfish.
Cannot mean: 'I said I stock Kim's and no other tank with clownfish'

(107) Kim's is the tank I said I always stock with clownfish.
Can mean: 'I said I stock Kim's and no other tank with clownfish'

Similarly, only *always* can ASSOCIATE WITH ELIDED MATERIAL: When there is nothing focusable in the scope of *only*, the sentence becomes ungrammatical (Beaver and Clark, 2008, 177).

(108) a. Kim always SALUTES because Sandy always does.
b. *Kim only SALUTES because Sandy only does.

So, the account of Beaver and Clark (2008) allows for different kinds of association with focus, including *free association*, which is more indirect, and even allows for association with out-of-focus material. They do however predict that English *only*, *also* and *even* are conventionally associating particles, and therefore that there is always a 1:1-relationship between the associate of the particle and what is interpreted as the focus.

Association with alternatives

There are however numerous cross-linguistic findings suggesting that a pragmatic approach is needed for at least some additive(-scalar) particles. For example, Krifka (1998) discusses the German additive particle *auch*. When this particle follows its associate and is stressed, seemingly carrying the focus accent itself, cf. (109) from Krifka (1998, p.112), its associate is not in focus.

(109) Peter hat die Ausstellung AUCH besucht.
Peter has the exhibition also visited
"Peter visited the exhibition, too."

[36]The following example by Beaver and Clark (2008, p.151) shows that *it* is a bad associate for *only* even when other pronouns are good:

(i) a. Sally likes only HIM.
b. *Sally likes only IT.

Rather, according to Krifka (1998, p.113) it can be a *contrastive topic*. Contrastive topics are like other topics in that they specify what the sentence is about, but they also indicate alternatives, like focused constituents do. An example of this can be seen in (110-b) (Jackendoff, 1972), where besides the regular focus accent on *beans*, there is an additional contrastive topic accent — which in English is a pitch accent with a fall-rise contour — on *Fred*. This accent indicates that there is an alternative to *Fred*, e.g. *Bill*, about which something else is true, i.e. in this case, that he ate some alternative to *beans*.

(110) a. Who ate what? What about Fred, what did he eat?
b. Fred$_{CT}$ ate the beans$_{F}$.

According to Büring (1997, 2003), contrastive topics indicate that although the sentence fully answers the CQ (in (110) it is the question 'What did Fred eat?'), there is another question (here 'Who ate what?'), which the sentence only partially answers, and of which the first question is a sub-question. This superquestion provides the contrastive topic value of the sentence (in (110) it is (110-a)), cf. (111). Thus a sentence with a contrastive topic does not only have a normal value and a focus value (cf. Rooth 1992, 1996), but also a contrastive topic value, indicating the strategy that the immediate CQ belongs to. The contrastive topic value includes the focus value, plus other alternatives[37].

(111) $[\![(111\text{-b})]\!]^{CT}$ = {{Fred ate beans, Fred ate salad,...}, {Bill ate beans, Bill ate salad,...}}

Coming back to stressed *auch*, this particle is fine in explicit contrastive topic contexts, and is dispreferred in contexts in which its associate is in focus (113), where a preceding, unstressed *auch* is preferred[38] (Krifka, 1998, p.114).

(112) A: I know that Pia visited the exhibition. But what did Peter do?
B: Peter hat die Ausstellung AUCH besucht.
Peter has the exhibition also visited
"Peter visited the exhibition, too."

[37] Büring (2003, p.519) notes that it can be thought of as a set of questions formed in the following way:

(i) CT-value formation:
Step 1:
Replace the focus with a *wh*-word and front the latter; if focus marks the finite verb or negation, front the finite verb instead.
Step 2:
Form a set of questions from the result of step 1 by replacing the contrastive topic with some alternative to it.

This set of questions is the immediate CQ and its sister questions.

[38] According to Krifka, the fact that answer B' in (111) is not completely infelicitous is due to the possibility of accommodating a discourse topic 'Mediterranean countries' — if this topic is made explicit as in (i), answer B' becomes felicitous.

(i) A: Speaking of Mediterranean countries, I have heard that you went to Italy. Did you go anywhere else?
B': Nach **Griechenland** sind wir AUCH gefahren.
to Greece are we also driven
"We also went to Greece."

(113) A: I heard you went to Italy. Did you go anywhere else?
B: Wir sind *auch* nach GRIECHENLAND gefahren.
We are also to Greece driven
"We also went to Greece."
B': ?Nach **Griechenland** sind wir AUCH gefahren.
to Greece are we also driven

As additional evidence for this claim, Krifka (1998, p. 115) notes first that stressed *auch* cannot associate with constituents which are bad topics, e.g. in (114), *auf die ohnmächtige Öffentlichkeit im eigenen Land* is a bad topic because it contains an assertion, namely that the public was powerless.

(114) a. Nixon nahm auch **auf die ohnmächtige Öffentlichkeit im eigenen Land**
Nixon took also of the powerless public in.the own country
keine Rücksicht.
no consideration
"Nixon also did not take the powerless public in his own country into consideration."
b. ?**Auf die ohnmächtige Öffentlichkeit im eigenen Land** nahm Nixon auch
of the powerless public in.the own country took Nixon also
keine Rücksicht.
no consideration

Second, stressed *auch* can have phonologically weak or even empty associates. (115) shows that *es* is a weak pronoun — it cannot be in focus, e.g. as the associate of a preceding, unstressed *auch*. However, it is fine as the associate of a following, stressed *auch*, cf. (116) (both examples are from Krifka 1998, p. 116).

(115) [What about the muesli?]
a. ??Peter mag auch **es** nicht.
Peter likes also it.WEAK not
"Peter doesn't like that, either."
b. Peter mag auch **das** nicht.
Peter likes also it.STRONG not
"Peter doesn't like that, either."

(116) a. Es ist wahrscheinlich AUCH runtergefallen.
it.WEAK is probably also fallen.down
b. Das ist wahrscheinlich AUCH runtergefallen.
it.STRONG is probably also fallen.down
"It probably fell down, too."

In (117), *auch* associates with a phonologically empty topic (Krifka, 1998, p. 117).

(117) A: You did the dishes. And the garbage?
B: Hab ich AUCH erledigt.
have I also took.care
"I took care (of that) too."

Krifka suggests that the following *auch* suffices to mark them as contrastive topics, no CT-accent is needed.

There is cross-linguistic evidence from languages as different as Bura (Central-Chadic, see Hartmann and Zimmermann 2008), Nłe?kepmxcin (Salishan, see Koch and Zimmermann 2010), Ishkashimi (Eastern Iranian, see Karvovskaya 2013), Avatime (Kwa, see van Putten 2013) of additive particles showing this kind of flexible association behaviour, i.e. associating with alternatives not provided by focus. For this reason, the terminology of Hartmann and Zimmermann (2008), using *association with alternatives*, and *alternative-sensitivity*, will be adopted here. For these cases, a pragmatic account of association with focus is needed. Thus, whereas the associate of English *also/too* and *even*, according to Beaver and Clark, is always the focus of the sentence, additive-scalar particles in other languages have been shown to be more variable in their association behaviour.

Summary In this section, the discussion of focus-sensitivity in a QUD account from section 2.1.4 was taken up again. In §2.1.4, *only*, *even* and *also/too* had been discussed as involving semantic association with focus via the current question under discussion, which provides a direct link between focus realization, focus interpretation, and association with focus. This section showed that this direct link is an oversimplification: Beaver and Clark (2008) show systematic differences between focus-sensitive elements which associate with focus semantically (or *conventionally*), and others which associate with focus pragmatically. While semantically associating operators are actually dependent on the alternatives indicated by focus, pragmatically associating operators associate with salient alternatives. These salient alternatives are usually, but not necessarily, the alternatives provided by the current QUD. According to Beaver and Clark (2008), *only, even* and *also* in English all conventionally associate with focus. However, crosslinguistic research shows that in numerous languages, additive particles do not associate with focus conventionally. There are thus cases where the associate of an alternative-sensitive particle is distinct from the focus of the utterance, breaking up the correspondence between the Current Question and association with alternatives assumed in section 2.1.4.

2.2.3 Summary

In the 'simple picture' of focus, the part of the utterance which evokes alternatives via a CQ, the part that is realized with greater prominence than the rest of the utterance, and the part that alternative-sensitive particles like *only* associate with are exactly the same. The more complex picture presented in this section dispelled this assumption. Assuming that the focus is that part of the utterance that evokes alternatives, it was discussed first, that sometimes parts that are smaller or larger than the focus of the utterance are marked, either for syntactic or prosodic reasons, because part of the focus is given and thus deaccented, or because part of the focus is especially noteworthy and thus emphasized. In addition, what is marked need not be focus: there are crosslinguistic observations that languages may mark contrast or exhaustivity instead of marking focus. In these languages, focus which isn't contrastive or exhaustive remains unmarked, or is marked in a different way. When a part of the utterance is realized with greater prominence, it thus does not have to correspond exactly to the focused part of the utterance. In addition, it was noted in this section that some alternative-sensitive particles need not semantically associate with the focused part of the utterance, but can also associate with other salient material.

2.3 Research questions / contribution of Ngamo

This section has shown that one of the overarching questions of focus research is the exact relation between the part of the utterance that answers the current QUD, and the way the utterance is realized. I will talk about the former as "the focus", and discuss the latter as "focus realization". The factors that influence this relation have been shown to vary crosslinguistically. One important goal, on the data side, is therefore a careful elicitation of focus data in Ngamo, to see how focus is realized, and what influences the relation between focus and focus realization, i.e. how it fits into the crosslinguistic picture.

1a) *What are the different focus realization patterns?*

1b) *Are there cases in which a certain realization pattern can be an answer to several different current QUDs?*

This chapter discussed several factors that influence which QUDs are possible for a given accent pattern. For example, the fact that (118) can answer DO-, VP-, or S-questions can be explained by focus projection and default accenting.

(118) Suzy phoned Mary.

In addition, further factors like givenness and unpredictability can account for non-default stress placement within a larger focus. For example, (119), apart from answering subject questions like "Who phoned Mary?", can also answer sentence-focus questions like "Why did Jill phone Mary?" (Büring, 2006), because the givenness of *phoned Mary* licenses its deaccenting in (119). In addition, (119) can even answer a question like "What happened?", if Suzy is considered to be highly unlikely to ever phone Mary. In this case, unpredictability or noteworthiness accounts for the main accent on *Suzy*, rather than focus.

(119) Suzy phoned Mary!

These factors — projection, givenness, and noteworthiness — were the first kinds of possible factors that were tested for Ngamo. The second kind of factors were factors that influence the realization of focus, given a certain QUD.

1c) *Given a certain current QUD, what are the factors that influence the realization of focus?*

The factors looked at here are mostly ones that have to do either with different focus contexts or different additional interpretations. For example, when looking at the difference between English focus and English clefts, the clefts are said to involve a stronger exhaustive inference (É. Kiss, 1998), a stronger existential inference (e.g. Rooth, 1999, i.a.), and/or stronger contrast (Destruel and Velleman, 2014).

(120) a. It was Suzy who phoned Mary.
b. Suzy phoned Mary.

An answer to this question involved testing for the status of different meaning components in different focus constructions, i.e. whether they were asserted, presupposed, or conventionally or conversationally implicated. This was tested for exhaustive inferences and existential inferences in different focus constructions. Testing contrast involved checking whether certain kinds of focus realization are preferred in more contrastive contexts, and others in less contrastive contexts. For example, (120-a) is better as a corrective reply to "Why did Jill phone Mary?", whereas (120-b) is better as a simple answer to "Who phoned Mary?". Note that the current QUD in both kinds of contexts is "Who phoned Mary?", a subject question. Since Ngamo is language with several possible focus realization patterns, the question of what is responsible for the different realizations takes up a large part of the investigation. Special emphasis will be placed on the question of what precisely is marked. Within the debate of whether either focus- or givenness-marking alone or both together are needed to account for the realization patterns, Ngamo is unusual, because it has a dedicated background marker. This background marking will therefore be discussed in great depth.

In the second part of this thesis, chapters 6–7, the alternative-sensitive particles *yak('i)* (= 'only'), *ke('e)* (= 'also') and *har('i)* (= 'even') are discussed. On the data side, these chapters are devoted to investigating first the meaning contribution of the particles and the status of these meaning components, and second, the association behaviour of these particles.

2a) *What are the meaning components contributed by the alternative-sensitive particles?*

2b) *Are the alternatives that are excluded (*yak('i)*) or included (*ke('e)/har('i)*) the alternatives indicated by focus?*

Whereas the contributed meaning components and their status were for the most part found to be very similar to corresponding particles in better-studied languages, the association behaviour was found to be interesting. It is known from other languages discussed above that the associate of a focus-sensitive particle does not necessarily correspond to what is interpreted as focus. It is thus tested whether the three particles necessarily associate with focus, i.e. whether they are *conventionally focus-sensitive* as described by Beaver and Clark (2008) for *only, also* and *even* in English, or whether they can associate with out-of-focus constituents. In Ngamo, the additive(-scalar) particles were found to be able to associate with out-of-focus constituents, whereas the exclusive particle *yak'i* can only associate with focus.

Relatedly, it is discussed how association with focus interacts with *focus realization*. This is already partly discussed in the answer to research question (1c), because some tests for exhaustivity rely on e.g. cooccurrence with additive particles, or comparison with exclusive particles. The answer to this question will again shed some light on the relation between focus marking and interpretation, because focus-sensitive particles can also give clues as to which part of a sentence is interpreted as focused.

2c) *How does association with focus (or alternatives) interact with focus realization?*

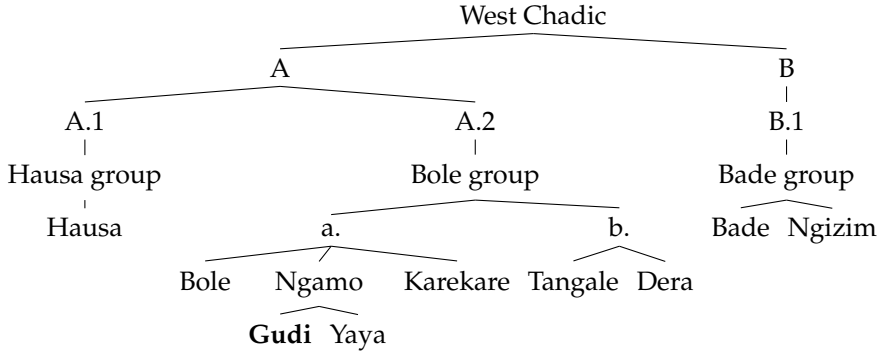
After an introduction to the language in chapter 3, the research questions (1a-c) will be taken up in chapter 4. Questions (2a-c) are answered in chapter 6.

Chapter 3

Gudi Ngamo

Ngamo is spoken by about 60'000 speakers in Yobe State (Fika Local Government Area) and Gombe state (Nafada-Bajoga Local Government Area), in North-East Nigeria (Lewis, 2009). The most influencial town, where the Mai Gudi (Alhaji Isa Bunuwo) resides, is Gadaka, in Yobe State. Its neighbouring languages are the closely related languages Bole and Karekare, the distant relative Ngizim, and the unrelated Nilo-Saharan language Kanuri, which used to be the dominant language in the region. Hausa, a related language, is currently the most dominant language of this region, and the neighbouring language Bole has also had influence on Ngamo (Schuh, 2005b, p.82). Ibriszimow (2006, p.38), whose fieldwork trips to this area took place in the late 1990s, is of the opinion that the language is endangered, since the younger generation speaks Hausa and/or Bole, instead, and even in Gadaka, Bole is the dominant language[1].

Ngamo is an Afroasiatic language of the West-Chadic A.2 subgroup. The following tree gives an overview of how Ngamo is related to its neighboring languages, and other important languages in the region (Newman, 1977, p.4-5).



The other West Chadic languages Bole, Karekare, Tangale, Dera (also called Kanakuru), Bade and Ngizim are mentioned here because in these languages, focused and questioned subjects are marked by inversion, like in Ngamo. Note that this is an areal feature: there are languages which are more closely related to some of these subject inversion languages, but which have different focus marking mechanisms (Schuh 2005b mentions Kirfi and Galambu (A.2), and Hausa (A.1)).

[1] See also Schuh and Gimba (in prep.), p.13 in the section on consonants.

According to Schuh (2005b, p.93), the inversion of focused subjects takes place 'along the entire eastern edge of the West Chadic speaking region, from Bade and Duwai in the north to Tangale and Kanakuru in the south'. More closely related West Chadic languages to the West of this area either front focused constituents (e.g. Hausa, cf. Newman 2000, i.a.), or use canonical word order (e.g. Kirfi, Galambu, cf. Schuh 1978). This thesis focuses on Ngamo, but data from related subject inversion languages will be mentioned in cases where it is of importance.

Ngamo has two dialects, Gudi and Yaya Ngamo[2], which according to Schuh (2009a, p.2) have so many differences, in phonology, morphology and lexical items, that they are "distinct enough to perhaps merit calling them different languages", but which are mutually intelligible, nevertheless (cf. also Ibriszimow, 2006, p.37, for a similar opinion). In this thesis, I will concentrate on the Gudi dialect of Ngamo.

There is no grammar of Ngamo, but there are numerous publications by the Yobe Languages Research Project (P.I. Russell Schuh), who also published a dictionary, and of whose work I have greatly profited. In addition, Ibriszimow (2006) mentions that some Gudi Ngamo material was published in Meek (1931) and Kraft (1981), and that there are unpublished notes by Johannes Lukas with some Yaya Ngamo words. The following sections give an overview of the grammar of Gudi Ngamo. Many of the examples in this chapter are from tales collected by the Yobe Languages Reseach Project, retrievable from `aflang.humnet.ucla.edu/Ngamo/ngamo.html`.

3.1 Prosody

Gudi Ngamo is a tone language with two tones, a high tone (H), which will not be marked, and a low tone (L), which will be marked with a grave (à) accent. The combinations HL and LH sometimes occur, and will be marked with circumflex (â) and hachek (ǎ), while long vowels will be marked with a macron (ā)[3]. The HL combination will also be abbreviated as F (for 'falling') in the discussion below.

In Gudi Ngamo, there was a historical process of tone shift, shifting every tone one tone bearing unit to the right (Schuh, 2009a, Great Ngamo Tone Shift) with respect to the original tones, which are preserved in cognate nouns and verbs in other, related, languages, and in the other main Ngamo dialect, Yaya Ngamo (Schuh, 2009a)[4]. This tone shift is exemplified in table 3.1 using the noun *hànkalì* ('intelligence').

Orig.	Karekare	Bole	Yaya Ngamo	Gudi Ngamo	
HLH	ankàli	ankàli	hankàli	hànkalì	'intelligence'

Table 3.1: Great Ngamo Tone Shift: HLH → LHL+H̩ (Schuh 2009:3)

As can be seen in the case of *hànkalì*, the initial syllable thereby receives a default low tone. The original final tone remains as a floating tone (marked H̩ or L̩, depending on the tone).

According to Schuh, in words with alternating tones like *hànkalì*, the tone bearing unit is the mora (Schuh, 2009a, p. 5). Schuh however notes that consecutive morae bearing the same tone

[2]Ibriszimow (2006) mentions two further possible dialects, Dokto and Janga Ngamo, which, according to his informants, are closer to Gudi Ngamo.

[3]This conforms to the tradition of marking Hausa tones (Newman, 2000, i.a.)

[4]Note that a similar tone shift has been reportet for Kikuyu, cf. Clements and Ford (1979), Pratt (1972).

actually associate with one single tone. For this reason, the outcome of the tone shift for original HHH and LHH tone patterns is the same as for original LLH tone patterns: A low tone shifts to replace all high tones to its right, yielding an LLL+H̩ pattern, cf. table 3.2.

Orig.	Karekare	Bole	Yaya Ngamo	Gudi Ngamo	
HHH	-	-	mandira	màndìrà	'sesame'
LHH	Nàsārā	Nàsāra	Nàsāra	Nàsàrà	'European'
LLH	gàlàfi	gàlàpi	gàlàfi	gàlàhì	'small axe'

Table 3.2: Great Ngamo Tone Shift: HHH/LHH/LLH → LLL+H̩ (Schuh 2009:3)

According to Schuh, this also explains why the outcome of an original HHL tone pattern is like that of an original LHL tone pattern, namely LLH+L̩: the two initial morae in the HHL pattern associate with the same high tone. The same happens with several consecutive low tone morae: since they associate with one L tone, they are all shifted. For example, an original HLL tone pattern becomes LHH+L̩. This is however not the surface form: whereas a floating H in IP-final position has no effect, a floating L in IP-final position reassociates with the preceding tone-bearing unit. With an underlying LLH+L̩ pattern, this yields an LLF pattern, cf. table 3.3, with an underlying LHH+L̩ pattern, an LHL pattern, cf. table 3.4 (Schuh, 2009a, p.4).

Orig.	Karekare	Bole	Yaya Ngamo	Gudi Ngamo	
HHL	lāfiyà	lāpiyà	lāfiyà	làhìyâ	'health'
LHL	àlbasà	àlbasàr	àlbasàr	àlbàsâr	'onion'

Table 3.3: Great Ngamo Tone Shift: HHL/LHL → LLH+L̩ (Schuh 2009:3)

Orig.	Karekare	Bole	Yaya Ngamo	Gudi Ngamo	
HLL	-	bibìdò	-	bi̋bidò	'monkey-like'

Table 3.4: Great Ngamo Tone Shift: HLL → LHH+L̩ (Schuh 2009:3)

Thus, IP-final floating H tones are not pronounced, whereas IP-final floating L tones reassociate. At intermediate phrase boundaries, floating H tones also reassociate with their original tone-bearing unit, a process which Schuh (2009a, p. 12) calls FLOATING H REVERSION. In these cases, the original tone-bearing unit receives a high tone. One example of such a boundary is the subject-VP boundary: In (1), the target word *tèmshì* has an underlying LL+H̩ tone pattern. Due to the strong boundary, H̩ does not spread to *kòlî*, instead, it reassociates with the last syllable of *tèmshì*, which thus receives a high tone.

(1) nè tà na **tèmshi** kòlî
1SG say.that if sheep hear.SBJV
"I said that the sheep should hear"

When the boundary is even weaker, i.e. there is a close syntactic or prosodic relation to the following word, floating H tones spread to the following word (Schuh calls this FLOATING H DOCKING) — this, for example, seems to occur between verbs with floating H tones and their

direct objects (Schuh, 2009a, p.29f). When H̩ docks onto *bù*, the negation receives a falling tone (*bû*). In (2) this is shown using the target word Nàsàrà: Here, there is a floating H tone due to an underlying LLL+H̩ sequence, and the H̩ spreads onto the following word *bù*, and combines with its low tone to create an HL contour *bû*. Since floating high tones always spread onto a following low tone clitic, and floating L tones never spread, negation is thus the most simple test for differentiating the floating tones in Gudi Ngamo (Schuh, 2009a, p.12, p. 45).

(2) Nàsàrà bû
European NEG
"Not a European"

Even though only Gudi Ngamo has undergone a tone shift, H tone spread is a common feature of many languages of the area, cf. Schuh (2009a, for Yaya Ngamo), Schuh and Gimba (2005, i.a. for Bole), Hyman and Schuh (1974, for Ngizim), Kidda (1993, i.a. for Tangale)[5], and will play a role in the discussion of the prosody of focus in Gudi Ngamo in section 4.1.3.

A summary in the form of a table is presented in 3.5[6]. Due to the Great Ngamo Tone Shift, all tones were shifted one tone-bearing unit to the right, with an initial default L tone. Floating L tones always reassociate with the preceding tone-bearing unit (REASSOCIATION OF FLOATING L), whereas the behavior of floating H tones depends on the kind of boundary following it: it remains unpronounced at IP-boundaries, reverts to the preceding tone-bearing unit at iP-boundaries (FLOATING H REVERSION), and spreads to the following tone-bearing unit at weaker boundaries (FLOATING H DOCKING)[7].

Orig.	example (original)	Gudi Ngamo tones	example	
HLH	hankàli	LHL+H̩	hànkalì	'intelligence'
HHH	mandira	LLL+H̩	màndìrà	'sesame'
LHH	Nàsāra		Nàsàrà	'European'
LLH	gàlàfi		gàlàhì	'small axe'
HHL	lāfiyà	LLH+L̩ → LLF	làhìyâ	'health'
LHL	àlbasàr		àlbàsâr	'onion'
HLL	bibìdò	LHH+L̩ → LHL	bǐbidò	'monkey-like'
LLL	kànkàrshà	LLL+L̩	kànkìrshà	'puff adder'

Table 3.5: Great Ngamo Tone Shift (Schuh 2009:3)

3.2 Word order

Gudi Ngamo is an SVO language with a relatively strict word order: The subject must precede the verb, and the direct object must immediately follow the verb. Word order changes can occur for information-structural reasons, e.g. focused subjects are inverted, cf. answers A_4 and A_6 in

[5] According to Schuh (2009a, p.45), Karekare does not have tone sandhi phenomena.
[6] The examples of the original tones are in almost all cases Yaya Ngamo, apart from *bibìdò*, which is Bole.
[7] This is just a simplified overview. See Schuh (2009a, p.11-12) for a full list of prosodic rules.

example (3), and topical constituents are sentence-initial, cf. A_5 and A_6. These word orders were however not accepted in a broad-focus context like (3), as answer to "What happened?".

(3) Q: [Context: what happened?]

A_1: Shuwa salko bano.
Shuwa build.PFV house
"Shuwa built a house."

A_2: *Shuwa bano salko.
Shuwa house build.PFV
(intended:) "Shuwa built a house."

A_3: *Salko Shuwa bano.
build.PFV Shuwa house
(intended:) "Shuwa built a house."

A_4: #Salko bano *(=i) Shuwa.
build.PFV house PRT Shuwa
"SHUWA built a house."

A_5: #Bano, Shuwa salko.
house Shuwa build.PFV
"As for the house, Shuwa built it."

A_6: #Bano, salko *(=i) Shuwa.
house build.PFV PRT Shuwa
"As for the house, SHUWA built it."

Nothing can intervene between the verb and the direct object (4), with the exception of weak pronominal indirect object clitics (5). When both direct and indirect object are pronominal, the indirect object precedes the direct object, since DO pronouns are independent pronouns and are not cliticized to the verb, whereas IO pronouns are clitics (see section (3.4.3) for a discussion of independent and dependent pronouns)[8].

(4) a. *Kule salko danom bano
Kule build.PFV carefully house
(intended:) Kule carefully built a house.

b. *Kule salko bu bano
Kule build.PFV NEG house
(intended:) Kule didn't build a house.

c. *Asabe tamko (ki) Shuwa Jajei.
Asabe show.PFV to Shuwa Jajei
(intended:) Asabe showed Jajei to Shuwa.

(5) a. Asabe tamno Jajei.
Asabe show.PFV.1SG.DEP Jajei
"Asabe showed me Jajei."

b. Ne tamto si.
1SG show.3SG.F 3SG.M
"I showed him to her."

c. Ne tamni te.
1SG show.3SG.M 3SG.F
"I showed her to him."

In addition, when there are auxiliaries, nothing can intervene between the auxiliary and the verb[9].

(6) a. Kule a *danom/*bu sala bano.
Kule 3SG.FUT carefully/NEG build.FUT house
(intended:) "Kule will (carefully/not) build a house."

b. Hadiza a ka *danom/*bu woɗa wo'oto.
Hadiza 3SG.IPFV IPFV carefully/NEG cook food
(intended:) "Hadiza is (carefully/not) cooking *tuwo*."

The position of the indirect object and adjuncts are more free with respect to each other, e.g. (7-b) is possible out of the blue, even though the order in (7-a) is preferred.

(7) Q: What happened?

a. Shuwa onko agoggo ki Mammadi nzono.
Shuwa give.PFV watch to Mammadi yesterday

[8] Schuh (2004b, p.9) writes "A feature of many Chadic languages, and of all the Bole-Tangale languages, is the fact that indirect object pronouns are, in some sense, more tightly bound to the verb than are direct object pronouns".

[9] *Tuwo* is the Hausa name for a staple made out of maize, yam, cassava, rice, or similar foods.

b. Shuwa onko agoggo nzono ki Mammadi.
Shuwa give.PFV watch yesterday to Mammadi
"Shuwa gave a watch to Mammadi yesterday."

Schuh and Gimba (in prep.) write that in the related language Bole nothing can invervene between the subject and the verb apart from auxiliaries. In Ngamo, superficially it seems as though this is possible. However, it seems as though the subject in these cases is topicalized. First, 'high' adjuncts like temporal/ locative adverbials are more acceptable in this position than 'low' adjuncts like manner/instrumental adverbials or indirect objects (8)–(9).

(8) a. (**Mano**) Shuwa (**mano**) salko bano. (temporal)
last.year Shuwa last.year build.PFV house
"Shuwa built a house last year."
b. (**A Nijeriya**) Shuwa (**a Nijeriya**) salko bano. (locative)
in Nigeria Shuwa in Nigeria build.PFV house
"Shuwa built a house in Nigeria."

(9) a. (**?Danom**) Shuwa (**?danom**) salko bano. (manner)
carefully Shuwa carefully build.PFV house
"Shuwa carefully built a house."
b. (**?Ki janga**) Shuwa (**?ki janga**) salko bano. (instrumental)
with mud Shuwa with mud build.PFV house
"Shuwa built a house with mud."
c. (**?Ki Mammadi**) Shuwa (**?ki Mammadi**) onko agoggo. (IO)
to Mammadi Shuwa to Mammadi give.PFV watch
"Shuwa gave a watch to Mammadi"

Second, when the subject is pronominal, it has to be an independent pronoun, with a resumptive dependent pronoun following immediately preceding the verb (10) . I assume, for these cases, that the dependent pronoun is in the canonical subject position, whereas the independent pronoun is topicalized.

(10) a. Ne salko bano **mano**. (SVOA)
1SG build.PFV house last.year
b. *Ne **mano** salko bano. (SAVO)
1SG.DEP last.year build.PFV house
c. Ne'e **mano** ne salko bano. (SAVO)
1SG.INDEP last.year 1SG build.PFV house
"I built a house last year"

Non-verbal sentences Non-verbal sentences are realized by juxtaposing the subject and the non-verbal predicate, e.g. a nominal (11), adjectival (12), numeral (13) and PP (14) predicates.

(11) Damasar la Jubi
Damasar son Jubi
"Damasar is the son of Jubi."
(D2G_MKM_134)

(12) 'ya ye ndaɗo!
thing DEF.DET.M heavy
"the thing is heavy."
(D1G_ZH1_145)

(13) mila=i kasu bolo
children=DET.PL head.3PL.POSS two
"there are two children"
(lit. the children, their heads are two)
(Schuh et al. (2009, p.47))

(14) lula woyye a bano
cry DEM.M in house
"that crowing is in a house."
(D2G_GKA_072)

When the subject is a pronoun, the dependent subject form is used, e.g. (15). An independent subject pronoun can be used in addition, but not alone (16)[10]. In the third person, there is often no pronoun at all (17)–(18).

(15) (What is your job?)
Ne malum
1SG.DEP teacher
"I am a teacher"

(16) (What is your job?)
Ne'e(=i) *(ne) malum
1SG.INDEP=DET 1SG.DEP teacher
"Me, I am a teacher"

(17) La Jubi [. . .].
son Jubi
"He is Jubi's son."
(D2G_MKM_120)

(18) bei a wondi
maybe at there
"maybe he is there"
(D1G_GKA_121)

Expressive particles like *ro* can intervene between the subject and the non-verbal predicate, cf. (19). In specificational non-verbal clauses, a definite determiner is obligatory (20).

(19) Arko=i ro jire!
song=DET.M indeed true
"The song is really true!"

(20) (Who is the bride?)
Marko(*=s) ne'e
bride=DET.F 1SG
"The bride is me."

Existential constructions are also often verbless, built up of *àndi* or *an* and a following DP, cf. e.g. (21)–(22)[11].

(21) An ma'i riya na'ako wallinko
there.is king bush big exceed.TOT.2SG.M
"There is a supreme chief of the bush that surpasses you."
(D2G_GKA_031)

(22) àndi hàm
there.is water
"There is water."
(Schuh et al., 2009, p.3)

Negation Ngamo, like its neighboring languages Bole, Karekare, Ngizim, and Bade (Schuh, 2005b, p.28), uses a single, final negative marker, which takes scope to its left (23)–(24). Schuh notes that most other West Chadic languages use a *bracket negation*, with two negative markers, one preceding the negated element, and one following it. Examples (25)–(26) are examples from Newman (1974, p.59) for bracket negation, from the related language Dera (Kanakuru).

(23) NGAMO, VERBAL SENTENCE
a ada wa adani **bu**
owner.of dog find.PFV dog=3SG.M NEG
"the [dog owner] didn't find his dog"
(D2G_GKA_017)

(24) NGAMO, NON-VERBAL SENTENCE
Mandu, Damasar ye lanshi **bu**!
woman Damasar DET.M son.3SG.F NEG
"Woman, Damasar is not your son!"
(D2G_MKM_119)

[10] Here, the dependent subject pronoun *ne* can be shortened and assimilated to *m*.

[11] For *ándì* in Bole, Schuh and Gimba (in prep.), "simplex non-verbal clauses", p.11 note that it's origin may be the verb *i* (= 'do'), but that it is now a non-verbal fixed expression.

(25) Dera, verbal sentence
wo-mɔ́n tua kumar **u**
neg-1pl.2pfv eat food neg
"we didn't eat food."

(26) Dera, non-verbal sentence
wo-kài namaləm **u**
neg-2sg.m teacher neg
"you are not a teacher."

Schuh (2005b, p.28) notes that the Yobe State languages Bole, Karekare, Ngizim, Bade follow the same pattern as Ngamo, and concludes that the loss of the initial negative marker is an innovation of these languages[12], since languages that use bracket negation, like Hausa and the West-Chadic languages Miya and Pero, are more common and not restricted to a certain area.

Concerning the word order with respect to adjuncts and adverbials, Schuh (2005b, p. 29) suggests that for sentential negation, the negative marker precedes 'sentence level adverbs', e.g. temporal adverbs, in these languages. He notes that when the negation follows these adverbs, this is interpreted as constituent negation of the adverb alone, a result mirrored in Tangale, where we found a constituent negation interpretation for the negative particle following a temporal adverb, but a sentential negation interpretation when it followed a manner adverb. In Ngamo, my main consultants did not find any difference in interpretation between the (a) and (b) sentences in (27)–(28): they interpreted all as involving sentential negation.

(27) a. Kule salko bano mano bu
Kule build.pfv house last.year neg
b. Kule salko bano bu mano
Kule build.pfv house neg last.year
"Kule didn't build a house last year."

(28) a. Kule salko gabi danum bu
Kule build.pfv pot carefully neg
b. Kule salko gabi bu danum
Kule build.pfv pot neg carefully
"Kule didn't carefully make a pot."

To sum up, in Ngamo verbal all-focus sentences, i.e. sentences that occur out-of-the-blue or as answers to "What happened?", there is a strict S V DO word order. Following indirect objects and adjuncts are more free in their distribution, however. In other contexts, word order changes can occur for information-structural reasons, e.g. topicalization, involving movement to the left periphery. Since there is no copular verb in Ngamo, copular sentences are realized by juxtaposing the subject and non-verbal predicate. The latter can be a noun, adjective, or prepositional phrase. Negation is expressed with the help of a negative marker *bu* following the VP, which can precede or follow any post-verbal adverbs.

3.3 The verbal system of Gudi Ngamo

The following section introduces the Gudi Ngamo verbal system. According to Schuh (2005a, p.2), factors playing a role in determining the verb morphology are (i) verb classes, (ii) tense, aspect and mood, (iii) agreement, (iv) verbal extensions, and (v) pluractionality. The first part accordingly describes the system of verb classes developed by Lukas (1972) for the related language Bole, and adapted by Russell Schuh in his description of the Ngamo verbal system (Schuh, 2004b). The next part introduces the tense, aspect and mood (TAM) marking of the language, while the third part briefly describes agreement in those TAMs in which it is realized. The fourth section describes the verbal extensions. The fifth part briefly discusses pluractionality.

[12]Schuh (2005b, p.29) suggests that in the Angas-Goemai group and the Ron group, which also have only one sentence final negation marker, this development was independent of the Yobe languages. According to Kidda (1993, p.26), Tangale also patterns like Ngamo. In addition, Schuh notes that some South Bauchi languages use a final negative marker in some TAMs, but a bracket negation in others, e.g. Guus and Dott (Caron, 2001, 2002). Caron (2001, p.178) writes that Dott borrowed the preverbal negative marker *ba* from Hausa for some negative sentences.

3.3.1 Verb Classes

According to a classification by Schuh (2004b), adapted from Lukas (1972), there are five verb classes in Ngamo, which differ in the structure of the root (i.e. the number of root consonants and vowels, the length of the root vowels), as well as the form of their tense and aspect marking. Table 3.6 shows an example of each of the classes, together with their defining features (Schuh, 2004b, p.1).

Class	A1	A2	B	C	D
Example:	ngàrkô 'he tied'	bìskâ 'he accepted'	bàsâ 'he shot'	tùkô 'he ate'	wâ 'he received'
Root consonants	2	≥2	2	1	1
Root vowel	short	often long	short	-	-
Stem vowel in the perfective	∅+-ko	-a	-a	-u +-ko	-a

Table 3.6: The five verb classes of Gudi Ngamo (Schuh 2004b:1)

As the following section will show, these verb classes have different properties concerning their tense and aspect marking.

3.3.2 Tense, Aspect, and Mood

Schuh identifies the following verbal tenses, aspects and moods (TAMs) (Schuh, 2004b, 2010)[13]: (i) completive (or perfective), (ii) subjunctive, (iii) imperative, (iv) 'future', and (v) habitual. They are identified by changes of the stem vowels and tone patterns, and affixes. Table 3.7 shows examples of each of the TAM forms mentioned by Schuh with the class A1 verb *èrkô* (= 'stop').

TAM	Example	Translation
Perfective (sg)	èrkô	'he/she stopped'
Imperative (sg)	èrî	'stop!'
Subjunctive	à èrî	'that he stop'
Future	à erâi	'he will stop'
Habitual	à èrshê	'he stops'

Table 3.7: Ngamo TAMs, class A1 verb, Schuh (2004b, p.2)

The perfective aspect is marked with an *-â* or *-kô* ending in the singular, depending on the verb class: *-â* for class A2, B and D verbs, *-kô* for class A1 and C verbs[14]. The vowel of class B roots is assimilated to the ending in all TAMs, i.e. it is *a* in the perfective, and *e* or *i* in the other TAMs (as

[13]Schuh also identifies further, periphrastic TAMs, the *continuative aspect*, using the auxiliary 'zuk' (possibly stemming from *zùgò* ='body'), and the *potential future*, using an auxiliary stemming from the verb gɔ̀ (Engl. 'go') (Schuh, 2004b, p.11). Ibriszimow (2006, p.41) in addition mentions a further continuative form with an auxiliary 'ka'. These forms do not have their own verb morphology and will not be discussed here.

[14]Class C verbs additionally have a stem vowel *-u-* in the singular perfective, singular imperative, and the subjunctive.

noted for imperatives and the subjunctive in Schuh, 2009b, p.4). The imperative is expressed with the ending *-î*[15]. The other TAMs, subjunctive, future, and habitual, are introduced by a proclitic '*à*' in all verb classes (Schuh, 2010, p.1), for third person subjects. The subjunctive endings are either *-ê* (for class A2, B, and D) or *-î* (for class A1 and C). The 'future', which according to Schuh (2010, p.1) is actually an imperfective which can also refer to ongoing events, and the habitual both use 'nominal-like verb forms' (Schuh, 2004b, p.2). The future appears to have different endings for the different verb classes: *-âi* (A1), *- à* (A2), *-è* (B), *-ǐnà* (C), and *ènà* (D). In the verb classes with a vowel in their root (A1/A2/B), this vowel receives a high tone. Finally, the habitual endings are *-shê* (A1), *-à* (A2), *-ê* (B), *-ǐshê* (C), and *-ènshê* (D). A summary is shown in table 3.8, whereby the bold entries are those where there are additional tonal changes on the stem, and the subjunctive, future and habitual have an additional marker *à* preceding the verb[16]. The endings seem to be elided when clitics are present, cf. Schuh (2010) for examples.

	A1	A2	B	C	D
Perfective (sg)	-kô	-â	-â	(-u)-kô	-â
Imperative (sg)	-î	-î	-î(?)	(-û)-i	-î
Subjunctive	-î	-ê	-ê	(-û)-i	-ê
Future	**-âi**	**-à**	**-è**	-ǐnâ	-ènâ
Habitual	-shê	-à	-ê	-ǐshê	-ènshê

Table 3.8: Ngamo TAM endings

The tonal pattern of the verb can also be influenced by tone sandhi phenomena. Schuh (2009a) notes that all subject pronoun clitics apart from the first person singular *nè* carry a floating H tone, which spreads to the first syllable of the verb, cf. (29) and (30)[17].

(29) PERFECTIVE
a. nè ng**à**rkô
b. kò ng**a**rkô

(30) SUBJUNCTIVE
a. nè '**è**rinnò
b. kò '**e**rìtkò

More surprisingly, Schuh (2009a, p.16ff) also observes floating H spreading from nominal subjects when the verb is in the perfective[18], but not in other TAMs cf. (31)–(32).

(31)	a.	àdà kòlkô	(32)	a.	àdà kòlî	(Original LL, cf. Bole àdà)
	b.	tèmshì kolkô		b.	tèmshi kòlî	(Original LH, cf. Bole tèmshi)
	c.	kǒrò kolkô		c.	kǒro kòlî	(Original HH, cf. Bole kōro)
	d.	bàngai kòlkô		d.	bàngai kòlî	(Original HL, cf. Bole bangè)

Schuh notes that this is surprising because it suggests that there is only a weak prosodic boundary

[15]Class B verbs seem to be an exception, e.g. *hètê* (from *hàtâ*, 'go out'), and *bìsì* (from *bìskâ*, 'take, accept') Schuh (2004b, 2010). It is not entirely clear to me how the imperative is formed here exactly.

[16]See also Ibriszimow (2006, p.40–43). He only discusses verbs that fall into Schuh's classes A1, A2 and B, and assumes more tonal changes on the verb stem, which may actually be due to tone sandhi, cf. the discussion below.

[17]It is not entirely clear whether all TAMs were tested. For nominal subjects, Schuh notes (Schuh, 2009a, p.18, footnote 22) that he only tested perfective and subjunctive examples, but has reasons to believe that the other TAMs pattern like the subjunctive. In Ibriszimow (2006), the effect of dependent subject pronouns on the verb was the same for the perfective and subjunctive, but the first syllable of the imperative stem was noted to have an L tone independent of the pronominal affix, the future an H tone, and the habitual a 'copy tone', i.e. the same tone as the pronoun.

[18]This can't be observed with proper noun subjects, since proper nouns did not undergo the Great Ngamo Tone Shift, and thus don't have any floating H tones Schuh (2009a, p.6–7), nor when the verb is totality extended (cf. §3.3.4), because this results in an initial high tone on the verb stem Schuh (2009a, p.18).

between the subject and the perfective verb, which, crosslinguistically, is a large boundary. In the related language Tangale, vowel elision and tone sandhi processes that are usually blocked at strong boundaries are possible between nominal subjects and perfective verbs (Kenstowicz, 1987, p.231–233). Kenstowicz suggests that the verb may be in a higher syntactic position in the perfective, closer to the subject than in other TAMs (Kenstowicz, 1987, p.231).

Aspect, rather than tense, is marked in Ngamo. For example, the continuative and the perfective forms were accepted in past and present, but not future contexts (33)–(34).

(33) Q: What is she doing right now?/ What was she doing when you arrived yesterday?
A: A ka woɗa wo'oto.
3SG.IPFV IPFV cook tuwo
"She is/was cooking *tuwo*."

(34) Q: Is food ready now? / Was food ready when you arrived yesterday?
A: O'o, Hadiza wo'oko wo'oto.
yes Hadiza cook.PFV.TOT tuwo
"Yes, Hadiza has / had cooked *tuwo*."

Without context, the continuative is interpreted as referring to the present. The perfective, in contrast, is interpreted as past out of the blue, unless with verbs like 'know' or 'remember', which receive a default present interpretation, cf. (35). This is similar to the related languages Bole (Schuh, 2005a, p.3) and Hausa (Mucha, 2013).

(35) Tida diɓko baɗî so ruko makaranta.
Tida remember.PFV morning REL enter.PFV school
"Tida remembers (/remembered /*will remember) the day when he started school."

3.3.3 Agreement

In Ngamo, subjects and verbs agree in number, but not in gender[19]. Number is marked only in the perfective and the imperative. The perfective is marked *-ànkô* in the plural form, systematically for all verb classes. Similarly, the plural second person imperative ending *-âi* and first person imperative ending *-àmù* are systematic for the five verb classes. With all three plural endings, class B verb root vowels assimilate to the *a* in the ending. Table 3.9 shows an example of these TAM forms for the A1 verb *èrkô*.

TAM	Number	Example	Translation
Perfective	SG	èrkô	'he/she stopped'
	PL	èrànkô	'they stopped'
Imperative	SG	èrî	'stop!'
	2. PL	èrâi	'stop!'
	1. PL	èràmù	'let's stop!'

Table 3.9: Perfective and Imperative TAMs

[19]The closely related language Bole, in contrast, marks number and gender agreement (Schuh and Gimba (in prep.)).

A further kind of agreement occurs with so-called *intransitive copy pronouns*. These are pronominal suffixes to intransitive verb that agree with the subject in number, person, and gender. Since they only occur in specific environments that are introduced in section 3.3.4, they will be discussed there, and in the section on pronouns 3.4.3.

3.3.4 Verbal extensions

Verbal extensions are clitics which are added to the verb stem, yielding an additional meaning (Schuh, 2003, p.84). In Ngamo, there are the following three extensions (Schuh, 2004b, p.4): *totality* (describing an action done completely), *ventive* (describing an action begun at a distance, which "has effect on the place of reference" (Schuh, 2004b, p.4)), and *additive* (describing an action done repeatedly)[20]. Table 3.10 shows an example from the A1 verb *ngàrkô* in the subjunctive.

Stem	Unextended	Additive	Totality	Ventive
ngar-	à ngàr-î	à ngàr-**dì**	à ngàr-**tì**	à ngàr-**tû**

Table 3.10: Class A1, subjunctive, verbal extensions; from Schuh 2010:9

The totality and ventive extensions are realized irregularly in Ngamo[21]: the totality morpheme *-t-* has the allomorph *-n-*, used before a pronoun clitic, cf. example (36) with an A1 class verb (from Schuh (2005a, p.9)). Schuh tentatively suggests that with intransitive verbs, the totality extension must be realized together with an 'intransitive copy pronoun', cf. (37) (Schuh, 2005a, p.19, p.23). Intransitive copy pronouns are further discussed in section 3.4.3.

(36) à ngàr=ìn=sù
3SG.SBJ tie.SBJV=TOT=3PL
"(s)he tied them (completely)"

(37) pàta=n=nî
go.out.PFV=TOT=ICP
"he went out (completely)"

The ventive morpheme *-t-* has an allomorph *-n-* which is used in the perfective, e.g. (38)–(39). In the other TAMs, the *-t-* ventive extension is used, apart from the habitual, in which the ventive extension does not occur (Schuh, 2010, p.15).

(38) ngàr=nô
tie.PFV=VENT.PFV
"(s)he tied (there)."

(39) ngàr=ìn=sù
tie.PFV=VENT=3PL
"(s)he tied (it) to them (there)."

The interaction with indirect object clitics shows that the ventive extension has a different behaviour than the totality and additive extension. While the latter are added after the pronoun clitic, the former cliticizes to the verb stem first, and is followed by the indirect object clitic. Schuh (2004b, p.4) concluded that the totality extension and additive extension "occupy the same spot" from the fact that they cannot be combined, whereas both can be combined with the ventive extension, cf. (40) (A1 verb, perfective, from Schuh 2010, p.4), where the ventive extension precedes any indirect object clitics, and the other extensions follow them.

[20] Extensions like these are common in West Chadic languages, e.g. the totality extension is also found in Bade, Karekare, Ngizim, Bole, Kwami, Kanakuru, and Hausa, cf. Schuh (2005a) and the references cited therein. Ibriszimow (2006, p.40–43) also presents a list of ventive and totality suffixes and tonal patterns for different verb classes.

[21] Schuh 2005a, p.5 suggests for irregularly realized extensions in the Yobe State languages that the different allomorphs may originally have been extensions with different meanings, which are now used to express the same meaning.

(40) a. ngàr=ìn=tɔ̀=tî
tie.PFV=VENT=3SG.F.DEP=TOT
"(s)he tied (it) to/for her (there, completely)"
b. ngàr=ìn=tɔ̀=dî
tie.PFV=VENT=3SG.F.DEP=ADD
"(s)he tied (it) to/for her (there, again)"

Interaction with direct objects however shows that there are differences between the totality extension and the additive extension: in contrast to the unextended, additive- and ventive-extended forms, the totality-extended form occurs with a dependent DO-pronoun. Table 3.11 summarizes the interaction of verbal extensions with pronouns.

	Unextended	Additive	Totality	Ventive
IO pronoun	stem=pro	stem=pro=ext	stem=pro=ext	stem=**ext=pro**
DO pronoun	stem indep.pro	stem=ext indep.pro	stem=ext**=pro**	stem=ext indep.pro

Table 3.11: Verbal extensions and pronouns

For a list of different verb paradigms, including interactions with direct and indirect object pronouns, plural agreement, and the different extensions, cf. Schuh (2010).

3.3.5 Pluractionality

Schuh (2009b) describes the pluractional verb morphology of Gudi Ngamo. Pluractionality indicates 'plurality of action' (Newman, 2000), i.e. that an action is done several times, or by several people, or on several objects. Schuh suggests that there are two general strategies: (i) reduplication of the first CV-/C-, and (ii) adding a pluractional infix *-k-*. The exact outcome of the first strategy depends on the weight of the initial syllable of the verb stem (Schuh, 2009b, p.3): if it is heavy, its first CV is reduplicated and prefixed. This happens in the case of some A2 verbs, cf. example (41) from Schuh (2009b, p.3). All of the following examples are in the perfective.

(41) bìrwàntâ (= "rotate", class A2, heavy initial syllable) → bìbìrwàntâ

If the initial syllable is light, the first consonant is infixed. This happens in the case of A1[22], B and D verbs, and some A2 verbs, e.g. the examples in (42) from Schuh (2009b, p.3ff). Schuh notes that via the process of pluractionality, A1 verb stems receive the form of an A2 stem, and that the inflectional pattern of these pluractional forms follows that of A2 verbs, e.g. an *-â* rather than a *-kô* suffix in the perfective (cf. (42-a)).

(42) a. sàlkô (= "build", class A1, light initial syllable) → sà**s**lâ
b. gèlàmpâ (= "lick", class A2, light initial syllable) → gè**g**làmpâ
c. rùbâ (= "scratch", class B, light initial syllable) → rù**r**bâ
d. mâ (= "return", class D, light initial syllable) → mà**p**yâ

[22]Schuh (2009b, p.8) notes that although the perfective form of A1 verbs used in the examples does not have a light stem syllable, many if not most A1 forms actually do.

The second strategy consists of adding a *-k-* infix, cf. (43). This is possible for classes A1, B, and D (cf. (43)). For class C, this is the only option (44). Schuh (2009b, p.8) suggests that the infix *-k-* originates from the strategy of reduplicating initial consonants.

(43) a. sàlkô → sà**k**lâ
b. rùbâ → rù**k**bâ
c. mâ → mà**k**yâ

(44) tùkô (= "eat", class C) → tì**k**yâ (NOT: *tìtyâ)

For more details on the marking of pluractionality, e.g. on the phonological variation happening in many of these cases, see Schuh (2009b).

3.3.6 Summary

To sum up, the verbal morphology is determined by the verb class, TAM marking, agreement, verbal extensions, and pluractionality.

There are five verb classes, depending on the structure of the root, which differ in the kind of TAM marking they allow. For example, class A1 verbs (CVC, with a short root vowel) take the ending *kô* in the perfective aspect, class A2 verbs (CVC or longer, often long root vowels) take the ending *â* in the perfective. In Ngamo, aspect rather than tense is marked. The main TAM forms are perfective, imperative, subjunctive, 'future', and habitual. In the perfective and imperative, there is number agreement between the subject and the verb. There are three verbal extensions in Ngamo, indicating that an action was done completely (*totality extension*), at a distance (*ventive extension*), or repeatedly (*additive extension*). These are clitics added to the verb stem, the additive and totality extension following any IO clitics, the ventive extension preceding them. The totality extension will play a role in the discussion of predicate focus in section 4, since Schuh (2005a) suggested that the totality extension marks 'auxiliary focus' (Hyman and Watters, 1984), cf. §4.1.2 for details. To mark pluractionality, i.e. that an action was done repeatedly, either an infix *-k-* is added within the verb stem, or there are different strategies of reduplication. Which kind of pluractionality marking is possible also depends on the syllable structure of the verb stem.

3.4 The nominal system of Gudi Ngamo

This section presents a brief overview over the nominal system of Ngamo. Section 3.4.1 discusses the realization of indefinite and definite DPs, section 3.4.2 discusses possessive constructions, adjectival modification and relative clauses, as well as numerals and quantifiers. It concludes with a discussion of word order within DPs. Section 3.4.3 introduces the pronominal system of Ngamo, including dependent and independent pronouns, reflexives, and intransitive copy pronouns.

Plural marking will not receive a separate section. As Schuh et al. (2009, p.vi) write, plural marking is not very common, and highly varied, differing between dialects and speakers. Grammatical gender plays a role for some determiners (cf. definite and indefinite determiners and demonstratives §3.4.1), linking morphemes with genitive constructions, adjectives, relative clauses, universal quantifiers, etc. §3.4.2, and pronouns §3.4.3 (Schuh, 2004a, p.1).

3.4.1 Indefiniteness and Definiteness

In Ngamo, bare nouns can be interpreted either as indefinite or definite, depending on the context of utterance, e.g. (45) can have either reading (i) or (ii), depending on the interpretation of the direct object *bano* ("house").

(45) Kule salko bano.
Kule build.PFV house
(i) "Kule built a house."
(ii) "Kule built the house."

In addition, there are postnominal determiners which are said to mark indefiniteness and definiteness, respectively, but these occur only in certain contexts. This section discusses these determiners and compares them with the bare noun variant above.

Indefiniteness The post-nominal indefinite determiner *sò'otò* (f), *yò'otò* (m) or *màɗɗi* (pl) is translated as 'a certain' or 'another' in the Ngamo dictionary (Schuh et al., 2009, p.106). Below, it is shown that the defining characteristic for *yo'oto* indefinites is novelty (cf. also §5.4.1)[23]. The noun and indefinite determiner are linked by a linker *-s* (f) or *-i* (m/pl). The indefinite *ngo(=i yo'oto)* ('a man/person'), or *yo'oto* alone, can be used as an existential quantifier *somebody*.

(46) Ngo(=i yo'oto) salko bano.
person=LINK DET.INDF.M build.PFV house
(i) "Somebody built a house."
(ii) "A man/person built a house."

(47) Yo'oto salko bano.
DET.INDF.M build.PFV house
"Somebody built a house."

Both are indefinite: e.g. in (48), the use of either kind of indefinite introduces a new discourse referent, instead of anaphorically referring back to a previously mentioned individual of the same kind (Matthewson, 1998b, p.104ff.).

(48) Ngo(=i yo'oto) rino. Ngo(=i yo'oto) imu lakɗu.
person=LINK DET.INDF.M enter.PFV.VENT person=LINK DET.INDF.M do.1PL.DEP greet.NMLZ
"A man entered. A man greeted us."
(Consultant comment: Two men. If it is the same person, *Ngo rino, imu lakdu* would be better. With *yo'oto*, it is necessarily a second person.)

For *yo'oto*, the requirement that the DP introduces a new discourse referent is stronger than in English, cf. (49): whereas the corresponding bare noun variant *ngo* can have an interpretation where the person and Kule corefer, *ngoi yo'oto* necessarily introduces a new discourse referent.

(49) Kule teɗeno ki ka ka'a ngo=i yo'oto teɗeno
Kule arrive.PFV.VENT because.of like.that person=LINK INDF.DET arrive.PFV.VENT
"Kule arrived, therefore a person arrived."
(Comment: As soon as Kule arrives, somebody else follows. Two people arrive.)

DPs with this determiner can take wide or narrow scope with respect to modals and negation,

[23] The translation as 'a certain' might thus be misleading, it rather seems to mean "a previously unmentioned".

whereas bare nominal indefinites can only take narrow scope (like in Hausa, cf. Zimmermann and Grubic, 2010a). For this reason, the bare noun variant of (50) can easily be followed up with *lei a siyasai yiya* (= "any politican"/"no matter which politician"). For *yo'oto*, this is also possible, but only in the "another politician" reading, where Hawwa has been married to a politican before.

(50) Hawwa nda kena a siyasa(=i yo'oto).
Hawwa want.PFV marry one.who.is politician=LINK DET.INDF
"Hawwa wants to marry a politician."
(Comment for the bare noun: a politician in general — any politician; Comment for *yo'oto*: must be a specific person among the politicians — or one politician divorced her, and she wants to marry another politician!)

A further difference between the two kinds of indefinites is that only the bare nominal indefinite can be interpreted as generic, cf. (51).

(51) Mandu[(#=s so'oto)] a ha'ashe yinsa bu baya a shutantik shiri.
woman=LINK DET.INDF 3SG.HAB eat.HAB egg NEG because 3SG.HAB learn.HAB.TOT theft
"A woman doesn't eat eggs because she will learn to steal."
(Comment: with *so'oto*, it is not general anymore, it concerns a specific woman.)
(gudi_superstitions.pdf, no. 1)

Definiteness The postnominal determiner clitic *=s'e* (f)/ *=i'e* (m/pl)[24,25] is usually used to anaphorically refer back to prementioned discourse referents. Its form varies with the position of the DP in the sentence and with whether the preceding noun ends in a vowel or a consonant, e.g. (52): (52-a) shows spontaneously produced phrase-final forms, whereas (52-b) shows non-final forms.

(52) a. Ne moishentik **bido=i'e** / **ada=i'e** / **ngirak ye'e** / **totol ye'e**
1SG see.HAB.TOT monkey=DEF.DET dog=DEF.DET vervet DEF.DET chigger DEF.DET
"I can see the (prementioned) monkey/dog/vervet monkey/chigger insect."
b. Ne tamko **bido=i** / **ngirak=i'e** ki Kule
1SG showPFV monkey=DEF.DET vervet=DEF.DET to Kule
"I showed the (prementioned) monkey/vervet monkey to Kule"

DPs with this determiner cannot introduce a new discourse referent (53), and are therefore not felicitous out of the blue (54), not even in cases where this is felicitous for English *the*, cf. (55). For these kinds of definites, which are not anaphoric but refer to the unique salient individual of this kind in the context, the bare definite is used.

(53) Ngo rino. **Ngo=i** imu lakɗu.
person enter.PFV.VENT person=DEF.DET.M do.1PL.DEP greet.NMLZ
"A man entered. The man greeted us."
(Consultant comment: Necessarily the same person)

[24]Schuh (2004a, p. 15) suggests that the determiner is 'è', and the preceding 's' (f) /'i' (m/pl) is a linking morpheme.
[25]Newman (2000, p.144) notes that there is a common definite article /-i/ found in many West Chadic languages, e.g. Kanakuru (as well as in Pero (Frajzyngier, 1989, p.131) and in Tangale (Kidda, 1993, p.25)), and suggests this as one possible source for the definite article ì found in some dialects of Hausa.

(54) (A bookshop owner recommends a book to a new customer—they haven't spoken before):
Woiye takarda a ka **la mandu (#s'e)**. Sunto Hassana.
this book on head child woman DEF.DET.F name=3SG.F.POSS Hassana
"This is a book about a/#the girl. Her name is Hassana."

(55) ɗo Njelu hinɗa=i, **tere (*=i)** bulinni.
when Njelu get.up=I moon =DEF.DET.M shine.ICP
"When Njelu got up, the moon was shining."

In other cases, the definite article has a wider distribution than definite articles in English: It can co-occur with proper nouns (56-a) and pronouns (56-b), as well as with demonstratives (56-c).

(56) a. Halima=s
Halima=DEF.DET.F
"('the') Halima"

b. te=s
she=DEF.DET.F
"('the') she"

c. mandu wonsi=s
woman DEM=DEF.DET.F
"that ('the') woman"

In addition, it can co-occur with possessive pronouns (57-a), and even with the 'indefinite determiner' (57-b). Here it has the meaning 'the other one', and, unlike similar constructions in Hausa (Zimmermann, 2008b, p.444), cannot just refer to a specific prementioned individual (58)[26].

(57) a. ɗeino=mu=s
staying=1PL.POSS=DEF.DET.F
"This (lit. the) staying of ours"
(D1G_GKA_006)

b. a siyasa=i yo'oto ye'e
one.who.is politician=LINK DET.INDF DET.DEF
"the other politician"

(58) (Context: There is only one politician in Mubi.)
Hawwa nda kena a siyasa=i (#yo'oto) ye'e.
Hawwa want.PFV marry one.who.is politician=LINK DET.INDF DET.DEF
(intended:) "Hawwa wants to marry the (specific) politician."
(Consultant comment: not possible, there must be two politicians.)

Demonstratives Demonstrative determiners are also post-nominal, but in contrast to definite and indefinite determiners, they do not use a linking morpheme (Schuh, 2004a, p.15). The following examples are from Schuh et al. (2009).

(59) a. tèmshi wònsi'ì
ewe DEM
"that ewe"
b. tèmshi wònse'è
ewe DEM
"this ewe"

(60) a. gâm wòmmi'ì
ram DEM
"that ram"
b. gâm wòye'è
ram DEM
"this ram"

(61) a. tèmka mằmi'ì
sheep DEM
"those sheep"
b. tèmkà mằye'è
sheep DEM
"these sheep"

3.4.2 Expanded NPs

Possessives Possessive pronouns are the form of the usual dependent pronouns (see section 3.4.3). They follow the head noun and are linked to it by a linking morpheme *-ŧ-* (f) / *-ñ-* (m/pl)

[26]The fact that this is not possible is a further indication that the main characteristic of *yo'oto* indefinites is not specificity, but novelty.

(Schuh, 2004a)[27]. The linking morphemes are not overtly realized in all cases, the generalization seems to be that the *-ì-* morpheme is overtly realized before pronouns beginning with */k/* (Schuh, 2004a, p.2), whereas the *-ǹ-* morpheme is overtly realized following nouns ending in a vowel (Schuh, 2004a, p.5). The following examples, with the feminine noun *sàrà*, the masculine noun *tìlì*, and the plural expression *tèmkâ* are from Schuh (2004a). Through tone shift, all possessive pronouns receive a low tone from the linking morpheme, regardless of whether it is overt or not (Schuh, 2004a, p.5).

(62) sàra=**t**=kò
hand=LINK.F=2SG.M
"your (m) hand"

(63) tìli=**n**=kò
heart=LINK.M=2SG.M
"your (m) heart"

(64) tèmka=**n**=kò
sheep.PL=LINK.PL=2SG.M
"your (m) sheep (pl)"

In *N + N genitive constructions*, there is a *-k-* genitive linker when the head noun (i.e. the initial noun) is feminine, but no linker when the head noun is masculine or plural. In all cases, there is a floating H tone, which docks onto the next tone-bearing unit. In (65), this process turns the original low tone on *ngò* into a falling tone *ngô*, in (66), the original low tone on *tèmshì* is turned into a high tone (examples from Schuh 2004a, p.3 and p.7, respectively). There are additional tone changes, both in the first and in the second word — for a detailed description see Schuh (2009a, p.32-38).

(65) sàrà=k ngô
hand=LINK man
"hand of a person"

(66) tìlì temshì
heart sheep
"heart of a sheep"

(67) ma'i riya=i na'ako
king bush=LINK big
"great king of the bush"

The gender of the whole N+N genitive construction is that of the head noun, as can be seen e.g. in (67), where *ma'i* ('king') is masculine, *riya* ('bush') is feminine, and *ma'i riya* ('king of the bush') is masculine, as can be seen by the *=i* linker linking it to the following adjective.

Attributive adjectives and relative clauses When they modify a noun, adjectives follow it, linked by a linker *s/sò* (f.), *ì /yò* (m.), or *m/mà* (pl.) agreeing with the noun (Schuh et al., 2009), cf. (68)–(69) . The following examples are from Schuh (2004a, p.14).

(68) a. tèmshi=s hetrè
ewe=LINK white
"white ewe"
b. gam yò hetrè
ram LINK white
"white ram"
c. tèmka mà hetrè
sheep LINK white
"white sheep (pl)"

(69) a. tèmshi=s ngàrnò
ewe=LINK tie.STAT
"tied up ewe"
b. gam yò ngàrnò
ram LINK tie.STAT
"tied up ram"
c. tèmka mà ngàkrēnò
sheep LINK tie.PL.STAT
"tied up sheep (pl)"

The kinds of attributive adjectives shown in (69) are *statives*. They are derived from verbs and

[27] Kin terms (e.g. *bɔ̀tî* ('father')) do not behave like regular possessives (Schuh, 2004a, p.8-11). When combined with a possessive pronoun and as the head noun in N + N constructions, kin terms do not allow a linking morpheme, and the tone patterns suggest that possessive pronouns are incorporated. The kin terms that allow this require a suffix: if there is no possessive pronoun, a suffix *-ti* is added. See Schuh (2004a) for information on Ngamo possessives.

indicate a state[28]. The stative always ends in *=no*, which, as Schuh (2009a, p.14) shows, carries a floating tone. Statives are used as adjectives (69), adverbs (70), and as predicates (71).

(70) Daho wo'oko wo'oto (a) ɗeno.
Daho cook.PFV tuwo at sit.STAT
"Daho cooked the *tuwo* sitting."

(71) Daho (a) ɗeno.
Daho at sit.STAT
"Daho is sitting."

In *relative clauses*, the linker *sò* (f), *yò* (m), or *mà* (pl) functions as the relative pronoun (Schuh, 2004a, p.14)[29]. This relative pronoun can be shortened (e.g. *yò* to *i*) but cannot be left out (72-a). The relative clause can be headless, but not without the relative pronoun (72-b). When the relative pronoun refers to an animate relative clause subject, it is alternatively possible to use *àn* (f) / *à* (m)/ *ànà* (or *ànìn*) (pl) 'one who has' / 'one who does' , cf. (72-c) (see Newman 2000, p.323-325, and Schuh and Gimba (in prep.) for similar constructions in Hausa and Bole).

(72) a. Ngo *(=i/yo) esha Shuwa(=i) lapko.
man REL.M call.PFV Shuwa=DET.M answer.PFV
"The man that called Shuwa answered."
b. *(Yo) esha Shuwa=i lapko.
REL.M call.PFV Shuwa=DET.M answer.PFV
"The one that called Shuwa answered"
c. Ana esha Shuwa=i lapanko
ones.that.do call.PFV Shuwa=DET.PL answer.PL.PFV
"The ones that called Shuwa answered"

Numerals Numerals follow the head noun, e.g. (73)[30]. Examples with nouns that have a commonly used plural form suggest that the head noun must be plural for numerals greater than one (73-a), although there are examples in the texts that look as though the head noun can be singular (73-b) (like in Hausa, cf. Newman 2000, p.382). For numerals greater than one and animate nouns, it is possible to add a classifier consisting of *kà* (= 'head') and a possessive pronoun, e.g. (73-c) (Schuh et al., 2009, p.47). The Hausa classifier *guda* is also commonly used.

(73) a. *kom kunu
cow three
"three cows."
("komshine kunu!")

b. kushi kunu
baobab three
"three baobabs"
(D1G_ZH2_041)

c. komshineno kasu kunu
cattle=1SG head=3PL three
"my three cows"
(gudi_riddles_20)

[28]For Bole, Schuh and Gimba (in prep.) note that in statives derived from intransitives, it is usually the subject that is in this state, in statives derived from transitives, it is usually the object.

[29]Schuh (2004a) compares Gudi Ngamo to Yaya Ngamo, which has a true relative pronoun *dɔ̀* in addition to a linking morpheme, cf. examples (i) and (ii).

(i) gam-'ì dɔ̀ pàtâ (Yaya)
ram=LINK REL exit.PFV
"the ram that left"

(ii) gam yò hàtâ (Gudi).
ram LINK exit.PFV
"the ram that left"

[30]These are the basic cardinal numbers (Schuh et al. 2009, cf. Ibriszimow 2006, p.37 for a slightly different picture.):

1 = mɔ̀ɗî 2 = bòlò 3 = kùnû 4 = hòɗɔ̀ 5 = bàƈ
6= bà'àshìmɔ̀ɗì 7 = bābìlò 8 = hōrɗɔ̀ 9 = ɓɔ̀nùm 10 = bìmbàƈ

The word *bìmbàƈ*, which also occurs in Bole and Karekare, literally means 'house of five' (Schuh and Gimba (in prep.)). Numbers from eleven to nineteen are made up of *dìr* + the numeral from one to nine, e.g. twelve = dìr bolò. Twenty, thirty, etc. are made up by prefixing *bì* in front of a basic cardinal number, e.g. twenty = bìbòlò. To form e.g. numbers from twenty-one to twenty-nine, a basic cardinal number is added using *=k/kì*, e.g. twenty-five = bìbòlok bàƈ. Similarly, numbers above one-hundred (*dalmâ*) are formed by adding *dalma kì N*.

Quantifiers This section concentrates mainly on universal quantification and the quantifiers *few*, *many* and *most*. Existential quantification ('some', 'somebody') is briefly discussed in section 3.4.1 above, and negative existential quantifiers ('no', 'nobody') don't seem to exist in Ngamo (similar to Hausa, cf. Zimmermann 2008b, p.442). Instead, it is usually expressed using a bare noun, e.g. *ngo* (="person"), and negation (74-a), sometimes together with *an* (= 'there is') (74-b).

(74) a. Ne bolko ngo bu
1SG come.across.PFV person NEG
"I met nobody."

b. an goyou bu
there.is game NEG
"with no playing around"
(D1G_GKA_032)

In the following section, a further method for expressing negative existentials will be discussed, using a combination of the universal distributive quantifier and negation.

Universal quantification The general pattern for the distributive universal quantifier *everyone* seems to be one in which either the additive-scalar *lei* or the additive *ke* (see section 6), or both combine with a *wh*-expression, cf. (75) for some examples[31]. The *wh*-elements *yīyà/sīyà* (= 'which', m./f., respectively) are also used for adnominal "every", e.g. (76). They are linked to the noun with a linking morpheme. Prepositions can precede or follow *lei*, e.g. *lei ki miya ke* ('for/with everything') or *(ki) lei (ki) mandus siya ke* ('for/with every woman').

(75) a. (lei) lo (ke) = everyone
b. (lei) miya (ke) = everything
c. (lei) tiya (ke) = everywhere
d. (lei) tomiya (ke) = always

(76) a. (Lei) mandu=s siya (ke)
even woman=LINK which also
"every woman"
b. Mandu lei siya (ke)
woman even which also
"every woman"

These universal quantifiers also have a free choice reading as *any person / whoever*, similar to their counterparts in Hausa (Zimmermann, 2008b), cf. (77). These expressions require either *lei* or *ke* or both to co-occur with a *wh*-expression, and additionally contain a conditional.

(77) a. (Lei) lo (ke) na ndino, ne lakɗa si.
even who also if go.PFV.VENT 1SG greet.FUT 3SG
"Whoever comes, I will greet him."
b. (Lei) mandu=s siya (ke) na ndino=i, ne lakɗa te.
even woman=LINK which also if go.PFV.VENT=I 1SG greet.FUT 3SG.F
"No matter which woman comes, I will greet her."
(Comment: without *siya*, this means "Even if a woman comes, I will greet her.")

A reading corresponding to the English negative polarity item *any* is possible with the basic *wh*-elements and *lei* (78-a). *Lei* is obligatory: the *wh*-elements cannot occur alone or only with *ke*. When *lei* was there, a *ke* following the *wh*-word was judged to be marginally possible. In the adnominal cases, there was no *wh*-element, just *lei* (78-b) —with the *wh*-element, it received a

[31] Instead of *lei*, the particle *ko* can be used, which is possibly borrowed from Hausa. Ziegelmeyer (2009) suggests that numerous languages in Northern Nigeria, southern Niger and northern Cameroon borrowed Hausa *kō* for use in similar constructions, including other West-Chadic languages like Ngizim, but also some dialects of Fulani and — via Fulani — Chamba-Daka (both Niger-Congo) (for the latter, see Boyd 2005). For the Hausa construction, cf. e.g. Meyers (1974), Attouman (1985), Zimmermann (2009), Ziegelmeyer (2009) and sections in Newman (2000), Jaggar (2001). In Hausa, *kō* functions as a disjunction marker, a question particle in *y/n*- and alternative questions, a subordinating complementizer "whether", an additive-scalar particle, and a marker of concessive conditionals.

universal reading (79).

(78) a. Ne wa *(lei) miya bu.
1SG get.PFV even what NEG
"I didn't get anything."

b. Ne wa lei wo'oto bu.
1SG get.PFV even tuwo NEG
"I did not get any tuwo."

(79) Ne wa (lei) wo'oto yiya (ke) bu
1SG get.PFV even food which also NEG
"I didn't get all (kinds of) food."
(Consultant comment: some but not all — this cannot mean that he got no food.)

Crosslinguistically, many instances of distributive universal quantification and free choice expressions consist of *wh*-elements combined with additive or additive-scalar particles (cf. e.g. Haspelmath 1995, p.369 for universal quantifiers, and König 1991, p.66 and Haspelmath 1997, p.136, 159f. for free choice expressions). The literature on this topic is too broad to discuss here, but it is interesting that both in Hausa and Ngamo, the additive-scalar particle used in these constructions is the one used in negative contexts, and in concessive conditionals. *Lei*, in contrast to Hausa *ko*, is neither used as a disjunction nor a question marker, nor as a complementizer.

Non-distributive universal quantification The most common way to express non-distributive universal quantification is *shap* ("all", "completely") or *kirkir* ("all", "both", "completely"). *Shap* and *kirkir* occur post-nominally, often followed by a pronominal clitic with a partitive meaning, shown in (80) for shap. Thereby, the pronoun must be plural for plural count nouns (80-a), and singular for mass nouns (80-b). For count nouns that don't have a distinct plural form, the pronoun can be either singular or plural (80-c) — even though regular singular count nouns disallow *shap* (80-d).

(80) a. milla shap=su/*=ni
children all=of.them/=of.him
"all children"

b. ham shap=ni/*=su
water all=of.him/=of.them
"all the water (m)"

c. sara shap=to/=su
hand all=of.her/=of.them
"all of the hand(s) (f)"

d. ??ngo shap=ni
person all=of.him
(intended:)"all of the ??man/*men"

Any possessive pronouns or DPs directly follow the noun (81). Numerals follow *shap/kirkir* (82).

(81) a. milla=ni shap=su
children=3SG.M.POSS all=of.them
"all of his children"

b. milla zonge kirkir=su
children hyena all=3PL
"all the hyena's children."
(D1G_ZH1_261)

(82) sara=su shap=to bolo
hand=3PL all=3SG.F two
'both their hands"
(sup_D2G_007)
(Consultant comment: if it is 2 people, we're talking about four hands.)

Shap and *kirkir* can be used alone (83)–(84).

(83) Shap ke 'yanko ono
all PRT do.PFV.PL give.PFV.1SG.DEP
"They have all done it and given to me [. . .]."
(Audu et al. 2009, p.26)

(84) Kirkir salanko bano.
all build.PL.PFV house
"(they) all built a house."

In contrast to the distributive universal *lei+wh+ke* discussed above, *shap* and *kirkir* require plural agreement on the verb, and pronouns which refer back to *all*-DPs are plural (85) (cf. Vendler, 1967, Baker, 1995, Gil, 1995).

(85) a. [Biya shap / kirkir]$_i$ salanko bano=su$_i$/*=ni$_i$
people all / all build.PL.PFV house=3PL.POSS/3SG.POSS
"All people$_i$ built their$_i$ houses / his$_{*i}$ house."
b. [Ngo yiya ke]$_i$ salko bano=ni$_i$/=*su$_i$
person which also build.PFV house=3SG.POSS/3PL.POSS
"Every man$_i$ built his$_i$ / their$_{*i}$ house."

In addition, DPs with *shap* and *kirkir*, but not *lei+wh+ke* DPs, are interpreted collectively, so that they can occur with collective predicates (Gil 1995, p.322, Vendler 1967, p.72-74), cf. (86).

(86) a. Biya shap / kirkir a haɓri ki zehe
people all / all IPFV patient with each.other
"All men are patient with each other."
b. Lei ngo yiya ke a haɓri ki zap'i/*zehe
even person which also IPFV patient with each.other/peer
"Everybody is patient with his peer /*each other."

Few, many, most The quantifiers *shei* (= 'many', 'much', 'most') and *(la) shim* (= 'a few', 'a little') are post-nominal.

(87) Biya shei salanko bano.
people many build.PL.PFV house
"Many/several people built a house."

(88) Biya (la) shim salanko bano.
people few build.PL.PFV house
"Few men built a house."

I believe that *many*, rather than *most*, is the core meaning of *shei*, since it can be used in contexts like (89), even though less than half of Kule's children study in England. In contrast to English *many*, *shei* can however be used with mass nouns (90-a). It cannot, however, be used with singular count nouns that have a commonly used plural, cf. (90-b).

(89) Kule has 24 children. 10 of them study in England.
Milla Kule shei a karatu a Ingila
children Kule many 3PL.SBJV read.SBJV.VENT at England
"Many of Kule's children study in England."

(90) a. Ham shei
water a.lot
"a lot of water"
b. *Ngo shei
person a.lot
"a lot of people"

Shim and *shei* follow possessive pronouns (91).

(91) a. Millani shim
children.3SG.POSS few
"His few children"

b. Millanoi shei
children.1SG.POSS many
"My many children"

Partitive expressions use a PP headed by *kì* (= 'from', 'via') (92)–(93). Even though some instances were translated as "many", my main language consultants suggested that constructions like this are used to unambiguously express *most*, cf. e.g. (94).

(92) Shei ki millanoi
many of children.1SG.POSS
"Many of my children"

(93) Shim ki millani
few of children.3SG.POSS
"Few of his children"

(94) Kule has 24 children. 10 of them study in England.
#Shei ki milla Kule a karatu a
many of children Kule 3PL.SBJV read.SBJV.VENT at
Ingila
England
"Many of Kule's children study in England."
(Consultant comment: it has to be more than half!)

In contrast to *shap*, *shei* and *shim* can be used as predicates (95), and in (96), *shim* is used as a noun.

(95) Kamu shei / shim / *shap.
head.1PL many few all
"We are many/few/*all."

(96) Ngo=i na kunna shim bu=i...
person=DET.M if thank.PFV small.thing NEG=I
"One who doesn't give thanks for the small things"
(gudi_proverbs.pdf, no. 72)

Word order From the available examples found in the Yobe Languages Research Project collection of texts and some elicited examples, it seems as though the linear order of constituents in the nominal domain is the following:

(97) noun > poss > dem / num / adj / rel > def.det

The order of the head noun, possessive, and demonstrative is shown in (98-a), where the possessor *dishmu* ("(of) our grandfather") follows the noun, and is followed by the proximal demonstrative *wonse* ("this (f)"). The same is shown with a pronominal possessive in (98-b). The order of the demonstrative and possessive cannot be changed (98-c).

(98) a. Mariri dish=mu wonse (noun > poss > dem)
oryx grandfather=1PL.POSS DEM.PROX.F
"This oryx of our grandfather"
(From *D2G_02_gam_ki_ada.pdf*, line 173)

b. Zaure=su wonse (noun > poss > dem)
entrance.room=3PL DEM.PROX.F
"This entrance room of theirs"
(From *D2G_02_gam_ki_ada.pdf*, line 104)

c. *Zaure wonse=su (*noun > dem > poss)
entrance.room DEM.PROX.F=3PL

The DP in (99-a), which is part of a sentence elicited as a translation, illustrates the spontaneous relative word order of the noun, demonstrative, numeral, and adjective. In elicitation, the order of the demonstrative, numeral, adjective and relative clause were however found to be free, cf. e.g. (99-b–c) for the relative order of the adjective and demonstrative:

(99) a. Takarda maye=i bolo=i nekshi=i (noun > dem > num > adj)
book DEM.PROX.PL=I TWO=I large.PL=I
"Those two large books."

b. takarda maye=i (ma) boloi (noun > dem > num)
book DEM.PROX.PL=I REL TWO=I

c. takarda *(ma) bolo maye=i (noun > num > dem)
book REL two DEM.PROX.PL=I
"Those two books"

The definite determiner *=s/se/=i/ye* seems to occur at the rightmost position of the DP, cf. (100).

(100) a. takarda na'ako(*=s'e) wonse
book big=DEF.DET.F DEM.PROX.F
b. takarda(=*s'e) so na'ako(=*s'e) wonse
book=DEF.DET.F REL big=DEF.DET.F DEM.PROX.F
"that big book"

The data in (99-a) and (99-b) are not entirely clear in this respect. According to (Schuh, 2004a), the linking morpheme between plural nouns and adjectives is *ma*, whereas the plural definite determiner is *=i/ye*, it is thus unclear whether the *=i* morphemes in these examples are repeated definite determiners or a neutral *=i* linker. One thing that is certain, however, is that the definite determiner *can* follow a relative clause, cf. (101). Whether the definite determiner can be doubled and occur both preceding and following the relative clause, as e.g. in Dera (Newman, 1974, p.96), will be left for further research.

(101) 'Ya ma ɗapanko=i a zeno ka tepur
things REL.PL break.PL.PFV=DET.PL 3.SBJ put.down.VENT.PFV head table
"The things that broke are lying on the table."

3.4.3 Pronouns

Table 3.12 shows the pronouns of Gudi Ngamo[32], cf. Schuh et al. (2009), Schuh (2004b), cf. also Ibriszimow (2006, p.39f.). As Schuh (2004b, p.9) notes, the dependent pronouns have the same form as possessive pronouns.

	Subject affixes	Independent pronouns	Dependent pronouns
1sg	nè	nè'è	=nò
2sg.f	shì	shî	=shì
2sg.m	kò	kôi	=kò
3sg.f	∅	tê	=tò
3sg.m	∅	sî	=nì
1pl	mù	mùnî	=mù
2pl	ngù	ngùnî	=kù
3pl	∅	nzùnî	=sù

Table 3.12: Pronouns in Gudi Ngamo

Apart from the subject affixes, the pronoun form does not indicate its function. For example,

[32]In contrast e.g. to the related languages Tangale, Pero, and Widala (Leger and Zoch, 2006), there are no logophoric pronouns in Ngamo. Leger and Zoch (2006, p.213) suggest that these southern languages of the Bole-Tangale group have adopted logophoricity via language contact with the surrounding Adamawa and Benue-Congo languages.

independent pronouns can be used as subjects in addition to the subject affixes (102-a), as direct objects (102-b), and as (emphatic) indirect objects (102-c). As mentioned above in section 3.2, in basic sentences, indirect object pronouns are dependent pronouns, cliticized to the verb, and preceding possible direct object pronouns, which are usually independent pronouns, e.g. (102-d). See section 3.3.4 for a brief summary of the orders of (dependent) pronouns and verbal extensions. The tonal pattern of dependent pronouns varies, depending on the tonal pattern of the verb (Schuh, 2010, p.2). For example, in the perfective, the tones of dependent pronouns are influenced by the elided perfective marker *-ko* (Schuh, 2004b). The tones in table 3.12 are those shown for dependent pronouns in unextended completive and subjunctive verb forms in Schuh (2004b, p.9). The tones of the subject pronouns are discussed in section 3.3.2 above.

(102) a. (Ne'e) ne malum
1SG.INDEP 1SG.DEP teacher
"I am a teacher."

b. Tamko ne'e ki Gaboye.
show.PFV 1SG to Gaboye
"(She) showed me to Gaboye."

c. Tamko Shuwa ki ne'e
show.PFV Shuwa to 1SG
"(She) showed Shuwa to ME."

d. tam**=ni** **te**.
show.PFV.3SG.M.DEP 3SG.F.INDEP
"(s)he showed her to him."

Apart from pronominal arguments, dependent pronouns are also used as possessive pronouns (cf. p.3.4.2), and in reflexive pronouns, which are formed using *kà̄* (= 'head') and a possessive pronoun, cf. table 3.13 for examples[33,34]. Dependent pronouns are also used as pronominal suffixes to intransitive verbs that agree with the subject, so-called *intransitive copy pronouns* (ICPs), a term introduced by Newman (1971) (cf. §3.3.3–§3.3.4), cf. table 3.14 for examples. These kinds of pronouns occur in many languages of the region, in fact all West-Chadic languages mentioned on p.46 have intransitive copy pronouns[35]. According to Frajzyngier (1977, p.82), ICPs in West Chadic languages can either be added to inherently transitive verbs to make them intransitive and possibly inchoative, or to intransitive stative verbs, making them inchoative. According to Schuh (2004b, 2005a, 2010), ICPs in Ngamo are however only used with intransitive verbs to express totality, which in turn is used as auxiliary focus (Schuh, 2005a), cf. chapter 4.1.2.

[33] Although body parts are the main source of reflexives, crosslinguistically (Schladt, 1999, p.111), the source *head* seems to be relatively uncommon: of his sample of 145 languages (71 African languages), 89 languages use body parts to form reflexives (60 of them being African languages), but only thirteen of them form their reflexives using the word for *head* (eight African languages). In the related language Pero, there are *body* and *head* reflexives (Frajzyngier, 1989, p. 183).

[34] Reciprocals, in contrast, are formed using the word *zèhè* (= 'each other', 'together'), which does not agree with the subject, e.g. (i) from Schuh et al. (2009, p.108).

(i) 'yə̀̀mu haßri kì zèhè.
"Let's be patient with each other."

According to Schuh and Gimba (in prep.), p.6 in the chapter on anaphors, *zèhè* originates from *zàptì* (= 'peer', 'compatriot'), similar to the Bole reciprocal *zàppè*, which also means "compatriots" or "peers". They note that these two languages thus differ from most other West Chadic languages, which use a reciprocal derived from the word for "body", e.g. Hausa *juna*, from an archaic plural of jìkī̄ (= 'body').

[35] cf. Tangale (Kidda 1993, p.36, Jungraithmayr 1991, p.59ff.), Dera (Newman, 1974, p.23), Bole, Karekare, Bade and Ngizim (Schuh 2004b, 2005a, 1972, Schuh and Gimba (in prep.)). In Hausa, ICPs are restricted to the verbs *zō̄* (= 'come') and *jē̄* (= 'go') (Newman, 2000, p.479), whereas in Dera, Tangale and Miya, they are almost obligatory with intransitive verbs, according to Schuh (2005a, p.19). They also occur in other Chadic languages, e.g. Pero, Tera, and Margi (Frajzyngier, 1977) some remainders in some Ron languages (Wolff and Gerhardt, 1977), and even in some Benue-Congo languages of the region (Wolff and Gerhardt, 1977). While Wolff and Gerhardt (1977) hypothesize that ICPs might be an innovation of the Chadic languages in that region, Newman (2006, p.197) suggests that they might be an inheritance from Proto-Chadic.

	Reflexive
1sg	kannò
2sg.f	kāshì
2sg.m	kakò
3sg.f	kātò
3sg.m	kannì
1pl	kammù
2pl	kakù
3pl	kāsù

Table 3.13: Reflexives

	Intransitive Copy Pronoun	
1sg	nè èrinnô	'I stopped'
2sg.f	shì èrīshî	'you stopped'
2sg.m	kò èrikkô	'you stopped'
3sg.f	èrītô	'she stopped'
3sg.m	èrinnî	'he stopped'
1pl	mù èranmû	'we stopped'
2pl	ngù èrankû	'you (pl) stopped'
3pl	èransû	'they stopped'

Table 3.14: ICPs in Ngamo, Schuh (2010, p.2; 2004, p.10)

3.4.4 Summary

This section presented a brief overview of the nominal system of Gudi Ngamo. It was noted in section 3.4.1 that bare nominals can have indefinite and definite readings, and that, in addition, there are postnominal indefinite and definite determiners, encoding familiarity and novelty, respectively. Section 3.4.2 discussed possessive constructions, attributive adjectives and relative clauses, and quantification. In possessive constructions, the possessor follows the head noun, and, depending on the kind of possessor and the grammatical gender of the head noun, may be linked to it by a linking morpheme. Similarly, adjectives and relative clauses are postnominal and linked using a linking morpheme, albeit a different one than in the possessive construction. Numerals and most quantifiers are also postnominal, and do not need a linker, with the exception of the complex distributive universal quantifier, e.g. *lei ngoi yiya ke* ('everyone'). In general, the order of constituents in the nominal domain seems to be *noun* > *poss* > *dem/num/adj/rel* > *def.det*. In section 3.4.3, the pronominal system of the language is introduced. There are subject affixes, and independent and dependent pronouns. Whether direct and indirect objects are realized as dependent or as independent pronouns depends on the verb morphology. For example, DO pronouns are realized as independent pronouns when there is no verbal extension, but as dependent pronoun with the totality extension.

3.5 Summary and outlook

This chapter gave a brief introduction to Gudi Ngamo. It started out with a discussion of the prosody of Gudi Ngamo in section 3.1, which distinguishes this dialect from Yaya Ngamo, and will be relevant for the discussion of the intonation of focus, discussed in section 4.1.3. Even more crucial for the discussion of focus in the following chapters is the word order of Ngamo sentences, presented in section 3.2. Whereas Ngamo is an SVO language, information structural factors like topic and focus change the word order, such that topics are sentence-initial, and foci are in a sentence-final or near sentence-final position. The discussion of the verbal system of Gudi Ngamo in section 3.3 included several aspects that will be important for this discussion, most notably subject-verb agreement, which will play a role for the discussion of subject focus, and the totality extension, which is discussed in relation to predicate focus in section 4.1.2. Finally, with respect to the nominal system discussed in section 3.4, the "definite determiner" *=i/ye* will play a large role in the discussion to come, since it is claimed to be related to the morphological marker *=i/ye* occurring in marked focus constructions, discussed e.g. in section 4.3.

Chapter 4

Focus and Backgrounding in Ngamo: Data

In the theoretical background, chapter 2, two problems for a 'simple' theory of focus were noted. First, focus interpretation and *focus realization* do not always correspond to each other, and second, so-called *focus-sensitive particles* do not always associate with the part interpreted as the focus of the utterance. The following chapters of this thesis investigate how Ngamo patterns in this respect, starting with the relation between focus interpretation and realization in chapters 4 and 5, and discussing the relation between focus interpretation and association with focus in chapter 6.

Section 4.1 gives an overview of the grammatical realization of focus in Ngamo, whereby sections 4.1.1 and 4.1.2 present an overview of the realization of focus on terms and predicates. Different kinds of realization patterns are identified: (i) insertion of a marker *=i/ye*, which is argued to mark the preceding constituents as backgrounded (Schuh, 2005b), (ii) syntactic reordering, so that the focus is clause-final, (iii) no marking. In the following section 4.1.3, a pilot study investigating the prosody of unmarked focus examples is presented. Section 4.1.4 then completes this overview with a discussion of the syntax of *=i/ye* constructions.

The following section 4.2 then turns to the relation between focus interpretation and realization. Section 4.2.1 discusses whether part of the focus can be backgrounded, i.e. whether it is possible to include a *=i/ye* marker within the focused constituent, or to move only part of the focused constituent. The contexts tested in this section involve partially given foci, and partially noteworthy foci. Section 4.2.2 then discusses the potential semantic differences between the different kinds of focus/background marking, i.e. whether the marked constructions mark contrast, exhaustivity, or unpredictability/noteworthiness (cf. §2.2.1). The conclusion of this section is that none of the factors discussed in section 2.2.1 are responsible for the different kinds of focus/background marking.

While no semantic or pragmatic differences concerning the interpretation of focus were found in Ngamo, one difference between the different constructions is overt *background marking*. Section 4.3 investigates the *=i/ye* background marker. Using the related definite determiner as a starting point, this section argues for a definiteness account for marked backgrounds.

4.1 Focus/background realization

This section is a general introduction to focus/background realization in Ngamo, based on original fieldwork — usually acceptability judgments, unless indicated otherwise[1]. Section 4.1.1 discusses the realization of term focus — e.g. focus on the subject, direct object, indirect object, and on adjuncts, whereas section 4.1.2 discusses the realization of predicate focus, i.e. focus on the verb, verb phrase, temporal/aspectual/verum operators, or the whole sentence. Section 4.1.3 discusses the prosodic realization of 'unmarked' focus, whereas section 4.1.4 discusses the syntax of 'marked' constructions.

4.1.1 Term focus

The following kinds of focus/background realization were accepted for focus on non-subject arguments and adjuncts: First, unmarked focus, i.e. canonical word order without morphological marking, as seen in the (a) examples in (1)–(3). Second, canonical word order with a morphological marker =*i* or *ye* immediately preceding the focused constituent, as seen in the (b) examples, and third, focus inversion with =*i*/*ye*, as seen in the (c) examples[2]. In translation, object and adjunct *wh*-questions and their answers were usually offered in the canonical word order[3].

(1) [Context: What did Mammadi give to Dimza?] **(DO_F)**

a. Mammadi onko **agoggo** ki Dimza.
Mammadi give.PFV watch to Dimza

b. Mammadi onko=*i* **agoggo** ki Dimza.
Mammadi give.PFV=I watch to Dimza

c. Mammadi onko ki Dimza=*i* **agoggo**.
Mammadi give.PFV to Dimza=I watch
"Mammadi gave A WATCH to Dimza."

(2) [Context: Mammadi gave a watch to Dimza yesterday] **(IO_F)**

a. Aa, Mammadi onko agoggo **ki Habu** nzono.
no Mammadi give.PFV watch to Habu yesterday

b. Aa, Mammadi onko agoggo=*i* **ki Habu** nzono.
no Mammadi give.PFV watch=I to Habu yesterday

c. Aa, Mammadi onko agoggo nzono=*i* **ki Habu**.
no Mammadi give.PFV watch yesterday=I to Habu
"No, Mammadi gave a watch TO HABU yesterday."

[1] See section 1.3 for an overview of the data and data collection methodology used in this thesis.

[2] These full answers are not the most natural answers. For given arguments and adjuncts which are out of focus, the most natural realization is one where they are elided, e.g. (i).

(i) [Context: To whom did she give the watch yesterday?]
Onko k(i) Shuwa
give.PFV to Shuwa
"(She) gave (it) TO SHUWA."

[3] In this chapter, SMALL CAPS in English indicate prominence. **Bold font** and *italics* are used to highlight certain aspects of the Ngamo sentences, to ease the understanding of the examples.

(3) [Where did Kule build a house last year?] **(Adj$_F$)**

a. Salko bano **a Potiskum** mano.
build.PFV house at Potiskum last.year

b. Salko bano=*i* **a Potiskum** mano.
build.PFV house=I at Potiskum last.year

c. Salko bano mano=*i* **a Potiskum**.
build.PFV house last.year=I at Potiskum
"He built a house IN POTISKUM last year"

Wh-questions in general have parallel realization patterns, i.e. unmarked or =*i/ye*-marked with or without a change in word order. Question/answer-congruence with respect to focus marking is preferred, e.g. that an unmarked question like Q1 in (4) receives an unmarked answer (A1), whereas a =*i/ye*-marked question like Q2 receives a marked answer (A2).

(4) Q1: Shuwa esha **lo**?
Shuwa call.PFV who
"Who did Shuwa call?"
A1: Shuwa esha **Jajei**.
Shuwa call.PFV Jajei
"Shuwa called JAJEI."

Q2: Shuwa esha=*i* **lo**?
Shuwa call.PFV=I who
"Who did Shuwa call?"
A2: Shuwa esha=*i* **Jajei**.
Shuwa call.PFV=I Jajei
"Shuwa called JAJEI."

The =*i/ye* marker The morphological marker =*i/ye* appearing in these constructions can usually occur in either variant, except when the preceding word ends with a consonant (5)–(6)[4]. Where both are possible, *ye* is seen to be more insistant or emphatic.

(5) a. Esha Husam/Hassan/Abdul/Zeinab/Jibir/Anas **ye/*=i** lo?
call.PFV Husam/Hassan/Abdul/Zeinab/Jibir/Anas I who
"Who called Husam/Hassan/Abdul/Zeinab/Jibir/Anas?"

b. Esha Lakka/Kule/Gimsi/Gizo/Njelu **=i/ye** lo?
call.PFV Lakka/Kule/Gimsi/Gizo/Njelu I who
"Who called Lakka/Kule/Gimsi/Gizo/Njelu?"

(6) a. Si esha Husam/Hassan/Abdul/Zeinab/Jibir/Anas **ye** nzono
3SG call.PFV Husam/Hassan/Abdul/Zeinab/Jibir/Anas I yesterday
"He called Husam/Hassan/Abdul/Zeinab/Jibir/Anas YESTERDAY."

b. Si esha Lakka/Kule/Gimsi/Gizo/Njelu **=i** nzono
3SG call.PFV Lakka/Kule/Gimsi/Gizo/Njelu =I yesterday
"He called Lakka/Kule/Gimsi/Gizo/Njelu YESTERDAY."

Following seminal work by Schuh (2005b, p.93), I will assume that this marker is a *background marker* rather than a focus marker[5]. Schuh notes that background marking is an areal feature: whereas other languages at the eastern edge of the West Chadic region use similar syntactic focus marking strategies, only the languages spoken in the Potiskum region make use of a

[4]Thanks to Malte Zimmermann (p.c.) for suggesting this to me.

[5]I will refer to any focus/background construction containing a background marker =*i/ye* as "=*i/ye*-marked focus construction". This does not mean to imply that I take =*i/ye* to mark *focus*.

morphological marker of this kind (Schuh, 2005b, p.93)[6]. These morphological markers all stem from the definite determiner and are related to similar morphological markers marking temporal adverbial clauses and conditionals, cf. table 4.1, adapted from Schuh (2005b)[7].

	Ngamo	Bole	Karekare	Ngizim
DET	def: **-i[/ye]**	def:yê	def:yi, dem:âm	dem:tənu, def:-gu
BM	**-i[/ye]**	ye	nà	-n[/nən]
if/when	na...(**-i[/ye]**)	bàa...(ye)	...ye/ya	-n/nən
when	[ɗo ... (**-i/ye**)]	ye	...(ma)	...(tənu/ngum)

Table 4.1: Yobe State languages: morphological markers

Both the definite determiner *=i/ye* (m.), and the marker of conditionals *=i/ye* scope leftward (7), as do some other functional elements, e.g. the negation (8), providing some support to the claim that *=i/ye* in focus/background constructions marks the background to the left, rather than the focus to the right.

(7) a. bi ye
room DET.M
"the (previously mentioned) room"

b. Na iko ham ye, bano=no nzere.
COMPL do.PFV water YE house=1SG.POSS leak.HAB
"If/When it rains, my house leaks."

(8) bano bu
house NEG
"not a house"

Apart from the formal similarity to the definite determiner, there are other properties of the background marker that support an analysis of *=i/ye* as a background marker rather than a focus marker: First, in contrast to languages with morphological focus marking (e.g. Yom, Oti-Volta, (9), from Fiedler 2006), the background marker in Ngamo does not occur in short answers to *wh*-questions (10).

(9) YOM (Oti-Volta), cf Fiedler (2006)
Q: Who is eating bananas?
A. béséŕwá **=rà**
girl =FM
"The GIRLS."

(10) NGAMO:
Q: Who answered?
A: **(*I/*Ye)** Jajei.
BM Jajei
"JAJEI"

Second, *=i/ye* can occur twice in a clause with only one focus. For example, (11) shows a second *ye* marker following the focused constituent[8]. In example (11), the final *ye'e* cannot be a definite determiner, since *Potiskum* takes the feminine determiner *s/se/se'e* (12) .

(11) Kule salko **=i** bano a Potiskum **ye'e**
Kule build.PFV BM house at Potiskum BM
"Kule built a HOUSE in Potiskum."

(12) Potiskum =se
Potiskum DET.F
"the Potiskum'

[6] Truckenbrodt et al. (2008) argue that there is a morphological marker [-n], sometimes realized as an empty mora [-μ], in Shongom Tangale, a language spoken outside the Potiskum region, but it bears no relation to the determiner system.

[7] I included *ye* and the *when*-clause marker *ɗo* in Ngamo, and the Ngizim background marker *nən* as a variant of *-n* (for *nən*, cf. Schuh, 1972, p.210). Note that the origin of the Karekare *na* marker is unclear. Schuh (2005b, p.93–94) tentatively suggests that it may either be related to the *when*-clause marker *ma*, or to the Ngizim *-n/nən*.

[8] The form *ye'e* is the phrase-final variant of *ye*, cf. section 3.4.1 for a similar variation of the definite article.

Focused subjects and the subject/non-subject asymmetry For focused subjects, unmarked *wh*-questions and answers were accepted (13), although the inverted word order was preferred (14), especially for answers. Canonical word order with a morphological marker *=i/ye* preceding the subject was rejected, also in embedded clauses (15)–(16)[9].

(13) Q: **Lo** lapko ye?
who answer.PFV Q
"Who answered?"
A: **Hawwa** lapko.
Hawwa answer.PFV
"HAWWA answered"

(14) Q: Salko bano**=i lo**?
build.PFV house=I who
"Who built a/the house?"
A: Salko bano**=i Shuwa**.
build.PFV house=I Shuwa
"SHUWA built a/the house."

(15) ***I/Ye Hawwa** lapko.
I Hawwa answer.PFV
(intended:) "HAWWA answered."

(16) *Kule anko ta**=i Shuwa** lapko
Kule say.PFV COMP=I Shuwa answer.PFV
(intended:) "Kule said that SHUWA answered."

The S_FVO word order behaves in many respects like all-focus sentences: subject pronouns are in their regular form (17)-(18), and there is subject-verb agreement with respect to number (17) .

(17) Q: Who answered?
A: **Mu** / ***Muni** lapanko
1PL.DEP 1PL.INDEP answer.PL.PFV
"WE answered."

(18) A: Hawwa called Wuruwa.
B: ʔAa, **ne** esha te.
no 1SG.DEP call.PFV 3SG.F
"No, I called her."

In contrast, there are some differences between all-focus sentences and sentences with focused, inverted subjects[10]: (i) no subject-verb number agreement (19-a-b)[11], (ii) 'independent' pronoun instead of the dependent subject pronoun (19-c), (iii) the morphological marker *=i/ye* (19-d).

[9]Embedded clauses were tested since Judith Tonhauser (p.c.) proposed that the inacceptability of initial *=i/ye* markers might just be due to their clitic status. In general, canonical S_FVO word order is expected to be fine in embedded clauses, since the corresponding *wh*-questions are felicitous (i). Subject inversion is also possible (ii).

(i) Jajei anko ta **lo** salko bano?
Jajei say.PFV COMP who build.PFV house
"Who did Jajei say built the house?"

(ii) Jajei anko ta salko bano=i Shuwa.
Jajei say.PFV COMP build.PFV house=I Shuwa
"Jajei said that SHUWA built the house."

[10]In focus/background constructions with non-canonical word order, such as subject inversion, *=i/ye* marking is obligatory. For this reason, *subject inversion* refers to the combination of word order changes and *=i/ye* marking.

[11]With regular verbs, only number agreement is marked, but data with reflexive pronouns (i) and intransitive copy pronouns (ii) reveal that there is also no gender (and person) agreement.

(i) Moiko *kanni*=i / ??*kato*=i **Asabe**.
see.PFV head.3SG.M.POSS=BM head.3SG.F.POSS=BM Asabe
"ASABE saw herself."
(Comment: *kato* only possible in an answer to "Moiko kato=i lo?" [= Who saw herself?])

(ii) Matini=i Asabe (ki Kule)
die.ICP.M.SG=BM Asabe and Kule
"ASABE (AND KULE) died."
(Comment: better than "Matito=i Asabe" / "Matansu=i Asabe ki Kule."; "Matko=i Asabe" is best)

(19) a. Lapko=i **muni**
answer.PFV=BM 1PL.INDEP
"WE answered."

b. ??Lap**an**ko=i muni
answer.PL.PFV=BM 1PL.INDEP
(intended:) "WE answered."
(Ok as "(They) answered us.")

c. *Lapko=i **mu**
answer.PFV=BM 1PL.DEP
(intended:) "WE answered."

d. *Lapko muni.
answer.PFV 1PL.INDEP
(intended:) "WE answered."

The elicitation data thus do not entirely confirm Schuh (2005b, p.92–93)'s findings that there is a subject-non-subject asymmetry in Ngamo, whereby focused subjects are marked by inversion, and focused non-subjects remain unmarked[12]. While this may be true for production tasks, marked non-subject foci and — to some extent — unmarked subject foci were also accepted in elicitation. Section 6 will however cast some doubt on the focusability of preverbal subjects, since the focus-sensitive exclusive particle *yak('i)* (= 'only') cannot associate with them. It is not entirely clear to me why initial *wh*-elements were accepted. It may be that they are instances of another question marking strategy: initial direct object *wh*-elements and — marginally — foci were also accepted in elicitation (20).

(20) Q: **Lo** Shuwa esha yam ye?
who Shuwa call.PFV loudly Q
"Who did Shuwa call loudly?"

A: ??**Jajei** Shuwa esha yam (ye)
Jajei Shuwa call.PFV loudly I
"Shuwa called JAJEI loudly."

Since initial *=i/ye*-marked focused subjects are not possible, and the status of initial unmarked subjects is unclear, the discussion of focused subjects will concentrate on inverted subjects.

Non-canonical word order In non-canonical word order, foci can never occur between the verb and the direct object, cf. the focused subject in (21), indirect object in (22), and adjunct in (23).

(21) [Who built a house in Nigeria last year?]
A: *Salko=*i* **Kule** bano a Nigeria mano. (*V S_F DO A A)
build.PFV=I Kule house at Nigeria last.year
(intended:) "KULE built a house in Nigeria last year."

(22) [To whom did she give the watch yesterday?]
A: *Onko=*i* **ki Gaye** agoggo nzono (*V IO_F DO A)
give.PFV=BM to Gaye watch yesterday
(intended:) "She gave the watch TO GAYE yesterday."

(23) [When did Kule build a house?]
A: *Salko=*i* **mano** bano. (*V A_F DO)
build.PFV=BM last.year house
(intended:) "He built a house LAST YEAR."

Otherwise, foci can occur in any position following the direct object, e.g. (24) for focused subjects, and (25) for focused indirect objects. As example (26) shows, a linear order in which the focused constituent occurs to the left of its usual position is also possible: a temporal adjunct usually

[12]Subject/non-subject asymmetry in focus marking is common in West African languages, cf. Fiedler et al. (2010) for discussion.

follows a manner adverb in neutral word order; in (26-a), the temporal adjunct *nzono* however precedes the manner adverb *danom*.

(24) [Who built a house in Nigeria last year?] ($Subj_F$)
- a. Salko bano =*i* **Kule** a Nigeria mano.
  build.PFV house I Kule at Nigeria last.year
- b. Salko bano a Nigeria =*i* **Kule** mano.
  build.PFV house at Nigeria I Kule last.year
- c. Salko bano a Nigeria mano =*i* **Kule**.
  build.PFV house at Nigeria last.year I Kule
  "KULE built a house in Nigeria last year."

(25) [To who did Njelu send a letter from Potiskum yesterday?] (IO_F)
- a. Njelu sarko wasika=*i* **ki Kule** ki Potiskum nzono.
  Njelu sent.PFV letter=BM to Kule from Potiskum yesterday
- b. Njelu sarko wasika ki Potiskum *ye* **ki Kule** nzono.
  Njelu sent.PFV letter from Potiskum I to Kule yesterday
- c. Njelu sarko wasika ki Potiskum nzono=*i* **ki Kule**.
  Njelu sent.PFV letter from Potiskum yesterday=BM to Kule
  "Njelu sent a letter to KULE from Potiskum yesterday."

(26) [When did Shuwa carefully cook food?] (Adj_F)
- a. Shuwa wo'oka wo'oto=*i* **nzono** danom.
  Shuwa cook.PFV food=BM yesterday carefully
- b. Shuwa wo'oka wo'oto danom *ye* **nzono**.
  Shuwa cook.PFV food carefully BM yesterday
  "Shuwa carefully cooked food YESTERDAY."

Non-canonical word order without the =*i*/*ye*-marker was often rejected, cf. (27) for subject focus, and (28) for a direct object focus. Without =*i*/*ye*, the sequence of two proper names is most naturally interpreted as a N+N genitive construction (cf. section 3.4.2), according to my consultants (an interpretation also reported for similar constructions in Bole in Gimba 2005).

(27) Q: Who showed Urwa to Dimza?
A: Tamko Urwa#(=*i*) **Hassana** ki Dimza. ($Subj_F$)
show.PFV Urwa=BM Hassana to Dimza
"HASSANA showed Urwa to Dimza."

(28) Q: Who did Hassana show to Dimza?
A: Tamko ki Dimza #(=*i*) **Urwa** (DO_F)
show.PFV to Dimza =BM Urwa
"She showed URWA to Dimza."

Morphological marking was however also obligatory when the movement did not result in the juxtaposition of two DPs, e.g. with intransitive verbs, cf. (29).

(29) Q: Who died?
A: Matko *(=*i*) **Dayayi**. ($Subj_F$)
die.PFV BM Dayayi
DAYAYI died.

The only exception to this rule showed up with adjuncts and indirect objects (30)–(32). The order of adjuncts with respect to each other and to indirect objects is relatively free in Ngamo (cf. chapter 3.2), so that different orders do not necessarily need =*i/ye*-marking.

(30) [How did Habu call Jajei yesterday?] (Adj_F)
a. Esha te **yam** nzono.
call.PFV 3SG.F loudly yesterday
b. Esha te nzono **yam**.
call.PFV 3SG.F yesterday loudly
"He called her LOUDLY yesterday"

(31) [When did Shuwa build a house in Nigeria?] (Adj_F)
a. Shuwa salko bano a Nigeria **mano**.
Shuwa build.PFV house at Nigeria last.year
b. Shuwa salko bano **mano** a Nigeria.
Shuwa build.PFV house last.year at Nigeria
"Shuwa build a house in Nigeria LAST YEAR."

(32) [To who did Hassana show Urwa yesterday?] (IO_F)
a. Tamko Urwa **ki Dimza** nzono.
show.PFV Urwa to Dimza yesterday
b. Tamko Urwa nzono **ki Dimza**.
show.PFV Urwa yesterday to Dimza
"She showed Urwa to DIMZA yesterday."

In addition, the =*i/ye* marker can be omitted when there is a determiner preceding the focused or questioned constituent, cf. (33)[13]. There are however reasons to believe that these are not variants of the =*i/ye* marker. First, as seen in (33-b), the =*i/ye* marker can occur in addition. Second, with an intransitive verb, =*s* was only very marginally possible (34) .

(33) a. Salko bano**=s** lo?
build.PFV house=DET.F who
"Who built the house?"
b. Salko bano **wonse**(=*i*) lo?
build.PFV house DEM.F=I who
"Who built this house?"

(34) Teɗeno **=i** / ??**=s** lo?
arrive.PFV.VENT =BM =DEF.DET.F who
"Who arrived?"

[13]This was also found for non-subject focus in (i)— the definite determiner =*s* was expected to be unacceptable because the house is not prementioned, but the comment indicates that a question is accommodated.

(i) #Kule bo'ota bano**=s** mano.
Kule sell.PFV house=SE last.year
(intended:) "Kule sold **the** house last year."
(Comment: This is an answer to a question 'When did Kule sell the house?')

According to Schuh (2005a, p.14–18), the verbal extension called *totality extension* is dispreferred in marked term focus structures, since it marks "auxiliary focus" (cf. §3.3.4 for an introduction to verbal extensions in Ngamo). Following Hyman and Watters (1984), Schuh views the inability to co-occur with constituent focus as a defining criterion for auxiliary focus. The elicitation results in this respect are not entirely clear: while my language consultants agree that in some cases, e.g. (35), the unmarked verb form is better, the totality marked form does not seem to be ungrammatical. For a discussion of the totality extension with focus on the predicate, see section 4.1.2. In the S_FVO word order, e.g. (36)[14], the totality-extended form is regularly used.

(35) (You hear a cry: Shuwa!)
??**Eshitkok** Shuwa=i lo?
call.TOT.PFV Shuwa=BM who
"Who called Shuwa?"
(Comment: this means 'Who has already called Shuwa', or ' Who has called her away?' — she has left and gone there.)

(36) Q: Who died?
A: Dudu ki Shuwa **matansu(=ko)**.
Dudu and Shuwa die.PL.ICP=PFV
"DUDU AND SHUWA died."

Summary In Ngamo, the focus-background partition can remain unmarked, or can be indicated (i) morphologically, by the insertion of a background-marker *=i* or *ye* following the backgrounded part, and (ii) syntactically, by a change in word order. When the word order is changed, morphological marking is near-obligatory. In principle, there appear to be three different strategies for marking the focus-background partition in Ngamo:

- INVERSION: Change in word order, morphological marking
- I/YE-MARKING: No change in word order, morphological marking
- NO MARKING: No change in word order, no morphological marking

It was however found that subject focus is preferably marked by inversion. Preverbal focused subjects preceded by *=i/ye* were not accepted, while unmarked SVO sentences were marginal in subject focus contexts. In the following section 4.1.2, further kinds of non-subject foci are investigated, and found to be generally unmarked. Section 4.1.3 discusses the prosody of unmarked foci, while section 4.1.4 discusses the syntax of marked foci.

4.1.2 Predicate focus

The notion of *predicate focus*, i.e. focus on non-terms, encompasses sentential focus, verb- and VP-focus, focus on tense, aspect, or mood (TAM) (Zimmermann, 2015). I also include focus on the truth of a proposition (verum) under this heading[15]. In Ngamo, predicate focus usually remains unmarked, similar to non-subject term focus. Focus on the perfective aspect is marked

[14]Schuh (2010) provides paradigms that lead us to expect the form *matansu* in (36). My language consultants however say that *ko* is optional, cf. also (i), where *matito* is expected.

(i) Dayayi matito(ko)
Dayayi die.ICP.PFV
"Dayayi died."

[15]This notion of predicate focus is thus broader than the notion of predicate-centered focus used in Güldemann (2009), which only includes TAM focus, verum focus, and *state of affairs* (i.e. verb) focus.

using the totality extension (cf. §3.3.4 for an introduction to verbal extensions in Ngamo). Other means used in related languages for focus on the predicate, e.g. nominalization, were also found to be possible for some instances of predicate focus.

Unmarked canonical word order like (37) was the most natural way to respond to *wh*-questions eliciting sentential focus, VP-, and verb focus (38). In addition, (37) was judged best in two of the four verum focus contexts that were tested, namely answers to indirect *y/n* questions and corrections of negative statements (39) (cf. Zimmermann and Hole (2008) for different kinds of verum focus contexts). In TAM focus contexts focusing on the future, e.g. (40), unmarked focus was also judged to be best.

(37) Kule **basa** bo'i.
Kule shoot.PFV bush.duiker
"Kule shot a/the duiker."

(38) Q: What happened yesterday?
Q': What did Kule do?
Q'': What did Kule do to the duiker?

(39) A: I wonder whether Kule shot a duiker.
A': Kule didn't shoot a duiker.

(40) Q: Did Kule shoot a duiker?
A: A'a, Kule **a** **bese** bo'i.
No Kule 3SG.FUT shoot.FUT bush.duiker
"No, he WILL shoot a duiker."

In TAM focus on the perfective aspect and the two remaining verum focus contexts, the *totality extension* (cf. section 3.3.4) was preferred (41)–(42)[16]. In (42-a), an expected path of events is confirmed, in (42-b), a negative expectation is corrected. It seems to me that the totality extension is preferred in these two contexts because they contrast a future-oriented expectation with a completed past event. The totality extension is thus not used to signal verum focus in these examples, but focus on the perfective. The unmarked form was accepted in the two kinds of verum focus examples, but not consistently accepted in the TAM focus examples.

(41) Q: Will Kule shoot a duiker?
A: A'a, Kule har **basatkok** bo'i.
no Kule already shoot.PFV.TOT bush.duiker
"No, he already SHOT a duiker."

(42) a. Kule anko ta a bese bo'i, ke **basatkok** bo'i.
Kule say.PFV that 3SG.FUT shoot.FUT bush.duiker and shoot.PFV.TOT bush.duiker
"Kule said that he would shoot a duiker, and he DID shoot a duiker."
b. Ne anshe ta Kule a bese bo'i bu, me **basatkok** bo'i.
1SG say.HAB that Kule 3SG.FUT shoot.FUT duiker NEG but shoot.PFV.TOT duiker
"I didn't think (lit. "say") that Kule would shoot a duiker, but he DID shoot a duiker."

The suggestion that the totality extension marks perfective aspect focus is a departure from the analysis of Schuh (2005a), who suggests that the totality extension is used to mark *auxiliary focus*, a term adopted from Hyman and Watters (1984), which Schuh defines as 'explicit marking of focus on the verb in conjunction with its auxiliary features (tense, aspect, mood), as opposed to *constituent focus*, that is, explicit marking of focus on some constituent other than the verb,

[16]Note that *har*, which was translated as "already" in this context, is also used as a focus-sensitive particle meaning "even"/"until". See §6.1.3 for a further discussion of *har*.

typically a nominal or adverbial phrase'. It also differs from the conclusion arrived at in Hartmann et al. (2008) for similar data in Bura (Chadic, Biu-Mandara branch), who suggest that this is an instance of verum (or 'polarity') focus, but that verum focus can only be marked in the perfective aspect in Bura because the marking requires the event talked about to be completed. Both Schuh and Hartmann et al. propose that their account best explains why this marking cannot cooccur with term focus, nor with negation. The judgments of my language consultants were not so clear in this respect: while totality marked verbs were always accepted with sentence focus, and all kinds of TAM- and verum focus, they were sometimes rejected with term focus, verb and VP-focus, but not consistently[17], nor were they consistently rejected in negative sentences.

In the related language Hausa (Hartmann and Zimmermann, 2007c, i.a.), term-like focus constructions involving focus movement are only possible when the verb is nominalized, suggesting a syntactic rather than a semantic reason for the lack of overt focus-marking for predicate focus. While my two main language consultants did not produce examples with nominalized verbs in translation tasks, they accepted them as a further, less commonly used, focus strategy. One speaker judged these constructions to be better in sentence focus, V-, VP-, and TAM-focus contexts than in verum focus contexts, while the other accepted them in all contexts.

(43) Kule **iko** **bese** ki bo'i.
Kule do.PFV shoot.NMLZ to bush.duiker
"Kule SHOT (lit. 'did shooting of') a/the duiker."

Note however that the focus marking strategy with nominalized verbs was never the most preferred strategy — in all contexts, either canonical unmarked sentences or totality extended verbs were preferred[18].

The possibility of background marking in predicate focus contexts was also tested. The judgments show that the *=i/ye* marker cannot be initial in an all-focus sentence (44-a), nor can it be final in a verum focus (and thus all-given) sentence (44-b).

(44) (Context: What happened yesterday?)
*__=i/ye__ Kule basa bo'i.
=BM Kule shoot.PFV bush.duiker
"Kule SHOT A DUIKER."

(45) (Kule said that he would shoot a duiker)
. . . *ke basatkok bo'i **ye**.
and shoot.PFV.TOT bush.duiker I
". . . and he DID shoot a duiker."

When the subject is backgrounded, *=i/ye*-marking between the subject and the verb was accepted, e.g. for V-, VP-, and TAM-focus (46)–(47), although the unmarked examples were

[17] Schuh (2005a, p.21) also notes that when the totality extension is expressed via intransitive copy pronouns, there seem to be exceptions to the rule that the totality extension cannot co-occur with term focus.

[18] A further possible verb focus construction is a construction using a reduplicated stative form for emphasis, e.g. (i) (cf. p.63 for more information about statives). This construction was accepted in contrastive contexts, e.g. corrective contexts or answers to disjunctive questions, e.g. (i). In all other predicate focus environments, it was rejected. My language consultants suggested manner focus contexts like (ii) as the most natural context for the stative construction.

(i) (Context: Kule bought a house.)
O'o, **salko** bano=S **salno**.
No build.PFV house=DET build.STAT
"No, he BUILT the house (lit. 'buildingly')."

(ii) (Context: How did Kule kill the duiker?)
Kule **basa** bo'i **beseno**.
Kule shoot.PFV bush.duiker shoot.STAT
"Kule SHOT the duiker (lit. 'shootingly')."

preferred. It is not clear whether this is background marking or definiteness marking (cf. section 3.4.1). One language consultant also accepted (48), which is an indication that this might be background marking: *Hawwa*, being female, would normally receive the definite determiner *s/se*.

(46) (Context: What did Kule do? / What did Kule do to the duiker?)
Kule**=i** basa bo'i.
Kule=I shoot.PFV bush.duiker
"Kule shot a/the duiker."

(47) (Context: Kule will shoot a/the duiker.)
A'a, Kule**=i** har basatkok bo'i!
no Kule=I already shoot.PFV.TOT bush.duiker
"No, Kule already SHOT a/the duiker."

(48) (What did Hawwa do?)
Hawwa**=i** lapko eshi.
Hawwa=I answer.PFV call
"Hawwa answered the call."

With nominalized verbs, an *=i/ye* marker can occur preceding the nominalized verb, e.g. (49) . Like in term focus examples, the nominalized verb could occur in a sentence-final position. This was only consistently accepted for V-focus contexts (50).

(49) (What did Kule do with the duiker? / What did Kule do?)
Kule **iko**=*i* **bese** ki bo'i.
Kule do.PFV=BM shoot.NMLZ to bush.duiker
"Kule shot the duiker."

(50) (What did Kule do with the duiker?)
Kule **iko** ki bo'i=*i* **bese**.
Kule do.PFV to bush.duiker=BM shoot.NMLZ
"Kule SHOT the duiker."

Summary In translation and elicitation with my two main speakers, predicate focus was like non-subject term focus, in that the unmarked canonical word order was proposed for (almost) all predicate focus cases — with the exception of focus on the perfective aspect. For focus on the perfective aspect and for two perfective verum focus contexts, the *totality extension* was preferred. For verb, VP, and term focus, the totality extension was judged to be degraded. Background-marking using the *=i/ye* marker was dispreferred.

4.1.3 Prosody of 'unmarked' focus

In the preceding sections, it was shown that while explicit morphosyntactic marking of (term) focus is possible in Ngamo, there are also cases where focus is morphosyntactically *unmarked*. This raises the question of whether focus is prosodically marked in these cases. Taking up the discussion in Genzel and Grubic (2011), this section argues that morphosyntactically unmarked focus in Ngamo is also prosodically unmarked. Genzel and Grubic (2011) present a pilot study of the prosody of unmarked sentences with focus on the direct object, checking for any prosodic marking on the focused constituent itself, as well as an effect of focus on prosodic phrasing. The production experiment was conducted with four male speakers of Gudi Ngamo. Contexts and test sentences were presented visually, the context sentence was additionally presented auditorily,

and the speakers were asked to respond as naturally as possible, using the test sentence[19]. The DO-focus examples were elicited as corrections, and compared to an all-focus baseline. The recordings were checked visually, and the f0 and duration values were extracted with the help of a Praat script and evaluated statistically. To calculate the f0 values, tones were manually marked, at the midpoint of their TBU, and extracted. For each item, a mean value was calculated. For the duration, the beginning and end of the target word was manually labelled. An ANOVA with f0 and duration as dependent variables and speaker as a random factor was made. The results will be presented step by step in the rest of this section, first introducing different possible hypotheses for the marking of focus in Ngamo based on findings from other tone languages, and then discussing the results.

Prosodic marking of the focused constituent From other tone languages, it is known that focus can have an effect on the f0 curve and duration. For example, for Mandarin Chinese, the pitch range on the focused element is expanded, and the post-focal pitch range reduced (e.g. Xu, 1999), while duration and intensity increase (Yuan, 2004). Inkelas and Leben (1990, p.26) report a pitch register raising — as well as a prosodic phrase boundary insertion, see below — for the West-Chadic tone language Hausa. For the tone language Akan (Niger-Congo), Kügler and Genzel (2012) found pitch register lowering for corrective foci, but no durational effects, nor any prosodic effect of givenness or backgrounding. Kügler and Genzel (2012) cite a study reporting the insertion of a kind of a focus pitch accent in a dialect of the tone language Papiamentu (Iberian based Creole) (cf. Remijsen and van Heuven, 2005). Crosslinguistically, there are thus different prosodic strategies for expressing focus, even in tone languages.

Four of the test items were designed to test the influence of focus on pitch. To minimize the effect of the tone contour, they are all-low tone sentences, taking care that there are no floating high tones (cf. section 3.1)[20]. The influence of focus on word length was also tested. One of the test items is shown in (51).

(51) [Context: A man carried salt long ago]
O'ò! Mìzì mòkò **màndìrà** ònzì.
no man carry.PFV sesame long.ago
"No! The man carried SESAME long ago."

Prosodic phrasing Other tone languages insert a prosodic phrase boundary before or after the focused constituent. For the unrelated Bantu language Chichewa, an insertion of a prosodic phrase boundary to the right of the focus has been described (Féry 2013, Büring 2010 and Truckenbrodt 1999 cite Kanerva 1990). For the related Chadic languages Bole (Schuh and Gimba, 2005), Tangale (Kenstowicz 1987, p.241, footnote 4; Kidda 1993, p.120), Pero (Frajzyngier, 1989, p.227-228), and Hausa (Inkelas and Leben, 1990, p.26), the insertion of a phrase boundary to the left of the focused constituent is reported.

The ways the phrase boundary is indicated differs from language to language: In Bole, it

[19]This method, as well as the few participants, is the main reason I call these results tentative: Ngamo is not a written language, therefore the method is not ideal. However, this was part of a larger recording session, in which different focus marking strategies were recorded — a more natural, free production task, e.g. based on pictures, would have not allowed us to record less common strategies of focus marking. All examples were recorded several times, so that it was possible to use only natural-sounding, mistake-free recordings for the analysis.

[20]Preferably, this would have also been tested with all-high tone sentences, but due to the Great Ngamo Tone Shift in Gudi Ngamo, in which all tones were shifted one tone-bearing unit to the right (cf. §3.1), almost all words begin with a default low tone — it is impossible to construct an all-high tone sequence.

blocks the usual tone sandhi process of high tone spread from e.g. a verb ending in a high tone to an immediately following DO originally beginning with a low tone, which is thereby raised to a high tone (cf. Schuh and Gimba, 2005, who call this *low tone raising* (LTR))[21]. When the DO is focused, the high tone does not spread. According to Schuh et al. (2010, p.227), there is no other phonological marking of focus in Bole, i.e. no higher pitch or intensity. In Tangale, focus on a direct object blocks two tone sandhi processes between the verb and the direct object: (i) elision of the final vowel of the verb, and (ii) high tone delinking. The latter is part of a process in which a verb-final high tone spreads to the initial tone-bearing unit of the DO, and then is 'delinked' from the original verb-final tone-bearing unit, which receives a low tone. In (52-a), the high tone of the perfective ending *gó* spread, was delinked, and the final vowel was elided, causing an epenthetic *-u-* to appear. When the DO is focused, the high tone spreads, but is not delinked, and the verb-final vowel is not elided (52-b) (Kenstowicz 1987, p.241, cf. also Kidda 1993).

(52) a. **No focus**
Kay dob**ug** M**á**lay.
Kay call.PFV Malay
"Kay called Malay"

b. **DO focus**
Kay dob**gó** M**a**lay.
Kay call.PFV Malay
"Kay called MALAY"

For Pero, Frajzyngier (1989, p.227–228) describes a 'pause' preceding morphologically unmarked focused constituents, which leads to a blocking of phonetic processes (voicing or spirantization) which would affect the initial consonant of the focused constituent if it weren't focused. Other indicators of a phrase boundary found in the literature on unrelated languages are for example pauses, final lengthening, boundary tones, and resetting of f0 after downstep (Frota, 2000, Kügler and Genzel, 2012).

For Ngamo, we expected that if it patterns like related Chadic languages, the tone sandhi process of high tone spread discussed in section 3.1, which applies across weaker prosodic boundaries but is blocked by stronger prosodic boundaries (Schuh, 2009a), would be blocked preceding a focused direct object, and probably also after the focused object. Four of the test sentences were designed to test whether focusing of a direct object blocks the spread of a floating high tone from the verb to the DO, or from the DO to a following adverbial. The four test sentences consisted of all-low-tone words, apart from a habitual verb form with a floating H̩ tone, and a direct object with a floating H̩. Habituals, like verbs in the subjunctive (Schuh, 2009a, p.30), have a floating H̩ tone (cf. also Schuh, 2010, p.15–17) that can spread onto the direct object, cf. e.g. (53).

(53) [Context: A goat is biting a Ngamo this year]
O'ò! Òshì+H̩ à àshè+H̩ **nàsàrà**+H̩ mìlàsè
no goat IPFV bite.HAB European this.year
"No! The goat is biting a EUROPEAN this year."

We also tested four sentences with alternating low and high tones to check whether downstepped f0 is reset preceding or following a focused direct object, again taking care not to include any words with floating high tones. For Bole, Gimba reports partial resetting of downstepped pitch after intermediate phrase (iP) boundaries (Gimba, 2000, p.15), but this also depends on speech rate and utterance length.

[21] See Schuh and Gimba (2005) for exceptions to LTR. For example, it does not take place if the DO is a proper noun. It also doesn't take place when the verb is in the completive. Schuh and Gimba (2005) suggest that a suppressed low tone perfective suffix blocks the high tone spread, arguing against Lukas (1972)'s analysis, who proposed that the high tone spread only takes place with what he calls 'nominal' TAMs — all TAMs apart from the perfective.

(54) [Context: Sama immediately stole food]
O'ò! Sàma shìrko **làlintàr** nakàt.
no Sama steal.PFV purse immediately
"No! Samar immediately stole a PURSE."

All in all, this part of the production experiment yielded 96 recorded sentences (3 tone patterns x 4 items x 2 information structure x 4 participants)[22]. It revealed no prosodic difference between the all-focus baseline and the DO-focus test sentences: (i) no boundary insertion due to narrow focus, neither to the left nor to the right of the focused constituent, as indicated by tone sandhi, downstep, and durational properties of the sentences, and (ii) no prosodic marking (f0 raising/lowering or durational) on the focused constituent itself.

The results of this pilot experiment thus suggest that the morphosyntactically unmarked focus construction is also prosodically unmarked. This seems unusual from the point of view of intonation languages like English, but there are numerous languages without prosodic focus marking. Kügler and Genzel (2012) mention Northern Sotho (Zerbian, 2006), Yucatec Maya (Kügler et al., 2007), Navajo (McDonough, 2003), and Hausa (Hartmann and Zimmermann (2007c), pace Inkelas and Leben (1990)); Downing (2012), who discusses the lack of prosodic focus marking in Tumbuka, additionally mentions Wolof (Rialland and Robert, 2001), Buli, Kɔnni and Dagbani (Schwarz, 2009a), and Thompson River Salish (Koch, 2008). In most of these languages, focus is independently marked morphologically or syntactically, but the studies in Hartmann and Zimmermann (2007c) and Zerbian (2006) report the existence of fully unmarked narrow focus. Findings like this, on first glance, seem to speak against proposals that focus, crosslinguistically, needs to be indicated by maximal prominence, cf. e.g. Truckenbrodt (1995). Büring (2010) reconciles the Hausa data with the requirement that focus be maximally prominent by suggesting that non-subject positions are inherently more prominent than the subject position. For this reason, non-subjects, already in a position of relative prominence, can remain unmarked. Subjects need to be moved to a focus position in order to be more prominent than non-subjects. The requirement is thus not that a focused constituent should be absolutely more prominent than its non-focused counterpart, but that it should be relatively more prominent than the other constituents in the sentence.

4.1.4 Morphosyntactic marking of focus

This section discusses the syntax of marked constructions, specifically the cases of non-canonical word order. The section introduces the relevant issues, discusses previous approaches, and concludes with a proposal involving remnant movement.

Things to be explained

Any syntactic approach to marked focus/background constructions needs to account for (i) the word order facts, (ii) the binding properties, (iii) the differences between subjects, non-subject terms, and predicates, and (iv) the (im)possibility of certain constructions. These properties are briefly introduced in this section.

[22] The words used in the different items were additionally recorded with the negative marker *bu*, which serves as a test for floating high tones (Schuh, 2009a, p.12, p.45), to double-check whether they contained a floating high tone or not.

Word order As shown in section 3.2, nothing can intervene between the verb and the direct object in canonical word order[23]. Section 4.1.1 showed that focused constituents cannot intervene between the verb and the direct object either. The word order of focus with respect to indirect objects and adverbs is flexible, cf. (55), repeated from (24) above. The order of indirect object PPs and adverbs themselves with respect to each other is free, too, as also shown in section 3.2. This is corroborated by the fact, discussed above, that when an adverb or IO is focused, it can precede or follow other adjuncts without requiring a preceding *=i/ye* marker.

(55) [Who built a house in Nigeria last year?] ($Subj_F$)

a. Salko bano *=i* **Kule** a Nigeria mano.
build.PFV house I Kule at Nigeria last.year

b. Salko bano a Nigeria *=i* **Kule** mano.
build.PFV house at Nigeria I Kule last.year

c. Salko bano a Nigeria mano *=i* **Kule**.
build.PFV house at Nigeria last.year I Kule
"KULE built a house in Nigeria last year."

Negation is expressed using a clause-final marker *bu*, which can also freely precede or follow adverbs or IOs in canonical word order, cf. section 3.2. In marked focus/background constructions, the focused constituent must follow the negative marker, (56)-(57), cf. also Schuh (2005b, p. 30). When the negative marker immediately follows the focus, this is narrow negation of the focused constituent, cf. e.g. the comment in (56) for example (c).

(56) (Context: Mammadi gave a lot of things to Abu, but there was one thing that he didn't give to him. What didn't he give to him?)

a. Onko *bu*=i **agoggo** ki Abu.
give.PFV NEG=BM watch to Abu
"He didn't give a WATCH to Abu."

b. ?Onko ki Abu *bu*=i **agoggo**
give.PFV to Abu NEG=BM watch
"He didn't give a WATCH to Abu."

c. #Onko=i **agoggo** *bu* ki Abu.
give.PFV=BM watch NEG to Abu

d. #Onko=i **agoggo** ki Abu *bu*.
give.PFV=BM watch to Abu NEG

(Comments: (c): he gave him something, but not a watch; (d): he gave to somebody, but not Abu. (b) is good, but it sounds as though he gave to other people, but not to Abu.)

As example (57) shows, canonical word order was not accepted in this context.

(57) (Context: as in (56))
#Onko **agoggo** *bu* ki Abu.
give.PFV watch NEG to Abu
(intended:) "He didn't give a WATCH to Abu."
(Comment: This doesn't relate to the context, it is just an ordinary statement)

We had originally assumed in Zimmermann and Grubic (2010b) that *bu* is a negative adverb, since many related languages have bracket negation, and Schuh (2005b, p.28) suggests that the loss of the initial negative marker is an innovation of Ngamo and related languages. Ngamo could thus be hypothesized to be in phase V of Jespersen's cycle (Jespersen, 1917), as described in Zeijlstra (2004, p.56): having lost its preverbal negative head, and retaining a negative adverb.

[23]The only exception to this is incorporation of IO pronouns, which standardly happens when the IO is pronominal.

However, *bu* does not pass the tests for phrasal status proposed in Merchant (2006): First, it cannot be used together with *ki ka miya* (= 'why') to ask "why not?" (58). Second, it cannot be used as an *if not*-conditional antecedent (59), nor, third, in *whether TP or not* constructions, (60)[24]. The negative marker *bu* is thus a negative head.

(58) A: I didn't go to work today.
B: **Ki ka miya** *(ko nduko) **bu**?
with head(?) what 2SG go.PFV NEG
"Why not?"/"Why didn't you go?"

(59) If he went to work, there is no problem,
na *(ka'a) **bu** me, andi 'ya.
if like.that NEG but there.is thing
"... if not, then we have a problem."

(60) I don't know ...
ko Adamu nduko ruta kute'e, **ko** *(nduko) **bu**.
whether Adamu go.PFV work today or go.PFV NEG
"... whether Adamu went to work today or not."

Binding The binding options in sentences with narrow focus are exactly the same as in canonical all-focus sentences. For example, the fact that the inverted subject binds preceding objects (61-a) as well as following indirect objects and adjuncts (61-b) shows that the VOSX word order is not the base generated word order, but must derive from another word order in which the subject c-commands both the direct and the indirect object. Example (61-c) is a further example for this.

(61) a. Moiko *kanni* =i **ngo yiya ke**. (Subj$_F$ binds DO)
see.PFV head.3P.M.POSS =BM everybody
"EVERYBODY saw himself."
b. Sarko leta =i **ko gorzoi yo yiya** ki *kanni*. (Subj$_F$ binds IO)
send..PFV letter =BM every man to head.3P.M.POSS
"EVERY MAN sent a letter to himself."
c. Tamko *kanni*$_i$ =i [**ko ngo yiya ke**]$_i$ ki *adeno=ni*$_i$.
show.PFV head.3P.M.POSS =BM everybody to neighbor=3P.M.POSS
"EVERYBODY$_i$ showed himself$_i$ to his$_i$ neighbor."

The direct object binds indirect objects and adjuncts, even across an inverted subject, e.g. (62). Similarly, a focused DO following the indirect object can still bind it (63) . Indirect objects bind adjuncts (64). No other binding options are available.

(62) Tamko **ngo yiya ke** =i ne'e ki *kanni*. (DO binds IO)
show.PFV everybody =BM 1SG to head.3P.M.POSS=I
"I$_F$ showed every man to himself."

(63) Ne tamko ki *kanni* =i **ngo yiya ke**. (DO$_F$ binds IO)
1SG show.PFV to head.3P.M.POSS =BM everybody
"I showed EVERYBODY to himself"

[24] It can however be used in negative stripping (i), as well as to express constituent negation, as shown above, which are two further tests for negative adverb status which Merchant mentions. He however notes that these tests are not always reliable, stating that e.g. Italian also allows the negative head *non* in these contexts.

(i) Abare ndunniko, baya **Baba bu**.
Abare go.PFV.TOT otherwise Baba NEG
"Abare left, but not Baba."

(64) Iko onom **ki ngo yiya ke**$_i$ =i ne'e *ki man'i*$_i$. (IO binds Adv)
give.PFV present to everybody =BM 1SG for wife=3SG.M.POSS
"I$_F$ gave a present to every man$_i$ for his$_j$ wife"

To conclude, an inverted subject or *=i/ye* marked non-subject is not in its base-generated position[25].

Subject and predicate focus Any account of focus in Ngamo has to account for the asymmetry of focus marking found in Ngamo. On the one hand, the marked focus/background construction with non-canonical word order, cf. (65), is highly preferred for focused subjects. On the other hand, this construction is not available for focused predicates, with the exception of nominalized focused verbs (66), which are rarely used.

(65) (Who answered?)
Lapko=i **muni**
answer.SG.PFV=BM 1PL.INDEP
"WE answered."

(66) (What did Kule do to the duiker?)
Kule *iko* ki bo'i=i **bese**.
Kule do.PFV to bush.duiker=BM shoot.NMLZ
"Kule SHOT the duiker."

In addition, focused, inverted subjects differ from preverbal subjects in two ways: first, there is no subject/verb agreement, and second, the pronoun is in its independent form, cf. (65). These differences between different focus constituents have to be accounted for.

Special focus/background constructions In Ngamo, double *wh*-questions (and, presumably, foci) are not permitted, cf. (67-a–b), the language consultants offered paraphrases as in (67-c)[26]. Doubly marked backgrounds, as noted above, are however possible, cf. (68) .

(67) a. ??Le'yko miya=i lo?
give.birth.PFV what=BM who
(int.:) "Who gave birth to what?"

b. ??Lo ka lo?
who marry.PFV who
(int.:) "Who married who?"

c. Nzuni tanko miya?
3PL eatPL.PFV what
"What did they eat?"
(int.: "Who ate what?")

(68) Kule salko **=i** bano a Potiskum **ye'e**
Kule build.PFV BM house at Potiskum BM
"Kule built a HOUSE in Potiskum."

In addition, there is a construction that we called *double subject construction* in Zimmermann and Grubic (2010b), but which can occur with different kinds of constituents, not only subjects. In these constructions, there a left-dislocated constituent and a coreferent focused resumptive pronoun, cf. (69)-(70). As (69) shows, the inverted pronoun is interpreted as the subject of the sentence: when a plural subject is focused, there is no subject-verb agreement.

(69) *Kule ki Dimza*, salko bano=i **nzuni**.
Kule and Dimza build.SG.PFV house=BM 3PL
"Dimza and Kule, THEY built the house."

(70) *Hadiza*, Kule esha=i **te**.
Hadiza Kule call.PFV=BM 3SG.F
"Hadiza, Kule called HER."

These constructions can only be used in very special contexts, they are for example not felicitous as answers to *wh*-questions. Instead, my language consultants suggest that in a sentence like (69),

[25] That the VOS word order might be the base-generated word order was suggested to us by Gisbert Fanselow (p.c.). The VOS word order was independently suggested as the neutral word order for Proto-West Chadic, though not for Ngamo itself, in Schuh (2001, p.446ff). Other proposals however suggest either a VSO (Frajzyngier, 1984) or VS/SVO (Williams, 1989) basic word order for Proto-Chadic.

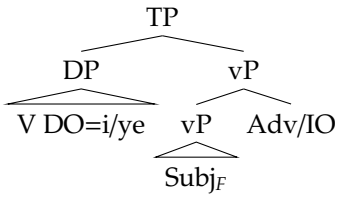
[26] Kenstowicz (1987, p.240) writes that double *wh*-questions in Tangale are felicitous, and that, just as in English, only one *wh*-element is moved, the other is in-situ.

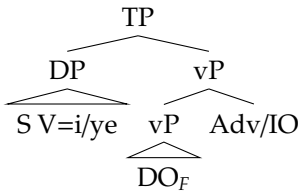
both the house building and Kule and Dimza should be given. They say that this is best as a correction, in a context where discourse participants argue about who built the house[27].

Previous accounts

This subsection presents the most important previous accounts proposed for similar languages. First, a pseudocleft account is presented. Then, some interrelated accounts for the West-Chadic subject inversion languages Tangale and Dera (or Kanakuru) are presented, the accounts of Kenstowicz (1987), Tuller (1992), Samek-Lodovici (1998), and Kidwai (1999). After that, the remnant VP movement account of Coon (2010) for the VOS language Chol (Mayan) is discussed, since it is similar to Tuller (1992)'s account, but avoids some its problems. Finally, a prosodic alignment account is discussed. Since none of these accounts offers a convincing syntax for the background marking constructions, a separate account is proposed in the following subsection.

Pseudocleft approach The first approach discussed here is one where the *=i/ye* construction is a specificational pseudocleft structure, with *=i/ye* being a definite determiner, e.g. (71)–(72). The background would form the subject DP, and the focus the predicate. Any material following the focus would be adjoined to the predicate.

(71)


(72)


The main, idea, under this approach, is that a construction like (73) is actually a headless pseudocleft corresponding to the full pseudocleft in (74)[28].

(73) Njelu esha=i Sama
Njelu call.PFV=BM Sama
"Njelu called SAMA."

(74) Ngo=i yo Njelu esha=i Sama
person=LINK REL Njelu call.PFV=DEF.DET.M Sama
"The one that Njelu called was Sama."

Pseudoclefts in Ngamo are very similar to *=i/ye* constructions, e.g. indirect objects, adjuncts, and even embedded clauses can also follow the pivot e.g. (75), and a focused pronoun in the pivot is also in its 'independent' form (like a DO-pronoun) (76). The definiteness marker seems to be obligatory with specificational equational sentences where the first DP is definite, cf. (77). This would account for the (near-)obligatoriness of the *=i/ye* marker in non-canonical word order.

[27] The use conditions might be similar to "German Left Dislocation" constructions with focused resumptive pronouns, cf. (i). Although Frey (2004) notes that the GLD construction can be used in an answer to a *wh*-question, I find these constructions much better in the more elaborate contexts described by my language consultants.

(i) Peter und Maria, DIE haben das Haus gebaut.
Peter and Mary they have the house built
"Peter and Mary, THEY built the house."

[28] The first *=i*, glossed as linker, is the short form of the relative clause marker (or linking morpheme, according to Schuh (2004a)) *yo*.

(75) Ngo=i anko=i **Hasha** *ta Shuwa salko bano*.
man=REL say.PFV=DET Hasha COMP Shuwa build.PFV house
"The person who said that Shuwa built a house was Hasha."

(76) Ngo=i yo sarko leta=i **ne'e** *ki Maleka*
man=LINK REL send.PFV letter=DET 1SG to Maleka
"The person who sent a letter to Maleka was me."

(77) Malum *(ye) ne'e.
teacher DEF.DET.M 1SG.INDEP
"The teacher is me."

Conceptually, this would be an attractive analysis, because it would directly account for the presence of the background marker: the background marker would simply be analysed as the *=i/ye* definite determiner, thus all *=i/ye*-marked structures, even those with canonical word order, would be pseudoclefts. However, it is not the right analysis. First, *=i/ye* constructions cannot be headless pseudoclefts: headless relative clauses without a relative clause marker are ungrammatical (78)–(79), and there are several focus examples that do not have a pseudocleft counterpart, e.g. imperatives (80)–(81) (cf. Schuh (1972) for similar arguments against a pseudocleft analysis in the related language Ngizim). If the focus examples were headless pseudoclefts, there is no explanation for the inacceptability of the corresponding full pseudoclefts.

(78) Ngo yo esha Shuwa=i lapko
man REL call.PFV Shuwa DET answer.PFV
"The man that called Shuwa answered"

(79) *Esha Shuwa=i lapko.
call.PFV Shuwa=DET answer.PFV
"The one that called Shuwa answered"

(80) Lapi=i shi!
answer.IMP=BM 2SG.F
"YOU$_F$ answer!"

(81) *Ngo=i lapi=i shi!
person=LINK answer.IMP=BM 2SG.F
"The one to answer is you."

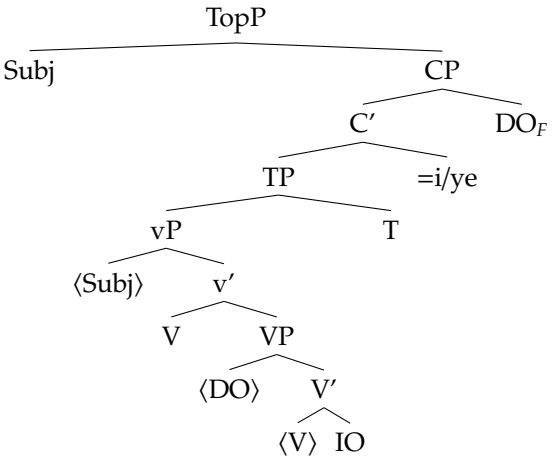
Second, the semantics of the *=i/ye* construction also doesn't match that of pseudoclefts: sections 4.2.2 and 4.3.1 below show that pseudocleft constructions trigger existence presuppositions, e.g. in (74) above, the presupposition *Njelu called someone*. In (73), however, there is no such existence presupposition. A pseudocleft analysis for these constructions is thus rejected.

Rightward Spec,CP Kenstowicz (1987) proposed for *wh*-elements in the related language Tangale that they are located in a high focus position, or a rightward Spec,CP. An account for Ngamo along these lines might run as follows. Some functional projections are right-headed (e.g. NegP, DP, CP), whereas lexical projections are left-headed[29]. Kenstowicz proposes for Tangale that all foci move to Spec,CP, presenting tone sandhi as indication of string vacuous movement of focused DOs in canonical word order[30]. For Ngamo, we have shown that there is no such prosodic difference between unmarked narrow DO foci and sentence foci — a movement analysis for unmarked foci is thus not motivated on independent grounds. Instead, movement of the focus to Spec,CP might plausibly be triggered by a strong feature on *=i/ye*. (82) is a sample tree.

[29]This is the mirror image of Elordieta (2001)'s proposal for Basque that functional projections are left-headed, and lexical projections are right-headed. Elordieta seems to count the vP as a lexical projection. In contrast to Elordieta's proposal, specifiers of phrases in this proposal are usually to the same side as their heads. Tuller (1989, 1992), in contrast, offers a version of Kenstowicz' proposal in which all projections in Tangale are left-headed, but Spec,CP is rightward.

[30]In Tangale, there is no obligatory morphological marker in non-canonical word order, but a marker *-n* can be observed in some contexts. Truckenbrodt et al. (2008) suggested that the tone sandhi process is triggered by a zero focus marker.

(82)



This version of Kenstowicz' proposal could account for some of the word order facts in Ngamo: The close proximity between the verb and the DO can be explained by the assumption that the verb doesn't raise to T, but stays within the vP[31]. The proposal can also account for the close proximity between the *=i/ye* marker and the focus, since the *=i/ye* marker is in C, and the focus obligatorily moves to Spec,CP. The fact that the focus needs to follow the negative marker *bu*, which would be the rightward head of a NegP somewhere above vP, is also accounted for. The binding facts and focus pied-piping could be explained by any account of similar facts for better-studied languages in which focus movement to Spec,CP is assumed.

In principle this adapted account would amount to not three, but only two focusing options: (i) ex-situ focus whenever *=i/ye* triggers focus movement, (ii) in-situ focus, licensed by a weak feature of C via Agree. For subjects, only the ex-situ strategy is available, since preverbal subjects are in Spec,TopP, a position which is not available for focused subjects. Since Spec, CP only attracts nominal constituents, ex-situ focus is not possible for predicates[32].

The unavailability of multiple *wh*-questions could be accounted for by assuming that there is only one position to which the focus can move. In addition, the head of this phrase can either host *=i/ye*, licensing movement, or a zero morpheme licensing the closest in-situ focus, but not both. The 'double subject' focus (cf. example (69)), however, is possible, under the assumption that the initial full subject is topicalized, and the resumptive pronoun focused.

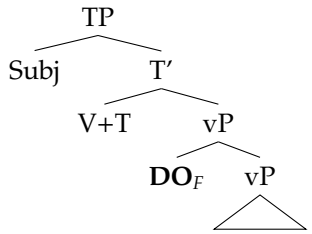
This account, even in its amended version, has a number of problems: First, any word order where adverbs or IOs follow an ex-situ focus are derived by extraposition of these adverbs/IOs. Therefore, the account predicts *=i/ye* marked canonical word order constructions to be less acceptable than their non-canonical counterparts, since they are less economical. This, as described above for DO focus, is not the case. Second, and more problematically, this account treats *=i/ye* like a focus marker, rather than a background marker. For this reason, it also cannot account for the multiple occurrence of *=i/ye* markers, especially since the additional *=i/ye* markers do NOT attract a focus. Such an account would thus have to assume that the second *=i/ye* marker is not a background marker, but a definite determiner.

[31] The auxiliary clitic à found e.g. in the future TAM is ignored here; I would have to treat it like a kind of agreement marker. Note that Kenstowicz (1987, p.231) does not assume that the verb stays low — for the perfective, he proposes that it raises to a position above T, to account for the lack of prosodic boundaries between the subject and the verb.

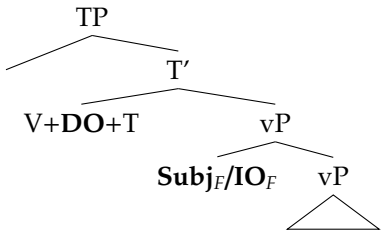
[32] The proposal would analyse *=i/ye* marked subjects in predicate focus contexts as definite, not background-marked.

Verb movement Several accounts have proposed multiple focus positions for related subject inversion languages (e.g. Tuller, 1992, Samek-Lodovici, 1998). In Tuller (1992)'s account for Tangale, the focus is either low, left-adjoined to vP, or high, in a rightward Spec,CP, following Kenstowicz (1987)'s proposal. Tuller suggests the low focus position in order to account for Chadic languages in which the focus preferably occurs immediately after the verb, e.g. Western Bade and Podoko. For languages like Tangale, in which the focus follows the direct object, she suggests that the nominal head of the DO is adjoined to V for Case assignment reasons, and moved to T (or I) with it[33]. This accounts for all cases in which either the DO is focused in its canonical word order (83), or the focused constituent immediately follows the DO (84).

(83)



(84)



When the focused constituent follows other, further arguments or adjuncts, it is in a high, rightward focus position which Tuller adopts from Kenstowicz (1987). Evidence for this second focus position, according to Tuller, comes from the fact that Dera (or Kanakuru), which otherwise is similar to Tangale in that it does not allow focused constituents between the verb and direct object, does not have such a high focus position[34]: In Dera, focused subjects obligatorily split a complex DO, whereas Tangale (like Ngamo, cf. examples (85)–(86)) allows focused subjects to either split complex DOs or follow them. The focused subject can occur directly after the head noun of a complex DO (85-a). Unlike Dera, but like Tangale, Ngamo additionally allows for focused subjects following the whole complex DO (85-b). Under this approach, Ngamo would thus have two focus position: left-adjoined to vP, or in a rightward Spec,CP[35].

(85) a. Tuko *wo'oto*=i **lo** *yo Dimza wo'oko*?
eat.PFV food=BM who REL Dimza prepare.PFV
b. Tuko *wo'oto yo Dimza wo'oko*=i **lo**?
eat.PFV food REL Dimza pepare.PFV=BM who
"Who ate the food that Dimza prepared?"

Tuller's analysis immediately accounts for the special proximity of the verb and the direct object, by positing an adjacency requirement for Case assignment, which even leads to noun incorporation if there would be intervening constituents otherwise (Tuller, 1992, p.317)[36]. It accounts for foci immediately following the DO, or sentence-final foci, though not for intermediate foci like (86), which are marginal in Tangale, according to her (Tuller, 1992, p.322).

[33] In Western Bade and Podoko, Tuller suggests, the trace of the verb can assign Case.

[34] Instead, she suggest, the Spec,CP might be leftward in Dera (Tuller, 1992, p.325).

[35] Tuller (1992, p. 326) explains that focus can be either structural or inherent. The focus feature assigned by T under adjacency is structural, whereas the focus feature in Spec,CP is inherent.

[36] The existence of complex phrases in this position forces Tuller to adopt a very non-standard approach to the Tangale DP, cf. Tuller (1992, p.318–320). For example, the occurrence of what looks like a full DP with a definite determiner is explained by incorporation of N into D, and then of the N+D head into V.

(86) Salko bano a Nigeria =*i* **Kule** mano.
build.PFV house at Nigeria I Kule last.year
"KULE built a house in Nigeria last year."

Tuller's account doesn't explain the word order with respect to negation and the =*i/ye* marker in Ngamo, however. In positive examples, =*i/ye* could be hypothesized to be in T, with the V or V+DO head left-adjoining to it. Since Tuller suggests that T assigns a focus feature to the focus under adjacency, this would account for the adjacency between =*i/ye* and the focused constituent. However, negative sentences show that this is not possible, since the negative marker *bu* precedes =*i/ye*. Negative sentences are independently problematic because *bu*, as a negative head, should block head movement across it (Zeijlstra, 2004, p.153); they are however also problematic since the =*i/ye* marker follows *bu*, cf. (87). A Tuller-like account would thus have to assume that *bu* is incorporated, too.

(87) (What didn't Mammadi give to Abu?)
Onko *bu*=i **agoggo** ki Abu.
give.PFV NEG=BM watch to Abu
"He didn't give a WATCH to Abu."

The focus cannot be in Spec,CP in the negation example, either, since there is a following IO. By disallowing right-extraposition of intervening material (cf. Tuller, 1992, p.329), Tuller's proposal is thus more problematic than that of Kenstowicz for these basic examples[37].

Samek-Lodovici (1998) takes up Tuller's incorporation idea, and, using data from Newman (1974), proposes that Dera, too, has a second focus position — recall that Tuller had suggested that Dera lacks the high focus position in Spec,CP. Based on examples with complex objects followed by an inverted subject, he proposes that the focus is rightward-adjoined to VP whenever the head of the direct object cannot incorporate into the verb (Samek-Lodovici, 1998, p.118). Since he assumes indirect objects and adjuncts to occur within the VP that the left- or rightward foci adjoin to (Samek-Lodovici, 1998, p.116), he can account for foci following IOs and adjuncts. Samek-Lodovici's analysis improves on Tuller's in that it can account for Dera examples like the one in (88) (from Newman 1974, p.64) in which a complex DO precedes the focus.

(88) nai [*gwa m dwal=i*] **nani**. (Subj$_F$, Dera/Kanakuru)
drank water REL cold=DEF.DET 1SG.
"I drank cold water."

If adopted for Tangale and Ngamo, his analysis would predict three possible positions for focus: (i) left-adjoined to VP, (ii) right-adjoined to VP, and (iii) in a rightward Spec,CP. The rightward adjunction of the focused constituent to VP could thus account for intermediate focus. The question of the syntactic status of the =*i/ye* marker would however remain. In addition, I am not convinced that the DO splitting data actually is evidence for noun incorporation, even in Dera and Tangale: Examples like (89)–(91), in which a temporal adverbial can intervene, suggest that this is extraposition of the relative clause (cf. also Schuh, 1972, p.152ff.).

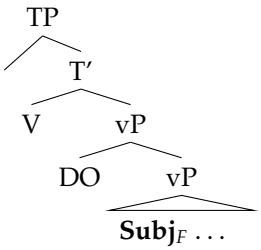
[37] I believe that it however fares equally well (or badly) with respect to the subject and predicate focus facts, binding, pied-piping, and special focus/background constructions. Especially double =*i/ye* marking is still a puzzle.

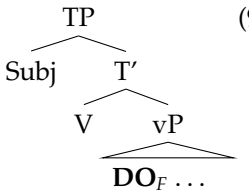
(89) Nai *gwa=i* **mandai** wono *mə dwal=i*?
drank water=DEF.DET who yesterday REL cold=DEF.DET
"Who drank the cold water yesterday?"
(data from original fieldwork on Dera/Kanakuru, 2010/2011)

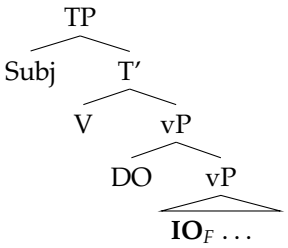
(90) Sago *wa m sana=i* ono **non** *tam ne diko*?
eat.PFV thing REL food=DEF.DET yesterday who REL 1SG prepare
"Who ate the food that I prepared yesterday?"
(data from original fieldwork on Tangale, 2010/2011)

(91) Tuko *wo'oto*=i Kule **nzono** *yo Dimza wo'oko*
eat.PFV food=BM Kule yesterday REL Dimza prepare.PFV
"KULE ate the food yesterday that Dimza prepared."

DO shift A similar account based on Tuller (1992) is Kidwai (1999). Kidwai's main generalization is that focus, in languages with syntactic focus marking, requires proximity to the verb (Kidwai, 1999, p.244), whereas languages differ with respect to (i) the directionality of the adjacency, and (ii) how strict it is. She proposes a PF-movement account, in which the focus feature can only be licensed under adjacency[38]. However, Kidwai does not adopt the noun incorporation analysis for Tangale. She proposes that when the subject is focused, it does not move to Spec,TP, but instead is in-situ in Spec,vP (Kidwai, 1999, p.234). Kidwai suggests instead that there is object shift in Tangale, so that the object is overtly moved to a second Spec,vP above the subject, cf. (92). Adjacency in Tangale is not strict, Kidwai suggests that "the mechanism that calculates adjacency simply cannot "see" a filled multiple Spec." (Kidwai, 1999, p.235). A focused object stays in-situ, since the adjacency-to-the-verb requirement is already fulfilled, cf. (92)–(93). This account inherits the problems concerning the position of the *=i/ye* marker and the negation from Tuller's account, and is thus not suitable to explain the Ngamo data.

(92)


(93)


(94)


(Remnant) VP movement A further account along these lines, which has never been proposed for any related languages, but which goes in a similar direction, is a VP movement account, as e.g. assumed in Coon (2010) for the basic VOS word order in Chol (Mayan). Coon proposes that the subject stays in its base-generated position in Spec,VoiceP, and that the whole VP moves to Spec,TP[39]. In order for this account to be applicable to Ngamo, it would, like the accounts above, have to require the focus and T to be strictly adjacent, but adjunction below the focus should be allowed, e.g. for adverbs and indirect objects following the focus. Adverbs and indirect objects preceding the focus would be vP-internal, and would move with it. With negation, the whole

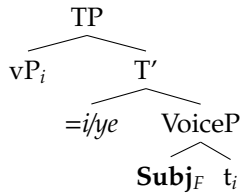
[38]For reasons of space, I will not go into details here, but the approach includes an elaborate description of specific components within the PF component, including a component Morphology which licenses the focus feature under adjacency, and a component Domain Discourse, where focus is interpreted, cf. Kidwai (1999, p.224–230).

[39]Coon (2010) suggests that in Chol, the vP moves to T instead of V, because there is no head movement. In Ngamo, head movement is available according to Coon's tests: there are lexical unergatives, and there is IO pronoun incorporation.

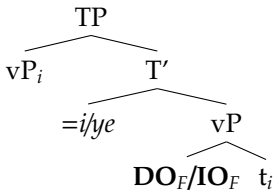
NegP would move, i.e. vP would move to Spec,NegP, and then the NegP to Spec,TP. An analysis along these lines might be able to account for the relative ease of non-canonical subject focus in contrast to non-subject focus, which is more complex, since it involves evacuation from the VP.

Example trees for subject, DO and IO focus are shown in (95)–(96). The most interesting account of this kind would postulate vP movement to Spec,TP only in case the subject cannot move there, accounting for the lack of subject-verb agreement in subject inversion constructions. This, however, is not a feasible account, since e.g. in IO_F focus, the direct object has to precede the *=i/ye* marker. The remnant vP thus has to be higher, in Spec,TP.

(95)



(96)



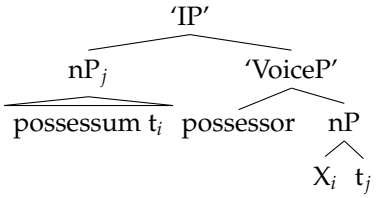
Coon's account is also interesting for Ngamo because Ngamo has a similar DP syntax: In Ngamo, the order of the noun and possessor is the same as in Chol, cf. (97), corresponding to a DP-internal 'VSOX'/'VSXO' word order[40]. Following accounts which posit a parallelity between the structure of the DP and the CP (e.g. Szabolcsi, 1983), Coon (2010, p.369f.) proposes that the possessor in Chol is base-generated in a DP-internal Spec,VoiceP, and an nP containing just the noun obligatorily moves to a DP-internal Spec,IP, cf. (98).

(97) a. **onom ma'i** yo agoggo ki Abu
gift king REL watch to Abu

b. **onom ma'i** ki Abu yo agoggo
gift king to Abu REL watch

c. ***onom** yo agoggo **ma'i** ki Abu
gift REL watch king to Abu
"the king's gift of a watch to Abu"

(98)



While in Chol, *wh*-possessors in the 'left periphery' of the DP, just as focused constituent are at the left periphery of the clause, *wh*-possessors and focused possessors in Ngamo stay in the position immediately following the noun, cf. (99)–(100)[41]. Like in the IP domain, nothing can intervene between possessum and possessor.

(99) a. ban(o) **lo**
house who
"Whose house"

b. mizi *yak* **Hassana**
husband only Hassana.
"the husband of only Hassana"

This approach could account for the word order facts. Under the (non-standard) assumption that adverbs and indirect objects can freely be base-generated either within the vP or adjoined to it, the different word orders (e.g. VOSX / VOXS) would even be equally costly[42]. The account however does not readily explain the lack of subject/verb agreement with inverted subjects: one would expect the same (lack of) agreement in all cases where the vP moves to Spec,TP. In

[40] This again corresponds well with Frajzyngier (1984)'s proposal that VSO was the basic Proto-Chadic word order.

[41] The position of the *=i/ye* definite determiner is however different from the *=i/ye background marker*: it is obligatorily DP-final (cf. section 3.4.2). Presumably, the whole DP-internal 'IP' would move to Spec,DP under this account.

[42] This would not account for the binding facts in VOSX word order — when the DO binds the Adv, this word order should be less acceptable!

addition, it cannot account for the existence of double background marking, either.

Prosodic alignment accounts Some of the accounts above propose movement of the focused constituent due to a requirement that the focus be (almost) right-adjacent to the verb. There are other accounts which propose movement in order to satisfy an alignment requirement on prosodic structure (Féry, 2013, Samek-Lodovici, 2005, i.a.). For Ngamo, this could be a requirement that foci must occur at the right edge of a prosodic or intonational phrase (Zimmermann and Grubic 2010b, cf. also Truckenbrodt 1999's AlignFoc for Chichewa, Samek-Lodovici 2005's Head-I/Head-P together with Stress-Focus for Italian, Zimmermann 2006's PromIP and FP_X for Tangale, Büring 2010's IP-head-R and FocusProminence for a number of languages, i.a.). Most approaches are OT accounts which derive this from an interaction between a constraint that requires the most prominent constituents to be the furthest to the right, and a constraint that defines the focus of a sentence as its most prominent constituent[43]. The following are examples from Zimmermann (2006).

(100) PromIP: Right-Align the most prominent constituent X in an intonational phrase (iP) with the edge of iP.

(101) FP_X: *Focus Prominence:* Constituent focus on X must be realised on or next to X in a clause S iff S also contains non-focused (given) material.

Under this approach, the positions at which focus can occur makes predictions for the prosodic structure of Ngamo utterances: (i) the boundary between the verb and the direct object is too weak to allow for focused constituents to be placed there, (ii) the boundary between the subject and the verb is too weak to allow the subject to stay in situ[44], and (iii) there are optional strong boundaries preceding and/or following adverbials and IOs, cf. (102). Predition (iii) follows from the requirement that the position of e.g. a focused subject is not at any iP boundary, but always rightmost in its own iP. Samek-Lodovici (2005) makes such a proposal for Italian, where the iP boundaries are inserted due to right-dislocation of constituents following the focus. Féry (2013, p.723) similarly argues for Bole (West Chadic), that given constituents following the focus can "be analysed as outside of the main [iP]".

(102) a. (S V DO)$_{iP}$ (IO)$_{iP}$ (A)$_{iP}$ b. (S V DO IO)$_{iP}$ (A)$_{iP}$ c. (S V DO IO A)$_{iP}$

Alignment accounts allow for the possibility that non-subject terms are often already in a position in which they satisfy the alignment requirement, whereas subjects need to invert in order to fulfil it (cf. e.g. Féry, 2013, p.720). A special, high-ranking constraint, e.g. Zimmermann's FocNP ("No focus realization on non-nominal constituents") prohibits movement of focused verbs to the iP-edge, unless they are nominalized[45]. This could account for the different word orders found with focus in Ngamo.

Still, questions remain: one open question is the (sometimes optional, sometimes obligatory) insertion of the background marker *=i/ye* in Ngamo. In Tangale, there is an optional focus marker *-n*, and the tone sandhi processes taking place preceding a focused DO were analysed as a kind of allomorph of this focus marker in Truckenbrodt et al. (2008). In Zimmermann (2006),

[43] Féry (2013), in contrast, proposes directly that foci are aligned to prosodic or intonation phrases. For her, prominence and alignment are orthogonal. This is motivated by languages like Nłe?kepmxcin, where focus and prosodic prominence do not coincide (Koch, 2008). She thus only needs one constraint, Align-Foc-*ι*-R, to explain right-alignment of focus.

[44] Recall Schuh (2009a, p.16ff)'s observation, cited in section 3.3.2, that the boundary between a subject and a following perfective verb is weak, as evidenced by floating H tone spread. He however notes that this is not the case in other TAMs.

[45] Focus on the perfective TAM, which is marked by the *totality extension*, would have to be dealt with separately.

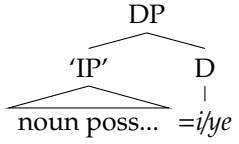
these tone sandhi processes were suggested to be due to the constraint FP_{OBJ}[46]. Féry (2013, p.723) tentatively suggests, for Bole, that the particle *ye* marks left-alignment of focus to a pP boundary, but acknowledges that it might also mark right-alignment of the preceding "given material". There might thus be a constraint requiring that the background has to be aligned in certain circumstances (cf. section 4.3 and 5.4 for discussion), for example left-aligned to an iP boundary, and right-aligned to at least a pP boundary (which can be indicated by the morpheme *=i/ye*).

In Zimmermann and Grubic (2010b), we propose an alignment account in which focused constituents adjoin to the vP (below or above adverbs or IOs) at PF. Presumably, the alignment-indicating morpheme *=i/ye* would also be introduced at PF. This raises a conceptual problem: since this marker will be analysed in section 5.4 as having a semantic effect apart from indicating the background/focus divide, it cannot be inserted only at PF, but must be present at LF, as well.

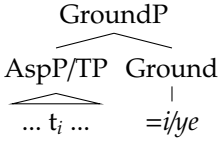
Syntactic Proposal

For the purpose of the discussion here, I propose an account in which the structure of the backgrounded part is as similar as possible to that of the DP, shown in (i) in (103). The *=i/ye* marker is thus an operator heading its own phrase, the GroundP, which can be merged somewhere above vP, cf. (ii). *=i/ye* takes at least an AspP as its complement, since the verb is marked for aspect. Focused constituents move to the left periphery in order to evacuate the GroundP, and adjoin to CP. The remnant GroundP moves to adjoin immediately above FocP, cf. (iii). Indirect objects and adjuncts can occur within this moved phrase, or be adjoined below FocP.

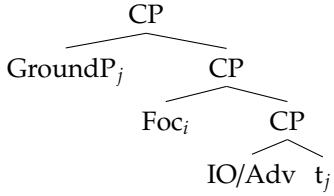
(103) (i)



(ii)



(iii)



This is similar in some respects to the adaptation of Kenstowicz (1987)'s account proposed above, and in other respects to Coon (2010)'s VP movement account. Like Kenstowicz's account, this proposal assumes Ā-movement to a peripheral position, only that this account proposes only leftward movement, and that the *=i/ye* marker is not the head of any left-peripheral phrase. This allows for the word-order, binding, and focus pied-piping facts to be accounted for as in Kenstowicz' approach. IOs can freely be adjoined below the focus, whereas the DO and negation are part of the GroundP and thus move to precede the focus. I follow the standard assumption that Ā-movement can be reconstructed for binding. Here, again, there are only two focus/background marking strategies: ex situ with *=i/ye*, and in situ without any marking.

(104) Bano, salko=i lo?
house build.PFV=BM who
"The house, who built it?"

Concerning the subject/non-subject asymmetry, I assume that the background is obligatorily marked in subject focus contexts because preverbal subjects are usually in a topic position. To

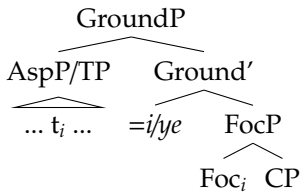
[46]Similarly, Zimmermann (2006) and Büring (2010) propose that the focus marker *á* in Guruntum occurs due to the constraint that focus must be prominent.

prohibit a topic interpretation, these constructions are used to make clear that this is a subject focus. Predicate focus works differently because only nominal elements can move to Spec,FocP. Note however, that in this account, *=i/ye* marked subjects in predicate focus contexts can be assumed to be backgrounded, and to occur in Spec,GroundP.

Double focus is prohibited because (i) there is only one position to which a focused constituent can move, and (ii) the *=i/ye*-marked background must be entirely backgrounded; no foci are allowed within the background. Double backgrounding, in contrast, is possible, since there are further positions below the focus to which backgrounded constituents can move[47]. In the "double subject" construction and similar constructions, the initial DP is left-dislocated. I assume that it is base-generated in a position above the GroundP.

An alternative analysis under which GroundP is a phrase in the left periphery, with the *=i/ye* background marker as its head, and the background in Spec,GroundP, cf. (105), is rejected.

(105)



Such an account could not explain the data described in §4.1: It does not explain the leftward scope of the *=i/ye* marker. Semantically, it would be possible to postulate a backgrounding operator which recursively applies to structurally higher constituents, following the givenness-marking proposal in Kučerová (2007, 2012). This is however not possible, since further background-marked constituents can follow the focus: such an account would predict that, within a clause, everything preceding the *=i/ye* marker is backgrounded.

4.1.5 Summary and discussion

The preceding sections set out to answer the first research question from section 2.3:

1a) *What are the different focus realization patterns?*

The answers found were that there are at least three focus/background marking patterns: unmarked, i.e. with canonical word order, and no morphological or prosodic marking; *=i/ye* marked, i.e. in canonical word order, but morphologically marked; and *=i/ye* marked in non-canonical word order.

The fact that there are different possible realization patterns for one and the same current QUD makes it especially relevant to investigate the possible differences in use and interpretation that these different patterns might have. This will be done in the following section 4.2.

In addition, there are further interesting factors which appeared in the discussion. First the optionality of overt focus/background marking in Ngamo is unusual, given the crosslinguistic tendency for the focus to be maximally prominent (Truckenbrodt, 1995, i.a.). The existence of

[47] Malte Zimmermann (p.c.) pointed out to me that this is reminiscent of the cartographic approach of Rizzi (1997), where several topic positions are possible, but just one focus position.

entirely unmarked focus thus needs to be addressed. Second, the subject/non-subject asymmetry needs to be addressed, i.e. the strong preference of subjects to be inverted.

4.2 Focus contexts and interpretation

The preceding section introduced the focus/background realization strategies of Ngamo. It was shown that the focus/background partition can either (i) remain unmarked, (ii) be marked by a *=i/ye* background marker, or (iii) can be marked by *=i/ye* and movement. This section returns to the question of the correspondence between focus / background realization and interpretation introduced in section 2.2.

First, section 4.2.1 discusses whether there is a tight correspondence between focus / background realization and what is understood to be the focus. It investigates whether part of the focus can be *=i/ye*-marked, for example due to focus projection, givenness, or expectedness (i.e. when the rest of the focus is emphasized due to noteworthiness), cf. section 2.2.1 for discussion.

Second, section 4.2.2 explores whether different kinds of focus/background realization correspond to a different semantic interpretation or pragmatic use. For example, contrastive contexts are tested, to see whether they lead to a more marked realization of focus. Further tests investigate whether marked constructions have a different interpretation than unmarked constructions, for example giving rise to a stronger exhaustive or existential inference.

4.2.1 Projection, givenness, and noteworthiness

Section 2.2.1 briefly discussed English examples in which only part of the focus is focus-marked. In some examples, part of the focus was deaccented because it was *given*, in others, only part of the focus was marked because it was especially *noteworthy*, or because of default accenting and *focus projection*. As noted in the introduction to focus/background realization in Ngamo, unmarked focus is highly ambiguous, i.e. the same unmarked sentence can answer several different current QUDs. This section investigates whether *=i/ye* constructions allow for partial backgrounding of focus. It is found that in *=i/ye* constructions, focus does not project to background-marked constituents in neutral contexts. For this reason, *=i/ye* marking of less noteworthy parts of the focus was also not accepted. When part of the focus is given, background marking was sometimes accepted — the examples however show that givenness per se is not enough to license *=i/ye* marking, but that, like in English (Kadmon and Sevi, 2011), additional factors play a role.

Projection In Ngamo, background marking using the *=i/ye* marker does not allow for focus projection: In contrast to the closely related language Tangale (West Chadic, Hartmann and Zimmermann 2007b) and the more distantly related language Gùrùntùm (West Chadic, Hartmann and Zimmermann 2009), constructions like (106-b) cannot be interpreted as VP- or S-focus in standard *wh*-question contexts.

(106) [Context: What did Abu do yesterday? / What happened?]
  a. Abu esha Sama nzono.
     Abu call.PFV Sama yesterday
  b. #Abu esha=i Sama nzono.
     Abu call.PFV=BM Sama yesterday

c. #Abu esha nzono=i Sama.
Abu call.PFV yesterday=BM Sama
"Abu called Sama yesterday."
(Consultant comment: "with =*i*, the listener knows that there was a call!")

Thus, the unmarked realization in (106-a) is like English default prosody — capable of answering DO- / VP- and S- questions without any further requirements on the context, cf. section 2.2.1. The Ngamo patterns in (106-b-c), in contrast, can only answer one kind of question, namely DO-questions. These answers can become felicitous if a covert QUD that does not correspond to the overtly uttered *wh*-question is accommodated. For example, in (107-b–c), the comments indicate that the alternatives under consideration are alternatives of the form *Because he called X yesterday*, i.e. DO-focus alternatives, even though the overt question is a sentence focus question[48].

(107) [Context: Why does Abu's mother think that he is unhappy?]
a. Kika esha Sama nzono
because call.PFV Sama yesterday
b. Kika esha=i Sama nzono
because call.PFV=BM Sama yesterday
c. Kika esha nzono=i Sama
because call.PFV yesterday=BM Sama
"Because he called SAMA yesterday"
(Consultant comment: (b) and (c) are okay if he mistakenly called Sama — he was supposed to call somebody else, maybe his younger sister, to give her something important, but he gave the important thing to Sama, who cannot be trusted.)

In simple question-answer contexts, partial focus marking was thus not accepted. There are however cases where there is a mismatch between the overt question and the focus/background-marking of the answer, namely when a covert QUD is accommodated. In these examples, importantly, there is still a 1:1 relation between focus/background marking and interpretation.

Noteworthiness Partial background-marking of part of the focus due to *noteworthiness* of the rest of the focus (Skopeteas and Fanselow, 2011) was also rejected. This is marking that looks like focus/background marking, but is actually an emphasis for a different reason, namely noteworthiness, and thus does not lead to the same exhaustive narrow focus interpretation. The relevant examples involve a wide focus context, as in (108), with a marked and unmarked unsurprising utterance (108-a-b), and a marked and unmarked surprising utterance (108-c-d)[49]. The important example is (d): if partial background-marking due to (non-)noteworthiness is possible, (d) should be accepted without accommodating an intermediate QUD *What did grandma eat?*. For (b), in contrast, such a QUD has to be accommodated.

[48] It may be that these kinds of intermediate questions are more easily accommodated in answers to *why*-questions because a plausible story to connect the two clauses (here: Abu's unhappiness and the calling of Sama) needs to be accommodated anyway.

[49] A *kumba* is a kind of round, woven tray, called *faifai* in Hausa (Schuh et al., 2009). The example contexts for this test were modeled after a similar experiment that is being conducted for Hausa (West Chadic) at present, which in turn is modeled after an experiment in Skopeteas and Fanselow (2011).

(108) Old grandma had dinner with the family. There was rice, meat and vegetables on the table, as well as plates on trays. Bashir says:

a. Dikati tuko shinkafa.
grandma eat.PFV rice
"Grandma ate rice."

b. Dikati tuko=*i* **shinkafa**.
grandma eat.PFV=BM rice
"Grandma ate RICE."

c. Dikati tuko kumba!
grandma eat.PFV kumba
"Grandma ate a kumba!"

d. Dikati tuko=*i* **kumba**!
grandma eat.PFV=BM kumba
"Grandma ate A KUMBA!"

My consultants reacted differently to this test: One consultant rejected the *=i/ye*-marked examples in these contexts, correcting them to unmarked sentences. This is the predicted reaction if neither partial focus marking nor an accommodation of an intermediate QUD is possible. The second consultant accepted (108-a–c), but considered sentences like (108-d) to be less acceptable.

Following Skopeteas and Fanselow (2011), the consultants were asked to judge how exhaustive they considered the sentence to be. This was done by a question as in (109). The prediction is that if an intermediate DO-question *What did grandma eat?* is accommodated, the sentence is understood to be more exhaustive, i.e. this judgment is an indirect indication of whether the answers in (108) are interpreted as expressing DO-focus or not.

(109) Given this answer, how likely is it that grandma ate anything else beside rice/a tray?
□ very likely □ likely □ unclear □ unlikely □ very unlikely

The first speaker chose the answer "*unclear*" for the unmarked constructions that he accepted (e.g. (108-a) and (108-c)). The second speaker chose 'very unlikely' for sentences like (108-a-b), and a mixed answer ('unclear'/'very unlikely') for sentences like (108-c). He thus judged most test sentences like (108-a–c) to be exhaustive, i.e. even the unmarked ones were interpreted like an answer to an intermediate QUD. In contrast, he chose 'very likely' for sentences like (108-d), thus indicating that no intermediate QUD was accommodated. I believe that this is the reason why these sentences were degraded: there is a clash between the *=i/ye*-marking, indicating DO-focus, and the sentence focus interpretation. This test thus confirms the results of the previous section, that there is a 1:1 relation between focus/background marking and interpretation.

Pied-piping This 1:1 relation is however put in question when looking at further data, namely at partial background marking. Whereas everything preceding an *=i/ye* marker has to be part of the background, not everything following the *=i/ye* marker has to be focused. For example, when part of a complex DO is focused, the *=i/ye* marker precedes the whole DO (110-c), and the whole DO is placed ex-situ (110-d).

(110) [Context: Burba bought a small watermelon in the village. — That's not true! ...]

a. *Kaja fari=*i* so **na'ako** ki gargu.
buy.PFV watermelon=BM LINK large at village

b. Kaja fari so **na'ako** ki gargu.
buy.PFV watermelon LINK large at village

c. Kaja=*i* fari so **na'ako** ki gargu.
buy.PFV=BM watermelon LINK large at village

d. Kaja ki gargu=*i* fari so **na'ako**.
buy.PFV at village=BM watermelon LINK large
"She bought a LARGE watermelon in the village."

Thus, even though focus projection is not possible in simple answers to *wh*-questions, there is not a strict correspondence between focus/background marking and interpretation.

Givenness The last kind of projection examples to be discussed in this section are examples where part of the focus is given. In English, given elements are deaccented. This is particularly visible when the given part of the focus linearly follows the new part, since given constituents preceding the main accent can receive secondary accents. For example, in the answer in (111) (from Schwarzschild, 1999, p.146), the focus, as indicated by the context question, is *her blue convertible*, the main accent however is on *blue*, since *convertible* is given.

(111) Q: I know that John drove Mary's red convertible. But what did Bill drive?
A: He drove her BLUE convertible.

In Ngamo, as discussed in section 4.1.3, no prosodic effects of focus were found, including prosodic effects of backgrounding. Since the test sentences were classic test sentences with a given background and a new focus[50], this suggests that givenness is not marked prosodically.

In addition, givenness also does not obligatorily trigger background-marking. On first glance, it seems that givenness has an effect on the possibility of *=i/ye* marking, cf. examples (112) and (113). In (112), the context is a disjunctive question eliciting VP-focus, whereas the background/focus partition in the answer resembles a DO-focus answer. The speakers suggested that this answer is possible, because the discourse participants have "already discussed building", i.e. because *salko* is given. Nevertheless, both speakers indicated that they preferred the unmarked realization. The contrast between (112) and the unacceptability of A as answer to a VP-*wh*-question *What did Kule do?* suggests that givenness plays a role for *=i/ye* marking.

(112) Q: "Did Kule buy a car or build a house?"
A: Salko=i bano
build.PFV=DET house
"He built a house."
(Consultant comment: but "Salko bano" is better!)

Example (113) is similar to the convertible example above: *=i/ye* marking is allowed due to the fact that *building* is given, regardless of the fact that the QUD is a VP-focus question.

(113) Bah gave a lot of money to his two sons, Luccu and Kule. Luccu built a school, what did Kule do?
A: **Salko=i** bano.
build.PFV=BM house
"He built a HOUSE."

However, givenness alone is not enough to account for *=i/ye* marking. In (114), which is a variant of (113), *=i/ye* marking was not accepted.

[50] An experimental setup that is criticized in Katz and Selkirk (2011), since it makes it impossible to differentiate between the effects of focus/background and those of newness/givenness.

(114) Bah gave a lot of money to his four sons: Abu, Luccu, Njelu and Kule. Abu bought a farm, Luccu built a school, and Njelu travelled. What did Kule do?
A: **#Salko=i** bano.
build.PFV=BM house
"He built a HOUSE."
(Comment: the answer is "Salko bano.")

Kadmon and Sevi (2011, p.22–29) explain examples like this by a continuation of pattern. They contrast example (111) with examples where the parallelism is broken, e.g. (115), where a pitch accent on convertible becomes possible. Now, the kind of continuation varies with whether the speaker wants to continue the pattern of the first clause ("*In 1994, . . . "*), in which case *convertible* is deaccented, or that of the second clause ("*In 1995, . . . "*), by deaccenting *blue*. She can also completely ignore the parallelism and produce a pitch accent on both *blue* and *convertible*. Thus, in contrast to (111), there can be an accent on *convertible* here, even though it is given.

(115) In 1994, John drove Mary's red convertible. In 1995, he drove her blue Jeep. And what did he drive in 1996?
In '96, he drove her blue convertible.

For the Ngamo examples, this explanation, in a sense, is even clearer: in contrast to English deaccenting in (111), the *=i/ye* marking in (113) is not obligatory. The speaker can however use it to emphasize that Kule's activity parallels that of Luccu, that the pattern is continued. In (114), again in contrast to the deaccentuation in the English example (115), background marking is not possible because there is no such parallelism. Importantly, these examples show that givenness is not sufficient for licensing *=i/ye* marking.

In general, the focus/background distinction and the given/new distinction are orthogonal in Ngamo, like in English (Krifka, 2008, Katz and Selkirk, 2011): First, backgrounded elements can be new, cf. (116).

(116) Who gave away a watch?
Onko$_G$ agoggo$_G$ **ki Lakka**$_N$=i Kule.
give.PFV watch to Lakka=BM Kule
"KULE gave a watch to Lakka."

In fact, all of the background can be new, cf. examples (117)–(118), modeled after examples in Katz and Selkirk (2011). Here the background is all-new, and a focus-sensitive operator like *only* enforces narrow focus on its associate.

(117) Naje and Tunza were extremely busy with school, they didn't have time for their usual routines. For this reason, . . .
esha nonto=i Husam yak'i nzono.
call.PFV mother.3SG.POSS.F=I Husam only yesterday
" . . . only HUSAM called her mother yesterday."

(118) Hassana doesn't want anybody to know her friends Uddu and Maleka, . . .
woi te tamko=i Urwa yak'i ki ba'anonto.
so 3SG.F show.PFV=BM Urwa only to sister.POSS.F
". . . so she only showed URWA to her (younger) sister."

The word orders with final focus were also judged to be fine in both (118) and (117). A discussion of the exact relation between the associate of focus-sensitive particles in Ngamo and focus has to wait until chapters 6–7, but the important point for the discussion here is that the background-marked part can be new.

Second, elements that are given don't need to be *=i/ye* marked. In fact, the word order in (119) was judged to be the preferred word order even when the adjunct or indirect object was given, i.e. there was no preference for given adjuncts or IOs to precede the *=i/ye* marker[51].

(119) Who showed Urwa to Tunza?
Tamko Urwa=i Hassana **ki Tunza**.
show.PFV Urwa=BM Hassana to Tunza
"HASSANA showed Urwa to Tunza"

The fact that focus can be entirely unmarked, e.g. (120), also shows that given constituents need not be background-marked.

(120) Who did Hassana show to Tunza?
Tamko Urwa ki Tunza
show.PFV Urwa to Tunza
"She showed URWA to Tunza."

Third, if the *=i/ye* marker would simply mark the border between given and new constituents, it would be unclear why examples like (121) are unacceptable. In this example, the verb and direct object are given, the indirect object and focused subject are new, and the *=i/ye* marker is placed between the given and the new elements in the sentence, preceding the new, but backgrounded, IO. If *=i/ye* is a background marker, the fact that (121) is unacceptable would be due to the fact that it occurs within the background instead of between background and focus.

(121) Who gave away a watch?
*Onko agoggo=i ki Lakka Kule.
give.PFV watch=BM to Lakka Kule
(intended:) "KULE gave a watch to Lakka."

Examples like (121) were never accepted, including cases where the indirect object or adjunct intervening between the background marker and the focus is given. The requirement of the background marker to be placed exactly between focus and background thus seems to be very strict.

This section concludes the discussion of focus projection in Ngamo. It started with some examples where the *=i/ye*-marker was accepted within the focused part of the sentence, because the *=i/ye*-marked part of the focus was prementioned. However, this was shown to be only possible in certain, restricted cases, paralleling observations made in Kadmon and Sevi (2011) for English. Further examples showed that (i) *=i/ye* marked parts of the sentence can be new, (ii) given parts of the sentence are not obligatorily *=i/ye* marked, and (iii) no new constituents can intervene between a (given) background-marked part and the focus. These examples all show that *=i/ye* marking is not givenness marking.

[51] When the adjunct was new, e.g. as an answer to 'Who showed Urwa to someone?', the preference for this word order was even greater.

Summary This subsection investigated whether there is a strict correspondence between focus/background marking and interpretation in Ngamo. In English, there are contexts that license partial marking of focus ('under-marking'): first, due to default accent patterns, the main accent in sentence, VP- and DO-focus contexts lies on the direct object, making the realization of these three kinds of focus very similar. Second, part of the focus can be marked because this part is unexpected or noteworthy, without changing the focus interpretation. And third, part of the focus can be realized as though it were backgrounded, even though it is part of the focus, because it is prementioned. In Ngamo, background-marking of part of the focus in standard focus contexts was not possible, even if this part was especially unexpected. In contexts where the focus was part new, part given, *=i/ye*-marking within the focus was sometimes accepted, when the test sentence was a continuation of a pattern found in the immediately preceding context (Kadmon and Sevi, 2011). However, it was also shown that *=i/ye* marking is not simply givenness marking.

This section also briefly discussed cases of focus pied-piping: when e.g. an adjective, a possessive or another part of a complex DP is focused, the whole DP is marked as focus.

4.2.2 Contrast, Exhaustivity, and Existence

In the previous subsection, it was discussed whether there are possible factors that allow for partial marking of a wider focus. The results were that *=i/ye* constructions in Ngamo are less flexible than focus accenting in English.

This section takes up the discussion from section 2.2.1. It investigates whether specific contexts or special interpretations enforce a marked focus/background realization. The first part of this section discusses whether contrastive focus contexts, e.g. corrective contexts, enforce marked constructions. The second part discusses whether the exhaustive inference of marked constructions is stronger than that of unmarked constructions. The last part of the section discusses whether the existential inference is stronger with marked constructions than with unmarked constructions. Although there are some interesting interactions with focus-sensitive operators that seem to suggest differences in interpretation, a careful investigation of the meaning contribution of marked constructions showed no differences in contrast, exhaustivity, or existence inferences between marked and unmarked focus/background constructions in Ngamo.

Contrast

As discussed in section 2.2.1, the notion of contrast is usually linked to focus use, i.e. in which context the focus appears. For example, whereas *corrective focus* as in (122) is seen as contrastive, answers to *wh*-questions as in (123) are seen to be non-contrastive by e.g. Chafe (1976), É. Kiss (1998), Krifka (2008), Repp (2010), i.a. This section investigates whether there is a difference in focus/background realization in contrastive and non-contrastive contexts in Ngamo.

(122) A: John wants coffee.
B: No, John wants TEA.

(123) A: What does John want?
B: John wants TEA.

If contrastive and non-contrastive foci are realized differently in Ngamo, we would predict that answers to *wh*-questions are realized differently than the corresponding corrective foci. This is however not the case. In an acceptability judgment task testing the following four focus/background constructions, my two main language consultants judged all, except for the

non-canonical word order without the morphological marker *=i/ye* (124-b), to be fully acceptable in the contexts exemplified by (125): (i) answers to *wh*-question (125-a), (ii) answers to alternative questions (125-b), (iii) corrections of at-issue content (125-c), (iv) corrections of not-at-issue content (125-d).

(124) a. Kule onko **agoggo** ki Lakka.
Kule give.PFV watch to Lakka
b. *Kule onko ki Lakka **agoggo**.
Kule give.PFV to Lakka watch
c. Kule onko=i **agoggo** ki Lakka.
Kule give.PFV=BM watch to Lakka
d. Kule onko ki Lakka=i **agoggo**.
Kule give.PFV to Lakka=BM watch
"Kule gave A WATCH to Lakka."

(125) a. What did Kule give to Lakka? (*wh*-question)
b. Did Kule give a ball or a watch to Lakka? (disjunctive question)
c. Kule gave a ball to Lakka. (correction)
d. When did Kule give a ball to Lakka? (correction of presupposition)

These results indicate clearly that the three possible focus configurations are all acceptable to my main consultants, no matter how contrastive the context. For example, the judgments for the most contrastive context, corrections of not-at-issue content (125-d) were the same as for the least contrastive, answers to *wh*-questions. The SVAO word order was usually corrected to SVA=iO, i.e. a *=i*-marker was included.

The test was repeated as a ranking test with eight participants (8 participants, all male, age 33 to 50 (mean age: 44.6)). The participants were asked to rank answers like (124) from best ('4') to worst ('1') for a given context.

(126) Abu asks Ma'iko what Kule gave to Lakka.
Which answer should Ma'iko give?
□ Onko **agoggo** ki Lakka. (V DO IO)
□ Onko**=i agoggo** ki Lakka. (V=i DO IO)
□ Onko ki Lakka**=i agoggo**. (V IO=i DO)
□ Onko ki Lakka **agoggo**. (V IO DO)

All eight participants filled out the same questionnaire, consisting of sixteen questions (4 contexts x 4 items), resulting in 128 judgments. The results are shown in table 4.2, whereby the first column always represents the rank (1 is 'worst', 4 is 'best'), and the following columns give the frequency with which this rank was chosen. Throughout all context types, the direct object focus with canonical word order and morphological marker *=i* was judged to be the best (cf. table 4.2a), followed by the ex-situ structure (table 4.2b), followed by the canonical word order without morphological marker (table 4.2c). The non-canonical word order without *=i*-marking was judged to be worst in all contexts (table 4.2d).

To sum up, as the results of the questionnaire clearly show, the different focus contexts do not make a difference for the acceptability of different focus/background constructions. In addition, the dispreference for non-canonical word order without *=i/ye* marking was confirmed. The

	corr-presupp	correction	disj-question	*wh*-question
1	0	3	2	1
2	3	2	1	2
3	5	1	3	6
4	24	26	26	23

(a) SV=iOA word order

	corr-presupp	correction	disj-question	*wh*-question
1	0	0	0	1
2	4	8	6	11
3	21	19	22	17
4	7	5	4	3

(b) SVA=iO word order

	corr-presupp	correction	disj-question	*wh*-question
1	3	0	1	0
2	23	22	23	18
3	5	9	6	8
4	1	1	2	6

(c) SVOA word order

	corr-presupp	correction	disj-question	*wh*-question
1	29	29	29	30
2	2	0	2	1
3	1	3	1	1
4	0	0	0	0

(d) SVAO word order

Table 4.2: Ranking frequency for different word orders in different contexts

result that the canonical *=i/ye*-marked word order is most preferable is unexpected, given the discussion in Schuh (2005b). Schuh notes that questioned non-subjects are preferably unmarked, a preference that was confirmed in my own elicitation tasks. Presumably, this is an effect of the questionnaire task: since the unmarked form is highly ambiguous, the disambiguating marked forms are used for clarity.

Exhaustivity

Section 2.2.1 discussed approaches linking stronger focus marking to possible differences in (non-)exhaustivity. This section first discusses results which indicate that *=i*-marked focus structures in Ngamo are exhaustive, then tests which show that the exhaustivity inference is a conversational implicature rather than part of the truth-conditional meaning of the sentence.

An initial reason for the investigation of exhaustivity for structures using the *=i/ye* marker were examples like the following, where *=i*-marking seems to be dispreferred when the additive particle *ke* or the scalar particle *har* associate with the focused constituent. An explanation for this proposed in Grubic and Zimmermann (2011) is that the additive meaning of the particle clashes with the exhaustivity of *=i/ye*-marked constructions.

(127) [Context: Hawwa built a house.]

a. #Salko bano=*i* ke **Kule**
build.PFV house=BM also Kule
(intended:) "KULE also built a house."
(Consultant comment: Where there is 'salko bano=i', this means that the other person did something else.)

b. *Salko bano=*i* har **Kule**
build.PFV house=BM even Kule
(intended:) "Even KULE built a house."

As will be shown in the following sections, the *=i/ye* construction is however only pragmatically exhaustive, just as the corresponding unmarked cases.

The exhaustive inference The most basic test for exhaustivity (semantic or pragmatic) is the *coordination test* (É. Kiss 1998, p. 250, Szabolcsi 1981b, p. 519). Here, a sentence is asked to be judged with respect to a context which it does not describe exhaustively, thus making the sentence infelicitous if it is exhaustive. In order to control for focus in the unmarked case, it is necessary to present pairs of contexts and questions, as in (128)[52].

(128) Peter and Paul each took a test and passed. Mary asks the teacher who passed the test. The teacher answers:

a. PETER passed
b. It was PETER who passed.

Since any answer to a question is usually at least pragmatically exhaustive, I expected both answers to be infelicitous in this context. The test can be augmented to better differentiate between pragmatic and semantic exhaustivity by explaining that the person asking the question is not interested in Paul — nevertheless, it is a test that is not easily conductible in fieldwork.

[52]The test presented here differs from the original test in two respects: (i) in the original test, the context was presented unmarked or as a cleft, too, e.g. *It was Peter and Paul who passed the test*. Gryllia (2008, p.14) argues convincingly that it is the form of the answer that is important in this test — I thus did not construct the context sentence as a *=i/ye* construction; (ii) in the original test, no intermediate question was asked. I believe that the question is important because it enforces a narrow focus reading for the unmarked focus construction.

Without a preceding question enforcing narrow focus, both speakers consistently judged the *=i/ye* sentences (e.g. DO-focus in (129)) to be exhaustive, whereas the unmarked, all-focus structure, was not considered to be exhaustive, cf. for example (129) .

(129) [Context: Kule called Shuwa and Dimza.]

a. Kule esha Dimza
Kule call.PFV Dimza
"Kule called Dimza."
(Comment: Yes, can be said to somebody who is not interested in Shuwa)

b. #Kule esha**=i** **Dimza**
Kule call.PFV=BM Dimza
"Kule called DIMZA."
(Comment: Not possible, because it is like saying that Kule only called Dimza)

With a preceding question enforcing narrow focus, the unmarked answer was judged to be exhaustive, too.

(130) [Context: Kule called Shuwa and Dimza.]

Q: "Who did Kule call?"

A: #Kule esha **Dimza**.
Kule call.PFV Dimza
"Kule called DIMZA."
(Comment: This does not convey the real answer to the question, except if the questioner is after Dimza alone.)

While this is a preliminary indication that there is an exhaustive inference with focus in Ngamo, this test does not show whether the *=i/ye* construction is semantically exhaustive, like English sentences with *only*, or pragmatically exhaustive, like English focus.

The exhaustive inference is not truth-conditional In this section, the *=i/ye* focus/background construction[53] is compared to sentences with *yak'i* (= "only"). As discussed in section 2.1.2, an English sentence like (131) has two core meaning components: the exhaustive meaning component (131-a), and the *prejacent* (131-b). In English, the exclusive meaning component is truth-conditional, whereas the prejacent is non-truthconditional, as can be seen e.g. from the fact that it survives embedding under negation (cf. section 2.1.2).

(131) Njelu only called SAMA yesterday

a. Njelu didn't call anybody else yesterday (Exclusive)
b. Njelu called Sama yesterday (Prejacent)

That *=i/ye* marking does not have an ONLY-semantics can be seen in (132), adapted from Horn (1981, p.130): in the complement of *realize* (or *kane* in Ngamo), the newly realized information is always part of the truth-conditional content of the complement. The oddness of (132-a) shows that all the truth-conditional information in the complement is known to the speaker and the new information that nobody else passed is non-truth-conditional meaning. (132-b), in

[53] In examples in which it was difficult to insert a *wh*-question controlling for focus, unmarked focus examples were not testable.

contrast, is felicitous because the new information is truth-conditional, and the old information presuppositional[54].

(132) I know that Kule passed, . . .

a. #me ne man ta kane ta tuko**=i** **Kule**.
but 1SG know.PFV.NEG COMP it.turned.out(?) COMP eat.PFV=BM Kule
"but I came to realize that KULE passed."
(Comment: This is not good! Once you know that he passed, you know it!)

b. me ne man ta kane ta tuko**=i** **Kule yak'i**.
but 1SG know.PFV.NEG COMP it.turned.out(?) COMP eat.PFV=BM Kule only
"but I came to realize that only KULE passed."
(Comment: he thought that Kule and some other people passed, but then he realized that only Kule passed)

Beaver and Clark (2008, p. 217) suggest a similar test with reason clauses and emotive factives[55]. In reason sentences, only the truth-conditional content of the embedded clause is understood to be the cause of the main clause. In (133), the language consultants were asked to specify the reason why the test was repeated. In (a), the exam was repeated because Kule passed, whereas in (b), it was repeated because nobody else passed.

(133) a. Malum ye kaba asaka jarabawa, kika tuko**=i** **Kule**.
teacher DEF.DET.M must repeat(?) exam because eat.PFV=BM Kule
"The teacher had to repeat the exam because KULE passed."
(Comment: he doesn't want Kule to pass!)

b. Malum ye kaba asaka jarabawa, kika tuko**=i** **Kule yak'i/modabi**.
teacher DEF.DET.M must repeat(?) exam because eat.PFV=BM Kule only/alone
"The teacher had to repeat the exam because only KULE passed."
(Comment: he doesn't want the other students to fail.)

We can thus conclude that the marked focus examples in (133) and (132) assert that Kule passed, and that the exhaustive meaning component is non-truth-conditional.

The following negation tests (Horn 1981, Szabolcsi 1981a, Szabolcsi 1994, Malte Zimmermann p.c.) also test for the differences between the semantics of the *=i/ye* marker and *yak'i*. The test pairs up the negated sentences (134) with the four possible continuations in (135). The the continuations in (135-a–b) are predicted to be felicitous if the sentence has an ONLY-like semantics, i.e. if the exhaustive meaning component is truth-conditional and the prejacent projective. In contrast, the continuations in (135-c–d) are predicted to be felicitous if the prejacent is truth-conditional.

(134) a. Njelu esha Sama bu nzono. (unmarked)
Njelu call.PFV Sama NEG yesterday

b. Njelu esha**=i** **Sama** bu nzono. (marked canonical)
Njelu call.PFV=BM Sama NEG yesterday

[54] *To pass* is translated as *to eat* in Ngamo, cf. also Jaggar and Buba (2009) for similar uses of 'eat' in the related Chadic language Hausa.

[55] This test is better than Horn's test to test for the status of the exclusive, because the status of the prejacent doesn't play a role — in (132), at least part of the unacceptability of (a) is due to the (redundantly) repeated assertion of the prejacent.

c. Njelu esha nzono**=i** **Sama** bu. (marked non-canonical)
Njelu call.PFV yesterday=BM Sama NEG
"Njelu didn't call SAMA yesterday."

d. Njelu esha**=i** **Sama yak'i** bu nzono. (ONLY)
Njelu call.PFV=BM Sama only NEG yesterday
"Njelu didn't only call SAMA yesterday."

(135) a. ke esha **Hawwa**
also call.PFV Hawwa
"he also called Hawwa."

b. esha **Sama ki Hawwa**
call.PFV Sama and Hawwa
"he called Sama and Hawwa."

c. esha **Hawwa**
call.PFV Hawwa
"he called Hawwa."

d. esha **Tunza ki Hawwa**
call.PFV Tunza and Hawwa
"he called Tunza and Hawwa."

The Ngamo speakers only accepted the continuations in (135-c–d) for sentences (134-a–c), indicating that *=i/ye* constructions do not have a ONLY-like semantics. In contrast, only (135-a–b) were accepted for the *yak'i*-sentence in (134-d), confirming that *yak'i* patterns like English *only*.

In a questionnaire testing for the survival of meaning components of sentences when negated[56], the same result with respect to projection of the prejacent inference was found: the prejacent only projects in *yak'i*-sentences, and not in merely focused sentences. For example, (136) tests whether the prejacent inference of *=i*-marked canonical word order constructions survives embedding under negation. The test sentences had the form in (134). For the *yak'i*- examples, the answer *Yes* was chosen, indicating that the prejacent (here: *Njelu called Sama yesterday*) survives negation, whereas for all focus examples, including the all-focus case (134-a)[57], *No* was chosen, showing that the prejacent does not survive. In the corresponding positive sentences, the prejacent was judged to hold in four cases.

(136) **Prejacent context**
Sama told Njelu that they can make a business deal, if Njelu calls her on a certain date, namely yesterday. Jamal says: **Njelu esha=i Sama bu nzono.**

Considering what Jamal said, do you think that Njelu and Sama made the deal?
□ Yes □ No □ I don't know

Ngamo focus/background constructions thus differ from *yak'i* (="only") sentences: In *yak'i* sentences, the exhaustive inference is truth-conditional and the prejacent is projective (i.e. survives embedding under non-veridical operators). In focus/background constructions, the prejacent is truth-conditional, whereas the exhaustive inference is non-truth-conditional.

The exhaustive inference is not a presupposition When a sentence contains a presupposition trigger, coordination of the sentence and the corresponding presupposition should be possible without any feeling of redundancy, as long as the presupposition precedes the sentence. For example, the possessive DP *my sister* in (137-a) triggers the presupposition that the speaker has a sister, and (137-b) shows the corresponding coordination test.

[56] A discussion of this questionnaire and its results can be found in Appendix A.

[57] To clarify, the unmarked case is considered to be all-focus in this test, but DO-focus in the negation tests above. In the negation tests, the continuations help disambiguate, whereas the projection contexts do not involve any disambiguating information.

(137) a. My sister is visiting me tomorrow. (PRESUPP: I have a sister.)
b. I have a sister, and my sister is visiting me tomorrow.

Thus, if the exhaustivity implication were a presupposition, a speaker should be able to add it in front of the test sentence, without an impression of redundance. This was not the case: for all focus/background constructions, my main consultants rejected a preceding exhaustive statement because they deemed it to be too "repetitive"[58].

(138) What did Ibrahim give to Lakka?
Onto 'ya bu kaba agoggo, . . .
give.PFV.3SG.F thing NEG except.for watch
"He gave (her) nothing apart from a watch, . . . "
a. #ke onko agoggo ki Lakka
and give.PFV watch to Lakka
b. #ke onko**=i** **agoggo** ki Lakka
and give.PFV=BM watch to Lakka
c. #ke onko ki Lakka**=i** **agoggo**
and give.PFV to Lakka=BM watch
". . . and he gave a WATCH to Lakka"
d. ??ke onko**=i** **agoggo yak'i** ki Lakka.
and give.PFV=BM watch only to Lakka
". . . and he only gave a WATCH to Lakka"

The projection questionnaire also included a test for the projective properties of the exhaustive inference. This turned out to be hard to test with the *=i*-marked structure, since the prejacent does not survive embedding, and the exhaustive component tested is contingent on the prejacent. (139) shows an example context and question, and (134), repeated here, the tested word orders.

(139) **Exhaustivity context**
Sama told Njelu that they can make a business deal, if Njelu doesn't call anyone who isn't Sama on a certain date, namely yesterday. Jamal says:
Njelu esha=i Sama bu nzono.
Considering what Jamal said, do you think that Njelu and Sama made the deal?
□ Yes □ No □ I don't know

(134) a. Njelu esha Sama bu nzono. (unmarked)
Njelu call.PFV Sama NEG yesterday
b. Njelu esha**=i** **Sama** bu nzono. (marked canonical)
Njelu call.PFV=BM Sama NEG yesterday
c. Njelu esha nzono**=i** **Sama** bu. (marked non-canonical)
Njelu call.PFV yesterday=BM Sama NEG
"Njelu didn't call SAMA yesterday."
d. Njelu esha**=i** **Sama yak'i** bu nzono. (ONLY)
Njelu call.PFV=BM Sama only NEG yesterday
"Njelu didn't only call SAMA yesterday."

[58]The (d) example with *yak'i* was not judged as bad as the others, even though the exhaustive inference is an assertion in this case.

It was predicted that simple positive sentences with narrow focus and *only* are judged as exhaustive. When embedded under negation, like in (134), the exhaustive inference was predicted not to follow if it is part of the assertion, like in English *only* sentences, nor if it is an implicature, like in English narrow focus examples, but only if it were a presupposition or conventional implicature. A difference between *only* sentences and the other sentences was predicted: since they assert non-exhaustivity, *only* sentences should yield clear "No" answers, whereas other test sentences might also be answered by "I don't know".

The first part of the prediction was borne out: all positive sentences, even the all-focus sentence, were judged to be exhaustive. When embedded under negation, the *only* sentences were clearly judged to be non-exhaustive, as predicted. The judgments for the other negated sentences showed that the tested implication (e.g. for (139), *Njelu didn't call anybody who isn't Sama yesterday*) does not project. However, interestingly, about half of the answers for the *=i/ye* test sentences (c) and (d) in (134) were "no" answers rather than the predicted "I don't know" answers, i.e. the participants interpreted a sentence like (139) as indicating that Njelu called somebody else yesterday, although not as clearly as in the *only* cases, where all answers were "no" answers. Later in this section, it will be shown that this is due to an existence implication which arises due to association of the negation with focus (cf. p.117 below).

To sum up, the exhaustivity inference is not a presupposition. First, it cannot felicitously precede the test sentence without any redundance, and second, it does not project. In the following, it will be shown that the exhaustivity inference is a conversational implicature.

The exhaustivity inference is a conversational implicature One property of conversational implicatures is *reinforceability*: if the exhaustivity is a conversational implicature, appending it to the test sentence should lead to strengthening instead of redundance. This is the case: examples like (140) were judged to be fine.

(140) Salko bano**=i** **Dimza**, an ngo=i salko bu ke'e.
build.PFV house=BM Dimza there.is person=REL build.PFV NEG also
"DIMZA built a house, and nobody else built a house."

(141) shows that this is possible with all three kinds of focus/background constructions[59].

(141) Who did Njelu call yesterday?
a. Esha Sama nzono, baya yo'oto bu.
call.PFV Sama yesterday, otherwise someone NEG
b. Esha**=i** **Sama** nzono, baya yo'oto bu.
call.PFV=BM Sama yesterday, otherwise someone NEG

[59] Unexpectedly, this was also accepted for sentences with *yak'i* ('only') like (i), for which the exhaustive inference is assumed to be part of the truth-conditional content. Reinforcing *only* sentences does not seem to be very odd in English, either, cf. e.g. the web example in (ii).

(i) Esha**=i** **Sama yak'i** nzono, baya yo'oto bu.
call.PFV=BM Sama only yesterday, otherwise someone NEG
"He only called SAMA yesterday, and nobody else"
(Comment: (d) can be said, not redundant, even though it is expressing the same thing.)

(ii) I spent the 48 hours leading to this exam studing only physics and nothing but physics [...]
(`http://blogs.ubc.ca/blogsquad/category/gateman/`)

It is not entirely clear to me why this is possible.

c. Esha nzono**=i** **Sama**, baya yo'oto bu.
call.PFV yesterday=BM Sama, otherwise someone NEG
"He called SAMA yesterday, and nobody else"

In addition, conversational implicatures are *cancellable* (Grice, 1975, Levinson, 1983, i.a.). As seen in answer A' in (142), exhaustivity in ex-situ *=i/ye* constructions is cancellable, like in the unmarked structure in A, but unlike in the truth-conditionally exhaustive structure with *yak'i* (= 'only') in A"[60].

(142) [Context: Who built a house?]
A: **Dimza** salko bano, Umar ke salko bano.
Dimza build.PFV house Umar also build.PFV house
A': Salko bano**=i** **Dimza**, Umar ke salko bano.
build.PFV house=BM Dimza Umar also build.PFV house
"DIMZA built a house, and Umar also built a house."
(Consultant comment for both A and A': different houses)
A": *Salko bano**=i** **Dimza yak'i**, Umar ke salko bano.
build.PFV house=BM Dimza only Umar also build.PFV house
"Only DIMZA built a house, and Umar also built a house."
(Consultant comment: it should be "Salko bano=i Dimza yak'i ki Umar" [(= 'Only Dimza and Umar built a house'])

The same results were found for DO-focus: First, overt cancellation is fine in all three possible focus configurations: unmarked (143-a), canonical marked (143-b), and non-canonical marked (143-c). With the exclusive particle *yak'i* (= 'only'), cancellation was not accepted (143-d).

(143) What did Burba buy in the village?
a. Kaja **fari** ki gargu, ke kaja ayaba.
buy.PFV watermelon at village also buy.PFV banana
b. Kaja**=i** **fari** ki gargu, ke kaja ayaba.
buy.PFV=BM watermelon at village also buy.PFV banana
c. Kaja ki gargu**=i** **fari**, ke kaja ayaba.
buy.PFV at village=BM watermelon also buy.PFV banana
"She bought a WATERMELON in the village, and she also bought a banana.
d. Kaja**=i** **fari** **yak'i** ki gargu, # ke kaja ayaba.
buy.PFV=BM watermelon only at village also buy.PFV banana
"She only bought a WATERMELON in the village, and she also bought a banana.
(Comment of one consultant: It should be "kaja fari ki ayaba yak'i ki gargu" or "kaja ki gargu=i yak fari ki ayaba" [both meaning 'she only bought a watermelon and a banana'])

[60]Consultants were asked whether Dimza and Kule built the same house because collective and distributive readings play a role in the construction of tests (Gryllia, 2008, Onea, 2007, Onea and Beaver, 2011). As Gryllia (2008, p. 16ff.) notes, collective readings should be avoided for exhaustivity tests. For example, for the Greek equivalent of the coordination test in (i), she notes that the entailment only holds when it is understood distributively, i.e. as *a pair of trousers each* (Gryllia, 2008, p. 19).

(i) [Context: I bought a pair of trousers for John and for Mary.]
I bought a pair of trousers FOR JOHN.

Second, that the exhaustivity inference is cancellable[61] can also be seen by the fact that there are contexts in which it doesn't arise. Exhaustivity does not arise in answers to so-called *mention-some* questions, because the current discourse goal does not require the answer to be exhaustive (e.g. Schulz and Van Rooij 2006, p.210, Gryllia 2008, p.9f., Hartmann and Zimmermann 2007a, p. 254). These are questions which don't require an exhaustive list as an answer. For example, for the mention-some *Where can I buy a newspaper?*, it suffices for the purposes of the questioner to provide one of the places where she can buy a newspaper; the answerer doesn't need to list all places. As seen in (144), the *=i/ye* construction is possible in these cases. The speakers confirmed that (144) can be said in a situation where you just want to know the closest place to buy a newspaper.

(144) Q: A bo'yta jarida=i lo?
3SG.HAB sell.HAB newspaper=BM who
"Who sells newspapers?"
A: A bo'yta**=i ngo=i wommi'i**.
3SG.HAB sell.HAB=BM man=LINK DEM
"THAT MAN sells newspapers."

Third, *=i/ye*-marked answers themselves can overtly indicate that they are non-exhaustive, thereby cancelling the exhaustive inference, e.g. answer A in (145) (É. Kiss 1998, p.251, Wedgwood et al. 2006, p.12, Hartmann and Zimmermann 2007a, p.253), and answers like A' in (145) (É. Kiss 1998, p.251, Onea and Beaver 2011, p. 345). Onea and Beaver explain that A' is inherently non-exhaustive because no stronger alternative can be excluded, whereas all weaker alternatives are included[62,63].

(145) [Who called you?]
A: Kika Hawwa, esha ne'e**=i Shuwa**.
apart.from Hawwa call.PFV 1SG=I Shuwa
"Apart from Hawwa, SHUWA called me."
A': Esha ne'e**=i ngo yiya ke**.
call.PFV 1SG=I person which also
"EVERYBODY called me."

(146) [Who did Gambo call?]
Esha**=i ngo yiya ke**
call.PFV=BM person which also
"He called EVERYBODY"

To conclude this section, the exhaustivity inference in *=i/ye* constructions in Ngamo was found to be a conversational implicature. First, it can be appended after the test sentence without any redundancy, and second, it is cancellable. The exhaustivity inference is thus not stronger in these constructions than in unmarked focus constructions: in both cases, it is merely a conversational implicature.

[61] I use the standard term here, even though I don't want to suggest that he implicature arises and is then cancelled.

[62] É. Kiss (1998) also tests answers like *Somebody passed*. I discuss these under the heading of *existence* below.

[63] In contrast to Hungarian and Mongolian, where downward monotone quantifiers have to occur in marked, exhaustive, focus constructions, and cannot occur in situ (É. Kiss 1998, p.262, Onea and Guntsetseg 2011, p.473, Onea (t.a.), p.10), they are possible in all kinds of focus/background constructions in Ngamo, including in situ, e.g. (i).

(i) What did Burba buy in the village?
Kaja **'ya la shim** ki gargu.
buy.PFV thing few at village
"She bought FEW THINGS at the village."

In contrast to Ngamo, universal quantifiers are disallowed in the marked focus construction in Hungarian and Mongolian (Onea and Guntsetseg, 2011, p. 480) — the status of the exhaustive inference in these languages is thus entirely different than in Ngamo.

Existence

A further possible difference between different kinds of focus/background constructions is the presence or absence of an existential presupposition, cf. section 2.2.1. As will be shown, an existence presupposition analysis seems promising at first glance, since the existence inference is often judged to be projective. More thorough tests however reveal that this is not an existence presupposition, but rather a weaker inference due to the association of negation with focus.

One speaker, commenting on the difference between Q1 and Q2 in (147), suggested that in the question Q2 with *=i/ye*, "the speaker is specific about the person that Dimza called, and the speaker knows that he has called somebody." Similarly, the same speaker judged Q3 and Q4 to be subtly different in that in the *=i/ye*-question Q4, it is certain that somebody has built a house.

(147) Q1: Dimza esha **lo**?
Dimza call.PFV who

Q2: Dimza esha**=i** **lo**?
Dimza call.PFV=BM who
"Who did Dimza call?"

Q3: **Lo** salko bano a Nigeria mano?
who build.PFV house at Nigeria last.year

Q4: Salko bano**=i** **lo** a Nigeria mano?
build.PFV house=BM who at Nigeria last.year
"Who built a house in Nigeria last year?"

In addition, the speakers judged an existential statement to follow from negative *=i/ye* marked non-canonical word order sentences like (148-b).

(148) a. Salko bano**=i** **Dimza**
built.PFV house=BM Dimza
"DIMZA built a house."
→ Somebody built a house

b. Salko bano**=i** **Dimza bu**
built.PFV house=BM Dimza NEG
"DIMZA didn't build a house."
→ Somebody built a house

Interestingly, word order plays a role for this inference: In a projection test[64], negative=*i/ye* constructions with canonical word order (149-b) and non-canonical word order (149-c) were compared to an all-focus baseline (149-a) and a pseudocleft baseline (149-d) with respect to the existence inference *Njelu called somebody*.

(149) a. Njelu esha **Sama** *bu* nzono
Njelu call.PFV Sama NEG yesterday
"Njelu didn't call Sama yesterday."

b. Njelu esha**=i** **Sama** *bu* nzono
Njelu call.PFV=BM Sama NEG yesterday

c. Njelu esha nzono**=i** **Sama** *bu*
Njelu call.PFV yesterday=BM Sama NEG
"Njelu didn't call SAMA yesterday"

d. Ngo=i yo Njelu esha nzono**=i** **Sama** *bu*.
person=DET REL Njelu call.PFV yesterday=DET Sama NEG
"The one that Njelu called yesterday wasn't Sama."

The contexts in which this was tested were like in (150). Here, the existential is a condition for the deal between Yura and Njelu, and the participants are asked to judge, based on the test sentence, whether this deal will take place, i.e., indirectly, whether the existential holds.

[64] A more detailed discussion of this projection test and its results can be found in Appendix A.

(150) **Existence context**
Yura told Njelu that they can make a business deal, if Njelu calls somebody, no matter who, on a certain date, namely yesterday. Jamal says:
Njelu esha=i Sama bu nzono.
Considering what Jamal said, do you think that Njelu and Yura made the deal?
□ Yes □ No □ I don't know

The baseline sentences were judged as predicted, i.e. an existence inference followed from (149-d), but not from (149-a). The answers for the canonical word order *=i/ye* constructions like (149-b) were mixed, half of the participants judged the existence inference to follow. The non-canonical word order, like (149-c), patterned like the pseudocleft: the existence inference was judged to follow.

Other tests seemed to indicate that the existence inference projects in negative sentences: First, in contexts in which both speaker and addressee express that they are not committed to the truth of the existential inference: the addressee by a preceding question (e.g. Q in (151)), the speaker by an immediately preceding statement (here: "I don't think so") (cf. section 2.2.1 for Rooth (1999)'s original "football pool" example on which this test is based). If the test sentence has an existential presupposition which survives embedding under negation, this should thus clash with the public commitment of the discourse participants that they do not know whether this existential is true. My main language consultants accepted these kinds of sentences in canonical unmarked word order, but rejected the *=i/ye* marked constructions and the pseudocleft as contradictory.

(151) Njelu hates calling, but his father forces him to call one family member per day. Sometimes, his father is not around, so Njelu doesn't call anybody.
Q: Did Njelu call somebody yesterday?
A: I don't think so . . .
a. . . . kika esha **Sama** *bu* nzono, . . .
because call.PFV Sama NEG yesterday
b. . . . #kika esha**=i** **Sama** *bu* nzono, . . .
because call.PFV=BM Sama NEG yesterday
c. . . . #kika esha nzono**=i** **Sama** *bu*, . . .
because call.PFV yesterday=BM Sama NEG
". . . because he didn't call SAMA, . . . "
d. . . . #kika ngo=i yo Njelu esha**=i** **Sama** *bu* nzono, . . .
because person=LINK REL Njelu call.PFV=BM Sama NEG yesterday
". . . because the one he called wasn't Sama yesterday, . . . "
. . . and it was Sama's turn to be called.

Second, the same results were found in a similar test, involving examples like the following: Here, the speaker explicitly negates the existential in a preceding subordinate clause, e.g. stating for (152) that Njelu didn't call anybody. If the existential inference (here: Njelu called somebody) survives the embedding under negation, it should thus give rise to a contradiction. My main language consultants only accepted the unmarked answer, like (152-a)[65].

[65] A further test for existence presuppositions, modeled after an example from Büring (2004, p.70), didn't work out. In this test, there are two relevant focus alternatives (e.g. { Daudu built a house, Njelu built a house }), the conversation participants know that one alternative doesn't hold, via the previous sentence, and one speaker asks whether the other alternative holds, indicating that she does not hold any existential belief e.g. that somebody built a house. If the construction used in the *y/n*-question triggers an existence presupposition, the exchange should thus be odd.

(152) Since Njelu didn't call anybody the last three days, . . .

a. . . . si pa esha **Sama** *bu* nzono.
3SG.M indeed call.PFV Sama NEG yesterday

b. . . . #si pa esha**=i** **Sama** *bu* nzono.
3SG.M indeed call.PFV=BM Sama NEG yesterday

c. . . . #si pa esha nzono**=i** **Sama** *bu*.
3SG.M indeed call.PFV yesterday=BM Sama NEG
"of course he didn't call SAMA yesterday."

d. . . . #pa ngo=i yo si esha nzono**=i** **Sama** *bu*.
indeed person=LINK REL 3SG.M call.PFV yesterday=BM Sama NEG
"of course who he called yesterday wasn't Sama."

There is however one important argument against an existence presupposition for these kinds of constructions: they allow the focus to be a negative existential quantifier like *nobody* (e.g. Jackendoff, 1972, p.246). For example, examples like (153), in which the assertion would clash with the existence implication, are judged by my main consultants to be fine. The pseudocleft example in (153-d) was rejected.

(153) Q: Who did Njelu call yesterday?

a. Esha **ngo** **bu** nzono.
call.PFV person NEG yesterday

b. Esha**=i** **ngo** **bu** nzono.
call.PFV=BM person NEG yesterday

c. Esha nzono**=i** **ngo** **bu**.
call.PFV yesterday=BM person NEG
"He called NOBODY yesterday"

d. #Ngo=i yo Njelu esha nzono**=i** **ngo** **bu**.
person=LINK REL Njelu call.PFV yesterday=BM person NEG
"The one that Njelu called was nobody."

A related test is the focussing of existential quantifiers. The idea behind this is that if the focus/background construction has an existential presupposition, this kind of utterance should be redundant, because they presuppose as well as assert the existential meaning component[66]. The language consultants judged all sentences in (154) to be fine.

(154) Q: What did Ibrahim give to Lakka?

a. Onko **ei** **yo'oto** ki Lakka.
give.PFV thing=LINK some to Lakka

b. Onko**=i** **ei** **yo'oto** ki Lakka.
give.PFV=BM thing=LINK some to Lakka

(i) Both Njelu and Daudu wanted to build a house last year. I just heard that Daudu didn't build a house.
Salko bano**=i** **Njelu** ɗo?
build.PFV house=BM Njelu Q
"Did NJELU build a house?"

In answers to my questionnaire, however, even the pseudocleft baseline cases, which have an existence presupposition, were accepted by the majority of speakers. For this reason, the results of this questionnaire are not included here.

[66] This is a variation on the argument in Haida (2007), who notes that these statements should be bad answers if the corresponding overt *wh*-question has an existence presupposition.

c. Onko ki Lakka**=i** **ei** **yo'oto**.
give.PFV to Lakka=BM thing=LINK some
"He gave SOMETHING to Lakka"

In the light of these facts, I reject the existential presupposition analysis. Instead, I interpret the projective existential meaning component in the case of the marked constructions as resulting from association of the negation with focus. When the negation associates with focus, it leads to different, non-truth-conditional existential inferences depending on the placement of focus (e.g. Jackendoff 1972, p.254; Kratzer 1989, p.646). For example, in (155), the inference changes depending on the placement of focus (Beaver and Clark, 2008, p.49).

(155) a. Njelu didn't call SAMA yesterday.
inference: Njelu called somebody else yesterday.
b. Njelu didn't call Sama YESTERDAY.
inference: Njelu called Sama some other day.

Association of negation with focus could also account for the mixed results of the projection test discussed on page 118. In this test, only half of the participants judged the existence inference to survive in canonical order *=i/ye* constructions. This is expected, since the negation is in its usual position, so that this structure is ambiguous between a 'normal' event negation reading, which does not lead to such an inference, and a reading in which the negation associates with the focus. For non-canonical word order, the existence inference more robust, indicating that this was interpreted as constituent negation.

4.2.3 Summary and discussion

After identifying three kinds of Ngamo focus/background constructions in section 4.1, this section was dedicated to answering two further research questions from section 2.3. The first is this:

1b) *Are there cases in which a certain realization pattern can be an answer to several different current QUDs?*

In order to answer 1b), focus projection, givenness, and partial marking due to unpredictability were tested. First, while the unmarked focus construction, like (156-a), was possible with all kinds of QUDs, the two kinds of marked constructions did not allow for focus projection, or partial background marking due to unpredictability. For example, (156-b) was infelicitous in a VP-focus context, indicating that focus marking on *Sama* does not standardly project to the VP. This section suggested that this result is not very surprising, since in the English equivalent of these sentences, the accent pattern is due to default prosody — it is the unmarked accent placement — whereas the Ngamo sentence in (156-b) is marked.

(156) a. Abu esha Sama nzono.
Abu call.PFV Sama yesterday
"Abu called SAMA yesterday."
b. Abu esha**=i** **Sama** nzono.
Abu call.PFV=BM Sama yesterday
"Abu called SAMA yesterday."

Second, the pattern in (156-b) was accepted in some — but not all — contexts in which constituents preceding the background marker were *given* in the sense of prementioned. The contexts in which this was accepted were contexts in which the antecedent and the test sentence were strongly parallel. It was shown that in other cases, givenness played no role. The fact that given constituents can sometimes be background marked is therefore a phenomenon that needs to be addressed in the analysis of these constructions.

The second research question this section addressed was 1c):

1c) *Given a certain current QUD, what are the factors that influence the realization of focus?*

It was found that contrast does not determine focus/background realization: the different word orders were judged to be equally felicitous in different contexts, no matter how contrastive the context was.

(157) a. Ibrahim onko **agoggo** ki Lakka.
Ibrahim give.PFV watch to Lakka
b. Ibrahim onko**=i** **agoggo** ki Lakka.
Ibrahim give.PFV=BM watch to Lakka
c. Ibrahim onko ki Lakka**=i** **agoggo**.
Ibrahim give.PFV to Lakka=BM watch
"Ibrahim gave a WATCH to Lakka."

Exhaustivity was initially thought to play a role, in the sense that the two kinds of marked focus/background structures, e.g. (157-b-c) were deemed to be more exhaustive than the unmarked focus constructions, because additive particles cannot associate with focus in these examples. The exhaustivity inference was however found to be only a conversational implicature, like in unmarked focus constructions: it disappeared (i) in mention-some contexts, (ii) with other inherently non-exhaustive elements apart from additive particles, and (iii) when cancelled. Tests conducted to see whether the exhaustive inference is a presupposition, or part of the truth-conditional meaning, showed that this is not the case. The status of the exhaustive component in *=i/ye* structures is therefore exactly the same as in unmarked focus cases. Sections 6 and 7 will come back to the question of why the additive particles do not associate with the focus in *=i/ye* constructions.

An existence presupposition for the *=i/ye* constructions in (157-b-c) was initially also considered possible, since it is judged to project when embedded under negation, even when this inference clashes with the context. Since focus on negative existential quantifiers like *nobody* or *nothing*, using *=i/ye* constructions, is however possible, it was concluded that this inference cannot be a presupposition. Instead, it was suggested that the negation associates with focus in these sentences. An analysis of focus in Ngamo needs to address why this association with focus seems more obligatory in Ngamo than in the corresponding English utterances, where it is — in principle — also possible.

In chapter 5, these questions will be addressed. First, the question what factor might be responsible for the different focus/background realization strategies is taken up again.

4.3 The =*i/ye* marker

This section examines the difference between the different kinds of focus/background realization from a different IS-related angle, by taking a closer look at the =*i/ye* marker. As noted above in section 4.1.1, I follow Schuh (2005b) in analysing this marker found in marked focus/background constructions not as a focus marker, but as a background marker. As Schuh (2005b) argues, this background marker derives historically from the definite determiner =*i/ye* (m) shown in (158), which was introduced in section 3.4.1.

(158) Ada**=i**
dog=DET.M
"the (previously mentioned) dog"

Section 4.3.1 shows that these =*i/ye* definites behave in some respect like *familiarity* definites as described in Schwarz (2009b, 2013): they are felicitous when the referent is recently prementioned, or present in the non-linguistic context and identified via a gesture. They can however also be used (i) when the addressee is evidently paying attention to a referent in the non-linguistic context, and (ii) when the referent is important to the aims and goals of the addressee. These are contexts described in Barlew (2014) as licensing the determiner *té* in Bulu (Bantu). Barlew proposes that *hearer salience* is the condition for the use of this determiner, with familiarity being only a sub-case of hearer salience.

Section 4.3.2 discusses the relation between the =*i/ye* determiner and the =*i/ye* background marker. It links the findings of the definiteness chapter with the observations on givenness in section 4.2.1. There, it was found that whether a given constituent can be =*i/ye* marked depends on the parallelity of the test sentence with the antecedent, as suggested for English in Kadmon and Sevi (2011). This section further discusses Kadmon and Sevi's proposal in the light of the definiteness facts, by presenting some similarities between contexts allowing for background marking and contexts allowing for the use of the definite determiner.

Section 4.3.3 takes up the proposal in Schuh (2005b) that the =*i/ye* marker found in the antecedent of conditionals and in *when*-clauses is also related to the definite determiner =*i/ye*. This section introduces conditionals and *when*-clauses in Ngamo, showing that the =*i/ye* marker is possible in all kinds of conditionals and *when*-clauses. This =*i/ye* marker is compared with that found in focus/background constructions and definites. It is proposed that whereas the background marker shares its *salience* requirement with the definite determiner, it shares with the conditional marker that its semantic domain is the domain of situations rather than individuals.

4.3.1 The diachronic origin of =*i/ye*: the definite determiner

As discussed in section 3.4, the definite determiner =*i/ye* (m./pl.) / =*s/se* (f.) occurs postnominally, and agrees with the noun in gender and number, cf. (159).

(159) a. ngo**=i**
man=DEF.DET.M
"the (previously mentioned) man"

b. mandu**=s**
woman=DEF.DET.F
"the (previously mentioned) woman"
c. mande**=i**
women=DEF.DET.PL
"the (previously mentioned) women"

This definite determiner is however not always required for an interpretation as definite: bare nominals can also receive a definite interpretation (depending on the context), similar to e.g. Hausa (West Chadic) (Newman 2000, p.143, i.a., Jaggar 1983) and Akan (Niger-Congo) (Arkoh and Matthewson, 2013), cf. the examples in (160)–(161).

(160) ada
dog
"the/a dog"

(161) ada **ye**
dog =DET
"the dog"

Languages with several definite determiners sometimes have a dedicated definite for *familiarity* uses, and one for *uniqueness* (Schwarz, 2009b, 2013). *Familiarity* refers to anaphoric uses of definite descriptions, where the referent is uniquely identifiable because it is recently prementioned (162), whereas *uniqueness* refers to non-anaphoric uses of definite descriptions, where the referent is uniquely identifiable because it is unique, at least in the current situation (163).

(162) A man came in. **The man** was wearing a hat.

(163) **The moon** is shining.

Languages with this distinction, according to Schwarz (2013), include various Germanic dialects, as well as Standard German, Akan (Niger-Congo), Mauritian Creole, Lakhota (Siouan), and Hausa (Chadic).

On first glance, Ngamo behaves very similarly to German as described in Schwarz' work. Spontaneously, Ngamo speakers use the *=i/ye*-marked definites for familiarity uses (164), and the unmarked definites for uniqueness cases (165)–(166)[67].

(164) Kule and I saw a woman and a man.
a. **Mandu=s** lakɗa ne'e.
woman=DET.DEF.F greet.PFV 1SG
"The woman greeted me."
b. Kule lakɗa **mandu=s'e**.
Kule greet.PFV woman=DET.DEF.F
"Kule greeted the woman."

(165) Njelu woke up late at night. When he woke up, . . .
a. . . . **tere** bulini.
moon shine.ICP
". . . the moon was shining."

[67] This was done consistently, independently of animacy, and across different contexts, e.g. also where the definite — in contrast to example (164) — is not easily interpretable as a contrastive topic.

b. . . . moiko **tere**.
saw.PFV moon
"He saw the moon."

(166) Takarda so ko kajas a ka **tepur (*se)** a bi wo'oto.
book REL 2SG.M buy=DEF.DET.F at head table DEF.DET.F at room food
"The book that you bought is on the kitchen table."

When a definite is both anaphoric and unique, it carries a *=i/ye* marker, cf. (167).

(167) Kule an=no labar a ka tere. Kika ka'a, ne kura **tere=i**
Kule tell.PFV=1SG story on top moon because like.that 1SG go.inspect.PFV moon=DEF.DET.M
nzonok bedi.
yesterday night
"Kule told me a story about the moon. Because of that, I looked at the moon last night."

The *=i/ye* definite triggers an existence presupposition, and a familiarity presupposition, but no uniqueness presupposition. This was tested in a context like (168), where the language consultants were asked to imagine that they only hear a part of a conversation, and are asked some questions about the conclusions that they can draw from this[68]. As seen in (169), when the definite occurs in the antecedent of a conditional, it still follows that the referent exists and is prementioned, but not that the referent is unique.

(168) (Context: You can hear a woman talking to somebody on the phone. You didn't hear what she said before. Now she is saying: *I will go to my village, . . .*)
kika **ba'i** **ma'i=s** ndalo ne shate te
because daughter king=DEF.DET.F want.PFV 1SG help.SBJV 3SG.F
"because the king's daughter needs my help."

a.	Does the king have a daughter?	Yes
b.	Does the king have only one daughter?	I don't know.
c.	Did they talk about the daughter before?	Yes

(169) (Context: You can hear a woman talking to somebody on the phone. You didn't hear what she said before. Now she is saying:)
Na **ba'i** **ma'i=s** ndalo ne shate te=i, ne go gara=mu
if daughter king=DEF.DET.F want.PFV 1SG help.SBJV 3SG.F=I 1SG go.FUT village(?)=1PL.POSS
sati=s so isno.
week=LINK REL come.STAT
"If the king's daughter needs my help, I need to go to my village next week."

a.	Does the king have a daughter?	Yes
b.	Does the king have only one daughter?	I don't know.
c.	Did they talk about the daughter before?	Yes.

Schwarz (2009b) notes that in standard German, the *familiarity* definite is used in bridging contexts where the DP under consideration and its antecedent stand in a product-producer relation (e.g. *book* and *author*), but the *uniqueness* definite is used when they stand in a part-whole

[68] Note that the definite determiner *=s* in (168) is a feminine definite determiner, and thus doesn't mark the king as definite, but his daughter.

relation (e.g. *car* and *steering wheel*). In Ngamo, this was also found, cf. (170)–(171), even though, for the part-whole relation, a possessive was considered to be preferable to a bare DP.

(170) I bought a book last week.
a. **A gofshe=i** walla ne'e ki sani bolo.
one.who.does writing=DEF.M exceed.PFV 1SG with year two
"The author is two years older than me."
b. Kule gomta **a gofshe=i** ki man'i.
Kule introduce.PFV(?) one.who.does writing=DEF.M to wife.3SG.POSS
"Kule introduced the author to his wife."

(171) Nzuni ahanko bo dumɓi motano me shirankok **siteri(=to/*=i'e)**
3PL open.PL.PFV door car=1SG but steal.PL.PFV.TOT steering.wheel=3SG.F/DEF.M
nzono.
yesterday
"They broke into my car and stole the steering wheel yesterday."
(Consultant comment: to use =*i'e*, you have to have talked about it before.)

The same pattern can be observed in covariation examples, (172)–(173).

(172) La makaranta yiya ke yo karanta takarda
child student which also REL read.PFV book
ndalo a gomi ki **a gofshe=i'e**
want.PFV 3SG.SBJV meet.SBJV with one.who.does writing=DEF.M
"Every student that read a book wanted to meet the author."

(173) Lei a shiri yiya yo aha bo dumɓi mato
even one.who.does stealing which REL open.PFV door car
shirkok **siteri (=to/*=i'e)**.
steal.PFV.TOT steering.wheel =3SG.F/=DEF.M
"Every thief who broke into a car stole the steering wheel."

In addition, the bare noun definite is used for kind reference, e.g. (174), and so-called *weak definites* (175), which do not seem to presuppose uniqueness. Again, this is like in Standard German (Schwarz, 2009b, p.65, p.72).

(174) **Turum** a dati wallak (shida) lei arei awe=s siya ke
lion in.terms.of height surpasses types even type cat=LINK which also
"The lion is the tallest of all living cats."

(175) Maleka nda ndishe **goma** — lei goma=i yiya.
Maleka want.PFV go.NMLZ market even market=LINK which
"Maleka wants to go to the market — any market."

On first glance, the pattern thus seems to be just like in German, cf. the summary in table 4.3. Following the terminology of Schwarz, the familiarity definite article in German is called the *strong* definite article, and the uniqueness definite article is called the *weak* definite article.

	Example	German	Ngamo
anaphoric	"a book ... the book"	strong	*=i/ye*
unique	"the moon" / "the king"	weak	∅
bridging I	"a book ... the author" (product-producer)	strong	*=i/ye*
bridging II	"a car... the steering wheel" (part-whole)	weak	∅/possessive
covarying I	"every book... the author" (product-producer)	strong	*=i/ye*
covarying II	"every car... the steering wheel" (part-whole)	weak	∅/possessive
proper names	"the Peter"	weak	(unclear)
kind reference	"the lion is a mammal"	weak	∅
weak definites	"go to the doctor"	weak	∅

Table 4.3: Definite articles in German and Ngamo

Immediate situation uses Schwarz (2009b, p.34) notes that the definite determiner that is used to mark familiarity can also be used in contexts in which the referent of the definite determiner is present in the utterance situation. Usually, if the referent is unique in this situation, these cases pattern like the uniqueness examples. Schwarz however cites the observations made in Ebert (1971, p.103f.) for Fering (Frisian) that when the speaker is making a gesture towards the referent or gazing at it, the familiarity definite can be used. Schwarz' explanation for this is that the familiarity definite, in Fering as well as in Standard German, can be used as a demonstrative.

In Ngamo, *=i/ye* DPs also have a demonstrative use, cf. (176) . In this situation, the referent is not unique, and has to be identified by pointing. The bare noun definite, which is used for unique referents, is therefore not allowed. The familiarity definite alone is possible for the first referent, its second occurrence was interpreted as anaphoric without an additional determiner indicating demonstrativity (*wonse*) or novelty (*so'oto*). It seems that in contrast to English, cf. (177-a), a demonstrative use is possible, but in contrast to German, cf. (177-b) from Schwarz (2009b, p.34), *=i/ye* DPs have to refer back to a previously introduced antecedent if they can.

(176) Shuwa and Dimza are standing in front of Shuwa's bookshelf. Shuwa says, pointing:
??Ne kaja **takarda=s** ki Potiskum, **takarda=s** me ki Barno.
1SG buy.PFV book=DEF.DET.F at Potiskum book=DEF.DET.F but at Maiduguri[69].
(intended:) "I bought this book in Potiskum, and this book in Maiduguri."
(Consultant comment: even though you are pointing, it should be "takardas ... takardas so'otos/wanses" [(='the other book'/'(the) that book')] — 'takardas' sounds as though you are still talking about the same book.)

(177) a. *Hans came in the car, not in the car.
b. Hans ist in DEM Auto gekommen, nicht in DEM Auto.
Hans is in the$_{strong}$ car come not in the$_{strong}$ car
"Hans came in that car, not in that car."

Example (178), inspired by Barlew (2014), suggests that it is not the attention of the speaker that plays a role, but the attention of the hearer. Barlew proposes for the Bantu language Bulu that the important difference between the two kinds of definites found in this language is that one of them — the one also used for anaphoricity — can only be used when the referent is salient to the

[69]The town of Maiduguri is called *Barno* in Ngamo.

hearer. In Ngamo, this seems to play a role, too: even though *tere* (= "the moon") is a typical uniqueness definite, it can be marked using *=i/ye* even if the interlocutors have not spoken about it before, if the speaker is sure that the hearer is attending to it. For this reason, the definite determiner was accepted in the context (178), but not in (179).

(178) (Shuwa is sitting outside in the evening, looking at the sky. A stranger comes up to her and says . . .)

a. **Tere=i** bulinni.
moon=DEF.DET.M shine.ICP
"The moon is shining."

b. Ne moishentik **tere=i'e**
1SG see.HAB.TOT moon=DEF.DET.M
"I can see the moon"
(Comment: He can say this, thinking that she is looking at the moon — if she's not looking at the moon, it is not good.)

(179) Shuwa is sitting outside in the evening, reading a book. A stranger comes up to her and says . . .
(Comment: You have to say tere, because the moon is not in her mind, she has no business with it)

An *=i/ye* definite can thus also be used in immediate situation examples, when the speaker can infer that the hearer is paying attention to its referent, either (i) because the speaker is pointing at it, or (ii) because the hearer is evidently independently paying attention to it.

Relevance to the addressee's aims and goals Barlew discusses a further kind of context which is interesting, because it does not necessarily involve the discourse referent being present in the utterance situation. He notes that the Bulu definite determiner *-tè*, which is used in familiarity contexts, can also be used in contexts like (180), but not in contexts like (181). Barlew proposes that the important difference between (180) and (181) is that the book is relevant to Abodo's aims and goals, but not to Andung's son's.

(180) Context: Andung and Abondo have a special book that is a family heirloom passed down from Andung's mother. It has family genealogy written inside it. They always keep it on the nightstand beside their bed. One day when they come home, they find their house has been broken into. When they come to the nightstand, they see that the book is gone. They exchange a glance, and then Andung says:

kálàtà tè à nə ndʒáŋán
book TE PN_1 COP missing
"The book is missing."

(181) Context: Minimally different from (180), except that Andung is speaking to her teenage son, who does not care about genealogy or family heirlooms.

These kinds of judgments were hard to reproduce, but I believe that (182) might be an example of this kind. Here, the car keys are not prementioned or visible in the utterance context, but are made salient by the fact that Njelu is evidently looking for them. The car keys are thus clearly relevant to Njelu's aims and goals, allowing Gimsi to use the *=i/ye* definite determiner.

(182) Njelu wants to travel. Gimsi sees him looking in his pockets, searching for something. She says:
Namko mamabuɗi=k mota**=s** Kule.
take.PFV key=LINK.F car.DEF.DET.F Kule
"KULE took the car keys."

These kinds of contexts are important. They show that the use of the *=i/ye* definite determiner need not be licensed by virtue of the referent being in the immediate linguistic or non-linguistic context. Instead, it can also be licensed because the referent is hearer-salient.

To sum up, the *=i/ye* definite determiner, which is related to the background marker *=i/ye*, is optional. It is used when the referent is (i) prementioned, (ii) in the immediate context and the speaker knows that the hearer is attending to it, or (iii) not in the immediate context, but the speaker knows that it is relevant for the hearer's aims and goals. These last cases show that the referent need not necessarily be anaphorically accessible. Instead, the definite determiner is licensed whenever the referent is hearer salient (cf. Barlew, 2014). In the following section, I will show that parallel examples can be found for the background marker.

4.3.2 Background marking and salience

The preceding section argued that the *=i/ye* definite determiner can occur when the referent is (i) prementioned, (ii) present in the utterance context and attended to by the addressee, or (iii) relevant to the addressee's aims and goals. In this section, it will be argued that the background marker occurring in marked constructions is licensed in similar contexts.

Premention Like with *=i/ye* definites, the prototypical background marking examples are cases where the background is *given*, e.g. (183).

(183) Q2: Shuwa esha=*i* **lo**?
Shuwa call.PFV=BM who
"Who did Shuwa call?"

A2: Shuwa esha=*i* **Jajei**.
Shuwa call.PFV=BM Jajei
"Shuwa called JAJEI."

In contrast to Barlew (2014)'s analysis of maximal salience, the use of an *=i/ye*-marked definite description or background is not preferred when the referent is maximally salient. Instead, the use of (zero) pronouns is preferred for definites (184) ; maximally salient backgrounds are preferably elided (185).

(184) Q: Shuwa iko miya ki bano=se?
Shuwa do.PFV what with house=DEF.DET.F
"What did Shuwa do to the house?"
A: **Salko**.
build.PFV
"(She) BUILT (it)."

(185) Q: Lapko=i lo?
answer.PFV=BM who
"Who answered?"
A: **Jajei**.
Jajei
"JAJEI."

The previous section showed that the definite determiner *=i/ye* can be used in some *bridging* examples, i.e. a DP could be *=i/ye* marked if something semantically related to its referent via a product-producer relationship was prementioned. For focus backgrounds, something similar is possible, e.g. (186). Here, because the book is recently mentioned, writing the book can be background-marked, just like premention of the book allows for the author to be referred to using a *=i/ye* definite.

(186) A yo takardai'ye, rubata**=i** **Kule**.
At(?) that.of(?) book=I write.PFV=BM Kule.
"As for the book, KULE wrote it."

In translation, there were examples where speakers spontaneously used a subject inversion construction even though there was no preceding subject focus context, e.g. (187). This happens when the backgrounded event (here: somebody marrying Lakka) could be inferred from something prementioned and topical (here: Lakka's wedding). This is thus another bridging example.

(187) Q: What happened last year?
A: Banono Lakka iko kaibono. Ka te**=i** **Baba**.
younger.sister2SG.POSS Lakka do.PFV wedding marry.PFV 3SG.F=BM Baba
"My younger sister Lakka had her wedding. BABA married her."

In such cases, e.g. also (188), subject inversion was preferred in a judgment task with eight participants: SV word order like answer A in (188) was only accepted in one out of eight judgments, the other speakers corrected it to V-iS word order, like answer A'[70]. Thus, in these bridging-like contexts, *=i/ye*-marking of the background was preferred.

(188) As for the funeral I visited yesterday,

A **Dayayi** matko.
Dayayi die.PFV
"Dayayi died."

A' Matko**=i** **Dayayi**.
die.PFV=BM Dayayi
"DAYAYI died."

Interestingly, in cases where the backgrounded event could be inferred from something prementioned but not topical, e.g. as a continuation of (189), both word orders were judged to be equally good: six out of eight SVO word order examples were accepted, and seven out of eight V-iS word order examples.

(189) Tunza, who had a recent loss in her family, came for a visit.

This means that even in the cases where the situation that the background is about is prementioned, the extent to which background-marking is preferred over the canonical word order depends on the discourse topicality of the situation.

Immediate situation uses In full parallel to the definiteness examples in section 4.3.1, where a definite could be *=i/ye*-marked when it was present in the utterance context and the addressee was evidently paying attention to it, background marking is possible when it is evident from the utterance context that the addressee is in need of a certain piece of information. For example, in (190), a variant of example (182) above, it is clear to Gimsi that Njelu is attending to the question of where the car keys are.

[70] One correction was missing; all remaining six corrections involved inverted subjects.

(190) Njelu wants to travel. Gimsi sees him looking in his pockets, searching for something. She says:
Namko mamabuɗi=k mota=i **Kule**.
take.PFV key=LINK.F car=BM Kule
"KULE took the car keys."

In this case, the background is not given. Apart from what Gimsi can see from the utterance context, she also has no other indication that this question is important to Njelu's goals. For background marking, it is thus the fact that the addressee is attending to this in the immediate context that allows the use of *=i/ye*.

Relevance to the addressee's aims and goals A further parallel between definites and backgrounds is that the background can be marked if the speaker knows that the corresponding question is relevant to the hearer's aims and goals. For example, in (191), the speaker knows that Jiji usually waits for Kule to call him at this time. Since he knows that it is relevant for Jiji to know who Kule called — namely somebody else —, he can *=i/ye*-mark the background.

(191) Kule usually asks Jiji to do errands for him after school. Now, after school, Jiji is sitting and waiting, but then a friend comes in and says:
Kule esha**=i** **Sama**.
Kule call.PFV=BM Sama
"Kule called SAMA."
(Comment: this is okay, because Jiji is expecting Kule to call him.)

Similar examples were discussed in Kadmon and Sevi (2011, p.26ff) using the notion of *expectability*: they propose that in English, deaccenting of given constituents is possible if there is a salient expectation of a certain kind. They follow up on Wagner (2006)'s observation that in the classic convertible examples, the given noun ('convertible') is only deaccented if the adjective contrasts with the given one (e.g. 'blue'/'red', 'high-end'/'cheap'), cf. (192).

(192) A: Mary's uncle, who produces high-end convertibles, is coming to her wedding. I wonder what he brought as a present.
B-1: He brought a CHEAP convertible.
B-2#He brought a RED convertible.

Kadmon and Sevi show that this is not enough to explain deaccenting patterns: in (193), *luxury convertible* is given, *luxury* contrasts with *cheap*, but still, in answer (B-1), *convertible* cannot be deaccented. They suggest that it isn't contrast with a given alternative that plays a role, but contrast with a salient expectation. In (193), the salient expectation is that Mary's uncle gives Mary an expensive bicycle for her wedding.

(193) A: Mary's uncle, the one who produces expensive bicycles, is currently stuck in Margaret's luxury convertible on Route 97, so he's going to be late for the wedding. Guess what he's giving her as a present.
B-1#I know what he's giving her. He's giving her a CHEAP convertible!
B-2: I know what he's giving her. He's giving her a USED bicycle!

It seems to me that expectability of this kind is a special sub-case of salience, namely one where the speaker thinks that (i) the addresse is harboring and attending to some (wrong) expectation, and (ii) it is beneficial to the hearer's aims and goals to be corrected. Example (191) is such a case.

Default anaphoricity In section 4.3.1, a difference between the deictic uses of the German familiarity definite and the corresponding Ngamo examples was noted: In German, the same definite description could be used to refer to several different referents, identified by pointing. In Ngamo, this was not possible, the second referent had to be identified using "the other. . . ". This can be seen in examples (176)–(177), repeated here:

(176) Shuwa and Dimza are standing in front of Shuwa's bookshelf. Shuwa says, pointing:
??Ne kaja **takarda=s** ki Potiskum, **takarda=s** me ki Barno.
1SG buy.PFV book=DEF.DET.F at Potiskum book=DEF.DET.F but at Maiduguri.
(intended:) "I bought this book in Potiskum, and this book in Maiduguri."
(Consultant comment: even though you are pointing, it should be "takardas ... takardas so'otos/wanses" [(='the other book'/'(the) that book')] — 'takardas' sounds as though you are still talking about the same book.)

(177) a. *Hans came in the car, not in the car.
b. Hans ist in DEM Auto gekommen, nicht in DEM Auto.
Hans is in the$_{strong}$ car come not in the$_{strong}$ car
"Hans came in that car, not in that car."

It will be argued in section 6.1.2 that a similar restriction for background marking is the reason of the unacceptability of the additive examples with background marking discussed in section 4.2.2, cf. (194). Here, the backgrounded part is interpreted as anaphoric, referring to the same thing in both instances. As section 6.1.2 will show, additive *ke('e)* requires the background-marked part to differ from the backgrounded part in the antecedent sentence, cf. e.g. (195). This is argued to be the reason for the inacceptability of (194).

(194) ??**Salko bano=i** Hawwa, **salko bano=i** ke Kule
build.PFV house=BM Hawwa build.PFV house=BM also Kule
(intended:) "HAWWA built a house, and KULE also built a house."

(195) **Kaja mato=i** Hawwa, **salko bano=i** ke Kule.
buy.PFV car=BM Hawwa build.PFV house=BM also Kule
"Hawwa bought a car, Kule built a house."

This thesis explores the idea that the background marker is a kind of definite determiner, and that this accounts for the examples shown in this section. The proposal that the information-structurally backgrounded part of an utterance is a definite description is not new. As discussed in section 2.2.1, it was proposed for clefts and other focus constructions in different languages that the background is a definite description of an individual, paraphrasable as (196-b) (Akmajian, 1970, Percus, 1997, Hedberg, 2000, Büring and Križ, 2013, Szabolcsi, 1994) or an event (196-c) (Hole 2011, Onea 2007, Onea and Beaver 2011, Onea (t.a.)).

(196) a. It is Peter who left.
b. **The one who left** is Peter.
c. **The event of somebody leaving** is an event of Peter leaving.

Both of these accounts are however not feasible for Ngamo: they were proposed to account for the existence and exhaustivity effects found with the respective constructions. In Ngamo, as discussed in section 4.2.2, *=i/ye* marking does not trigger an existence presupposition, nor does it yield a stronger exhaustive inference than non-*=i/ye*-marked narrow focus. In principle, this alone would not be problematic: von Fintel and Matthewson (2008, p.179) suggest that the fact that in St'át'imcets (Salish), neither definite determiners nor it-clefts are presuppositional (Matthewson, 1998a, Davis et al., 2004)[71] might be evidence for a definite description account for clefts. However, it was shown in section 4.3.1 that the *=i/ye* definite determiner triggers an existence presupposition. These definiteness accounts are thus not on the right track for Ngamo.

Instead, it will be argued in chapter 5 that the focus background is a definite description of the situation that the sentence is about, the so-called *topic situation*. For (196), this is paraphrasable as (197).

(197) **The situation that the question 'Who is leaving?' is about** is a situation in which Peter is leaving

This approach is thus in the tradition of accounts attributing the source of the topic situation to the current QUD and the QUD hierarchy in general (Kratzer, 2011, Schwarz, 2009b). The following section provides further motivation for this claim, by suggesting that other synchronic uses of related *=i/ye*-markers also mark descriptions of topic situations.

4.3.3 Other *=i/ye* markers: *if-* & *when-*clauses

In Ngamo, *if-* and *when*-clauses are expressed using a complementizer *na*, *ɗo* or *ka na*, and a final *i/ye*, according to my speakers[72]. *Ka na* is used in counterfactual conditionals, e.g. (198).

(198) **Ka na** Njelu teɗeni nzono (**ye**), ka('a) si a ndutu gama=mu
if Njelu arrive.ICP yesterday YE then 3SG.M 3SG.FUT go.FUT.VENT place.of=1PL.POSS
kute'e.
today.
"If Njelu had arrived yesterday, he would have visited us today"
(Comment: the speaker is sure that Njelu didn't arrive, otherwise he would have visited.)

The distribution of *na* and *ɗo* is parallel to that of *wenn* and *als* in German (cf. Hinterwimmer, 2008, for a comparison of *wenn* and *als*): Like *als* in German, *ɗo* is used for *when*-clauses referring to single past events (199-a) , or past framesetters (199-b).

[71] To be clear, the determiners discussed in Matthewson (1998a) are found to not be definite at all, since they lack the presuppositions usually triggered by definite determiners, and instead assert existence.

[72] Schuh (2005b) mentions only *na*, noting that *when*-clauses are unmarked. He writes that the verb is in the subjunctive in both cases.

(199) a. ɗ**o** Njelu teɗeno nzono (**ye**), Mary a ton obis=to.
when Njelu arrive.VENT yesterday YE Mary at in office=3SG.F.POSS
"When Njelu arrived yesterday, Mary was in her office."
b. ɗ**o** Njelu lalamba (**ye**), si a kuyu lei ki tomiya ke.
when Njelu child YE 3SG.M one.who.has happiness even at when also
"When Njelu was a child, he was always happy."

Na is used for all other cases: (i) *when*-clauses referring to single future events (200-a), (ii) *when*-clauses referring to several events (200-b), (iii) indicative *if*-clauses (201). In all kinds of conditionals mentioned so far, the *if/when*-clause can also follow the main clause (202). The *=i/ye*-marker is still optionally possible in these cases.

(200) a. **Na** Njelu teɗeno ɗoshi (**ye**), Mary a ɗeya ton obis=to.
when Njelu arrive.VENT tomorrow =YE Mary 3SG.FUT stay.FUT in office=3SG.F
"When Njelu arrives tomorrow, Mary will be in her office."
b. **Na** Njelu menok marshe**=i**, lei tomiya ke a ndishe bano=mu
when Njelu go.back.PFV.VENT journey=I even when also 3SG.HAB go.HAB house=1PL
dakarak baɗî.
next day
"When Njelu returned from a journey, he always visited us the next day."

(201) **Na** Njelu teɗeno (**ye**), a ndutu gama=mu kute'e.
if Njelu arrive.VENT YE 3SG go.FUT.VENT place.of=1PL.POSS today
"If Njelu arrived, he'll visit us today."

(202) Njelu a ndutu gama=mu **na** teɗeni nzono (**ye**).
Njelu 3SG go.FUT.VENT place.of=1PL.POSS if arriveICP yesterday YE
"If Njelu arrived yesterday, he'll visit us today"
(Comment: It is expected that Njelu will visit, it is not certain that he arrived yesterday)

Biscuit conditionals, i.e. conditionals in which the consequent is true independent of the truth of the antecedent, also use *na* and an optional *=i/ye* marker.

(203) **Na** ko kolshe kizi (**ye**), andi wo'oto a ka tepur a bi.
if 2SG.M hear.HAB hunger YE there.is food on top table at room
"If you're hungry, there is food on the table in the room."

Schuh (2005b, p. 22–26) shows for several languages of the Yobe State region that the final markers used in conditionals and *when*-clauses are related to the respective definite determiners (or sometimes demonstratives). He attributes the optionality of the *=i/ye* marker in Ngamo conditionals to the optionality of the definite determiner.

One hypothesis that can unite all of these related uses of *=i/ye* markers, definite descriptions, markers of conditionals and temporal adverbials, and focus backgrounds, is that the *=i/ye* marker in the latter cases is a definite description of a situation, namely, the situation that the utterance is about (the "topic situation"). In this respect, backgrounding and conditional antecedents are similar, as evidenced e.g. by the fact that they can both serve as restrictors for quantificational operators like *lei ki tomiya ke* (= "always"), cf. (204)–(205).

(204) [*Lei ki tomiya ke*] [**a keshe biya=i Janga Siri=i**]$_R$ biya=i Janga
even at when also 3SG.HAB marry.HAB people=LINK Janga Siri=BM people=LINK Janga
Dole.
Dole
"PEOPLE FROM JANGA DOLE always marry people from Janga Siri."
(Consultant comment: all people from Janga Siri marry people from Janga Dole. It is possible that many people from Janga Dole may marry other people.)

(205) [*Lei ki tomiya ke*] [**na ne meno=k marshe=iy'e**]$_R$,
even at when also if 1SG return.PFV.VENT=FROM journey=I
ne go bano=t=ko dakarak baɗi.
1SG go.FUT house=LINK=3SG.M.POSS the.next.day
"Whenever I come back from a journey, I will visit you the following day."

They however differ with respect to how the respective referents are accessed. In the case of *if/when*-clauses, the relevant notion, as e.g. Schlenker (2004) notes, is not (hearer-)salience, but *similarity*.

4.3.4 Summary

This section continued to investigate the question of why there are multiple realization patterns in answers to one and the same QUD in Ngamo, i.e. essentially, whether there is any difference in use or interpretation between the different focus/background constructions. The section explored the proposal by Schuh (2005b) that the *=i/ye* marker is a background marker originating from the 'definiteness marker' *=i/ye*. A closer look at the definiteness marker revealed that it is not used to mark all kinds of definites, but only ones that are *hearer-salient* (Barlew, 2014): either because they are prementioned/indicated deictically, evidently attended to by the hearer, or thought to be important to the hearer's aims and goals. It was shown that the background marker can be used in the same kinds of contexts, with the difference that the referent, in this case, is a situation. In contrast to the proposals in Hole (2011), Onea (2007), Onea and Beaver (2011), Onea (t.a.), and Grubic and Zimmermann (2011), in which the backgrounded event was suggested to be the referent, it is proposed here that the referent is a topic situation: the situation that the corresponding QUD is about.

4.4 Summary

This section was structured into three thematic parts, each answering one of the research questions posed in section 2.3 about the relation between focus interpretation and focus realization. First, section 4.1 discussed **the different focus/background realization patterns**. Three main realization patterns were found: (i) 'canonical unmarked', i.e. prosodically, syntactically, and morphologically unmarked focus, (ii) 'canonical marked', i.e. constructions with canonical word order, but with a background marker *=i/ye*, and (iii) 'canonical unmarked', i.e. constructions with background markers as well as non-canonical word order. Non-subject term focus could occur in any of these three constructions. Focused subjects could only occur either in non-canonical word order, the preferred option, or, marginally, unmarked. Predicate focus, in contrast, did not allow for non-canonical word order, apart from focused nominalized verbs.

(206) [Context: What did Mammadi give to Dimza?] **(DO_F)**

a. Mammadi onko **agoggo** ki Dimza.
Mammadi give.PFV watch to Dimza

b. Mammadi onko=*i* **agoggo** ki Dimza.
Mammadi give.PFV=BM watch to Dimza

c. Mammadi onko ki Dimza=*i* **agoggo**.
Mammadi give.PFV to Dimza=BM watch
"Mammadi gave A WATCH to Dimza."

(207) [Context: Who answered?] **($Subj_F$)**

a. **Hawwa** lapko.
Hawwa answer.PFV

b. **Lapko=i Hawwa**
answer.PFV=BM Hawwa

c. *__I/Ye Hawwa__ lapko.
I Hawwa answer.PFV
(intended:) "HAWWA answered."

(208) [Context: What did Kule do with the duiker?] **(V_F)**

a. Kule **basa** bo'i.
Kule shoot.PFV bush.duiker

b. Kule=i **basa** bo'i.
Kule=BM shoot.PFV bush.duiker

c. Kule iko ki bo'i=i **bese**.
Kule do.PFV to bush.duiker=BM shoot.NMLZ
"Kule SHOT the duiker."

Second, when looking at **whether a certain realization pattern can answer several different QUDs** in section 4.2.1, the following was found: First, unmarked sentences can answer all kinds of QUDs. Second, unless a covert QUD is accommodated, *marked* constructions are unambiguous with respect to the QUD that they answer. For example, (209-b–c) only answer DO-focus questions. Noteworthiness of the DO, in contrast to other languages (Skopeteas and Fanselow, 2011), did not make these kinds of constructions any more acceptable.

(209) [Context: What did Abu do yesterday? / What happened?]

a. Abu esha Sama nzono.
call.PFV Sama yesterday

b. #Abu esha**=i Sama** nzono.
call.PFV=BM Sama yesterday

c. #Abu esha nzono**=i Sama**.
call.PFV yesterday=BM Sama
"Abu called Sama yesterday"

However, givenness of the subject and verb did, in contexts where the background was sufficiently parallel: answer (A) in (210) was accepted in the context in (210), but not in the minimally different context in (211). Since there is also further evidence that *=i/ye*-marking is not simply givenness-marking, this pattern has to be explained.

(210) Bah gave a lot of money to his two sons, Luccu and Kule. Luccu built a school, what did Kule do?

A: Salko=i bano.
build.PFV=BM house
"He build a HOUSE."

(211) Bah gave a lot of money to his four sons: Abu, Luccu, Njelu and Kule. Abu bought a farm, Luccu built a school, and Njelu travelled. What did Kule do?

Third, it was investigated in section 4.2.2 **what factors influence focus/background realization, given a certain QUD**. The factors tested were contrast, exhaustivity, and existence. It was found that none of them play a role. There was no difference in the acceptance of the different realization patterns when the context was changed — the contrastiveness of the focus context thus did not play a role. With respect to exhaustivity, it was found that for all focus/background constructions, the exhaustive inference was merely a conversational implicature. The behaviour of additive focus-sensitive particles in Ngamo is a puzzle of this section: they were judged to be marginal with *=i/ye*-marking, even though *=i/ye*-marked structures do not involve any stronger exhaustivity than unmarked structures with the same narrow focus.

(212) [Context: Hawwa built a house.]

a. *Salko bano=*i* ke/har **Kule**
build.PFV house=BM also/even Kule
(intended:) "KULE also/even built a house."

The third factor tested in this section was existence. Based on the fact that the focus can be a negative existential quantifier (like *nobody*), and on the fact that projection judgments were not as consistent as in the corresponding pseudocleft cases, it was found that *=i/ye*-marking does not trigger an existence presupposition. The fact that an existence inference was often made in negated sentences was proposed to be due to association of negation with focus.

In section 4.3, the investigation of the different focus/background realization patterns was taken up again from a different angle. The definite determiner *=i/ye*, which, according to Schuh (2005b) is the origin of the background marker, was studied in detail. This determiner can be used when the referent is (i) prementioned, (ii) in the immediate situation and the addressee is attending to it, or (iii) when the referent is relevant to the addressee's aims and goals. It was suggested that the background marker can be used in the same kinds of contexts, with the difference that the referent in this case is not an individual, but a situation: the situation that the QUD is about. It was suggested that other, related *=i/ye* markers, which mark e.g. temporal adverbials and the antecedent of conditionals, also mark descriptions of topic situations.

4.4.1 Questions for the analysis

The analysis first needs to address what a situation semantic account of focus looks like in general. The focus of a sentence was defined as the part which indicates alternatives, i.e. which answers the current question under discussion. The rest of the sentence, the background, is analysed as a definite description of the topic situation. The analysis thus needs to discuss how the situation semantic and the QUD approach to focus are connected. It also needs to address how focus alternatives are restricted, and how the exhaustivity implicature found in all kinds

of focus/background constructions in Ngamo can be modeled. In addition, in order to account for the existence implications found in negated marked structures, it is necessary to discuss the relation between QUDs and existence assumptions.

The next aim is to account for the differences between the different focus/background constructions in Ngamo, i.e. what semantics to assume for the *=i/ye* marker. This should explain the different realization patterns found in section 4.1, as well as the different contexts shown in section 4.2–4.3 in which the *=i/ye*-marker was felicitous, e.g. certain givenness contexts (but not all), contexts in which the hearer is clearly attending to a certain QUD, and contexts in which the speaker believes that the hearer should be attending to a QUD.

The discussion of additive particles and *=i/ye*-marking is taken up in sections 6–7, where focus-sensitivity is discussed.

Chapter 5

A Situation Semantic Analysis of Focus and Backgrounding in Ngamo

In the previous chapter, three means of realizing focus in Ngamo were discussed: (i) unmarked (1-a), (ii) canonical word order with a background marker *=i/ye* (1-b), (ii) non-canonical word order with a background marker *=i/ye* (1-c). It was suggested that the background marker marks the backgrounded part as a definite description of the situation that the sentence is about — the *topic situation*.

(1) What did Kule build?

a. Kule salko **bano** mano.
Kule build.PFV house last.year

b. Kule salko**=i** **bano** mano.
Kule build.PFV=BM house last.year
"Kule built a HOUSE last year."

c. Kule salko mano**=i** **bano**.
Kule build.PFV house=BM last.year

For this reason, the analysis needs to address **what the function of focus is in a situation semantic approach**. This will be done in several steps: First, section 5.1 presents an introduction into situation semantics, including the topic situation. Then, section 5.2 discusses the general relation between the topic situation and focus, which is assumed to hold for all kinds of focus realization in Ngamo. It is suggested that the focus-background distinction indicates what the speaker assumes the hearer's informational needs to be, via a presupposed *current question under discussion*. Thereby, the speaker indicates which situation she assumes her utterance to be about, cf. §5.1.2, and which focus alternatives she assumes to be relevant to the hearer, cf. §5.2.2. Section 5.3 discusses the notions of exhaustivity (§5.3.1), existence (§5.3.2), and contrast (§5.3.3) with respect to this framework. This concludes the overview of the general properties of focus, those that are common to all kinds of focus/background constructions in Ngamo.

The fourth section, §5.4, discusses the marked construction involving the background marker *=i/ye*. First, the semantic contribution of the definite determiner *=i/ye* in DPs is discussed in section 5.4.1, and an analysis based on the proposal of Schwarz (2009b) for anaphoric definite descriptions is adopted. Then, section 5.4.2 discusses the background marker *=i/ye*, spelling out the proposal that the *=i/ye*-marked background is a definite description of the topic situation.

5.1 Situation Semantics

5.1.1 General properties

This section presents a possibilistic[1] version of situation semantics adopted from Kratzer (2011) as the theoretical background used in the rest of the thesis.

Situations are defined as parts of possible worlds. Parthood will be represented by the sign '$\leq$' ($s \leq s'$ read as 's is a part of s''), and is defined as a partial ordering on situations[2]. Because of the reflexivity of the parthood relation, worlds, being parts of themselves, are thus also situations (Kratzer, 2012), but they are *maximal situations*, i.e. they are not a proper part of a larger situation[3]. Every situation stands in a parthood relation to a maximal situation, its world, cf. (2), adapted from Kratzer (2012).

(2) **Parthood relation:** A partial ordering on the set of situations S such that for all $s \in$ S there is a unique $s' \in$ S such that $s \leq s'$ and for all $s'' \in$ S: if $s' \leq s''$, then $s'' = s'$.

In the following, I will refer to the world of which a situation s is a part as w_s. Note that only situations which are world mates (i.e. parts of the same world) can stand in a parthood relation to each other. Situations — like individuals — cannot be in several worlds, but they can have *counterparts* in other worlds. These are situations in different worlds, which are the same in all relevant properties . The notation for the counterpart relation will be '$\approx$': $s \approx s'$ read as 's is a counterpart of s''[4].

In this theory, propositions are not sets of possible worlds (or, equivalently, functions from possible worlds to truth values), but sets of possible situations (or their characteristic functions), namely these situations in which the proposition is true. The definition of truth is adapted accordingly in a situation semantics, cf. (3) from Kratzer (2012), where P is the set of propositions, and S the set of situations[5].

[1] This means that it is an extension of possible world semantics in which propositions are seen as sets of situations rather than worlds, cf. Kratzer (2011), who cites Barwise (1988), chapter 11.

[2] It is thus reflexive, transitive, and antisymmetric:

(i) Reflexivity: For all $s \in$ S, $s \leq s$.

(ii) Transitivity: For all $s, s', s'' \in$ S, if $s \leq s'$ and $s' \leq s''$, then $s \leq s''$.

(iii) Antisymmetry: For all $s, s' \in$ S, if $s \leq s'$ and $s' \leq s$, then $s = s'$.

[3] Proper parthood is defined as follows:

(i) Proper Parthood: For all $s, s' \in$ S, s is a proper part of s' iff $s \leq s'$ and $\neg\ (s' \leq s)$

[4] I assume that this relation is reflexive, i.e. that for all s $\in$ S, s $\approx$ s.

[5] Other definitions can then remain very close to those assumed for possible world semantics without situations, cf. (i), where P is the set of propositions, and W the set of possible worlds. As seen above, truth or falsity of a proposition is evaluated with respect to a (topic) situation.

(i) a. Validity
A proposition p $\in$ P is valid iff p $\cap$ W = W.
b. Consistency
A set of propositions A $\subseteq$ P is consistent iff there is a w $\in$ W such that w $\in \cap$A.
c. Compatibility
A proposition p $\in$ P is compatible with a set of propositions A $\subseteq$ P iff A $\cup$ {p} is consistent.

(3) Truth in a situation
A proposition p ∈ P is true in a situation s ∈ S iff s ∈ p.

In the following section, the concept of an *Austinian topic situation*, i.e. the kinds of situations with respect to which the truth of a sentence is evaluated, will be introduced.

5.1.2 Austinian Topic Situations

The idea is that every utterance is about a particular situation, and can thus only be evaluated for truth or falsity with respect to this situation[6]. This can be illustrated by (4) (a variant of an example by Barwise and Etchemendy 1987, p. 122):

(4) [Max is playing cards with Emily and Sophie (Game 1), and somewhere else, Claire is playing cards with Dana (Game 2). At the same time, in their respective games, both Max and Claire are winning.]
Someone, watching Game 1, mistakenly says:
 # A woman is winning.

This utterance is intuitively false, even though in the actual world, there is a woman, Claire, who is winning, because this utterance is not about the whole world w_0, it is about a subsituation in Game 1. Situations like this are called *Austinian topic situations*.

Kratzer explains (2011, section 3), that these situations are usually not overt, but can be indicated by tense, equating the topic situation with Klein (1994)'s topic time: the interval about which the utterance makes a claim. In (5), thus, the topic situation is some contextually salient situation about which the claim is made that an event of Jason catching a mouse took place within it.

(5) Jason caught a mouse.

Kratzer suggests (2011, section 5) that the topic situation may be represented as a variable in syntax, mirrowing the results of similar discussions for the representation of times and possible worlds (cf. e.g. Partee (1973), Cresswell (1990), cf. also Percus (2000)). This proposal is fleshed out by Schwarz (2009b, p.93/94), who introduces the topic situation as a variable at the top of clauses. He proposes that it is an argument of a topic operator, which he adopts with slight modifications from Kratzer (2008), cf. (7). Applying this topic operator to a proposition and a topic situation yields the set of all counterparts ('≈' is the counterpart relation) of the topic situation in which p is true.

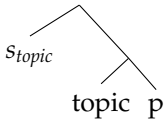
---

d. Logical Consequence
A proposition p ∈ P follows from a set of propositions A ⊆ P iff for all w ∈ W: if w ∈ ∩A, then w ∈ p.

e. Logical Equivalence
Two propositions p and q ∈ P are logically equivalent iff p ∩ W = q ∩ W.

[6] According to Kratzer, this idea is attributed to Austin (1950).

(6)



(7) [[topic]]= λp.λs′.λs. s ≈ s′ & p(s)

He does not commit himself as to where the situation variable is introduced, but says instead that if it is introduced via tense, it is in the TP, and if it is introduced in a topic projection, then it is within the CP[7].

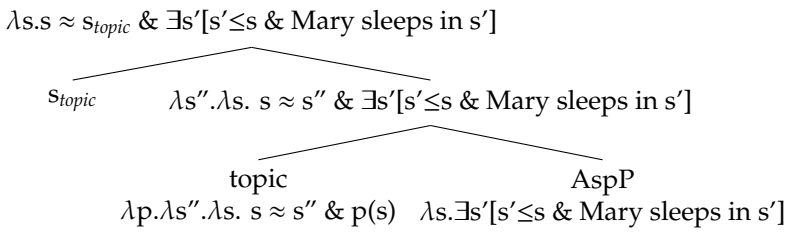
Thus, assuming, under a compositional view of Klein's tense and aspect system, as e.g. assumed by Kratzer (1998), Matthewson (2006b), Cable (2013), i.a., that a vP is dominated by an aspectual phrase, which provides information about the relation between the topic time/topic situation and the event indicated by the verb, in a sentence like (8-a), the complement of the topic operator is (8-b):

(8) a. Mary slept.
b. λs.$\exists$s′[s′≤s & Mary sleeps in s′]

I assume — following Kratzer (2011, section 9) — that events like the event of Mary sleeping in (8) are situations, too. Unlike other situations, such an event however (i) needs to be spatiotemporally connected, i.e. it cannot be made up of part of Mary's sleep on Wednesday night and part of Mary's sleep on Friday night (cf. e.g. von Fintel 2004, 2005 for a discussion of this property of situations), (ii) it needs to be maximal in the sense that only a full uninterrupted period of sleep counts as an event of Mary sleeping , and (iii) it needs to be minimal in the sense that an event of Mary sleeping does not contain anything else, e.g. that Mary is sleeping is true in every subpart of the event. The latter two properties are summarized under the heading of *exemplification* (cf. Kratzer 2011, section 7) in chapter 5.3.1.

The full example (8-a) is thus composed as follows:

(9)



[7]Note that in order for the assignment function to allow for reference to situations rather than individuals, it needs to be modified, so that it allows for pronouns of type *s*. For this, I adopt the proposal in Heim and Kratzer (1998, p.212–213) for pronouns and traces of any semantic type, cf. (i).

(i) a. A *variable assignment* is a partial function a from the set of indices to the set of all denotations, such that, for every $\langle i, \tau\rangle \in$ dom(a), a(i,τ) $\in D_\tau$.
b. If α is a trace or pronoun, and i and τ are a number and a type respectively, then, for any assignment a, $[\![\alpha_{\langle i,\tau\rangle}]\!]^a$ = a(i,τ).

The assignment function will thus return an individual of the appropriate type, e.g. in (a) in (ii), g(1,s) will return a situation. For ease of understanding, I will nevertheless use the simplified notation in (b) in the following sections.

(ii) a. $[\![s_{\langle 1,s\rangle}]\!]^g$ = g(1,s) b. $[\![s_1]\!]^g$ = g(1)

The topic situation pronoun s_{topic} in (9) is free, i.e. it picks up a contextually provided referent. Sometimes, the sentence contains information about the topic situation, e.g. via adverbial clauses containing temporal or locative information (e.g. the following example from Klein, 2008, p.288).

(10) On Jan. 29th in Bergen, it was snowing.

In the majority of cases, however, there is no overt indication of what the topic situation is like in the sentence. Instead, the topic situation is contextually provided, via an assignment function. The following section discusses a proposal for the source of the topic situation: the question under discussion.

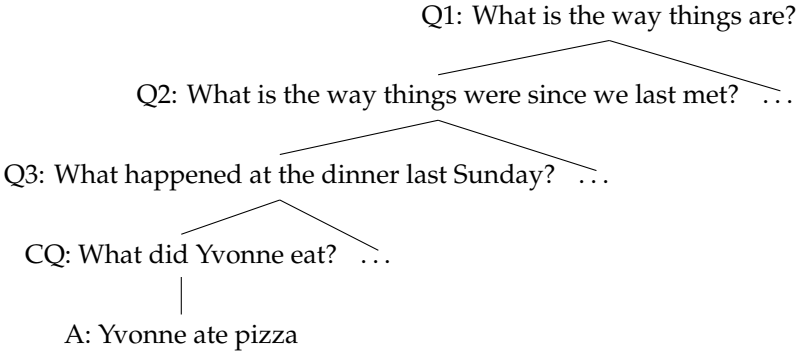
5.2 Focus in a situation semantic approach

After having introduced the notion of an Austinian topic situation in the last section, the current section discusses what role the focus/background distinction plays for the topic situation. As discussed in detail in section 2, I adopt an approach under which the function of the focus/background distinction is to indicate what is at-issue and not-at-issue at the current moment in discourse, modeled using a question under discussion approach. According to Schwarz (2009b), it is the current QUD that provides the topic situation for an utterance. This idea is adopted and discussed in section 5.2.1. Section 5.2.2 then presents a proposal for the restriction of focus alternatives from all alternatives of a certain type to only those alternatives that are contextually relevant.

5.2.1 Topic situations & questions under discussion

Schwarz (2009b, p. 137) explores the possibility that the referent for the topic situation pronoun is provided via the *Current Question*. As discussed in section 2.1.3, a hierarchy of questions is assumed, in which each subquestion is more specific than its superquestion. Each declarative sentence is seen as an answer to the currently lowest, most specific answer in the hierarchy — the *Current Question* (CQ).

(11)



I adopt Schwarz' view (Schwarz, 2009b, p. 166) that each subquestion narrows down "the part of the world" talked about in the superquestion, i.e. it is about a part of the situation asked about

in its superquestion. This is best grasped when thinking of the topic situation of the respective questions as their topic time: for example, the time interval that Q3 in (11) is about is a subinterval of the time interval that its superquestion Q2 is about. However, this is merely a simplification: the topic situation contains not only time intervals, but also locations, participants, etc., which can be restricted correspondingly from superquestion to subquestion, for example, the relevant participants at the Sunday dinner are a subgroup of those relevant for question Q2. The answer A has the same topic situation as its CQ, namely some subsituation of the dinner last Sunday, and asserts that this topic situation contains an event of Yvonne eating pizza.

Roberts (2012, p.7) notes that in a strategy, super- and subquestions are related in that (i) a full answer to the superquestion entails the full answers to each of the subquestions, and (ii) full answers to all of the subquestions yield the full answer to the superquestion. I therefore assume that in a discourse or narrative, any sequence of two utterances is expected to be about related topic situations, unless there is an overt indication of a topic situation (and thus QUD-) shift.

Topic situations of answers Kratzer (2011) presents a proposal for deriving the topic situation of a sentence from the topic situation of its QUD. Since this proposal relies heavily on the notion of *exemplification*, this notion will be introduced here first (Kratzer, 2011, section 7): it describes the relation between a situation and a proposition, cf. (12).

(12) Exemplification: A situation *s* exemplifies a proposition *p* iff whenever there is a part of *s* in which *p* is not true, then *s* is a minimal situation in which *p* is true.

(13) Minimal situation: A situation is a minimal situation in which a proposition p is true iff it has no proper parts in which p is true.

According to (12)–(13), there are two kinds of situations that exemplify a proposition: one in which the proposition is true in all subsituations, and one for which there is no smaller subsituation for which the proposition is true.

An example for the first kind is Kratzer's mud example: Proposition (14-b) is exemplified by a situation that contains only mud and nothing else, because all parts of this mud situation are a mud situation themselves. A situation that contains moss in addition to mud would not exemplify the proposition in (14-b): firstly, it cannot be of the first kind of situations that exemplify (14-b), because there are (moss) subsituations where there is no mud. Secondly, it cannot be of the second kind of situations that exemplify (14-b), because there are sub-situations which are mud-situations.

(14) a. There is mud.
b. λs.$\exists$x mud(x)(s)

An example for the second kind of exemplifying propositions is Kratzer's teapot example: Proposition (15-b) is exemplified by a situation that contains three teapots and nothing else, because this is a minimal situation in which (15-b) is true: in all subsituations, it is false[8].

[8]Kratzer notes that for this definition to work, we need the counting principle in (i).

(i) Counting Principle: A counting domain cannot contain non-identical overlapping individuals.

The reason we need this principle is a problem raised by Geach (1980): any of the three teapots would remain a teapot if a small part of it would be chipped off — so if one would allow for the possibility to count overlapping individuals, each

(15) a. There are three teapots.
b. λs.$\exists$x [x $\leq_p$ s & |{y:y $\leq_p$ x & teapot(y)(w_s) }| = 3]

Suppose now that the Current Question is 'Who slept?'. Then, according to Kratzer (2011, section 8), who adopts Groenendijk and Stokhof (1984)'s theory of question semantics, a question extension is a proposition, "the set of situations that answer the question in the same way as the actual world does", for example (16).

(16) λs[λx.x slept in s = λx.x slept in w_0]

If only Mary slept in the actual world, the question extension is the set of situations in which Mary was the only relevant individual who slept. According to Kratzer's definition in (17), possible topic situations would be all situations that exemplify the question extension, thus, in our example, minimal and maximal situations of Mary sleeping.

(17) **Austinian topic situations** All actual situations that exemplify the question extension.

Kratzer suggests that while a non-exhaustive answer merely needs to be true in the topic situations, an exhaustive answer needs to be exemplified by the topic situations. Thus, if Mary and Sue are the only relevant people who slept in the actual world, the topic situations would be all actual situations that exemplify *Mary and Sue slept*. The answer *Sue slept* would then be true, but wouldn't exemplify the topic situations. *Sue and Mary slept* would be both true and exemplified by the topic situations.

Exemplification is needed because, in contrast to Groenendijk and Stokhof's original account, answers are not automatically exhaustive. In the original account, a question like *Who slept?*, with Mary and Sue being the only considered individuals, would partition the context set as depicted in figure 5.1. Assume that the true answer is *Mary slept*. In Groenendijk and Stokhof's account, the question extension would then be the set of worlds in the top left partition, the set of worlds in which Mary slept, but not Sue.

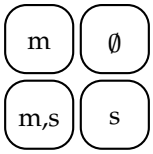


Figure 5.1: Example context set partition for "Who slept?"

The definition of the question extension in Kratzer's account, in (16), however additionally allows the question extension to contain situations that are part of the worlds in the bottom left partition, the worlds in which Mary and Sue slept, namely those subsituations in which only Mary is sleeping. The question extension therefore does not correspond to the exhaustive true answer anymore.

Interestingly, as Schwarz (2009b, p.140ff) notes, there can be multiple actual topic situations in Kratzer's approach. He writes that if in w_0, Jason caught a mouse and Willie caught a mouse and

teapot could be counted several times! Instead, Kratzer notes that only maximal self-connected teapots will be counted, i.e. only those that are not parts of other teapots (cf. Casati and Varzi (1999) for the counting principle and the notion of self-connectedness).

a bird, then the situations exemplifying the question extension in (18) are all minimal situations in which Jason and Willie caught something, i.e. the situations in (19).

(18) λs[λx.$\exists$y[x caught y in s] = λx.$\exists$y[x caught y in w_0]]
(Extension of the question *Who caught anything?*)

(19) s_1: Jason caught a mouse and Willie caught a mouse
s_2: Jason caught a mouse and Willie caught a bird

Both s_1 and s_2 are subsituations of w_0 exemplifying the question extension, and are thus, by the definition in (17), the topic situations of the answer *Jason and Willie caught something*. Schwarz comes to the following conclusion (Schwarz, 2009b, p.140):

> "This construal of topic situations thus forces us to make a choice: either we give up the idea that sentences are understood with respect to some specific topic situation, or we have to find a way of ending up with just one situation from the exemplifying situations."

He proposes that there is only one topic situation, in this case s_3 in (20). This either warrants changing the definition in (17) so that the topic situation is "the sum of all actual situations that exemplify the QUD extension" (Schwarz, 2009b, p.141), or retain (17) as it is, and assume that existential expressions like *anything* involve maximalization (Schwarz, 2009b, p.142). Under this second assumption, the topic situation can be defined as in (21) (Schwarz, 2009b, p.143).

(20) s_3: Jason caught a mouse and Willie caught a bird and a mouse.

(21) s_{topic} = ιs[Ex(question extension)(s) & s $\leq$ w_0]

A further potential problem of this approach is the reliance in (16) on the actual world w_0, even if we restrict the individuals considered to two, Mary and Sue. Imagine that Bill is telling John that he watched TV with his friends last night. John knows that any time Bill watches TV with his friends, either Mary or Sue or both fall asleep, so he asks *Who slept?* = {Mary slept, Sue slept, Mary and Sue slept}. Assume that Mary was there last night, and asleep, whereas Sue was somewhere entirely different, and also asleep. In this case, *Mary and Sue slept* would be true in w_0, but not in the topic situation. Thus, just was argued for assertions above, questions, too, are about specific situations, and should partition counterparts of these situations depending on how they answer the question.

Following the discussion on the QUD hierarchy, it should be possible to assume that the topic situation of a question is a free situation pronoun, the referent of which is a salient subsituation of its immediate superquestion. The topic situation of the highest question, *What is the way things are?*, is w_0, any sub-question is about a subsituation of its superquestion, so that the question in (22), in the context above, will be about the actual TV-watching situation of Bill and his friends last night. This subpart of the evaluation world can be used instead of w_0 in the definition of the question extension, cf. (23). Hereby, s_{t-CQ} is the topic situation of the question.

(22) Who slept in s_{t-CQ}?

(23) λs. s $\approx$ s_{t-CQ} & [λx. x sleeps in s = λx. x sleeps in s_{t-CQ}]

This is the set consisting of s_{t-CQ} and all other counterparts of s_{t-CQ} in which the same individual(s) slept as in s_{t-CQ}, i.e. all TV-watching last night situations in which Mary slept. It seems to me that the restriction to counterparts of s_{t-CQ} has the consequence that its result is very similar to the original denotation by Groenendijk and Stokhof, since, first, it contains no situations that are world-mates, and second, the situations are relatively 'large', i.e. consist of the full TV-watching situation last night, and thus do not exemplify *Mary slept*. Presumably, the partition induced by the corresponding intension in (24) would be like in figure 5.1 again, with no overlap between the partitions.

(24) $\lambda s'.\lambda s.\ s \approx s' \ \&\ [\lambda x.\ x \text{ sleeps in } s = \lambda x.\ x \text{ sleeps in } s']$

It would also be possible, instead, to formulate a variant of Kratzer's denotation like in (25), where '$\lessapprox$' stands for being a part of a counterpart. Since parthood is reflexive, this returns any counterpart of s_{t-CQ} in which the same individuals are asleep as in s_{t-CQ}, as well as subsituations of these counterparts in which the same individuals are asleep as in s_{t-CQ}.

(25) $\lambda s.\ s \lessapprox s_{t-CQ} \ \&\ [\lambda x.\ x \text{ sleeps in } s = \lambda x.\ x \text{ sleeps in } s_{t-CQ}]$

(26) $\lambda s'.\lambda s.\ s \lessapprox s' \ \&\ [\lambda x.\ x \text{ sleeps in } s = \lambda x.\ x \text{ sleeps in } s']$

This would allow to retain Kratzer's definition of an Austinian topic situation without having the problem of referring to the whole of w_0. In addition, it connects the proposal by Schwarz above about the role of the QUD hierarchy in delimiting the topic situation of the QUD to Kratzer's proposal about how to relate a QUD with the topic situation of its answer. It however inherits the problem of the potentially multiple topic situations discussed in Schwarz (2009b, p.140ff.).

When the Current Question is implicit, the focus-background partition of the declarative sentence indicates what the Current Question is, thereby (i) possibly providing further information on the topic situation, (ii) introducing relevant alternatives via this topic situation, and (iii) identifying which of these alternatives is true. In the following part, I will discuss the restriction of alternatives in greater detail.

5.2.2 Topic situations & restriction of alternatives

Kratzer (2011, section 4) discusses the proposal by Barwise and Perry (1983) to use topic situations to explain incomplete definite descriptions and implicit quantifier restrictions, cf. examples (27) and (28), from Barwise and Perry (1983, p.159f).

(27) [My wife and I collaborate on cooking for a party. [...] someone comes up to me eating a piece of my famous cheesecake pastry and says, "Who made this?"]
I: I am **the cook**

The definite DP *the cook* can only be uttered felicitously if there is only one unique cook in the situation talked about. Thus, *the cook* in (27) must be restricted to the cook of the cheesecake pastry, for example. Something similar happens with quantifiers, e.g. (28).

(28) [In a sleep lab, where assistants are required to monitor sleeping people. The sleep lab doctor checks whether all assistants are awake.]
Sleep lab doctor: **No one** is asleep.

The sleep lab doctor's utterance is true and felicitous, even though the sleep lab patients are asleep, because the first argument of *no one* is implicitly restricted to the set of assistants present in the sleep lab.

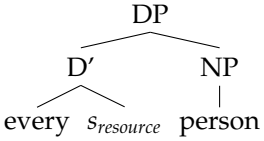
However, Kratzer notes that there is evidence that it is not the topic situation that restricts quantifiers and incomplete definite descriptions, but a salient subsituation, the *resource situation*. For example, the topic situation of (29) (from Soames (1986, p. 357)) is a Sleep Lab situation, containing patients and research assistants. It cannot only contain patients, otherwise it would not be felicitous to refer to a research assistant. The restriction for *everyone* must therefore be provided by a contextually salient subsituation of the topic situation, which contains only patients[9].

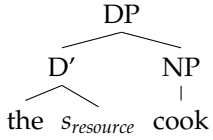
(29) **Everyone** is asleep and being monitored by a research assistant.

A similar observation can be made for definite descriptions: The topic situation of (30) (from Soames (1986, p.357)) cannot contain only one cook, since there are two cooks referred to in the sentence. Instead, the definite is evaluated with respect to a subsituation of the topic situation.

(30) **The cook**'s father is also a cook.

Schwarz (2009b, 63ff.) suggests that the resource situation is represented as a situation pronoun which is introduced with the determiner, cf. (31)–(32).

(31)


(32)


I will assume that the restriction of *wh*-phrases is parallel: they are restricted by the topic situation and a resource situation. Consider (33). The alternatives that the *wh*-phrase is restricted to, under the most plausible readings, do not contain Bertha herself, the topic situation for the whole sentence however must contain Bertha.

(33) **Who** married Bertha?

The existence of these kinds of questions, where there are individuals in the topic situation that are not part of the *wh*-phrase restriction, suggests that the restriction of *wh*-phrases is provided by a resource situation, too.

The considered focus alternatives are constrained by *anticipated addressee-interest*, i.e. they are restricted to those alternatives that the speaker believes to be interesting or relevant to the hearer[10]. For example, in (34), the speaker assumes that Peter and Paul are the only people from

[9] Kratzer notes (2011, section 4) that such resource situations are just one of many mechanisms of domain restriction.
[10] As Umbach (2004) notes, there are also further restrictions, e.g. the selectional restrictions of the verb, pragmatic restrictions, etc.

among those who came who are of interest to the hearer in this moment.

(34) CQ: Who came to the bar?
A: PETER AND PAUL came.

Thus, the referent of $s_{resource}$ is a subsituation of s_{topic} which only contains individuals of interest to the hearer. The CQ in (34) will thus mean something like 'Which individuals of interest to me came to the bar?', such that e.g. unknown tourists are not included in the resource situation. If the focused constituent is a quantifier, it inherits the resource situation of the corresponding *wh*-question: in both A and A' in (35), the quantifier domain is restricted to those individuals which are relevant to the person asking the question.

(35) CQ: Who came to the bar?
A: EVERYBODY came.
A': NOBODY came.

The following is an example denotation for *Who came?*. A question, in the QUD approach adopted here (Roberts, 2012, Beaver and Clark, 2008), is assumed to denote the set of its possible answers (following Hamblin, 1973). It is composed via pointwise functional application, which results in (36-c).

(36) a. [[who]]= λs.λx. x is a human in s
b. [[who s_r]]^g = λx. x is a human in g(r)
c. [[who s_r came in s_t]]= [[came in s_t]] ([[who s_r]]) = { λs. s$\approx$ g(t) & x came in s| x is a human in g(r)}

Note that I assume that Roberts (2012)'s presupposed CQ and Rooth's *focus value* (i.e. the set of alternatives indicated via focus) are the same — by indicating alternatives, a focus construction indicates what question the speaker intends to answer[11].

5.2.3 Summary

The truth of any sentence is assumed to be evaluated with respect to a situation, its *topic situation*. Correspondingly, propositions are assumed to be sets of situations: counterpart situations of the topic situation, in different worlds. Following Kratzer (2011), the topic situation of a QUD and its answer are assumed to be the same, and following Schwarz (2009b), the topic situation of a QUD is assumed to be a subsituation of that of its superquestion. Following similar proposals for quantifier restriction, focus alternatives are also assumed to be restricted via a salient *resource situation*, a subsituation of the topic situation. This concludes a first overview of focus in a situation semantic approach. The following section will briefly discuss some notions to do with focus interpretation, which were discussed in section 4.2, and found, in section 4.2, to have no impact on the realization of focus in Ngamo, namely contrast, exhaustivity, and existence. This will conclude the general overview of focus interpretation in a situation semantic approach.

[11] This would mean that in the cases where only part of the utterance indicates the CQ, the corresponding focus value is also not entirely parallel to the normal value, violating Rooth (1992, p.93)'s constraint that the normal value has to be an element of the focus value.

5.3 Contrast, Exhaustivity, and Existence

In Ngamo, as presented in section 4.2, the different realization patterns did not differ with respect to their interpretation: the *=i/ye* marked construction didn't indicate any greater contrast, nor stronger exhaustivity, nor an existence presupposition. First, all kinds of focus/background constructions were accepted in all kinds of contexts, whether contrastive or not. Second, the exhaustive inference in all kinds of focus/background constructions was merely a conversational implicature, as was shown e.g. by the fact that it can be cancelled. Third, even though several projection tests seemed to show a projective existence inference with *=i/ye* marked constructions, the focusability of negative existentials was taken as evidence that there is no existence presupposition in these constructions.

This section briefly comes back to the interpretive effects of the answer to the current QUD, by discussing the notions of contrast, exhaustivity, and existence in the current framework. The discussion starts with the notion of exhaustivity in section 5.3.1, where exhaustivity is connected to the notion of exemplification discussed above, and different kinds of exhaustivity cancellation are introduced. The section continues with the discussion of existence in section 5.3.2, taking the projective existence inferences in Ngamo as an indication that the existential inference should be modelled as attributed hearer belief. Finally, section 5.3.3 discusses contrast, relying on the discussion of exhaustivity and commitment in the previous sections to describe the different notions of contrast in the current framework.

5.3.1 Topic situations and exhaustivity implicatures

As section 4.2.2 showed, all kinds of focus realization in Ngamo come with an exhaustivity implicature: Answers are exhaustive, as shown by standard tests for exhaustivity like the *coordination test* in (37). This exhaustivity is however just a conversational implicature, as shown for example by the fact that it is cancellable (38).

(37) [Kule called Shuwa & Dimza]
Q: Who did Kule call?
A: #Kule esha Dimza.
Kule call.PFV Dimza
"Kule called DIMZA."

(38) [Who built a house?]
Salko bano**=i** **Dimza**, Umar ke salko
build.PFV house=BM Dimza Umar also build.PFV
bano.
house
"DIMZA built a house, and Umar also built a house."

In the standard account, the exhaustivity implicature is a scalar implicature which arises from the assumption that the Gricean maxims are obeyed (Krifka, 1998, Grice, 1975). First, the addressee can assume that the speaker obeys the maxims of Quantity and Quality by being as informative as possible with respect to the current discourse goal, without saying anything that she doesn't have evidence for. He can also assume that the speaker is obeying the maxim of Manner by doing so in a short and orderly fashion. Thus, in (37), the speaker, by uttering *Kule called* DIMZA, indicates that this is the most informative true answer possible in response to this question, i.e. the speaker indicates that she cannot truthfully utter *Kule called* SHUWA AND DIMZA. Assuming that the speaker knows that Kule called both Shuwa and Dimza, this can only be felicitously uttered if *Kule called Shuwa and Dimza* is not one of the focus alternatives, i.e. if the addressee is not interested in Shuwa.

Conversational implicatures arise relative to the current discourse goals of the discourse

participants. For this reason, an exhaustivity implicature does not arise in so-called mention-some answers, where a partial answer is enough to satisfy the current discourse goal. According to Kratzer (2011, section 8), non-exhaustive answers like mention-some answers are merely asserted to be true in the topic situation, whereas exhaustive answers are in addition asserted to be *exemplified* by the topic situation.

(39) **Exhaustive answers:** Propositional answers that are understood as exemplified by the topic situations.

(40) **Non-exhaustive answers:** Propositional answers that are understood as true in the topic situations.

So, for example, in an exchange like (41), if the current discourse goal of the person asking the question is merely to find some place to buy a newspaper, she will assume that the answer A in (41) is true in the topic situation, but not necessarily exemplified by the topic situation.

(41) Q: Who sells newspapers?
A: A bo'yta=i ngo=i wommi'i.
3SG.HAB sell.HAB=I man=LINK DEM
"THAT MAN sells newspapers."

If her the current discourse goals demand an exhaustive list of all (relevant) individuals selling newspapers, then she will interpret the answer as exemplified by the topic situation, i.e. she will assume that there is no other relevant individual selling newspapers in the topic situation.

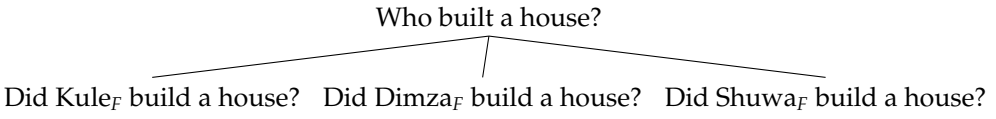
Exhaustivity cancellation There are thus two kinds of answers to questions in a situation semantics account: exhaustive answers and non-exhaustive answers. They are interpreted differently, accounting for the differences between example (37) and example (41). But how to account for cancellation examples like example (38) above? In this section, I will briefly mention two approaches in which exhaustivity can seemingly be cancelled: first, when the question is answered by a list of partial answers, e.g. in the case of contrastive topics (Büring, 2003), and second, when the question is reopened in order to consider further, previously ignored, alternatives or situations (Roberts, 2012, Grubic and Zimmermann, 2011).

Imagine an overt question *Who built a house?*, with alternatives $D_{resource-sit}$ = { Kule, Shuwa, Dimza, Hadiza }. A speaker can give a full exhaustive monoclausal answer to it, as in (42-a). Alternatively, she can give a list answer, as in (42-b).

(42) a. Kule, Dimza and Shuwa built a house.
b. Let's see. Kule built a house, Dimza built a house, and Shuwa built a house, too.

In the list answer, the speaker is going through each relevant individual separately, checking whether this person built a house or not. This can be modelled by assuming that each part of the list answers its own covert subquestion of *Who built a house?*, as in (43):

(43)

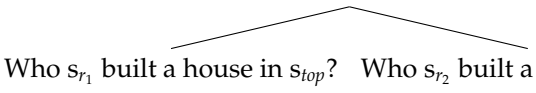


Importantly, this answer should also be possible to a question which overtly names all relevant individuals, e.g. *Who of Kule, Shuwa, Dimza and Hadiza built a house?*. It however conveys, by the fact that a list answer is used, that the overt *wh*-question was too complex to be answered directly. Note that although the tree provided in (43) is the kind of structure one would assume for contrastive topics, I do not necessarily assume that list answers need to come with overt CT marking — if all answers are listed, rather than alternatives left to be indicated via the CT and focus accents, CT marking is not obligatory . Whether these are contrastive topics is probably theory dependent , and not of a great concern for the purpose of this section. The important part is that a strategy of subquestions is opened, containing one subquestion for each individual in $D_{resource-sit}$, and each subquestion is answered exhaustively, so that together, they yield the full answer to the overt *wh*-question.

A further possible way of exhaustivity cancellation is a reopening of the immediately preceding CQ, to include further relevant alternatives. Assume the same question as above, with $D_{resource-sit}$ = { Kule, Shuwa, Dimza, Hadiza }. Here, the question is fully answered, and then reopened to include a further individual, e.g. (44). The underlying question hierarchy can be represented as in (45).

(44) Kule, Dimza and Shuwa built a house — and Umar built a house, too.

(45)



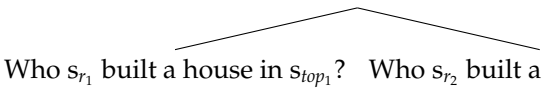
This is inspired by Roberts' approach, where exhaustivity cancellation is seen as a kind of miscommunication, a "*post hoc* clarification (by the speaker) and revision (by the hearer) of intended context" (Roberts, 2012, p.45). This kind of correction, or broadening, of the individuals considered as focus alternatives is expected to be a bit odd if the alternatives are explicit in the question, as in *Who of Kule, Shuwa, Dimza and Hadiza built a house?*, unless there is an explicit second question *Who else built a house?*.

A further way in which the question can be reopened is when it is posed again about a different topic situation. Assuming the same question as above, the relevant individuals may stay the same, but the situation talked about may shift, e.g. in the answer (46).

(46) Kule, Dimza, and Shuwa built a house. Hadiza eventually built a house, too, (but that was much later).

This was discussed as a method of exhaustivity cancellation in Grubic and Zimmermann (2011). An example QUD hierarchy is shown in (47).

(47)



One important question that arises from this discussion is why these different methods for exhaustivity cancellation are not possible for semantically exhaustive sentences, e.g. English sentences with *only*. First, the subquestion-method, where the overt *wh*-question is split up

in several *y/n* questions, is not possible because an *only*-sentence is semantically restricted to answer a salient (possibly implicit) *wh*-question (Beaver and Clark, 2008)- Therefore, it wouldn't be understood to answer an implicit *y/n*-question. Second, the post-hoc inclusion of further alternatives is not a good strategy for *only*-sentences because *only* belongs to the class of *inquiry terminating* operators or constructions, defined by Velleman et al. (2012) as elements that "mark an answer to the current question under discussion as a maximal answer, thereby resolving the question and terminating it as an active line of inquiry". A reopening of the CQ after an *only*-statement is thus highly dispreferred. The third kind of exhaustivity cancellation marks a stronger shift from the original question. This should be investigated further, but I would predict that this should even be possible with *only*-sentences:

(48) Q: Who built a house?
A: Only Kule built a house. Hadiza eventually built one, too, but that was much later.

In the discussion of exhaustive, additive, and scalar particles in chapter 7, exhaustivity cancellation is discussed again. This is especially interesting in Ngamo, since, as was shown in section 4.2.2, additive particles are dispreferred in *=i/ye* constructions, cf. (49).

(49) ??Salko bano=i Hawwa, salko bano=i ke Kule
build.PFV house=BM Hawwa build.PFV house=BM also Kule
(intended:) "HAWWA built a house, and KULE also built a house."

The explanation given in section 4.3.2 was that there is a clash between the default anaphoricity of the background-marked part, referring back to a salient topic situation, and the requirement of the additive particle *ke('e)* to shift the topic situation. Chapter 7 will discuss this further.

5.3.2 Topic situations and attributed existence belief

Section 4.2.2 showed that although there is no existence presupposition with *=i/ye*-marked focus/background constructions, the existence inference is often found to survive when the sentence is negated. The fact that these sentences have no existential presupposition can e.g. be shown by the acceptability of examples like (50). If *=i/ye* marking would trigger an existence presupposition, these sentences should be unacceptable, due to the clash between the assertion and the purported existential presupposition. Nevertheless, as section 4.2.2 showed, many speakers interpret *=i/ye*-marked negated sentences as having an existential meaning component, especially when the word order is non-canonical. For example, for many speakers, the sentences in (51) imply that Njelu called somebody else yesterday.

(50) Q: Who did Njelu call yesterday?
a. Esha**=i** **ngo bu** nzono.
call.PFV=BM man NEG yesterday
b. Esha nzono**=i** **ngo bu**.
call.PFV yesterday=BM man NEG
"He called NOBODY yesterday"

(51) Q: Who did Njelu call yesterday?
a. Njelu esha**=i** **Sama** *bu* nzono
Njelu call.PFV=BM Sama NEG yesterd.
b. Njelu esha nzono**=i** **Sama** *bu*
Njelu call.PFV yesterd.=BM Sama NEG
"Njelu didn't call SAMA yesterday"

Section 4.2.2 briefly discussed that these inferences are probably best analysed as instances of association of negation with focus. For association of negation with focus, I adopt Beaver and Clark (2008)'s account of *quasi-association*. Quasi-association is a focus phenomenon occurring

with non-veridical operators, i.e. with propositional operators which have the effect that the proposition in their scope is not entailed to be true. With these operators, there is often an inference that one of the other focus alternatives of the proposition in their scope is true, e.g. (52).

(52) a. Kim doesn't study LINGUISTICS at Northwestern
inference: Kim studies something else at Northwestern.
b. Kim doesn't study linguistics at NORTHWESTERN
inference: Kim studies linguistics somewhere else.

Beaver and Clark explain this using their Current Question Rule (Beaver and Clark, 2008, p.36):

(53) **Current Question Rule:** The Current Question must contain at least one true alternative, and contain multiple alternatives which are not resolved as true or false in the common ground.

Assume that (52-a) is a partial answer to the Current Question in (54-a) with the alternatives in (54-b). Since (52-a) negates that Kim studies linguistics, and the Current Question Rule demands that one of the alternatives is true, the inference that Kim studies something else follows.

(54) a. What does Kim study at Northwestern?
b. { Kim studies linguistics at Northwestern, Kim studies physics at Northwestern, Kim studies psychology at Northwestern, . . . }

Although Beaver and Clark suggest that this is has the same effect as the existence presupposition assumed by Geurts and van der Sandt (2004), there is a certain leeway with the Current Question Rule that is not possible with a usual existence presupposition. Recall that Beaver and Clark (2008, p.37) propose that there is some freedom in the choice of CQ: according to their Focus Principle, there are several possible CQs that an utterance like e.g. (52-a) can answer.

(55) **Focus Principle**: Some part of a declarative utterance should evoke a set of alternatives containing all the Rooth–Hamblin alternatives of the CQ.

If (52-a) is used as an answer to (54-a), the inference arises. However, if it answers (56-a), there is no such inference, because (52-a) already is a true answer to the CQ[12,13].

[12]Note that the Ngamo examples favour Beaver and Clark (2008)'s account over a possible alternative account that explains these inferences as arising due to a contrastive topic accent on *linguistics*: the syntactic marking of focus in the Ngamo examples makes it clear that this cannot be a contrastive topic here.

[13]Malte Zimmermann (p.c.) notes that it is puzzling for Beaver and Clark's approach that in German, an overt QUD 'Who won?' preceding a sentence like A in (i) is odd. This sentence involves an unambiguous focus on *Maria* embedded under negation, leading to a clear existence implication — in fact, the existence implication makes the sentence infelicitous unless the actual winner is added. Nevertheless, an overt QUD asking for the winner is odd.

(i) Q: Who won?
A: #Nicht Maria$_F$ hat gewonnen, *(sondern Susi).
not Maria has won but Susi
"It wasn't Mary$_F$ who won, (but Sue)."

The discrepancy between an assumed implicit QUD and the infelicity of it actually being overt has also been noted for non-negated English *It*-clefts in e.g. Velleman et al. (2012), Destruel and Velleman (2014). I assume that the reason here is the same: sentence A in (i) actually requires a more contrastive context, e.g. a corrective context.

(56) a. What doesn't Kim study at Northwestern?
b. { Kim doesn't study linguistics at Northwestern, Kim doesn't study physics at Northwestern, Kim doesn't study psychology at Northwestern, . . . }

In the following, I suggest that Beaver & Clark's Current Question Rule is reducible to an effect of the existence presupposition of the implicit CQ: by attributing a *wh*-question to the hearer (e.g. Who slept?), the speaker also attributes to them the belief that the existence of such an event (e.g. of somebody sleeping) is part of the CG. This is independent of whether the speaker herself shares this belief, it is enough that she attributes it to the hearer — for this reason, *nobody*-answers are not problematic: in these cases, the speaker contradicts an existence belief that she doesn't share. The rest of this section discusses how to model this.

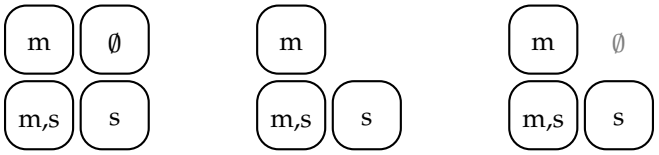
Existence suppositions In the QUD account of Roberts (1998, 2012), following Groenendijk and Stokhof (1984), *nobody* answers are treated on a par with all other answers, i.e. no existence inference is expected at all. In the account of Geurts and van der Sandt (2004), the existence inference is a presupposition. Other accounts, however, assume something inbetween. For example, Büring (2004) suggests that, in English, the backgrounded event is *supposed*. He describes this notion as something weaker than presupposition — an indication that the background situation is under discussion. Suppositions are most often discussed with respect to antecedents of conditionals, which are sometimes analysed as suppositions. There are in principle different ways to model this in a Stalnakerian account[14]. In Stalnaker (2005, p.6)'s own account, this is done e.g. in the following way for indicative conditionals:

> First, one adds the content of the antecedent, temporarily, to the context; that is, one sets aside the possibilities in the context set in which the supposition is false. [...] Then the content of the consequent is treated like the content of a categorical assertion: one eliminates, from this temporary or derived context those possible situations that are incompatible with the content of the consequent. Finally, one adds back the possibilities that one had set aside.

The context set is thus temporarily reduced to a smaller context set, on which a further operation is performed. In the case of *wh*-questions, it is a partition of the resulting worlds. Assume a *wh*-question *Who slept?*, with Mary and Sue being the only relevant individuals. In Groenendijk and Stokhof's NO EXISTENCE PRESUPPOSITION account, the context set would be partitioned as in (a) in figure 5.2, while in Geurts and van der Sandt's EXISTENCE PRESUPPOSITION account, there are no worlds in which nobody slept in the context set, cf. subfigure (b). In the EXISTENCE SUPPOSITION account, there would first be a temporary reduction to the worlds in which somebody slept, then a three-fold partition of the resulting set, as in subfigure (c). An answer like *Mary slept* would then update the context set in two ways: it confirms the supposition underlying the question, making the temporary restriction performed by the supposition a permanent one, and also supplies the answer, a choice between the remaining sets of worlds corresponding to the focus alternatives. A nobody-answer, in contrast, excludes all the supposed worlds.

A similar idea is expressed in Zimmermann and Onea (2011), where the set of worlds in which the supposition is true is called the *privileged possible worlds*. In this account, focus imposes

[14]For example, Starr (2011, p.14): "The **supposition** of **p** is a different kind of update which doesn't change c [the context set, MG], but involves **entertaining** an update with **p**. This can be modeled as replicating [a state of conversation] *s* and updating it with **p** while leaving *c* untouched: s′ = <c, <c[p] >>. The left position is reserved for the contextual possibilities, while entertained enrichments of it are stored to the right."



(a) no existence assumption (b) existence presupposition (c) existence supposition

Figure 5.2: Example context set partition for "Who slept?" in different frameworks

an ordering of salience or relevance such that the set of priviledged possible worlds is more important for the interpretation of the utterance. An important difference to the supposition account sketched above is that they assume that it is an ordering on all worlds — even the worlds outside the context set. Zimmermann and Onea (2011, p. 1653) do however note that the privileged possible worlds are "more likely candidates for the context set update". Priviledged possible worlds are thus used to model relevance and a very weak form of existential belief, formulated in terms of likelihood.

Attributed hearer belief As shown above, the presuppositional account is too strong to account for the Ngamo data. It however seems to me that the suppositional account is too weak to model the effects of Beaver and Clark's Current Question Rule, cf. (53) above, repeated here. In particular, the association of negation with focus does not follow from the existence supposition account.

(53) **Current Question Rule:** The Current Question must contain at least one true alternative, and contain multiple alternatives which are not resolved as true or false in the common ground.

In order to model the effect of this rule, I propose an account which treats the supposition as an indication of an *attributed hearer-belief*. Before going into detail, however, I want to make a distinction between two kinds of situations involved in the understanding of sentences like (57).

(57) MARY slept.

In (57), the existence and identifiability of a topic situation is presupposed[15]. This is the situation that the discourse participants are talking about, e.g. some situation yesterday evening at Mary and Sue's house. In contrast, the existence of a situation of somebody sleeping is not presupposed. In parallel with Klein's notions of topic time and event time, I will give this second kind of situation the slightly nonsensical name *event situation*, or just *event*[16].

Instead of stipulating an additional rule like the Current Question Rule, I follow e.g. Karttunen (1977), Levinson (1983), in assuming that *wh*-questions have an existence presupposition, i.e. the question (58) does not only presuppose the existence of a topic situation, but also the existence of an 'event situation'.

(58) Who slept?

[15]This is, for example, inherent in Schwarz (2009b, p.100)'s treatment of topic situations as definite expressions.
[16]Recall that, following Kratzer (2011, §9), events are assumed to be situations, too.

When such a question is implicit, e.g. when the speaker attributes question (58) to her addressee, she also attributes the belief in all presuppositions of the question to the addressee, for example the belief that somebody slept.

The consideration of such attributed commitment or belief necessitates looking at the belief worlds of the discourse participants separately (as is also assumed in e.g. Gunlogson (2001), Lassiter (2012)). Apart from presuppositions of the attributed CQ, there are also other focus phenomena that are better explainable using such a representation. For example, speakers also keep track of what focus alternatives a hearer considers to more or less probable (cf. the discussion in sections 2.1.4 and 2.2.1). First, at least in some languages, extra marking is used for hearer-unexpected answers, cf. Zimmermann (2008a) for Hausa, Greif (2010) for Mandarin Chinese, Destruel and Velleman (2014) for English it-clefts. These authors link this to the marked realization of more contrastive focus in some languages (e.g. Vallduví and Vilkuna, 1998) by proposing that in contexts where an answer is contrastive (e.g. corrective focus), it is also hearer-unexpected. Second, some focus-sensitive particles, like *even* and *only*, mark the true answer as hearer-unexpected (Karttunen and Peters, 1979, Beaver and Clark, 2008, Zeevat, 2009). Another example for a focus phenomenon concerning the speaker's representation of what her hearer considers probable is Kadmon and Sevi (2011)'s conclusion that backgroundedness is better represented as predictability, rather than premention. In section 4.3.2, these kinds of examples were subsumed under the notion of *salience*. It was proposed that speakers keep track of which QUD, and thus which topic situation, is salient for an addressee at a given moment in discourse. In the following, I will propose that each speaker has a representation of the assumed commitments or beliefs of their addressee(s). In the representation of the belief worlds of the addressee(s), possible worlds/situations are ordered by probability or stereotypicality.

In Lassiter (2012), presuppositions are represented not as conditions on the Common Ground preceding the utterance, but as conditions on the probability measures of speaker and hearer:

(59) **Usage constraint** (atomic sentences), cf. Lassiter (2012, p.10)
Let p be an atomic sentence which carries the semantic presupposition $\underline{p}$. Then a speaker should not utter p unless pr($\underline{p}$) meets or exceeds a high threshold θ according to her epistemic state, and she believes that her audience also assigns $\underline{p}$ at least probability θ.

Since in the case of implicit CQs, the assumptions are not presuppositions but assumptions about the belief of the hearer, the speaker's representation of the hearer's beliefs play an important role: In Lassiter's terms, this could be formulated as follows:

(60) **Attributed hearer-belief** When an utterance u indicates that the speaker attributes a covert move m to a hearer, it simultaneously indicates that she assumes any presupposition $\underline{m}$ of move m to meet or exceed a high threshold θ according to the hearer's epistemic state.

The existence belief which is a presupposition of the attributed implicit CQ is thus modeled as a condition on the epistemic state of the hearer rather than as a condition on the Common Ground.

This proposal is thus related to e.g. Christine Gunlogson's notion of separate *commitment sets* for each discourse participant, i.e. sets of worlds in which the public commitments of the respective discourse participant are true. One difference is that a degree of belief can be ascribed to a hearer independent of whether the hearer is publicly committed to something

(I assume, for example, that the speaker uses this to calculate whether a presupposition is accommodatable — even if the hearer is not publically committed to the presupposition, it will usually be accommodatable if the hearer considers it plausable enough)[17]. Similar to the privileged possible worlds model of Zimmermann and Onea (2011), this representation thus also takes worlds outside the context set into account, assigning them a probability weighting.

The focus-background distinction indicates some assumptions that the speaker has about the previous knowledge or belief of the hearer, cf. e.g. Krifka (2008)'s notion of focus as a Common Ground management device.

Discussion of possible counterexamples As discussed in section 2.2.1, example (61), from Rooth (1999, p.241), would be odd if *Mary won it* triggers an existential inference, since neither speaker B nor hearer A are committed to somebody winning the football pool.

(61) A: Did anyone win the football pool this week?
B: Probably not, because it's unlikely that **[Mary]**$_F$ **won it**, and she's the only person who ever wins.

In Beaver and Clark's account, one would therefore have to assume that *Mary won it* in (61) does not answer a CQ *Who won it?*. Instead, it is predicted to involve a more elaborate strategy, with, for example, an immediate CQ *Did* Mary *win it?* (or even *Why do you think that* Mary *didn't win; why do you think that* the others *didn't win?*) for the relevant subpart of the answer. Note that this would predict that the accent on *Mary* is not a focus accent, but a contrastive topic accent.

This prediction is corroborated by the oddity of similar examples with Ngamo marked focus constructions, cf. (62) (see also section 4.2.2). The focus, being syntactically marked, cannot be re-interpreted as a contrastive topic, and thus standardly presupposes a CQ *What did she buy?* with a corresponding existence presupposition. The other possible CQ *What didn't she buy?* doesn't make any sense in this context, and thus cannot be accommodated here, either.

(62) Every day, Burba goes to the village market and buys one kind of food. Sometimes she buys nothing. *Did Burba buy anything this time?*
A: I don't think so,
#kika kaja ki gargu=i **fari** bu,
because buy.pfv at market=bm melon neg
because she didn't buy a watermelon in the village,
. . . and she doesn't need anything else at the moment.

These examples suggest that many of the complex counterexamples to the existence assumption can be explained by the fact that in these cases, a different Current Question is induced, with a different existence assumption[18]. In simple examples like (63)–(64), however, the CQ attributed to speaker A by speaker B is *Who came?*, with an existence assumption, even though speaker A is

[17] It could be plausible, however, that Gunlogson's commitment sets are retrievable from the representation used here: the speaker's representation of the commitment set of the hearer may consist of those worlds in which all propositions of a probability above threshold θ are true.

[18] Work by Simons et al. (2011) suggests that conventionally not-at-issue parts of an utterance like antecedents of conditionals usually cannot evoke the main CQ, anyway, cf. their oddness as answers to overt CQs:

(i) Q: Who came?
A: #If John came, the party was probably fun.

not publicly committed to the belief that somebody came.

(63) A: Nobody came. / It is sad that nobody came.
B: That's not true! JOHN came.

(64) A: Did anybody come?
B: Yes. JOHN came.

This can be reconciled with the view defended above as follows. Speaker B attributes this CQ to speaker A under the assumption that her first utterance, e.g. *That's not true!*, or *Yes*, is accepted by A, and that it is then natural for A to want to know who this person was. Section 7.4.2, a discussion of anticipated hearer-surprise with focus-sensitive particles, will discuss further instances of attributed hearer belief.

5.3.3 Topic situations and contrast

In section 2.2.1, different kinds of theories of contrast were discussed: (i) contrast due to the existence of alternatives (ALTERNATIVESCONTRAST), (ii) contrast due to the fact that the set of alternatives is closed (CLOSEDSET), (iii) contrast with respect to the public belief of the speakers (CGCONTENT). Although they differ with respect to their definition of contrast, at least the latter two of these approaches predict that if a language makes a difference in the realization of contrastive vs. non-contrastive focus, it should be visible when looking at corrections vs. answers to *wh*-questions. Corrections are predicted to be contrastive, since (i) the set of relevant alternatives is closed, they consist of the corrected alternative and its correction, and (ii) the correction contradicts the public belief of the first speaker, thereby explicitly negating the corrected alternative. Section 4.2.2 showed that, in Ngamo, there is no correspondence between focus/background constructions and the contrastiveness of the context: the preference for certain constructions over others was stable, regardless of contexts. This section briefly revisits the different explanations given in section 2.2.1 for the impression of contrastiveness in different contexts, and relates them to the situation semantic approach discussed above.

First, note that sentential focus is generally assumed to be less contrastive than narrow focus on a constituent within the sentence. In the QUD approach adopted here, every sentence is assumed to answer a current QUD, and thus to presuppose alternatives. Nevertheless, an answer to *What happened?* is assumed to be less exclusive, and thus less contrastive, than an answer to e.g. *What did Mary eat?*. The reason, in this approach, lies in the fact that, usually, the former is assumed to be a non-exhaustive answer, and thus merely true in the topic situation, whereas the latter is assumed to be exhaustive, and thus exemplified by the topic situation. As discussed above, this assumption comes about via a combination of the Gricean maxims, especially those of Quantity (more specifically, 'Make your contribution as informative as is required') and Manner (more specifically, 'Be brief'), allowing the addressee to assume that if a question can be answered in one sentence, it will be. Since answers to a question like *What happened?* are usually not answerable in one sentence, they are usually not assumed to be as contrastive.

Second, contexts which involve explicit indication of alternatives, e.g. *Did Mary eat an apple or a pear?* are understood to be more contrastive than open-alternative contexts, because if some alternative is chosen in the answer, the others are excluded. In the current approach, this is explained as follows. As noted above, unless the answerer explicitly decides on a list answer strategy, exhaustivity cancellation is understood to be a kind of discourse repair, a renegotiation of what the Current QUD actually was. This can either concern the resource situation, i.e. which alternatives are relevant for the hearer, or the topic situation, i.e. about which part of the world

Thus, counterexamples to existence presuppositions involving focus in the antecedent of conditionals are not assumed to be problematic for Beaver and Clark (2008)'s indirect existence presupposition.

the hearer needs information. When the alternatives are overt, an important source of potential misunderstandings is thereby removed, making the answer more stable, and less prone to repair.

The third kind of phenomenon to do with contrast is the level of commitment that the addressee has towards one of the alternatives, e.g. corrections are understood to be more contrastive than answer to *wh*-questions, because in the latter, the addressee is usually not publicly committed to one of the answers being true. I assume that at least part of the answer lies in the question of whether the addressee is already attending to the QUD, or whether the speaker must make clear what the Current QUD is. This is especially relevant for corrections of presuppositions, which were found to require marked focus realizations in e.g. Greif (2010): when uttering (65-a), the questioner is not attending to the question *What did Mary eat?*, since she believes this question to be resolved. Therefore, the answerer in (65-b), believing that the question of what Mary ate is relevant to the discourse goals of the questioner, needs to steer her attention towards this question.

(65) a. How did Mary like the pear that she ate?
b. Mary ate an APPLE$_F$.

This last phenomenon thus has to do with different salience of the QUDs. Given the discussion of the relation between salience and background marking, it is therefore surprising that no effect of contrast was found. Note however that in all kinds of contexts tested, the marked focus/background construction was judged to be best, suggesting that even for contexts like (65), the perceived relevance of the QUD to the addressee's aims and goals was judged to be high enough to license the use of *=i/ye*. A way to test the effect of contrast would be to test constructions that require the QUD to be even more salient, e.g. short answers. It is predicted that, also in Ngamo, a short answer like *(No,) an apple!* is not acceptable as an answer to questions like (65-a), since the questioner is not attending to the relevant QUD yet.

To sum up, the different kinds of phenomena which lead to the classification of different contexts into *contrastive* and *non-contrastive* can be embedded into the current approach. Importantly, this can be done without assuming any semantic difference between focus in more contrastive contexts and focus in less contrastive contexts — it may however be that the notions of salience (of QUDs) and of addressee commitment might interact.

5.3.4 Summary

The preceding sections have clarified what the function of focus is understood to be, i.e. what all kinds of focus realization in Ngamo have in common. Following Roberts (2012), the primary function of focus is to indicate what CQ is answered, be it implicit or explicit. Thereby, focus helps to form discourse coherence, since the CQ is assumed to be part of a question under discussion hierarchy that governs the whole discourse. Part of the function of the CQ is to indicate what the Austinian topic situation is, the situation for which the answer is asserted to be true. This topic situation is represented as a variable, a variable that picks up the referent provided by the CQ (Kratzer, 2011, Schwarz, 2009b).

Any CQ comes with a, usually implicit, set of alternative answers, which is, at the same time, the set of focus alternatives of the answer. The restrictions for these alternatives are assumed to arise via a subsituation of the topic situation, the so-called *resource situation*, parallel to the treatment of quantifier restrictions in situation semantics (Kratzer, 2011). In the case of questions,

these situations contain only those indivuals and/or events that are assumed to be of interest to the addressee.

When the CQ is implicit, i.e. attributed to the hearer by the speaker via focus, the speaker signals what she assumes the current discourse interests of the hearer to be, concerning the CQ itself ("This CQ is more relevant/interesting to the addressee at this point in discourse than any other possible QUD") as well as the focus alternatives considered ("The addressee considers these focus alternatives to be relevant/interesting."), cf. Roberts (2012), cf. also the idea, from relevance theory, that each utterance carries the assumption of its own maximal relevance (e.g. Wilson and Sperber, 2004). She also holds parallel assumptions about the beliefs or commitments of the addressee concerning the CQ ("The addressee is committed to any presupposition raised by the CQ"), and the focus alternatives ("The addressee considers certain focus alternatives more probable than others"). Thus, by attributing a *wh*-question to the addressee, the speaker also attributes the existential presupposition of the *wh*-question to the addressee. This was modelled with the help of probability measures. A further motivation for assuming probability measures is the fact that speakers also sometimes mark how probable they assume their answers to be for the hearer (Zimmermann, 2008a, Destruel and Velleman, 2014, Beaver and Clark, 2008, i.a.). The speaker's representation of the addressee's belief must therefore also include probability measures for the respective possible answers.

What is sometimes assumed to be an existence presupposition induced by focus (cf. Geurts and van der Sandt (2004) for a proposal of this kind) is thus modeled here as something weaker, namely as attributed hearer-belief. The exhaustive conversational implicature which comes with focused utterances has to do with the fact that the addressee assumes the answer to not only be true in the topic situation, but also be exemplified by the topic situation.

The discussion of focus constructions so far shows that the semantic effect of backgrounding, i.e. indication of the topic situation, attribution of hearer-belief, etc. is assumed to be as important as that of focusing. The following section discusses backgrounding in further detail, by taking up and discussing the proposal from section 4 that the *=i/ye* marker in marked focus constructions in Ngamo is a *background* marker, rather than a focus marker.

5.4 Background marking

In chapter 4, the following observations were made about the background maker: First, that there is no difference between the different focus/background constructions in Ngamo with respect to contrast, exhaustivity, and existence implications. Second, that background-marking does not clearly correspond to givenness, although when the current utterance is strongly parallel to something given in the context, background-marking is possible, cf. (66).

(66) Bah gave a lot of money to his two sons, Luccu and Kule. Luccu built a school, what did Kule do?
A: Salko=i bano.
build.PFV=I house
"He built a HOUSE."

Third, the background was proposed to be a definite description of situations, with the background marker being a definite determiner, related to the definite determiner *=i/ye*. Both were found

to be possible when the corresponding referent is deemed to be hearer-salient, either because it is given in the linguistic context, or clear from the non-linguistic context that the hearer is attending to it, or because the speaker assumes it to be relevant to the hearer's aims and goals (cf. Barlew (2014) for definite descriptions in Bulu. I also assume this to be related to Kadmon and Sevi (2011)'s notion of givenness$_p$.). A possibly related *=i/ye*-marker marks antecedents of conditionals, *when*-clauses, and other temporal adverbials.

In this section, first a proposal for DP-*=i/ye* will be made in section 5.4.1, based upon the discussions in Schwarz (2009b), Arkoh and Matthewson (2013), and Barlew (2014). Section 5.4.2 then discusses how this proposal could be extended to the background marker *=i/ye*.

5.4.1 The definite determiner *=i/ye*

A first proposal

The definite determiner *=i/ye* was shown in section 4.3 to be used in similar environments as the 'strong' definite determiner discussed in Schwarz (2009b): in environments where it is used anaphorically to refer back to something prementioned or deictically to refer to something that the speaker is pointing at, and in some bridging contexts, e.g. *product-producer* bridging contexts. It was however also shown that *=i/ye* definites can also occur in other contexts in which the referent is salient (Barlew, 2014): those in which the addressee is clearly attending to the referent, and those in which the speaker believes that the referent is important to the addressee's aims and goals. This section briefly compares the proposals of Schwarz and Barlew with respect to how well they can be used to model the salience requirement and default anaphoricity of *=i/ye* in Ngamo.

Schwarz (2009b, p. 260) proposes the denotation in (67) for the anaphoric, *strong*, definite article in German. This is very similar to the lexical entry that he proposes for the weak definite article in German, cf. (68) (Schwarz, 2009b, p.148), with the difference that the lexical entry in (67) requires an additional unpronounced pronominal argument. By virtue of the anaphoric properties of the pronominal argument, this strong definite article can only be used anaphorically.

(67) $\lambda s_r.\ \lambda P.\ \lambda \mathbf{y}\text{: } \exists!x(P(x)(s_r)\ \mathbf{\&}\ \mathbf{x=y}).\iota x\ [P(x)(s_r)\ \&\ \mathbf{x=y}]$

(68) $\lambda s_r.\ \lambda P\text{: } \exists!x\ P(x)(s_r).\iota x[P(x)(s_r)]$

The proposal of Barlew (2014) for the definite article in Bulu is given in (69)[19]. This definite article behaves similarly to the German anaphoric definite article described by Schwarz (Barlew, 2014, p.14-15), with the difference that it can be used in further contexts where the referent is merely *hearer-salient*, not prementioned. In (69), D_c is the set of weakly familiar discourse referents, i.e. the individuals that are entailed to exist by the Common Ground, and the salience function *sal* is defined as in (70). It relies on the notion of *context*, defined as a tuple ⟨I, C, D, t⟩ made up of the set of interlocutors I_c, the Common Ground C_c, the set of weakly familiar discourse referents D_c, and the utterance time t_c.

(69) *Denotation of the definite article* -tè *in Bulu* (adapted from Barlew (2014, p.15))
$\lambda P_{\langle e,t\rangle} : \exists!x \in D_c[P(x) \wedge \mathbf{sal(x,c)}].\iota x[P(x) \wedge \mathbf{sal(x,c)}]$

[19] The denotation is adapted slightly, in order to make it more easily comparable with Schwarz' proposal.

(70) *Salience*
Given context c with speaker s_c and addressee a_c and $i \in D_c$:
$sal(i,c) \leftrightarrow att(i,s_c,t_c) \wedge C_c$ entails that $att(i,a_c, t_c)$

Barlew's definition of salience of a weakly familiar individual thus requires that the speaker is attending to that individual at utterance time, and that the Common Ground entails that the addressee is attending to it, too. Attention is defined as follows:

(71) *Attention*
Given c, $\alpha \in I_c$, and $i \in D_c$: $att(i, \alpha_c, t_c) \leftrightarrow \alpha_c$ is attending to i at t_c.

The main difference to Schwarz' proposal, apart from the fact that the situation argument is missing[20], is the explicitness of the salience requirement, i.e. the difference between identifying the referent with the referent of the free pronoun argument (67) and requiring its salience in (69).

Salience and the assignment function Whether or not Schwarz' lexical entry for the *strong* definite determiner in German can be used for the definite determiners in Bulu or Ngamo depends on the relation between the way the free pronoun in (67) is resolved and salience. Under the assumption that deictic and anaphoric free pronouns are resolved in the same way (Heim and Kratzer, 1998, p.239–242), i.e. via an assignment function that returns the most salient of the plausible referents, Schwarz' entry in (67) can also account for the relevant basic data where it is clear that the referent is salient to the speaker and hearer. The lexical entry can even account for Barlew's examples in which the referent is independently salient — following Heim and Kratzer, any free pronoun refers to a salient individual, no matter what the cause of the salience is. I thus do not share Barlew (2014, p.18)'s concerns that Schwarz' account cannot capture the data in which the referent is salient, but not prementioned.

However, there seem to be different opinions in the literature concerning the correspondence between salience and the assignment function. For example, Sauerland (2005) proposes a definition of *givenness* using the assignment function. For individuals, he proposes that "an individual is given if it is the value of some index of the assignment" (Sauerland, 2005, p.379), cf. (72), cf. also Wagner (2006) for discussion. This presupposes a very strict view of the relation between the assignment function and salience, where only the very recently mentioned individuals count as salient. Arkoh and Matthewson (2013), in contrast, do not seem to assume such a tight connection. They adopt the lexical entry in (67) for the definite article in Akan (Arkoh and Matthewson, 2013, p.19), but assume that it encodes weak familiarity, rather than strict anaphoricity, whereby a referent, following Gundel et al. (1993, p.275–276), is characterized as familiar if the addressee "has a representation of [it] in (long- or short-term) memory". They note that their approach predicts that it is possible to use this definite article if one has spoken about the referent weeks or even months ago. Finally, Büring (2005, p.28–29) proposes that all referring expressions are assigned a referent via the assignment function. The kind of relation between the assignment and salience needed here is an intermediate one, not as strict as Sauerland's, but not as lax as Arkoh and Matthewson's or Büring's.

In addition, the account adopted here should allow for a distinction between the kind of salience required by a pronoun, and the kind of salience required by a definite description. Even

[20]Schwarz (2009b, p.264) reports that Angelika Kratzer suggested to him that the situation argument may not be needed for the anaphoric definite article. As will be discussed below, Schwarz still needs it for the relational variant of this article. In order to keep the two variants as similar as possible, he decides to assume a situation argument here, too.

when only looking at anaphoric definite descriptions, it is evident that there is a difference between the salience of their referents and those of pronouns. For example, when the distance to the antecedent is short, a pronoun is preferred to a definite description, whereas a definite is preferred for antecedents that are further away (Ariel, 1988, Givón, 1983, Reinhart, 1995, Grosz et al., 1995), e.g. in the Ngamo example in (72), the preferred option is a zero pronoun.

(72) Ngo rino. Imu lakɗu.
person enter.PFV.VENT do.1PL.DEP greet.NMLZ
"A man entered. He greeted us."

This becomes especially important in cases where it is not the most salient possible referent that is picked out. Consider (73), from Reinhart (1995, p.80). Reinhart suggests that the fact that Max is the topic of this stretch of discourse makes it more accessible, and thus accounts for the fact that speakers usually assume that Max made the suggestion. The most salient male individual is thus Max in this example. Now consider the variant of Reinhart's example in (74). Here, I believe, the most plausible reading is one where *the politician* refers to Renzi, although, following the discussion of (73), Hollande should be the most salient politician.

(73) Max was walking down from school, pondering about the meaning of life. Soon he ran into Felix and he suggested that they stop at the bar. (Did Max or Felix suggest the bar?)

(74) François Hollande was walking down the street, pondering about the meaning of life. Soon he ran into Matteo Renzi and the politician suggested that they stop at the bar. (Did Hollande or Renzi suggest the bar?)

Both Schwarz' and Barlew's accounts would have to be amended in order to account for this difference. In both cases, the solution seems to lie in different *degrees of salience*. One could assume that a *=i/ye* DP requires the referent to be salient to at least a certain degree d_{def}, and that pronouns require salience to a greater degree d_{pro}. Even though in a sentence like (74), a full definite description could in principle be used to refer to Hollande, pragmatic principles of informativity and brevity lead the hearer to assume that a cooperative speaker would choose a pronoun to refer to the most salient politician, Hollande. Amended in this way, both approaches could thus account for such examples.

In the following, I will use Schwarz' account, enriched with the following assumptions: First, the assumption, stated above, that the assignment function assigns indices to individuals regardless of the source of the salience, i.e. a free variable can refer to a referent that is salient in the non-linguistic context. Second, individuals will be assumed to presuppose their respective degree of salience, cf. (75). This accounts for the difference between pronouns and definite descriptions concerning the salience of the referent.

(75) $[\![x_{1,d}]\!]^g$ = g(1), defined iff g(1) is salient to degree d, undefined otherwise.

Third, the proposal will have to capture the fact that in Ngamo, *=i/ye* definites are default anaphoric: e.g. in (76), the second use of *takardas* cannot refer to the second book pointed at, but must refer back to the previously introduced book.

(76) Shuwa and Dimza are standing in front of Shuwa's bookshelf. Shuwa says, pointing:
??Ne kaja takardas ki Potiskum, takardas me ki Barno.
1SG buy.PFV book=DEF.DET.F at Potiskum book=DEF.DET.F but at Maiduguri.
(intended:) "I bought this book in Potiskum, and this book in Maiduguri."
(Consultant comment: even though you are pointing, it should be "takardas ... takardas so'otos/wanses" [(='the other book'/'(the) that book')] — 'takardas' sounds as though you are still talking about the same book.)

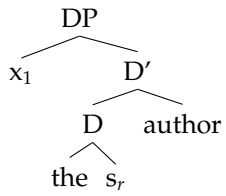
A possible way of capturing this is to assume that sources of salience are ordered with respect to their salience, so that the recent linguistic context is more salient than the non-linguistic context. Thus, in Ngamo, if there is a recently prementioned book, this book has to act as the antecedent of the definite description.

Bridging A further advantage of Schwarz' proposal is that he can account for bridging examples. Recall that in German and Ngamo, the anaphoric definite article was also used for product-producer bridging, cf. (77), and the uniqueness definite article for whole-part bridging.

(77) I bought a book last week.
A gofshe=i walla ne'e ki sani bolo.
one.who.does writing=DEF.M exceed.PFV 1SG with year two
"The author is two years older than me."

For these, Schwarz (2009b, p.271) uses a relational variant of the strong definite article, cf. (78-a) (ignoring presuppositions). Assuming the structure in (78) for *the author*, which, he argues, is the same as in prenominal possessives (e.g. *its author*), and the denotation in (78-b) for the relational noun *author*, Schwarz arrives at the meaning in (78-c) for the whole DP. He notes that in order to derive the uniqueness effect here, the resource situation is needed (Schwarz, 2009b, p.272): (78-a) triggers a presupposition that x is the unique individual in s_r standing in relation R to y. Unlike in the definition of the non-relational strong definite article in (67), where the referent is already presupposed to be unique or maximal by virtue of being identified with a covert pronoun, this relational variant relies on this presupposition in order to derive the uniqueness of the referent.

(78)



a. $[\![\text{the}_{strong-rel}]\!] = \lambda s_r.\lambda R.\lambda z.\ \iota x[R(x)(y)(s_r) \ \& \ y=z]$, defined iff $\exists!x[R(x)(y)(s_r) \ \& \ y=z]$
b. $[\![\text{author}]\!] = \lambda y.\lambda x.\lambda s.$ x is an author of y in s
c. $[\![x_1\ \text{the}_{strong-rel}\ s_r\ \text{author}\ ]\!] = \iota x[\text{author}(x)(y)(s_r) \ \& \ y=g(1)]$, defined iff $\exists!x[\text{author}(x)(y)(s_r) \ \& \ y=g(1)]$

This means that the prediction for the definite descriptions with relational nouns like $the_{strong-rel}$ *author* is not that they should be replaceable by free pronouns, e.g. *he*, but rather by possessives, e.g. *its author*, cf. (79), which seems to be accurate[21].

[21] Interestingly, in Ngamo, as in Akan (Arkoh and Matthewson, 2013, p.14) and Bulu (Barlew, 2014, p.17), possessive constructions were the preferred construction for whole-part bridging — for which a uniqueness definite was expected — rather than for product-producer bridging. Probably, possessives are possible in all bridging cases, and are just preferred in the whole-part examples because the bare nouns are otherwise interpreted as indefinite.

(79) I bought a book last week.
A gofshe=n=to yak walla ne'e ki sani bolo.
one.who.does writing=LINK=3.SG.F.POSS only exceed.PFV 1SG with year two
"Its (lit. "her") author is only two years older than me."

Schwarz thus explains the contrast with the fact that a relational noun is involved, which relates to something prementioned. Barlew, in contrast, would have to assume that product-producer bridging involves higher salience than whole-part bridging[22,23].

The Ngamo DP

The proposal of Schwarz (2009b) in (80) was adopted for *=i/ye* DPs in Ngamo, modulo some further assumptions concerning the assignment function, providing a d-salient individual as value for the free variable y.

(80) $\lambda s_r.\ \lambda P.\ \lambda y\colon \exists!x(P(x)(s_r)\ \&\ x=y).\iota x\ [P(x)(s_r)\ \&\ x=y]$

This section discusses whether this lexical entry needs to be modified in order to account for the special properties of the Ngamo DP. Section 3.4.1 showed that the definite determiner in Ngamo can attach to e.g. proper nouns, pronouns, possessives and demonstratives, as well as to the "indefinite" determiner *sò'otò* (f)/*yò'otò* (m), cf. (81)–(82)[24].

(81) a. Halima=s
Halima=DEF.DET.F
"('the') Halima"

b. te=s
she=DEF.DET.F
"('the') she"

c. mandu wonsi=s
woman DEM=DEF.DET.F
"that ('the') woman"

(82) a. ɗeino=mu=s
staying=1PL.POSS=DEF.DET.F
"This (lit. the) staying of ours"
(D1G_GKA_006)

b. a siyasa=i yo'oto ye'e
one.who.is politician=LINK DET.INDEF DET.DEF
"the other politician"

It is however not feasible to assume that the *=i/ye* determiner takes arguments of type *e*, contributing only the salience requirement. The main reason to reject this approach is that it would make the wrong predictions for the basic cases like (83), where the *=i/ye* determiner combines with a predicate of type $\langle e, \langle s, t\rangle\rangle$: Here, one would have to either posit that a IOTA type-shift is applied to *a siyasa* (Partee, 1986), or a covert determiner WEAK-DEF which contributes the same meaning as the weak determiner in German. In both cases, the resulting individual would be presupposed to be unique (in its resource situation), a presupposition that *=i/ye* definites do not have, as shown in section 4.3.1. The determiner in (80), in contrast, triggers the

[22] I'm not aware of any experimental literature comparing the salience of referents in these kinds of constructions (but cf. Weskott et al. (2011) on the processing of whole-part bridging). Barlew's approach would however predict that bridging relations that involve higher salience should require a strong definite article. For example, Baumann and Grice (2006) argue that in whole-part bridging, as in Schwarz' examples, the part is only mid-active. In part-whole bridging, in contrast, the inferred whole is highly active in the addressee's consciousness, as indicated by the fact that it can be deaccented. Barlew's account would thus predict that part-whole bridging would require a strong definite article, too.

[23] In addition, Schwarz tentatively proposes that a weak definite article can be used anaphorically to refer back to discourse topics. Since discourse topics are maximally salient, it is unclear how this observation can be explained in either Barlew's or Schwarz' proposals. This was not tested for Ngamo, and is therefore left for future research.

[24] Note that the *yo'oto* indefinites often contain a linking morpheme preceding *yo'oto* which is similar to the *=i/ye* definiteness marker, but should not be confused with it. The *=i/ye* definiteness marker follows *yo'oto*.

presupposition that the referent of the DP is the unique *salient* individual of this kind in the resource situation, which is compatible with the data in 4.3.1.

(83) a siyasa ye'e
one.who.is politician DET.DEF
"the politician"

I therefore assume that *=i/ye* is a definite determiner of type $\langle\langle e,t\rangle,\langle e,e\rangle\rangle$, which — ignoring the situation argument — corresponds to Schwarz (2009b)'s proposal. All possible first arguments of *=i/ye*, including proper names, pronouns, possessive and demonstrative DPs, would then be of type $\langle e,t\rangle$. This could be the result of an IDENT type-shift from e to $\langle e,t\rangle$ (Partee, 1986). Alternatively, the arguments could be assumed to be of type $\langle e,t\rangle$ to begin with, cf. e.g. Elbourne (2005), Matushansky (2015), i.a., for analyses of proper names as naming predicates; Sugamoto (1989), Noguchi (1997), Déchaine and Wiltschko (2002) for analyses of Japanese pronouns, which can also occur with a definite determiner, as nouns; Giorgi and Longobardi (1991) for analyses of (some) possessives as adjectives, and Matthewson and Davis (1995) for predicative analysis of possessives in St'at'imcets (Lillooet Salish).

While the Ngamo DP certainly has to be studied in greater detail[25], it nevertheless seems clear that an analysis of at least some of the arguments to the *=i/ye* marker as predicates is advantageous. For example, possessive and demonstrative NPs can be further modified by adjectives, cf. (84)–(85). Example (85) additionally shows that the demonstrative *wonse* (= "that"(f)) can be introduced by *so*, which usually introduces relative clauses or adjectives. Section 3.4.2 showed that the position of *wonse* with respect to adjectives and relative clauses is free. Its syntactic behaviour is thus very similar to that of adjectives.

(84) Takarda**=ni** baɗ ma nekshi ma si kejeno=i
book=3SG.POSS.M five LINK.PL large.PL LINK.PL 3SG.M buy.STAT=DEF.DET.PL
"His five large books that he bought"

(85) a. Takarda (so) **wonse** *(so) na'ako(=s'e) (noun > dem > adj)
book REL DEM.PROX.F REL big=DEF.DET.F
b. Takarda (so) na'ako (so) **wonse**(=s'e) (noun > adj > dem)
book REL big REL DEM.PROX.F=DEF.DET.F
"That big book"

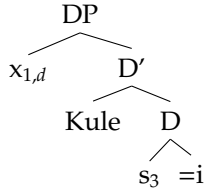
I will thus treat *wonse* and other demonstratives as adjectival. As Leu (2008, p.16) writes, definite adnominal demonstratives are often considered to be complex, composed out of a definite and a adjectival component. In Ngamo, demonstratives and definite determiners can however co-occur (85), and there is the possibility that bare nominals are interpreted as definite. *Wonse* will thus be treated as denoting a property, the property of *being there*. Possessives are tentatively analysed as not contributing a definite meaning component. This means that they take a relational noun as a complement (as in, e.g., Heim and Kratzer (1998)), but only saturate one argument slot of their complement, yielding a property.

[25]For example, it needs to be investigated whether pronouns can co-occur with possessive pronouns, adjectives, and demonstratives, as they can in Japanese (Déchaine and Wiltschko, 2002, p.417), and whether possessive NPs can co-occur with indefinite determiners, as in Italian (Giorgi and Longobardi, 1991, p.153–154).

Proper names are also more complex. Apart from appearing with the *=i/ye* definite determiner, they can also co-occur with possessives and demonstratives, e.g. (86). Some analysis allowing for proper names as properties is thus independently needed.

(86) Jubi=k bammu wonse
Jubi=LINK house.3PL.POSS DEM.PROX.F
"That Jubi of our house"
(*D2G_01_kayau_ki_ngoi.pdf*, line 024)

Under the assumptions that all of these possible complements of *=i/ye* can be properties, the modified version of Schwarz' proposal, described above, could be used for these cases, too. For example, (88) shows the denotation of the DP in (87).

(87)


(88) $[\![x_{1,d}\ \text{Kule}\ s_3\ \text{=i}]\!]^g = \iota x[x \text{ is named Kule in } g(3) \ \&\ x = g(1)]$, defined iff $\exists!x[x \text{ is named Kule in } g(3) \ \&\ x = g(1)] \ \&\ g(1)$ is salient to degree d.

A remaining question concerns the treatment of *yo'oto* indefinites under this proposal. Since the reading obtained by the combination of *yo'oto* indefinites and *=i/ye* is in some sense relational, cf. (89), it would be of advantage to be able to use the same relational variant of *=i/ye* which is needed for bridging examples, cf. the definition in (78) above, repeated here as (90).

(89) a siyasa=i *yo'oto* **ye'e**
one.who.is politician=LINK DET.INDEF DET.DEF
"the other politician"

(90) $[\![\text{the}_{strong-rel}]\!]$
$= \lambda s_r.\lambda R.\lambda z.\iota x[R(x)(y)(s_r) \ \&\ y=z]$,
defined iff $\exists!x[R(x)(y)(s_r) \ \&\ y=z]$

If *yo'oto* would simply mean *other*, as in (91-a), a relational NP meaning as in (91-b) were feasible. This would be an appropriate argument for the relational variant of the strong definite determiner, yielding the unique politician individual which is different from a salient politician individual. This follows e.g. Nouwen (2003, p.108–110)'s suggestion for the complement anaphoric definite description *the others* that it does not require its referent to be given, but relies on the *range* (e.g. the set of politicians) and the *contrast* (e.g. the prementioned politician(s)) being in the context[26]. For *the other politician*, however, it is arguably enough if the contrast is in the context, since *other*

[26] Alternatively, one could propose a further variant which encodes dependence on two free variables, cf. (i).

(i) $[\![\text{other politician}]\!]^g = \lambda z.\lambda y.\lambda x.\lambda s.$ x is a politician in s & x is other from y in s & x is a subset of z in s

The representation in this section is simplified, ignoring e.g. plural examples, and capturing only the important generalization that these expressions contain free variables for the range and contrast arguments. According to Dotlačil (2010, p.123), the much more sophisticated proposal of Beck (2001) for *each other* as a kind of plural definite perfectly captures the meaning of *the others*, cf. also Beck (2000)'s discussion of *anders*. Whatever the proper treatment of *the other politician* in these cases, it seems to me that this would also be applicable to the *marble* example cited in Schwarz (2009b, e.g. p.277), cf. (ii-a) (from Heim, 1982, attributed to Barbara Partee). This is another complement anaphoric example, with the range (the ten marbles) and the contrast (the nine marbles) being in the context, cf. (ii-b-c).

(ii) There were 10 marbles in the bag, but I found only 9 of them.
a. **The missing marble** / #it must be under the couch.
b. They belonged to my grandmother. (= the 10 marbles)
c. They are on the fridge now. (= the 9 marbles)

has an overt range argument in this case.

(91) a. [[other]]= λP. λy.λx.λs.P(x)(s) & P(y)(s) & x ≠ y
b. [[other politician]]= λy.λx.λs. x is a politician in s & y is a politician in s & x ≠ y
c. [[x_1 the$_{strong-rel}$ s_2 other politician]]^g = ιx[x is a politician in g(2) & v is a politician in g(2) & & x ≠ v & v=g(1)],
defined iff ∃!x[x is a politician in g(2) & v is a politician in g(2) & x ≠ v & v=g(1)]

Just as in the bridging examples, the definite determiner would have to contribute a uniqueness presupposition for the referent of the full DP, since the uniqueness is not contributed by the anaphoric part, i.e., in Schwarz' analysis, the situation pronoun is needed to account for the uniqueness of the definite description[27].

However, as discussed in §3.4.1, *yo'oto* indefinites are not always relational: in many cases, they simply introduce a new discourse referent which stands in no relation to any prementioned discourse referent. This can be seen by the fact that a *yo'oto* indefinite can be discourse-initial (92). Section 3.4.1 also showed that these indefinites have a strong novelty requirement, i.e. they cannot refer back to an individual which is already in the discourse, cf. (93).

(92) Ngo=i yo'oto rino. Ngo=i yo'oto imu lakɗu.
person=LINK DET.INDF.M enter.PFV.VENT person=LINK DET.INDF.M do.1PL.DEP greet.NMLZ
"A man entered. Another man greeted us."

(93) Kule teɗeno ki ka ka'a ngo=i yo'oto teɗeno
Kule arrive.PFV.VENT because.of like.that person=LINK INDF.DET arrive.PFV.VENT
"Kule arrived, therefore a person arrived."
(Comment: As soon as Kule arrives, somebody else follows. Two people arrive.)

Yo'oto will thus be assumed to have a denotation as in (94), merely contributing a newness presupposition similar to Heim (1982)'s novelty condition.

(94) λP.λx. P(x)
defined iff ¬∃i,d[$\langle i, e, d\rangle$ ∈ Dom(g) & g($\langle i, e, d\rangle$) = x],
where i is an index, and d a degree of salience.

The kind of interpretation that a *yo'oto* indefinite receives depends on the context of utterance: any utterance of a *yo'oto* indefinite is interpreted as introducing a new discourse referent. If there is already a salient individual of the same kind, this enforces the *another* interpretation. If there is no salient individual of the same kind, the other reading (translated as "*a certain*") is preferred. The combination of *=i/ye* and *yo'oto* can only mean *the other*, since *=i/ye*, following the discussion

[27] It is not entirely clear to me whether uniqueness in a resource situation is actually the right way to characterize how the uniqueness inference comes about. For example, in (i), there are multiple other books in the bookshelf. Nevertheless, *takardas so'otos* ("the other book") can be used, because it is the only *salient* other book.

(i) Shuwa and Dimza are standing in front of Shuwa's bookshelf. Shuwa says, pointing:
Ne kaja takarda=s ki Potiskum, **takarda=s so'oto=s** me ki Barno.
1SG buy.PFV book=DEF.DET.F at Potiskum book=LINK INDEF.DET.F=DEF.DET.F but at Maiduguri.
"I bought this book in Potiskum, and this other book in Maiduguri."

This should be further studied, also for bridging examples.

in Schwarz (2009b), introduces a requirement that either the referent itself is salient, which clashes with the novelty condition of the indefinite, or that some individual that the referent relates to in some way is salient. This latter requirement can be fulfilled without violating the novelty condition, thus leaving this as the only possible interpretation. This is formulated as kind of coercion, cf. (96-a) (Jensen and Vikner 1994, as discussed in Partee and Borschev 2003 for possessive constructions): in order to avoid a crash in the derivation, the indefinite in (95) is type-shifted to a relational noun. In (96), the general coercion rule is shown. Since this shift only occurs in contexts in which a clash of this kind occurs, the relation R_i is conventionalized as in (96-b): it is the relation of being different individuals of the same kind.

(95) λx.λs. x is a politician in s,
defined iff $\neg\exists$i,d[$\langle i, e, d\rangle \in$ Dom(g) & g($\langle i, e, d\rangle$) = x]

(96) a. *Coercion:*
λx.P(x) $\Rightarrow$ λx.λy.P(x) & R_i(x)(y)
b. *Coercion (with* yo'oto*):*
λx.P(x) $\Rightarrow$ λx.λy.P(x) & **P(y) & x$\neq$y**

When the combination of *=i/ye* with a *yo'oto* indefinite leads to such a coerced type-shift of the *yo'oto* indefinite, the derivation can proceed as shown in example (91) above, using the relational version of *=i/ye*. The resulting individual is new, as required by *yo'oto*, but related to a salient individual, as required by the relational variant of *=i/ye*. Schwarz' account of the strong definite article thus makes the interesting prediction that it can be used when some part of the DP is anaphoric, not necessarily the referent of the DP itself[28].

To sum up, the proposal used in Schwarz (2009b) to account for anaphoric definite descriptions in German, adapted to account for salient non-prementioned individuals, was adopted for *=i/ye* definites in Ngamo. This section discussed some remaining concerns concerning the Ngamo DP. First, arguments of the *=i/ye* determiner which seem definite already, e.g. proper nouns and pronouns, were discussed, and suggested to be of type $\langle e, \langle s, t\rangle\rangle$. Then, the combination of *=i/ye* with *yo'oto* indefinites was discussed, and found to be relational, similar to the product-producer bridging examples discussed in Schwarz (2009b). After a brief aside and a summary of this section, section §5.4.2 will discuss how this account can be extended to the background marker *=i/ye*.

Aside: DPs of type $\langle e, t\rangle$ The previous parts of this section discussed how Schwarz' strong definite determiner, which yields a DP of type e, can be adapted in order to account for the Ngamo data. This section briefly discusses an alternative proposal under which the whole DP is of type $\langle e, t\rangle$, too. As will be made clear in §5.4.2, an analysis of the *=i/ye* definite as a modifier, as in (97), would make it more similar to the proposal of the *=i/ye* background marker.

[28]Schwarz also mentions that the German definite article which indicates anaphoricity/familiarity is used in so-called 'establishing relative clauses', i.e. to introduce a new discourse referent which is somehow related to a familiar referent (Schwarz, 2009b, p.67, p. 280–281), cf. (i) from Hawkins (1978, p.131), where the relative clause relates the woman to Bill:

(i) Q: What's wrong with Bill?
B: Oh, the women he went out with last night was nasty to him.

For Ngamo, the available data is not entirely clear in this respect, but Arkoh and Matthewson (2013, p.18) note that the Akan definite article is not allowed in these kinds of contexts. Relative clauses in languages with two kinds of definite articles have e.g. been studied in Wiltschko (2013), Keenan and Ebert (1973). For Ngamo, this is left for further research.

(97) a. *Strong definite determiner, predicative version:*
$\lambda s_r.\lambda P.\lambda y.\lambda x.P(x)(s_r)$ & x=y, defined iff $\exists!x[P(x)(s_r)$ & x=y]
b. *Strong definite determiner, relational predicative version:*
$\lambda s_r.\lambda R.\lambda z.\lambda x.R(x)(y)(s_r)$ & y=z, defined iff $\exists!x[R(x)(y)(s_r)$ & y=z]

Proposals for definite descriptions as properties are e.g. discussed in Coppock and Beaver (2012) for predicative uses of definite DPs in English — argument DPs are type-shifted using the IOTA operator. The arguments they cite are the following: first, these DPs can be coordinated with other predicates, cf. (98-a), and second, they can be arguments of *consider* (98-b):

(98) a. John is tall, handsome, and the love of my life.
b. John considers this woman the queen of the world.

For Ngamo, data like this is not available, but if predicative *=i/ye* definites are possible, and if they pattern like the English definite descriptions in (98), a predicative analysis of *=i/ye* definites would be very attractive, due to its similarity to the background marking analysis to be proposed in the following section.

Summary

In this section, the proposal by Schwarz (2009b) for the strong definite article in German was adopted with some modifications: First, inspired by Barlew (2014)'s proposal for the definite determiner in Bulu, the DP was also assumed to overtly include an indication that the referent is salient to a certain degree. A brief discussion of the complements of the *=i/ye* definite in Ngamo followed, investigating whether these complements denote individuals or properties. After concluding that they denote properties, the combination of the indefinite determiner *yo'oto* and the definite determiner *ye'e* was discussed. This was found to be very similar to bridging examples analysed in Schwarz (2009b), for which a second, relational *=i/ye* determiner was assumed. A final, more tentative, part discussed whether the *=i/ye*-DP itself is better analysed as individual-denoting or as property-denoting.

5.4.2 Background marking

In section 4.3.2, it was argued that the *=i/ye* background marker behaves just like the *=i/ye* definite determiner: it indicates salience of a referent. The main difference is that the referent, in this case, is a situation, the *Austinian topic situation* of the sentence, rather than an individual. The *=i/ye* background marker was shown to be possible in similar contexts as the *=i/ye* definite determiner, namely, when the topic situation, indicated via an overt QUD, was in the linguistic context, when it was in the non-linguistic context, because the addressee was evidently attending to this question, or when the speaker believed that the question was relevant to the addressee's aims and goals. In this section, this idea will be made more explicit.

The first part of this section briefly recapitulates, by recalling some of the previously discussed notions and ideas which will become relevant again for this chapter. The second part presents the proposal for the background marker, making it as similar as possible to that adopted for the related definite determiner in the last section. The remainder of this section then shows how this proposal can account for the facts presented in chapter 4: first, several examples of

different focus/background constructions (e.g. DO focus, subject focus) are discussed. This also includes some examples of backgrounded constituents following the focus, as well as examples with several background markers. Second, the question of the lack of exhaustive and existential presuppositions in these constructions is taken up again, as well as the similarities with definite descriptions (e.g. the bridging examples). Finally, the section sketches a proposal for other constructions: short answers to questions, and unmarked focus/background constructions.

Recapitulation

The idea that the background is a definite description of the topic situation links three different approaches: (i) Background as a definite description of an event (cf. e.g. Hole (2011), Onea (t.a.), Grubic and Zimmermann (2011)), (ii) Background as an indicator of the question under discussion (e.g. Roberts, 1998, 2012), and (iii) The question under discussion as an indicator of the topic situation (Kratzer, 2011, Schwarz, 2009b). The first kind of approaches was briefly discussed in section 2.2.1 in the literature overview: these approaches, if adopted for the Ngamo sentence in (99), would predict it to presuppose the existence and maximality of an event of Kule building something, because the background is a definite description of the building-event. For example, we assumed in Grubic and Zimmermann (2011) that (99-b) can be paraphrased as (100).

(99) Q: What did Kule build?
A: **Kule salko=i** bano.
Kule build.PFV=BM house
"Kule built a HOUSE."

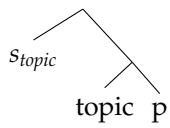
(100) The event of Kule building something is an event of Kule building a house.

The approach here is related, but different: it will be assumed that *=i/ye*, instead of being a definite description of the actual event, is a definite description of the topic situation talked about. The event is introduced low in the structure, whereas the topic situation is introduced higher. The relation between the event and the topic situation — assuming again a kind of correspondence between topic time and topic situation (proposed in Kratzer, 2011, section 3) — is at least partially indicated by aspect. The perfective aspect in (99) thus indicates that the event is a subsituation of the topic situation: In (101-b), the denotation of the (information-structurally neutral) sentence (101-a), situation s' corresponds to the event, and situation s_{topic} to the topic situation. It is this latter situation that is relevant for the current proposal.

(101) a. Kule salko bano
b. $\lambda s.s \approx s_{topic}$ & $\exists s'[s' \leq s$ & Kule builds a house in $s']$

As discussed above in §5.1.2, Schwarz (2009b, p.93f.), following Kratzer (2011)'s suggestion that the topic situation might be a variable in syntax, proposes the following: first, that this variable is high in the structure (within TP or CP), cf. (102). Second, that it is an argument to the topic operator in (103), adapted from Kratzer (2008). And third, as discussed in §5.2.1, that the topic situation can be defined as in (104) Schwarz (2009b, p.143)[29].

(102)



(103) [[topic]]= $\lambda p.\lambda s'.\lambda s.\ s \approx s'$ & p(s)

(104) $s_{topic} = \iota s[\text{EX}(\text{question extension})(s)$ & $s \leq w_0]$

[29] This definition ignores multiple topic situations occurring with indefinites, cf. section 5.2.1 for a discussion.

As discussed in §5.2.1 above, Schwarz' definition of the topic situation presented in (104) builds upon Kratzer's in (105), with the difference that he assumes that there is one unique topic situation. Both use the notion of exemplification, as defined in (106).

(105) **Austinian topic situations** All actual situations that exemplify the question extension.

(106) Exemplification: A situation *s* exemplifies a proposition *p* iff whenever there is a part of *s* in which *p* is not true, then *s* is a minimal situation in which *p* is true.

(107) Minimal situation: A situation is a minimal situation in which a proposition p is true iff it has no proper parts in which p is true.

Kratzer uses Groenendijk and Stokhof (1984)'s definition of question extension, under which the question extension corresponds to the true answer. The topic situation of (99), for Schwarz, would thus be the unique actual situation that exemplifies the proposition that Kule built a house, i.e. the proposition in (108), i.e. a situation containing a completed house building event by Kule, but nothing in addition.

(108) λs.$\exists$s'[s' $\leq$ s & Kule builds a house in s']

The current proposal aims to connect this proposal that the topic situation can be retrieved via the extension of the current QUD with the QUD account in Roberts (1998, 2012), cf. §2.1.3, under which the focus/background partition indicates what the QUD is. The proper paraphrase of (99), under the current account, is thus proposed to be (110), rather than (108). It thus does not presuppose the existence and maximality of the event, but the existence of exactly one salient topic situation of a certain kind.

(109) The situation that the current QUD *What did Kule build?* is about is a situation in which Kule built a house.

In the following, the proposal for the background marker is presented and some examples are discussed.

Background marking in Ngamo

Aboutness and salience A *=i/ye* focus background and a *=i/ye* DP have in common that they both introduce the following information: First, that the situation/individual in question is salient to a certain degree, but not salient enough to be referred to using a pronoun. Second, it provides a description of the situation/individual in question: for example, in (110), that the individual is a man, and in (111), that the situation is the situation that the QUD *What did Kule build?* is about.

(110) ngo =i ...
man DEF.DET
"the man ..."

(111) Kule salko =i ...
Kule build.PFV BM
"Kule built ..."

For the definite determiner, the proposal by Schwarz (2009b, p.260) was adopted, cf. (112). The argument P is relevant for introducing the relevant property that the individual has, whereas the identification with the individual argument y determines that the individual is salient.

(112) $[\![=\text{i/ye}_{\text{DEF.DET.M}}]\!]^s = \lambda s_r.\lambda P.\lambda y\text{: } \exists!x(P(x)(s_r) \,\&\, x=y).\iota x[P(x)(s_r) \,\&\, x=y]$

Adapting this proposal for the background marker, the salience requirement in the situation domain can be formulated identically to the individual domain, i.e. as identification with a situation pronoun. The property of "being the situation that the QUD which the background indicates is about" is formulated as follows. Following Kratzer (2011) and Schwarz (2009b), this *aboutness* is defined as exemplification of the QUD extension. The background is always of type $\langle s,t\rangle$, with an open variable of the type of the focus. Adapting the question formation process described in Groenendijk and Stokhof (1989) for my purposes, I assume that the question extension of such a background can be derived using (113)[30,31]. (114) shows an example: for the background of a sentence like "SARAH *walks*", this results in the set of situations in which the same individuals walk as in the actual world (cf. Kratzer, 2011, chapter 8; cf. also §5.2.1 for a discussion of this).

(113) *The question extension:*
For a background α, background marker $=i/ye_i$, focus of type τ, and actual world w_0,
$?\alpha = \lambda s'[\lambda u_\tau.[\![\alpha]\!]^{[i\to u]}(w_0) = \lambda u_\tau.[\![\alpha]\!]^{[i\to u]}(s')]$

(114) a. *Example background (simplified):* λs. g(2) walks in s
b. *Corresponding question extension:* $\lambda s'[\lambda u_e$.u walks in $w_0 = \lambda u_e$.u walks in s'$]$

Thus, for an expression **P**, we can derive the property of being a situation that the corresponding question extension **?P** is about as in (115), where ?P is the question extension of P, and EX(?P)(s) means "s exemplifies ?P". In parallel to the presupposition of the *=i/ye* definite article above, the background marker *=i/ye* contributes, for any background P, the presupposition that there is exactly one salient situation that has the property in (115), cf. (116). The salience requirement is formalized the same as with *=i/ye* DPs, namely as identification with a free pronoun which is salient to a certain degree. In this example, it is a situation pronoun s_1. A resource situation, as proposed by Schwarz for the strong definite article, is not assumed for the background marker[32].

(115) *Being a situation that* ?P *is about:*
$\lambda s[\text{EX}(?P)(s) \,\&\, s \leq w_0]$
abbreviated as:
ABOUT-QUD(s)

(116) *Presupposition triggered by* =i/ye*:*
$\exists!s'(\text{EX}(?P)(s') \,\&\, s' \leq w_0 \,\&\, s' = g(1)) \,\&$ g(1) is salient to degree d
abbreviated as:
$\exists!s'(\text{ABOUT-QUD}(s') \,\&\, s' = g(1))$

In contrast to the presupposition, the truth-conditional contribution of the background marker

[30] Groenendijk and Stokhof (1989, p.51) propose that an expression α can be turned into a question using (a) in (i). The corresponding question extension is thus (b). The expression α can be of different types, but, importantly, it must be a property or relation, and it must contain a free world variable, as e.g. proposed by von Fintel and Heim (2011, p.6) as extensional lexical entries, e.g. (a) in (ii). Example (b) in (ii) shows an example of a question extension in this account.

(i) a. $\lambda w.\lambda w'[\alpha = (\lambda w.\alpha)(w')]$ b. $\lambda w'[(\lambda w.\alpha)(w_0) = (\lambda w.\alpha)(w')]$

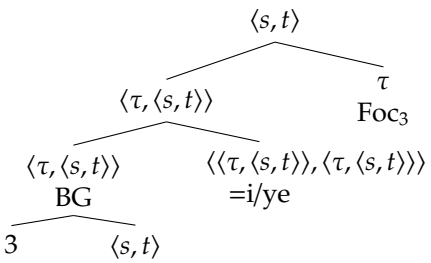
(ii) a. $[\![\text{walks}]\!]^w = \lambda$x. x walks in w b. $\lambda w'[\lambda$x. x walks in $w_0 = \lambda$x. x walks in w'$]$

[31] This formulation of the background requires the *=i/ye* marker and the trace of the focus constituent to be co-indexed, similar to the co-indexing between focus-sensitive particles and focus proposed in Wold (1996). I assume that this is co-indexing takes place when the focus evacuates the background. Further research is needed in order to clarify this mechanism.

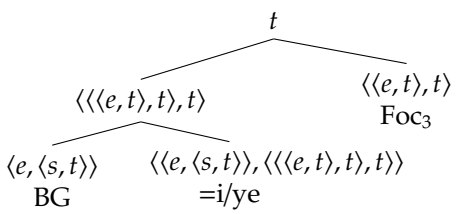
[32] Such a resource situation might however be necessary for the bridging examples also found with the background marker, cf. the examples in §4.3.2 and the discussion in section 5.4.1.

differs very much from the contribution of the *=i/ye* definite article. The *=i/ye* DP denotes an individual, whereas the *=i/ye*-marked background cannot just denote a situation, since it needs to be further combinable with the focused expression. There are at least two possible solutions: First, the *=i/ye* marker can be assumed to be merely presuppositional, contributing a presupposition like (116), but no truth-conditional contribution. This is the solution chosen in Hole (2011, p.1729) for the event determiner. If this proposal were chosen for Ngamo, the *=i/ye* background marker would modify backgrounds of any semantic type, cf. the schematic tree in (i)[33], cf. also the schematic lexical entry in (117). The second possible solution is one where the *=i/ye* marker, apart from introducing the presupposition above, also enforces that this unique salient situation is a situation argument on the truth-conditional level. This is the solution proposed in Onea (t.a.), p.4. Adopted for Ngamo, this would yield the tree in (ii) and the schematic lexical entry in (118).

(i)



(ii)



(117) $\lambda P_{\langle\tau,\langle s,t\rangle\rangle}.\lambda x_{\tau}.\lambda s'.P(x)(s')$,
defined iff $\exists$**!s''[...P...]**

(118) $\lambda P_{\langle e,\langle s,t\rangle\rangle}.\lambda Q_{\langle\langle e,t\rangle t\rangle}.Q(\lambda x.P(x)(\iota$**s'[...P...]**$))$,
defined iff $\exists$**!s''[...P...]**

The two analyses are not equally well-suited to explain the Ngamo data. Recall that, in Ngamo, two background makers can co-occur in a sentence. This is shown in (119), where a backgrounded constituent after the focus is background marked, too, and in (120), where an initial topical element is background marked[34].

(119) Kule salko **=i** bano a Potiskum **ye'e**
Kule build.PFV BM house at Potiskum BM
"Kule built a HOUSE in Potiskum."

(120) Bano**=i** salko**=i** lo?
house=BM build.PFV=BM who
"The house, who built it?"

The second type of analysis, under which the situation referred to by the background saturates the situation argument slot, is thus not suited to describe background marking, under the assumption that both occurrences of the background marker should be analysed the same. In the following, the first, presuppositional type of analysis will therefore be adopted.

The proposal and a first example

The exact proposal for the *=i/ye* marker looks as in (121), with the abbreviated version in (122).

(121) $[\![=i/ye]\!]^{g,s} = \lambda P_{\langle s,t\rangle}.\lambda s'''.\lambda s'.P(s')$,
defined iff $\exists$!s''[EX(?P)(s'') & s'' $\leq w_0$ & s'' = s'''] & s''' is salient to degree d

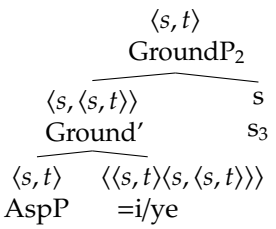
(122) $[\![=i/ye]\!]^{g,s} = \lambda P_{\langle s,t\rangle}.\lambda s'''.\lambda s'.P(s')$, defined iff $\exists$!s''[ABOUT-QUD(s'') & s'' = s''']

[33] Hole (2011, p.1728) suggests that the index triggering predicate abstraction, (cf. Heim and Kratzer, 1998), is not immediately below the focused constituent, but immediately below the operator that corresponds to the *=i/ye* marker.

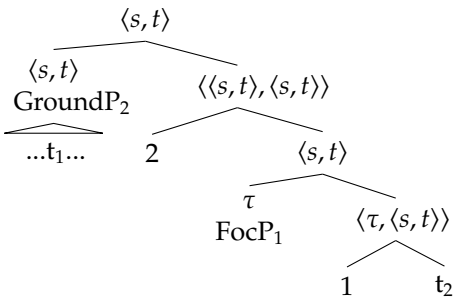
[34] This is not a definite determiner: *bano* is a feminine noun, and would thus take the definite determiner *=ṣ/=se*.

The proposal defended here assumes a remnant movement approach, in which the phrase containing the background (the *GroundP*) has a structure which is very similar to a DP (cf. §4.1.4). The internal structure of the GroundP is shown in (123). The structure assumed for the whole *=i/ye* construction is shown in (124). Unlike Hole (2011) and Onea (t.a.), I assume that the complement of the *=i/ye* marker is of type $\langle s,t\rangle$, rather than $\langle \tau, \langle s,t\rangle\rangle$ (for a focus of type τ). This assumption is made in order to avoid having to posit movement of whole sister of the focus in (124), including the index which triggers λ-abstraction.

(123)



(124)

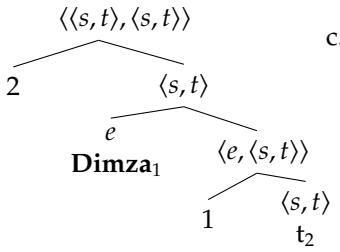


In the following, some example derivations will be presented. In order to make the derivations easier to understand, the they will be shown in two steps. First, I will first give example derivations for the other parts of the tree: (i) the sister node of GroundP, i.e. the part of the tree containing the focused constituent and the trace of the remnant, and (ii) the AspP, which is the complement of the *=i/ye* operator. Then, in a second step, I will show (i) the composition of the GroundP, and (ii) how it is combined with its sister node. This second step will be shown for several different focus/background constructions, e.g. for focused DOs, subjects, and predicates.

The sister of GroundP The sister of GroundP contains at least (i) the trace of the moved remnant background which is of the same type as the background[35], (ii) the focused constituent, and (iii) indices needed for λ-abstraction over the moved focus and moved remnant background. The result of the composition is always of type $\langle\langle s,t\rangle, \langle s,t\rangle\rangle$. For example (125), with focus on the direct object, (126) shows the corresponding tree, and (127) shows the derivation.

(125) Njelu esha=i Dimza
Njelu call.PFV=BM Dimza
"Njelu called DIMZA."

(126)



(127) *Derivation of the sister of GroundP*

a. $[\![1\ t_{\langle 2,\langle s,t\rangle\rangle}]\!]^g = \lambda x_e.[\![t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 1,e\rangle \to x]}}$

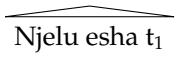
b. $[\![\text{Dimza } 1\ t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 1,e\rangle \to x]}}$
$= \lambda x_e.[\![t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 1,e\rangle \to x]}}$ (Dimza)

c. $[\![2 \text{ Dimza } 1\ t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 1,e\rangle \to x]}}$
$= \lambda p_{\langle s,t\rangle}.[\![\text{Dimza } 1\ t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 1,e\rangle \to x, \langle 2,\langle s,t\rangle\rangle \to p]}}$
$= \lambda p_{\langle s,t\rangle}.\lambda x_e.[\![t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 1,e\rangle \to x, \langle 2,\langle s,t\rangle\rangle \to p]}}$ (Dimza)

[35] Recall that I assumes traces with interpretations of any semantic type (Heim and Kratzer, 1998, p. 212–213), cf. footnote 7 in §5.1.2 above. Above, the notation in (i-a) was used for the sake of simplicity. In this section, the notation (i-b) will be used. Note however, that this is still an abbreviation: it does not contain the degree of salience proposed in §5.4.1.

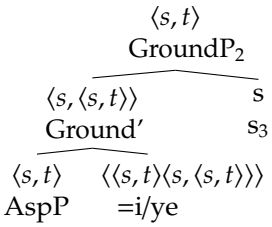
(i) a. $[\![s_1]\!]^g = g(1)$ b. $[\![s_{\langle 1,s\rangle}]\!]^g = g(1,s)$

The AspP The complement of the *=i/ye* background marker in example (125) is derived as follows. The aspectual information is, simplifyingly, represented using situational parthood.

(128)


(129) *Derivation of the AspP:*
[[PFV Njelu esha $t_{\langle 1,e\rangle}$]]^{g}
= λs′.$\exists$s″[s″ ≤ s′ & Njelu called g(⟨1, *e*⟩) in s″]

The GroundP Now that the first argument to the *=i/ye* marker and the sister of GroundP are derived, some examples for the internal structue of GroundP can be shown. For example (125), the structure would be the one in (130), and the derivation as in (131). In a first step, the *=i/ye* marker is applied to the AspP, triggering a presupposition that there is only one salient situation of the required kind. In a second step, the topic situation is equated with a salient situation.

(130)


(131) a. **The AspP**
λs′.$\exists$s″[s″≤s′ & Njelu called g(⟨1, *e*⟩) in s″]

b. **The *=i/ye* marker**
λP.λs‴.λs′.P(s′),
defined iff $\exists$!s″[ABOUT-QUD(s″) & s″ = s‴]

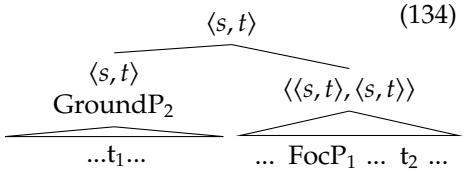
(132) *=i/ye applied to AspP*

[[PFV Njelu esha $t_{\langle 1,e\rangle}$ =i]]^{g,s}
= [[=i/ye]]^{g,s} ([[PFV Njelu esha $t_{\langle 1,e\rangle}$]]^{g,s})
= [λP.λs‴.λs′.P(s′)](λs′.$\exists$s″[s″≤s′&Njelu called g(⟨1, *e*⟩) in s″])
= λs‴.λs′.$\exists$s″[s″≤s′ & Njelu called g(⟨1, *e*⟩) in s″], defined iff $\exists$!s[ABOUT-QUD(s) & s = s‴]

=i/ye applied to s_3

[[PFV Njelu esha $t_{\langle 1,e\rangle}$ =i **s**$_{\langle 3,s\rangle}$]]^{g,s}
= [λ**s**‴.λs′.$\exists$s″[s″≤s′ & Njelu called g(⟨1, *e*⟩) in s″], defined iff $\exists$!s[ABOUT-QUD(s) & s = s‴]]**(g(**⟨3, *s*⟩**))**
= λs′.$\exists$s″[s″≤s′ & Njelu called g(⟨1, *e*⟩) in s″], defined iff $\exists$!s[ABOUT-QUD(s) & s = g(⟨3, *s*⟩)]

Combining the GroundP and its sister The full structure in (133) is composed out of the components in (134) as shown in (135).

(133)


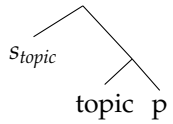
(134) a. **The sister of GroundP**
λp$_{\langle s,t\rangle}$.λx$_e$. [[$t_{\langle 2,\langle s,t\rangle\rangle}$]]$^{g^{[\langle 1,e\rangle\to x,\langle 2,\langle s,t\rangle\rangle\to p]}}$ (Dimza)

b. **GroundP**
λs′. $\exists$s″[s″ ≤ s′ & Njelu called g(⟨1, *e*⟩) in s″], defined iff $\exists$!s[ABOUT-QUD(s) & s = g(⟨3, *s*⟩)]

(135) [[[PFV Njelu esha $t_{\langle 1,e\rangle}$]2 =i $s_{\langle 3,s\rangle}$ 2 Dimza$_1$ $t_{\langle 2,\langle s,t\rangle\rangle}$]]$^{g^{[\langle 1,e\rangle\to x,\langle 2,\langle s,t\rangle\rangle\to p]}}$
= [λp$_{\langle s,t\rangle}$.λx$_e$. **g(**⟨2, ⟨*s*, *t*⟩⟩**)**(Dimza)] (λs′.$\exists$s″[s″≤s′&Njelu called **g(**⟨1, *e*⟩**)** in s″])
= [λ**p**$_{\langle s,t\rangle}$.λx$_e$. **p**(Dimza)] (λs′.$\exists$s″[s″≤s′&Njelu called x in s″])
= [λ**x**$_e$. λs′.$\exists$s″[s″≤s′&Njelu called **x** in s″]] (Dimza)
= λs′.$\exists$s″[s″≤s′&Njelu called Dimza in s″], defined iff $\exists$!s[ABOUT-QUD(s) & s= g(⟨3, *s*⟩)]

The topic operator As noted above, Schwarz proposes the topic operator in (137). Assuming a topic situation in the left periphery, as in (136), the derivation would continue as follows.

(136)



(137) [[TOPIC]]= λp.λs′.λs. s ≈ s′ & p(s)

(138) [[TOPIC [1 PFV Njelu esha t_1]$_2$ =i s_3 2 Dimza$_1$ t_2]]
= [λp.λs′.λs. s ≈ s′ & p(s)] (λs′.∃s″[s″≤s′ & Njelu called Dimza in s″])
= λs′.λs. s ≈ s′ & ∃s″[s″≤s & Njelu called Dimza in s″]

(139) [[s_5 TOPIC [1 PFV Njelu esha t_1]$_2$ =i s_3 2 Dimza$_1$ t_2]]
= [λs′.λs. s ≈ s′ & ∃s″[s″≤s & Njelu called Dimza in s″]] (g($\langle 5, s \rangle$))
= λs. s ≈ g($\langle 5, s \rangle$) & ∃s″[s″≤s & Njelu called Dimza in s″],
defined iff ∃!s′[ABOUT-QUD(s′) & s′= g($\langle 3, s \rangle$)]

When the topic situation argument is included, the reference of this argument is already restrained by the requirement that there is only one salient referent of this kind.

Aboutness Recall that the operator ABOUT-QUD used above to describe that the QUD is about this situation is an abbreviation. For a background P of type $\langle s, t \rangle$, and a situation s, the following formula describes that the QUD indicated by P is about s, whereby the question extension ?P of P is derived as in (141).

(140) *Aboutness*
ABOUT-QUD(s) = EX(?P)(s) & s ≤ w_0

(141) *The question extension:*
For a background α, background marker =*i*/*ye*$_i$, focus of type τ, and actual world w_0,
$?\alpha = \lambda s'[\lambda u_\tau.[[\alpha]]^{[i \to u]}(w_0) = \lambda u_\tau.[[\alpha]]^{[i \to u]}(s')]$

For example, if P is the AspP used above, cf. (142), then (143) would be its question extension ?P, the set of situations in which Njelu called the same individuals as in the actual world, and ABOUT-QUD(s) would be as in (144), i.e. it would state that s exemplifies the question extension, and is a subset of the actual world.

(142) *The AspP P*
λs′.∃s″[s″≤s′ & Njelu called g($\langle 1, e \rangle$) in s″]

(143) *The question extension ?P formed out of P*
λs′[λu.[λs′.∃s″[s″≤s′ & Njelu called u in s″]](w_0) = λu.[λs′.∃s″[s″≤s′ & Njelu called u in s″]](s′)]
= λs′[λu.∃s″[s″≤w_0 & Njelu called u in s″] = λu.∃s″[s″≤s′ & Njelu called u in s″]]

(144) ABOUT-QUD(s′)
= EX(?P)(s) & s ≤ w_0
= EX(λs′[λu.∃s″[s″≤w_0 & Njelu called u in s″] = λu.∃s″[s″≤s′ & Njelu called u in s″]])(s)
& s ≤ w_0

Some further examples

The previous subsection showed a detailed DO-focus example. This section briefly shows some examples of other focus/background structures.

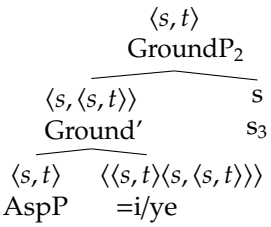
The GroundP, example 2: S_F The subject focus examples are derived in an entirely parallel way. For example, for the subject focus example in (145), the sister of GroundP would again be (146), and the AspP would be (147).

(145) **Esha Njelu=i** Dimza
call.PFV Njelu=BM Dimza
"DIMZA called Njelu."

(146) $\lambda p_{\langle s,t\rangle}.\lambda x_e.\ [[t_{\langle 2,\langle s,t\rangle\rangle}]]^{g^{[\langle 1,e\rangle \to x, \langle 2,\langle s,t\rangle\rangle \to p]}}$ (Dimza)

(147) $\lambda s'.\exists s''[s''\leq s' \ \&\ g(\langle 1,e\rangle)$ called Njelu in $s'']$

As in the last example, the GroundP looks like (148), consisting of its head, the *=i/ye* marker, and the two arguments of the *=i/ye* marker. The result of applying the *=i/ye* marker first to the AspP and then to the situation pronoun s_3 is (149).

(148)


(149) **The GroundP (abbreviated version):**
$\lambda s'.\exists s''[s''\leq s' \ \&\ g(\langle 1,e\rangle)$ called Njelu in $s'']$,
defined iff $\exists!s'[$ABOUT-QUD$(s') \ \&\ s'=g(\langle 3,s\rangle)]$

Combined with the sister of GroundP, this yields (150).

(150) $\lambda s'.\exists s''[s''\leq s' \ \&$ Dimza called Njelu in $s'']$, defined iff $\exists!s'[$ABOUT-QUD$(s') \ \&\ s'= g(\langle 3,s\rangle)]$

With focused subjects, there are not three possible focus/background constructions: canonical word order is ungrammatical with *=i/ye* marking, and slightly odd without (cf. also §4.1.1). The reason for the ungrammaticality of initial *=i/ye* is clear: the background-marker requires a non-empty complement, and requires that everything within its complement is backgrounded. In section 6.2.3, initial subjects in subject focus constructions will be briefly discussed again, and treated as out-of-focus, corroborating Schuh (2005b)'s observations. The question is then, why subjects, in contrast to non-subjects, are preferably marked when focused. For many languages with similar focus marking asymmetries, a default topicality for subjects is proposed, which makes them less easily interpretable as the focus of the sentence (Hartmann and Zimmermann, 2007c, Zerbian, 2006, i.a.). There is undeniably a correlation between subjecthood and topicality in many languages (Grosz et al., 1995, i.a.). A further correlation which is proposed in the literature, e.g. in Büring (2010) for Hausa, is a correlation between predicatehood and prominence. Non-subjects, by virtue of their placement within the predicate, are already more prominent than subjects, and therefore do not need to be marked. Subjects, on the other hand, are non-prominent, and need to receive special marking. In the light of the discussion in this chapter, a variant of the first proposal suggests itself. It seems plausible that those parts which specify which topic situation the utterance is made about should be sentence-initial. In canonical word order, the subject provides coherence with the preceding context. When the topic situation is indicated via the background, this backgrounded part is preferably initial. With focused non-subjects, this is possible in canonical word order. With focused subjects, inversion needs to take place.

The GroundP, example 3: V_F/VP_F For verb and VP focus, as shown in section 4.1.2, an unmarked focus/background construction was preferred. My language consultants however accepted a marked construction in which the verb is nominalized, cf. (151). These kinds of examples are parallel to the DO-focus examples above: the sister of GroundP is (152)[36], and the AspP is (153).

(151) Njelu iko=i eshi.
Njelu do.PFV=BM call
"(lit.) Njelu did A CALL."

(152) *The sister of GroundP:*
$\lambda p_{\langle s,t\rangle}.\lambda x_e.\ [[t_{\langle 2,\langle s,t\rangle\rangle}]]^{g^{[\langle 1,e\rangle \rightarrow x, \langle 2,\langle s,t\rangle\rangle \rightarrow p]}}$ (NOM(λy. y is a call))

(153) *The background AspP:*
λs'.$\exists$s"[s"$\leq$s' & Njelu did g($\langle 1, e\rangle$) in s"]

The GroundP then receives the denotation in (154), and the whole sentence the one in (155).

(154) **The GroundP (abbreviated version):**
λs'.$\exists$s"[s"$\leq$s' & Njelu did g($\langle 1, e\rangle$) in s"], defined iff $\exists$!s'(ABOUT-QUD(s') & s'=g($\langle 3, s\rangle$))

(155) λs'.$\exists$s"[s"$\leq$s' & Njelu did a call in s"], defined iff $\exists$!s'(ABOUT-QUD(s') & s'= g($\langle 3, s\rangle$))

The GroundP, example 4: A_F In example (156), an adverbial is given. The sister of GroundP is thus as in (157), whereas the AspP argument to *=i/ye* is given in (158).

(156) Hawwa lapko=i nzono.
Hawwa answer.PFV=BM yesterday
"Hawwa answered YESTERDAY."

(157) *The sister of GroundP:*
$\lambda q_{\langle s,t\rangle}.\lambda p_{\langle\langle s,t\rangle,\langle s,t\rangle\rangle}.q$ ([[yesterday]]$^{g^{[\langle 1,\langle st,st\rangle\rangle \rightarrow p]}}$)

(158) *The background AspP:*
g($\langle 1, \langle st, st\rangle\rangle$) ($\lambda$s'$\exists$s"[s"$\leq$s'&Hawwa answered in s"])

Then, (159) is the derivation proposed for the GroundP, and (160) for the whole sentence.

(159) *The GroundP (abbreviated version):*
λs'.[g($\langle 1, \langle st, st\rangle\rangle$) ($\lambda$s'$\exists$s"[s"$\leq$s'&Hawwa answered in s"])](s'),
defined iff $\exists$!s'[ABOUT-QUD(s') & s'=g($\langle 3, s\rangle$)]

(160) λs'.$\exists$s"[s"$\leq$s'&Hawwa answered in s"] & s' took place yesterday,
defined iff $\exists$!s'[ABOUT-QUD(s') & s'=g($\langle 3, s\rangle$)]

In the following section, more complex examples with several background markers are shown.

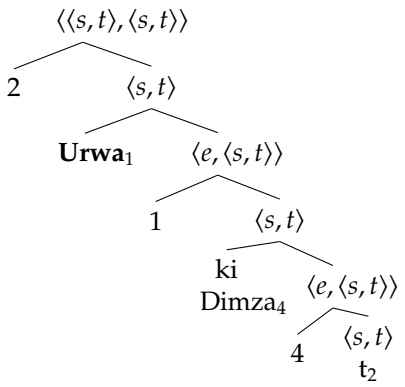
Backgrounded constituents following the focus

In many cases, backgrounded adverbs and/or indirect objects follow the focused constituent. Syntactically, these constituents are assumed to be adjoined below the focused constituent, either moved or base-generated there. For example, in the example in (161), the indirect object *ki Dimza* is moved out of the AspP and adjoined to it, cf. the tree in (162), and the derivation in (163).

[36] To make the example more easily understandable, the indefinite is type-shifted in order to be of type e. However, nothing hinges on this.

(161) Hassana tamko=i Urwa ki Dimza
Hassana show.PFV=BM Urwa to Dimza
"Hassana showed URWA to Dimza."

(162)



(163) *Derivation of the sister of GroundP*

a. $[\![4\ t_{\langle 2,\langle s,t\rangle\rangle}]\!]^g = \lambda x_e.[\![t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 4,e\rangle \to x]}}$

b. $[\![\text{ki Dimza } 4\ t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 4,e\rangle \to x]}}$
$= \lambda x_e.[\![t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 4,e\rangle \to x]}}$ (Dimza)

c. $[\![1 \text{ Dimza } 4\ t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 4,e\rangle \to x]}}$
$= \lambda y_e.\lambda x_e.[\![t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 4,e\rangle \to x,\langle 1,e\rangle \to y]}}$ (Dimza)

d. $[\![\text{Urwa } 1 \text{ Dimza } 4\ t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 4,e\rangle \to x,\langle 1,e\rangle \to y]}}$
$= \lambda y_e.\lambda x_e.[\![t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 4,e\rangle \to x,\langle 1,e\rangle \to y]}}$ (Dimza) (Urwa)

d. $[\![2 \text{ Urwa } 1 \text{ Dimza } 4\ t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 4,e\rangle \to x,\langle 1,e\rangle \to y]}}$
$= \lambda p_{\langle s,t\rangle}.\lambda y_e.\lambda x_e.[\![t_{\langle 2,\langle s,t\rangle\rangle}]\!]^{g^{[\langle 4,e\rangle \to x,\langle 1,e\rangle \to y,\langle 2,\langle s,t\rangle\rangle \to p]}}$
(Dimza) (Urwa)

This example shows clearly why it is necessary to assume that the moved GroundP is of type $\langle s, t\rangle$, rather than of type $\langle \tau, \langle s, t\rangle\rangle$, for a focus of type τ: if the whole sister node of the focus (here of type $\langle e, \langle s, t\rangle\rangle$) would move, the IO would have to adjoin right above the index 1, i.e. between the focused constituent and its index. Since this is very non-standard, it is assumed here that the focus and its corresponding index remain adjacent, and a lower constituent of type $\langle s, t\rangle$ moves.

Double background marking

Adverbs following the focus can be *=i/ye* marked, cf. (164). In addition, there can be initial topical elements that are background-marked (165).

(164) Kule salko **=i** bano a Potiskum **ye'e**
Kule build.PFV BM house at Potiskum BM
"Kule built a HOUSE in Potiskum."

(165) Yura**=i** esha si**=i** Kule
Yura=BM call.PFV 3SG.M=BM Kule
"Yura, KULE called him."

I will discuss the topic cases first. These cases are interesting, because crosslinguistically, numerous languages use the same kinds of markers for definiteness, topicality, sometimes conditionals, and sometimes backgrounding (cf. e.g. Haiman, 1978, Ameka, 1991). Topicality does not play a truth-conditional role. In analogy to the way *contrastive* topics are treated in Büring (1999, 2003, i.a.), it is assumed here that overt aboutness topics, like *bano* in (165), indicate a higher QUD in the QUD hierarchy[37]. This QUD, for a topic X, is assumed to be something like "What's the way things are about X?" or "What's new about X?". This QUD is proposed to be high in the QUD hierarchy, since topics are often topics of more than one consecutive sentence (cf. e.g. Givón, 1983). The topic situation of the sentence is thus, following the discussion in §5.2.1, a subsituation of the situation that this higher QUD is about[38]. The kind of *=i/ye* marker required

[37] Note that this would mean that separate parts of a sentence can indicate separate QUDs, i.e. that apart from the Current QUD, other, secondary QUDs can also be indicated by parts of the sentence. This is e.g. assumed for appositives by David Beaver in recent work, and is also inherent in the assumption in Coppock and Beaver (2014) that some exclusive particles require specialized QUDs (cf. chapter 6 for a discussion of this).

[38] As far as I know, there are not many proposals linking aboutness topics and topic situations. Schwarz (2011, p.4–9) discusses an observation by Stefan Hinterwimmer that D-series pronouns in German cannot refer to aboutness topics,

for these examples is thus one which modifies arguments of various types[39], cf. (167), triggering the presupposition that there is a salient question *What is the way things are about X?*.

(166) What is the way things are?
⋮
What is the way things are **about Yura**?
⋮
Yura, who called him?

(167) [[=i/ye$_{top}$]] = λu.λs‴.u, defined iff: $\exists$!s″(λp.[p(w_0) & p is about u] = λp.[p(s″) & p is about u] & s″ $\leq$ w_0 & s″ = s‴) & s‴ is salient to degree d

Thus, the *=i/ye*-marked topic *Yura* is interpreted as in (168), where ABOUT(X,P) is true if X is the aboutness topic of P[40].

(168) [[$s_{3,d}$ Yura =i/ye$_{top}$]] = Yura, defined iff: $\exists$!s″[λp.p(w_0) & ABOUT(Yura,p) = λp.p(s″) & ABOUT(Yura,p) & s″ $\leq$ w_0 & s″ = g($\langle 3, s \rangle$)] & g($\langle 3, s \rangle$) is salient to degree d

Since topics always seem to allow for the *=i/ye* marker, I will assume that the corresponding higher QUD is salient enough to license *=i/ye* marking[41].

Concerning background-marked adverbials following the focus, these adverbials are tentatively proposed to be interpreted just like the topics discussed in this section, with the difference that the presupposed situation is not assumed to belong to a higher QUD, but to the Current QUD. An example is shown in (169). Following Endriss and Hinterwimmer (2010), it will be assumed that a proposition can be about a set, e.g. a set of situations. Again, the presupposition requires that there is a single salient actual situation which the QUD *What is the way things are about Potiskum-situations?* is about.

(169) [[$s_{3,d}$ a Potiskum =i/ye$_{top}$]] = λs.s took place in Potiskum, defined iff: $\exists$!s″[λp.p(w_0) & ABOUT(λs.s took place in Potiskum, p) = λp.p(s″) & ABOUT(λs.s took place in Potiskum, p) & s″ $\leq$ w_0 & s″ = g($\langle 3, s \rangle$)] & g($\langle 3, s \rangle$) is salient to degree d

The situation described here is assumed to co-refer with the situation which the other backgrounded part in the sentence describes.

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and proposes that Hinterwimmer's data can also be captured by a proposal that the referent "cannot be part of all the viable counterparts of the topic situation", i.e. it must be part of the background in the simple cases. McKenzie (2012), in contrast, proposes for some DPs in Kiowa (Kiowa-Tanoan) that they are topical because their resource situation corefers with the topic situation of the sentence.

[39] Endriss and Hinterwimmer (2010) however argue that aboutness topics, being entities under which information is stored, can only be individuals or sets (predicates or propositions).

[40] The ABOUT operator could, for example, be formulated as done in Endriss and Hinterwimmer (2010), cf. (i).

(i) λP.λX.$\exists\alpha$[α = X & ASSERT[P(α)]]

They describe this as a conjunction of two speech acts: creation of an 'address' α identified with the topicalized constituent, under which the information is stored, and assertion that the comment holds of α. One problem with this definition is that it is specialized for assertions, and cannot be used for questions.

[41] Whether an alternative explanation using the relational variant of the *=i/ye* marker is possible is left for further research. Since this would be part-whole bridging, from the topic situation to the containing larger situation, this depends on whether the anaphoric/strong definite determiner is possible in such examples, cf. footnote 22. The current approach predicts that other sentence parts indicating secondary QUDs, e.g. appositives, can also be background-marked.

Exhaustivity and existence

In section 4.2.2, it was shown that background-marking does not trigger an exhaustivity and existence presupposition. While (170) gives rise to the meaning components in (i) and (ii), these are not presuppositions: (i) is a conversational implicature, and (ii) an entailment of (170).

(170) Kule salko=i bano
Kule build.PFV=BM house
"Kule build A HOUSE."
(i) Exhaustivity: Kule didn't build anything else.
(ii) Existence: Kule built something.

The analysis of these meaning components was already presented earlier in this chapter. Section 5.3.1 introduced Kratzer (2011)'s situation semantic account of exhaustive implicatures, which is adopted for focus in Ngamo, including focus in background-marking constructions. Section 5.3.2 discussed attributed existence belief, which is needed in order to account for the fact that even though there is no existence presupposition, an existential inference seems to follow from negated background-marked sentences, too. This was explained using Beaver and Clark (2008)'s notion of quasi-association of negation with focus, in combination with an existence belief attributed to the hearer. This subsection does not contribute to these accounts. Instead, it is dedicated to showing that the lexical entry for the *=i/ye* marker proposed above does not predict an exhaustivity and existence presupposition, in contrast to e.g. the approaches of Hole (2011), Onea (t.a.).

Exhaustivity As mentioned above in section 5.3.1, the difference between an exhaustive and a non-exhaustive answer to a question is whether it is merely asserted to be true in the topic situation, or whether it is asserted to be exemplified by the topic situation.

(171) Truth in a situation
A proposition p ∈ P is true in a situation s ∈ S iff s ∈ p.

(172) Exemplification: A situation *s* exemplifies a proposition *p* iff whenever there is a part of *s* in which *p* is not true, then *s* is a minimal situation in which *p* is true.

(173) Minimal situation: A situation is a minimal situation in which a proposition p is true iff it has no proper parts in which p is true.

While the topic situation, via its definition, always exemplifies the QUD extension, it does not always exemplify the answer. Assume that (125), repeated here as (174), is a non-exhaustive answer to *Who did Njelu call?* about a topic situation in which Njelu called Dimza and Kule. The actual situation that exemplifies the QUD extension in (175) would be a situation in which Njelu calls Dimza and Kule, containing nothing else, in particular no subsituation of Njelu calling somebody else. The *=i/ye* marker has the effect of adding a requirement that there must be only one salient situation of this kind. If the answer is intended and understood to be non-exhaustive, the full proposition in (176) is then merely asserted to be true in this topic situation.

(174) Njelu esha=i Dimza
Njelu call.PFV=BM Dimza
"Njelu called DIMZA."

(175) $\lambda s'''.[\lambda v.\exists s''[s''\leq w_0$ & Njelu called v in s''] = $\lambda v.\exists s''[s''\leq s'''$ & Njelu called v in s'']]

(176) $\lambda s'.\exists s''[s''\leq s'$ & Dimza called Njelu in s''], defined iff $\exists!s'(\text{ABOUT-QUD}(s')$ & $s' = g(\langle 3, s\rangle))$

This account of the topic situation and the role of the background in identifying the topic situation correctly predicts that there is no stronger exhaustivity in *=i/ye* constructions, cf. section 4.2.2.

Existence In addition, the account correctly predicts that there is no existence presupposition. Assume that the QUD is *Who did Njelu call?*, and the true answer is *nobody*, cf. (177). In this case, the QUD extension in (175) denotes the set of situations in which Njelu called nobody, and nothing else happened in addition.

(177) **Njelu esha=i** ngo bu.
Njelu call.PFV=BM person NEG
"Njelu called NOBODY."

The topic situation is the largest actual situation of Njelu calling nobody which doesn't contain anything else. The *=i/ye* marker triggers the presupposition that there is exactly one salient situation of this kind, but, importantly, does not presuppose that an event of Njelu calling somebody took place.

Salience

In parallel to the definiteness cases, the referent of the situation pronoun is required to be salient to a certain degree, the degree required for definite descriptions. The way in which the referent is salient, i.e. linguistic or non-linguistic context, or knowledge about the aims and goals of the addressee, does not play a role: the assignment function maps indices onto individuals of the right degree of salience, no matter what the source of the salience is. In order to model the default anaphoricity which was also found in background marking examples, it is however assumed that the recent linguistic context is more salient, i.e. only if no prementioned referent can be found, the non-linguistic context will be taken into account. Just as for definite descriptions above, the degree of salience is encoded as a presupposition of the situation pronoun.

(178) $[\![s_{1,d}]\!]^g = g(\langle 1, s\rangle)$, defined iff $g(\langle 1, s\rangle)$ is salient to degree d, undefined otherwise.

This makes it possible to describe the different degree of salience between *=i/ye*-marked backgrounds and elided backgrounds in short answers, which are usually used in natural discourse when the QUD is overt, cf. e.g. (179).

(179) Q: Lapko=i lo? A: Jajei.
answer.PFV=BM who Jajei
"Who answered?" "JAJEI."

I will assume that this is underlyingly a full *=i/ye* marked background, and that ellipsis becomes possible if the QUD, and thus the topic situation, is salient enough[42]. The elided part is reconstructed for interpretation. Thus, when the QUD is overt, and the corresponding topic situation highly salient, it is pragmatically odd to answer with a full answer, in the same way that it is odd to use a full definite DP instead of a pronoun when the referent is highly salient. A full definite description of an individual or topic situation, in contrast, is used when the referent is less accessible, i.e. it needs to be described in some way in order to be uniquely identifiable.

[42] In a parallel fashion, individual pronouns can be assumed to underlyingly be full definite descriptions, as proposed e.g. in Elbourne (2005).

Unmarked focus

In contrast to the *=i/ye* marker, there is no corresponding unpronounced uniqueness definite marker for situations. Unmarked narrow focus examples are assumed to have the same syntax and semantics as the corresponding all-focus sentences, or unmarked sentences with a different narrow focus — they are truly unmarked, and receive their interpretation as focused only by the context. Recall that all sentences were assumed to include a topic situation pronoun high in the structure. In this case, the pronoun is free, and picks up a salient referent from the context, i.e. the pronoun of the corresponding QUD. If there is no salient referent, existential closure can take place. In section 5.4.1 above, the idea that pronouns, and DPs in general, can differ in their salience requirement was introduced. In the case of unmarked sentences, the situation pronoun does not presuppose a salient referent. In contrast, the pronoun involved in the *=i/ye*-marking and ellipsis examples cannot be existentially closed, and require mid-salient and highly salient referents, respectively.

For highly salient referents, it was argued above that it is pragmatically dispreferred to use a definite description instead of a pronoun, even though this is not part of the semantics of definite descriptions. It was suggested that since a more specialized expression, namely pronouns, exist for highly salient referents, it is pragmatically preferred to use these. The question now arises why this is not the case for unmarked focus: Since in all felicitous focus cases, a topic situation is salient due to a corresponding QUD, and *=i/ye*-marked constructions are more specialized than unmarked focus constructions, why is unmarked focus so common in Ngamo? The first thing to point out is that these constructions are indeed dispreferred if the background can be elided. They are however not, it seems, dispreferred when the topic situation is mid-salient[43]. The reason for this arguably lies in the fact that the *=i/ye*-marked construction is more costly than the unmarked construction. The choice is thus one of clarity, i.e. whether the speaker wants to reduce ambiguity and make clear which topic situation she assumes for the sentence, versus effort reduction, i.e. whether the speaker assumes that the hearer can figure out the referent, with the benefit of not using a more marked construction.

5.4.3 Summary

In this section, *=i/ye*-marked backgrounds were discussed. First, a proposal for the related definite determiner *=i/ye* was presented, based on the proposals by Schwarz (2009b) and Barlew (2014). This approach was adapted to *=i/ye*-marked backgrounds, which were proposed to involve reference to a salient topic situation. This topic situation can be salient either because it is given, e.g. via an overt QUD, or because it is evident from the context that the addressee is attending to a covert QUD, or because the speaker assumes that a certain QUD is relevant to the addressee's aims and goals.

[43]Recall that this is not entirely clear: while Schuh (2005b) reports a preference for unmarked focus with focused non-subjects, my own questionnaire on contrast, testing focused direct objects, revealed a preference for *=i/ye*-marking in canonical word order, cf. §4.2.2. I believe that both are felicitous, and that the choice depends on whether clarity or less effort is preferred at a given moment. Apparently, the questionnaire task favoured clarity, whereas the natural speech observed by Schuh favoured less effort.

5.5 Summary

This chapter provided a situation semantic analysis of the focus/background division in Ngamo. The chapter started with brief introduction to situation semantics in general, including a definition of the *topic situation*, the situation that an utterance is about. The second part of the chapter discussed focus in general in situation semantics, with special emphasis on the relation between the topic situation and the focus/background distinction. Following Kratzer (2011), Schwarz (2009b), the topic situation of a sentence was suggested to be provided by the current QUD. The section discussed the role of the QUD hierarchy in narrowing down the situation taked about, and the method of deriving the topic situation from the QUD with the help of exemplification. In addition, it was proposed that the restriction of focus alternatives, just like the restriction of quantifiers, is done via a second situation, the so-called *resource situation*. Then, in the third part, the relation between the situation semantic approach to focus used here and the notions of contrast, exhaustivity, and existence was discussed. Following Kratzer (2011), exhaustivity is seen to be due to exemplification. There are several ways in which exhaustivity can be (seemingly) cancelled: (i) in list answers, i.e. when the speaker consciously decides to provide several partial answers, (ii) in a kind of post-hoc correction, when the speaker takes further alternatives and/or topic situations into account. An existence inference was discussed as arising due to an attributed hearer belief: when an implicit *wh*-question is attributed to the hearer, the existence presupposition of the *wh*-question is also attributed to the hearer. In the fourth part of the chapter, the meaning contribution of background marking was discussed. Since section 4 showed a similarity between the *=i/ye* background marker and the related definite determiner *=i/ye*, the definite determiner was discussed first. The proposal by Schwarz (2009b) for the strong definite determiner in German was adapted for the *=i/ye* definite determiner, taking salience into account, and a similar proposal was made for the *=i/ye* background marker, based on the proposal in Hole (2011) for definite descriptions of events.

Chapter 6

Alternative-Sensitive Operators in Ngamo: Data

6.1 Focus-sensitivity and alternative-sensitivity in Ngamo

This chapter discusses so-called focus-sensitive particles in Ngamo, i.e. the equivalents of English *only, also*, and *even*. As noted in section 2.1.2, these are predicted to have a focused constituent in their scope, and to exclude or include alternatives indicated by this focus:

(1) a. EXCLUSIVE
Mary **only** introduced BILL to Sue.
(excludes alternatives of the form *Mary introduced x to Sue*, for x ∈ Alt(Bill))

b. ADDITIVE
Mary **also** introduced BILL to Sue.
(includes alternatives of the form *Mary introduced x to Sue*, for x ∈ Alt(Bill))

c. ADDITIVE-SCALAR
Mary **even** introduced BILL to Sue.
(includes alternatives of the form *Mary introduced x to Sue*, for x ∈ Alt(Bill))

The following sections 6.1.1, 6.1.2 and 6.1.3 give an overview over the exclusive particle *yak('i)*, the additive particle *ke('e)*, and the scalar particle *har('i)*, respectively. They discuss the possible syntactic positions of the particles and their possible associates, as well as their meaning contribution. Section 6.2 then discusses whether the association of these particles with focus is *conventional*, in the terminology of Beaver and Clark (2008). Recall from the discussion in section 2.2.2 that Beaver and Clark proposed a taxonomy of focus-sensitive expressions, of which only *conventionally associating* focus-sensitive operators are semantically required to associate with a focus, whereas other operators merely associate pragmatically with salient alternatives. Beaver and Clark suggest that the English operators in (1) all conventionally associate with focus, but there is crosslinguistic research showing that this need not be the case for all languages (e.g. Hartmann and Zimmermann, 2008, Koch and Zimmermann, 2010, Karvovskaya, 2013). Section 6.2 tests this for Ngamo, using Beaver and Clark's tests for associating with non-focused or even phonetically empty material. Section 6.3 concludes this chapter.

6.1.1 Exclusive focus-sensitive particles

Out of the group of exclusive operators found in Ngamo, this section mainly concentrates on the focus-sensitive element *yak'i*, since it seems to be the operator which most closely resembles English *only*[1]. The general properties of this particle are introducted. The section then discusses the meaning contribution of *yak'i*, including the status of the different meaning components of *yak'i*-sentences. Like its English counterpart *only*, *yak'i* is semantically exclusive, and can either have a *complement exclusion* or an *evaluative* reading.

Properties of the exclusive particle *yak'i*

Similar to the additive particles discussed below, the particle *yak'i* comes in two forms, *yak* and the 'final' form *yak'i*. The Ngamo dictionary (Schuh et al., 2009) discusses them as two different lexemes, the adverb *yak'i* being translated as 'only', 'just', and *yak* as a manner adverb meaning 'just', 'barely', 'merely'[2]. This suggests a more 'evaluative' reading for *yak*, since *merely* seems to have a pejorative meaning component, according to Renans et al. (2011, p. 23), or requires an evaluative scale, according to Beaver and Clark (2008), Coppock and Beaver (2014). Nevertheless, in the elicited examples in this section, *yak* and *yak'i* seem to have the same range of readings. When discussing the unacceptability of pre-focal *yak'i* in examples like (2), one of my main language consultants suggested that *yak'i* is a *sentence-final* form.

(2) a. *Yak/*Yak'i* lapko=i **Hawwa**.
only answer.PFV=BM Hawwa
"Only HAWWA answered."

b. Lapko=i *yak/*yak'i* **Hawwa**.
answer.PFV=BM only Hawwa
"Only HAWWA answered."

This is not quite correct, since it was judged to be fine even within a clause. The generalization seems to be that *yak'i* occurs whenever the particle follows its associate, whereas *yak* occurs preceding the associate, cf. the contrast between (3) and (4)[3].

(3) (Kule wanted to build a house and a granary last year)
Kule salko **bano** *yak'i* /# *yak* mano.
Kule build.PFV house only last.year
"Kule only built A HOUSE last year."

(4) (Kule wanted to build a house last year and this year)
Kule salko bano # *yak'i* / *yak* **mano**.
Kule build.PFV house only last.year
"Kule only built a house LAST YEAR."

[1] Other exclusive operators are only briefly discussed, starting on page 194.

[2] In elicitation, it was not confirmed that *yak* can be used to express *barely*. Instead, translations with *rakki*, which is translated as "almost" in the Ngamo dictionary, were offered, cf. (i).

(i) *Rakki* ne hindinno.
almost 1SG get.up.ICP
"I'm barely awake."

[3] Malte Zimmermann (p.c.) suggests that the post-focal form *yak'i* is the form used at a strong prosodic boundary. This is a very plausible suggestion, which should be checked in further research.

Both *yak* and *yak'i* can either be adjacent to the focused constituent, as in (3) and (4), or can associate with the focus from a distance, e.g. in (5). Thus, like in English, but in contrast to German (cf. e.g. Büring and Hartmann (2001)'s 'closeness principle'), there is no requirement for the focus-sensitive operator to be as close as possible to the focused constituent.

(5) (Kule wanted to build a house and a granary last year)
Kule *(yak)* salko **bano** mano *(yak'i)*.
Kule only build.PFV house last.year only
"Kule only built A HOUSE last year."

Association with non-subject terms When *associating with unmarked non-subject terms*, there were multiple possible positions for *yak/yak'i*, cf. (6)–(8)[4]. *Yak('i)* is adverbial in most cases, it is e.g. adjoined to an extended verbal projection when it associates with the focus from a distance, under the assumption that *yak('i)* must c-command the focus. In contrast to focus particles in the Chadic language Bura (Hartmann and Zimmermann, 2008), association from a distance was as acceptable with unmarked focus as with marked focus. Although final *yak'i* was accepted in these examples, the immediately post-focal *yak'i* was preferred, because the distant *yak'i* was most easily understood as associating with the immediately preceding adjunct.

(6) (Kule wanted to build a house and a granary last year) (DO)
(*Yak*) Kule (*yak*) salko (*yak*) **bano** (*yak'i*) mano (*yak'i*).
only Kule only build.PFV only house only last.year only
"Kule only built A HOUSE last year."

(7) (Kule wanted to give a watch to Bah and Jajam) (IO)
(*Yak*) Kule (*yak*) onko agoggo (*yak*) **ki Bah** (*yak'i*) nzono (*yak'i*).
only Kule only give.PFV watch only to Bah only yesterday only
"Kule only gave a watch TO BAH yesterday."

(8) (Kule wanted to build houses in Mubi and in Potiskum last year) (ADJ)
(*Yak*) Kule (*yak*) salko bano (*yak*) **a Potiskum** (*yak'i*) mano (*yak'i*).
only Kule only build.PFV house only in Potiskum only last.year only
"Kule only built a house IN POTISKUM last year."

The syntactic interaction of immediately preverbal *yak* with subject pronouns is the same as that of other adverbs, cf. §3.2: it cannot intervene between a dependent subject pronoun and the verb, but must precede the pronoun, optionally preceded by a further, independent pronoun (9).

(9) (I wanted to build a house and a shed last year) (DO)
a. *Ne *yak* salko **bano** mano.
1SG.DEP only build.PFV house last.year
b. Ne'e *yak* ne salko **bano** mano.
1SG.INDEP only 1SG.DEP build.PFV house last.year
"I only built A HOUSE last year."

[4]That initial *yak* can associate with a DO/IO/ADJ is interesting from the point of view of English, which only allows sentence-initial operators to associate with the subject, e.g. *even* associating with the DO in (i) (cf. e.g. König 1991, p.22).

(i) (# Even) Fred (even) gave (even) PRESENTS to Mary, (even).

Almost the same word orders as for unmarked associates were possible when associating with focused non-subject terms in *marked* constructions, with the difference that the final *yak'i* was more often rejected, cf. examples (10)–(12).

(10) (Kule wanted to build a house and a granary last year) (DO)
(*Yak*) Kule (*yak*) salko=i (*yak*) **bano** (*yak'i*) mano (*yak'i*)
only Kule only build.PFV=BM only house only last.year only
"Kule only built a HOUSE last year."

(11) (Kule wanted to give a watch to Abu and Jajam) (IO)
(*Yak*) Kule (*yak*) onko agoggo=i (*yak*) **ki Abu** (*yak'i*) nzono
only Kule only give.PFV watch=BM only to Abu only yesterday
"Kule only gave a watch TO ABU."

(12) (Kule wanted to build houses in Mubi and Potiskum, but didn't build in Mubi.) (ADJ)
(*Yak*) Kule (*yak*) salko bano=i (*yak*) **a Potiskum** (*yak'i*) mano.
only Kule only build.PFV house=BM only in Potiskum only last.year
"Kule only built a house in POTISKUM last year."

In non-canonical word order, the following positions were possible for *yak('i)*: (i) preceding the subject, (ii) preceding the verb, (iii) immediately preceding or following the focus.

(13) (Kule wanted to build a house and a granary last year, but he didn't) (DO)
(*Yak*) Kule (*yak*) salko mano=i (*yak*) **bano** (*yak'i*)
only Kule only build.PFV last.year=BM only house only
"Kule only built a HOUSE last year."

(14) (Kule wanted to give a watch to Abu and Bah, but he didn't) (IO)
(*Yak*) Kule (*yak*) onko agoggo nzono=i (*yak*) **ki Abu** (*yak'i*).
only Kule only give.PFV watch yesterday=BM only to Abu only
"Kule only gave a watch TO ABU last year."

(15) (K. wanted to build houses in Potiskum and Mubi, but he didn't build in Mubi) (ADJ)
(*Yak*) Kule (*yak*) salko bano mano=i (*yak*) **a Potiskum** (*yak'i*).
only Kule only build.PFV house last.year=BM only in Potiskum only
"Kule only built a house in POTISKUM last year."

The examples in which *yak* immediately precedes a focused non-subject suggest that it can be used adnominally. Büring and Hartmann (2001, p.233) note that if a focus particle is adnominal, it should be able to occur within an NP preceding a genitive DP. This is possible in Ngamo, cf. (16). I tentatively conclude that *yak('i)* can be adnominal as well as adverbial[5].

(16) (I thought that Baba had two wives, but I was wrong)
Baba mizi *yak* **Hassana**.
Baba husband only Hassana.
"Baba is the husband of only Hassana."

[5]This conclusion is tentative, since there are conflicting data concerning occurrence of *yak('i)* in PPs (Büring and Hartmann, 2001, p.233). A full investigation of this requires a better understanding of the syntax of Ngamo DPs, and is outside the scope of this dissertation.

Association with predicates When associating with a verb, as in (17)–(18) , or a VP, as in (19), the following positions were possible for *yak('i)*: (i) initial, (ii) preceding the verb, (iii) following the VP, (iv) final.

(17) (Shuwa wanted to repair and paint his house, but . . .) (V)
Shuwa (*yak*) **shuɗanta** bano=s (*yak'i*) mano (*yak'i*).
Shuwa only paint.PFV house=DEF.DET.F only last.year only
"Shuwa only PAINTED the house."

(18) (Uddu planned to call Burba and tell her what to do, but....) (V)
Yak Uddu **esha** Burba.
only Uddu call.PFV Burba
"Uddu only CALLED Burba."

(19) (Kule planned to buy a car, build a house, and marry, last year, but...) (VP)
(*Yak*) Kule (*yak*) **salko** **bano** (*yak'i*) mano (*ʔyak'i*).
only Kule only build.PFV house only last.year only
"Kule only BUILT A HOUSE last year."

Association with subjects In the canonical word order, *yak('i)* cannot associate with the subject, independent of the position of *yak('i)*, cf. example (20). It seems that *yak('i)* can only associate with inverted subjects[6].

(20) (Context: Shuwa and Kule wanted to build houses.) (SBJ)
(#Yak('i)) **Shuwa** (#yak) salko (#yak('i)) bano (#yak('i)) mano (*yak/#yak'i).
only Shuwa only build.PFV only house only last.year only
(intended:) "Only SHUWA built a house last year."

[6]There is one exception: an immediately following *yak'i* can associate with a preverbal subject (i). However, as (ii) shows, the preverbal subject in these cases is not in its standard position, but topicalized.

(i) (Context: Gambo and Abare were supposed to give a watch to Bah)
Abare yak'i onko agoggo ki Bah.
Abare only give.PFV watch to Bah
"Only ABARE gave a watch to Bah."

(ii) (Context: Shuwa and I, we both wanted to build a house)
a. **Ne'e** yak'i ne salko bano.
1SG.INDEP only 1SG.DEP build.PFV house
b. *__Ne__ yak'i salko bano.
1SG.DEP only build.PFV house
"Only I built a house"

Malte Zimmermann (p.c.) pointed out to me that the German conventionally associating particle *nur* can also associate with topics in certain restricted cases, e.g. *Alle Kinder* jokes like (iii), where the hanging topic *mein Enkel* is taken up by a resumptive pronoun.

(iii) Alle Kinder haben Ohren, nur **mein Enkel**, der hat Henkel.
all children have ears only my grandson 3SG has handles
"All children have ears, only my grandson, he has handles."

The question of why *yak'i* can occur in these examples cannot be solved here, and is left for further research.

With an inverted, focused subject, the speakers usually suggested either an initial *yak*, associating at a distance, or a *yak'i* immediately following the focused constituent. *Yak* immediately preceding the focus, and a sentence-final *yak'i* were however also accepted.

(21) (Kule and Shuwa wanted to build a house) (SBJ)
a. (*Yak*) salko bano=i (*yak*) **Kule** (*yak'i*) mano (*yak'i*).
only build.PFV house=BM only Kule only last.year only
b. (*Yak*) salko bano mano=i (*yak*) **Kule** (*yak'i*)
only build.PFV house last.year=BM only Kule only
"Only KULE built a house last year."

Evaluative readings In addition to the readings shown above, *yak('i)* can have a purely evaluative reading, as in (22), where the speaker is not expressing that he has no other properties apart from being Audu's secretary, but rather that being Audu's secretary is less important or less desireable than being Audu himself. Coppock and Beaver (2014) call these readings *rank-order readings*, and the non-evaluative readings *complement exclusion readings*. (23) shows an example where evaluative *yak('i)* associates with a non-predicative DP.

(22) A: Hello Audu!
B: Ne'e ne Audu bu, (*yak*) ne **sakatarini** (*yak'i*).
1SG.INDEP 1SG.DEP Audu NEG only 1SG.DEP secretary.3SG.POSS.M only
"I'm not Audu, I'm just HIS SECRETARY."
B': ... ne'e *yak* ne **sakatarini**.
1SG.INDEP only 1SG.DEP secretary.3SG.POSS.M
(Comment: final *yak'i* best, then 'ne'e *yak* ne...', then '*yak* ne ...')

(23) I wanted to speak to Audu, ...
me (*yak*) mokano ne'e **ga sakatarini** (*yak'i*).
but only take.PL.VENT 1SG to secretary.3SG.POSS.M only
"but they only brought me TO HIS SECRETARY."
(Comment: the speaker expected to be taken straight to Audu.)

Thus, while the translations given in Schuh et al. (2009) for *yak* and *yak'i* seem to suggest a preference for rank-order readings for *yak*, both the pre-focal *yak* and the post-focal *yak'i* have the same range of readings as pre-focal *only* in English[7].

Meaning components of sentences with *yak'i*

In both its readings, English *only* has an exclusive assertive meaning component. In addition, Beaver and Clark (2008), following Zeevat (1994) i.a., propose that an important meaning component introduced by *only* is its *mirative* meaning component: sentences with *only* express that the prejacent is "less than expected". The same meaning components are expected for *yak('i)*.

[7] In contrast to final *only* in English, which does not seem to have an evaluative reading (Joseph DeVeaugh-Geiss, p.c.)

(24) Ne **sakatari** *yak'i*.
1SG.DEP secretary only
"I'm only A SECRETARY."

(i) COMPLEMENT EXCLUSION:
Exclusive: I am nothing else in addition.
Mirative: It was expected that I have additional jobs.
(ii) RANK ORDER:
Exclusive: I am nothing "better"
Mirative: It was expected that I have a more prestigious occupation.

The **exclusive meaning component** is asserted. First, it does not survive embedding under negation or Y/N-question operators and is thus not a presupposition or a conventional implicature.

(25) COMPLEMENT EXCLUSION
a. Salko bano=i **Dimza** *yak'i*.
build.PFV house=BM Dimza only
"Only DIMZA built a house."
(Consultant comment: Dimza built a house, **and nobody else built a house**.)
b. Salko bano=i **Dimza** *yak'i* **bu**.
build.PFV house=BM Dimza only NEG
"Not only DIMZA built a house."
(Consultant comment: Dimza built a house, **and other people also built a house**.)
c. Salko bano=i **Dimza** *yak'i* ɗ**o**?
build.PFV house=BM Dimza only Q
"Did only DIMZA build a house?"
(Consultant comment: Dimza built a house, **and you want to confirm: alone or with other people?**)

Second, the exclusive meaning component is not cancellable, which shows that it is not a conversational implicature, cf. e.g. answer A in (26), in contrast to the corresponding sentence without *yak'i*[8].

(26) Q: Who did Njelu call yesterday?
A: Esha=i **Sama** (#*yak'i*) nzono, ke esha Hawwa nzono.
call.PFV=BM Sama only yesterday also call.PFV Hawwa yesterday
"He only called Sama yesterday, and he also called Hawwa yesterday."

That **a mirative component** is present in Ngamo can be seen by the oddity of examples like (27) (cf. Beaver and Clark, 2008, p.252). Without *yak('i)*, the example is fine.

(27) Ka ne zopko tilino ta m wena ampani la shim ki korino,
previously 1SG put.PFV heart=1SG.POSS COMP 1SG get.FUT harvest little at farm=1SG.POSS
me ne (#*yak*) wa **yam** (#*yak'i*)
but 1SG only get.PFV a.lot only
"I expected a low harvest, but I only got a GOOD harvest."
(Consultant comment: nice with '*yak la shim*' [(= "only little")], when the quantity is lower than expected)

[8]For more examples and tests, see section 4.2.2, where sentences with *yak('i)* were used as a baseline for exhaustivity tests. The exhaustive inference tested there corresponds to what I refer to as the exclusive meaning component in this section.

This meaning component is projective, e.g. (28) is just as odd as (27) .

(28) #Ne'e *yak* ne wa ampani **yam** ki korino bu.
1SG only 1SG get.PFV harvest a.lot at farm=1SG.POSS NEG
"I didn't only get a GOOD harvest."
(Consultant comment: "*la shim*" [(= 'few'/'little')] better than "*yam*")

In the complement exclusion reading, in addition, the **prejacent**, i.e. the sentence without the particle, is a projective meaning component, and thus survives embedding under negation and *y/n*-questions. This can be seen in the examples (25) above, of which one is repeated here as an illustration: when (29-a) is negated, as in (29-b), the prejacent *Dimza built a house* still follows.

(29) a. Salko bano=i **Dimza** *yak'i*.
build.PFV house=BM Dimza only
"Only Dimza built a house."
(Consultant comment: **Dimza built a house**, and nobody else built a house.)
b. Salko bano=i **Dimza** *yak'i* **bu**.
build.PFV house=BM Dimza only NEG
"Not only Dimza built a house."
(Consultant comment: **Dimza built a house**, and other people also built a house.)

The reason for this, according to Beaver and Clark (2008), is that all considered alternative answers entail the prejacent in this reading. One way to test for the respective readings is thus to check what the possible alternatives are: if they entail the prejacent, it is a complement exclusion reading, if they don't entail the prejacent, it is a rank order reading. Beaver and Clark also predict that a look at the considered alternatives tells us "what is expected". Therefore, both the mirative component and the projection behaviour of the prejacent depend on the considered alternatives.

There are numerous tests to find out what the alternative possible answers under consideration are. One test is shown in the Ngamo example (30) (adapted from a similar example in Umbach 2004, p.165). The context indicates that there was a recent change, and describes what the situation is like now, using a sentence with an exclusive particle. The speakers are asked to describe what they think used to be the case. As shown in (30), in contrast to sentences involving just narrow focus (30-a), the relevant alternatives in (30-b) are alternatives in which *more* family members live in Kano, providing evidence that this is a complement exclusion reading.

(30) Things have changed in our family. Now...
a. ʔa ɗeyno Kano=i **darano**
IPFV stay.VENT Kano=BM elder.sister.1SG.POSS
MY ELDER SISTER lives in Kano.
(Comment: This doesn't make much sense, **it seems as though family members take turns in living in Kano**)
b. ʔa ɗeyno Kano=i *yak* **darano**
IPFV stay.VENT Kano=BM only elder.sister.1SG.POSS
Only MY ELDER SISTER lives in Kano.
(Comment: This still doesn't have a straightforward meaning, it is as though **they are expecting perhaps four or five of you to be there**)

Example (31) shows the same test for a rank order reading: the comment in (31-b) indicates a possible alternative which does not entail the prejacent.

(31) Things have changed in our family. Now...
a. ba'no **commissioner**.
elder.brother=1SG.POSS commissioner
"... my elder brother is a commissioner."
(Comment: the change is that the brother is now a commissioner — **there is no indication of what he was before**.)
b. ba'no **commissioner** *yak'i*.
elder.brother=1SG.POSS commissioner only
"... my elder brother is only a commissioner."
(Comment: perhaps **before that he was a head of service, now they demoted him** to be a commissioner.)

A further test involves embedding a sentence with an exclusive particle under *It is not expected that...*, and asking what is expected, e.g. (32)–(33)[9].

(32) Mu zohanko tilimu bu ta tuko jarabawa=i **Kule** *yak'i*.
1PL put.PL.PFV heart.1PL.POSS NEG COMP eat.PFV exam=BM Kule only
"It is not expected that only KULE passed."
(Consultant comment: it is expected that other people also pass)

(33) Kabun a le'y ne'e, ana le'ino zohanko tilinsu bu
before 3PL.SUBJ bear.SUBJ 1SG ones.who.do birth=1SG.POSS put.PL.PFV heart.3PL.POSS NEG
ta ne **la** **mandu** *yak'i*.
COMP 1SG child female only
"Before I was born, my parents didn't expect that I would be only A GIRL."
(Consultant comment: they were thinking that she would be a boy.)

To sum up, sentences with *yak('i)*, like sentences with *only*, have an asserted exclusive meaning component ("nothing else/better"), and a projective mirative meaning component ("less than expected"). Sentences with a complement exclusion reading have an additional projective meaning component, the prejacent. The prejacent is thus not in general a projective meaning component, but depends on the kinds of alternatives considered, i.e. on the kind of scale they are ordered on: entailment vs. evaluation.

Other exclusive particles

There are two further kinds of exclusives in Ngamo which I would like to briefly discuss here[10]. The first is an adverb *moɗ-* formed out of the cardinal number *mɔ̀ɔ̀ɗî* (= "one") and a dependent pronoun, which has the meaning of *alone*. The second is a particle *kaba*, meaning *only*, *not until*, and *must*. The remainder of this section briefly introduces these particles, based on previous

[9] I apologize for the sexism of the rank order example. I only include it because the rank order reading was hard to get with embedding, and this was one of the few examples where no complement exclusion reading could be coerced. It is not meant to reflect either my language consultants' opinions or my own.

[10] In fact, the Ngamo dictionary mentions a further exclusive operator, *ɓaram* (= "just", "only", "merely") (Schuh et al., 2009). This operator is ignored here, since it never came up in elicitation.

work on similar particles in Bole and Hausa (Grubic, 2011, 2012b, Grubic and Mucha, 2013).

Examples (34)–(35) show that *moɗ-* can mean *alone*. (34) additionally shows that *yak'i* cannot have this meaning. Example (35) is an adverbial use with the same meaning. In the closely related language Bole (West Chadic), a similar particle *moɗ-* seems to the main method to express exclusiveness (Grubic, 2011).

(34) (Context: What happened?)
A: Hawwa *moɗato*.
Hawwa alone.3SG.F
"Hawwa is alone."

A': #Hawwa *yak'i*.
Hawwa only
"Only HAWWA."

(35) Lapko *moɗato*=i Hawwa
answer.PFV alone.3SG.F=BM Hawwa
"HAWWA answered alone."
(Consultant comment: the others answered in a group, only Hawwa answered alone)

When used as an exclusive, *moɗ-* can only have a complement exclusion reading (36)[11], not a rank-order reading (37)–(38). Example (38) shows that *moɗ-* can associate with a predicative DP, if it results in a complement exclusion reading. The reason for the rejection of the rank-order example (37) is thus semantic. These examples also show that *moɗ-* can associate with out-of-focus constituents like the dependent subject pronoun (37), and the preverbal subject (36).

(36) Samaye salko bano *moɗato*.
Samaye build.PFV house alone.3SG.F
(i) "Only SAMAYE built a house."
(ii) "Samaye built only a HOUSE."

(37) Ne la mandu *moɗano* / **moɗato*
1SG child female alone.1SG alone.3SG.F
(i) #"I am only A GIRL."
(ii) "Only I am a girl."

(38) Si **sakatari** *moɗabi*
3SG.M secretary alone.3SG.M
"He is only a SECRETARY"
(Comment: he is not performing any additional duties)

Moɗ- can be used together with *yak'i*, to strengthen it (39):

(39) Salko bano=i *yak* **Dimza** *moɗabi*.
build.PFV house=BM only Dimza alone.3SG.M
"Only DIMZA alone built a house."
(Comment: they are expecting other people to build a house, but the only person who managed to do so is Dimza)

I assume that *moɗ-* behaves just like the exclusive *moɗ-* in the related language Bole: it is simply an adverb meaning *alone* which does not conventionally associate with focus. The proposal is that *moɗ-* itself is in focus in these sentences, and that they answer a CQ like *How (i.e. with how many people) did Samaye build a house?*, cf. Grubic (2011) for discussion[12].

[11] In (36), *moɗ-* differs from *alone* (Moltmann, 2004, p.315) in that it does not necessarily associate with the subject.

[12] Cf. also Tonhauser (2014), who proposes a similar CQ (e.g. *Who accompanied Dimza in building a house?*) for a similar exclusive in Paraguayan Guaraní, but proposes an analysis under which it conventionally associates with focus.

A further way to express exclusive meaning is the multifunctional operator *kaba* (= (i) "until", (ii) "just, only", (iii) "have to, must") (translations from Schuh et al., 2009). *Kaba* is a sentence coordinator or preposition which is attested at least in Bole, Ngizim and Ngamo[13] (Schuh and Gimba (in prep.)), cf. (40) for an example of the exclusive use.

(40) Everybody built a house in Nigeria last year, . . .
kaba ngo **mo**ɗ**i** salko bu.
only person one build.PFV NEG
". . . only ONE person didn't (build)."

Moreover, it has a further exclusive use as *not until*, similar to German *erst* (41)[14]. The excluded alternatives are earlier alternatives, this can be seen by placing (41) in a counterfactual environment like (42) and asking when the event described happened.

(41) Ba'ano leyanko te bu *kaba* **arfe bolo** .
daughter.1SG.POSS give.birth.PL.PFV 3SG.F NEG until hour two
"My daughter wasn't born (lit. 'they didn't give birth to her') until 2 O'CLOCK."

(42) Ne ndalo ka na ba'ano leyanko te bu *kaba* **arfe bolo**.
1SG wish.PFV IRR COMP daughter.1SG.POSS give.birth.PL.PFV 3SG.F NEG until hour two
"I wish my daughter was not born (lit. 'they didn't give birth to her') until 2 O'CLOCK."
(Comment: The daughter was born earlier — maybe he was not prepared for the birth.)

While *erst* in German can additionally express e.g. that a development is unexpectedly late (Löbner, 1989, Krifka, 2000), *kaba*, like English *not . . . until*, does not have these readings (43).

(43) Te (#*kaba*) sanito (#*kaba*) **bolo**
3SG.F KABA year.3SG.F.POSS KABA two
(intended:) "She is still only TWO years old."
(Consultant comment: you can use *yak*: *Te yak sanito bolo*. *Kaba* is only possible in a sentence like *Ba'ano kaba na sanito moko bolo* ('my daughter not until her age reaches 2 years') — said e.g. when you want to wait before you buy a certain toy for her)

In Grubic (2012a,b), I proposed an analysis of the *not... until* readings of *kapa* in Bole based on Beaver and Clark (2008)'s analysis of *only*, and Karttunen (1974)'s proposal for *not...until*: Under this analysis, examples (40) and (41) have (at least) the meaning components in (44) and (45).

(44) Only ONE person didn't build a house.
a. EXCLUSIVE: Not more than one person didn't build a house
b. MIRATIVE: "One person didn't build a house" is the weakest considered alternative
≈ It was expected that more people wouldn't build houses

[13] It does not seem to be used in the other Yobe State languages, judging from the absence in the dictionaries of these languages (Yobe Languages Research project *http://aflang.humnet.ucla.edu/Yobe/Pages/yobe_dictionaries.html*). But note that in the dictionary of Miya (West Chadic, North Bauchi, spoken in Bauchi State, Nigeria), there is a particle *kwâpa* (= (i) 'until, only until, after', (ii) 'have to, must' (Schuh and Miya, 2010), leading Schuh and Gimba (in prep.) to suggest that it may be an inherited Chadic word (cf. their chapter *Quantifying and contrastive prepositions and conjunctions*).

[14] *Kaba* in Ngamo thus resembles English *only* (Declerck, 1995), which can also be used in these temporal contexts, cf. e.g. *John only woke up at nine*. French temporal *ne... que* (De Swart, 1996), and Greek temporal *para monon* (lit. 'but only') (Condoravdi, 2008, Giannakidou, 2002, 2003) are also obviously exclusive.

(45) My daughter wasn't born until 2 O'CLOCK.
   a. EXCLUSIVE: She wasn't born earlier
   b. MIRATIVE: "My daughter was born between t_{start} 2 O'clock" is the weakest considered alternative ≈ It was expected that she would be born earlier

Since earlier alternatives, e.g. *My daughter was born between t_{start} 1 O'clock* entail later alternatives, the corresponding scales are very similar to the entailment scales needed for examples like (44), cf. Grubic (2012a,b) for details. This reading of *kaba* is thus treated like its other exclusive readings.

Note that *yak('i)* doesn't have this reading: while one language consultant accepted (46) as meaning *just/exactly at 2 O'clock*, negating this sentence made all other arrival times available for this speaker, not just the earlier ones, cf. Comment 1 in (47) . The other language consultant didn't get the *not. . . until* reading, either, cf. Comment 2 in (47).

(46) Kule teɗeno *yak* **ki arfe bolo**.
Kule arrive.PFV.VENT only at hour two
"Kule arrived just AT 2 O'CLOCK."

(47) #Kule teɗeno (*yak*) **ki arfe bolo** (*yak'i*) bu.
Kule arrive.PFV.VENT only at hour two only NEG
"Kule didn't arrive just AT 2 O'CLOCK"
(Comment 1: He arrived either before or afterwards)
(Comment 2: Kule cannot divide himself to arrive at several times!)

The last important use of *kaba* is a modal one: it can be used to express deontic necessity (48-a), but cannot express deontic possibility (48-b), nor epistemic necessity (49), and is usually expressed using a combination of *kaba* and *na*[15]. Example (48-a) shows, however, that *kaba* can also occur without *na*, with a subjunctive verb form.

(48) According to Nigerian law, . . .
   a. Kule **kaba** a go ban pursina.
   Kule kaba 3SG.SBJV go.SBJV house prison
   "Kule must go to jail."
   b. #Musulme **kaba na** ka monde hoɗo
   muslims KABA NA marry.PFV women four
   (intended:) "Muslims can marry four women."
   (Comment: It has to be "musulme a katik monde hoɗo" [MG: verb totality extended & subjunctive], then it is given to his choice, with *kaba na* it becomes necessary!)

(49) A: I have just seen Peter and Mary in their offices. I was told they were sick, so why are they at work?
   B: #**Kaba na** lafiya=su kute=i'ye.
   KABA NA health=3PL today=I
   (intended:) "they must be well today."
   (Comment: this means that they are required to be well. It should be: "A ɗeya lafiyasu kutei'ye" [MG: *ɗeya* = 'it is possible'].)

[15]This *na* looks like the conditional marker, I however don't have sufficient evidence to claim that it is the same morpheme.

Kaba thus has the same uses as the related particle *kapa* in Bole (Grubic 2012b, Schuh and Gimba (in prep.)), and the unrelated particle *sai* in Hausa (Kraft, 1970). For *sai*, which also has the same exclusive readings as *kaba*, we propose in Grubic and Mucha (2013) that the modal readings arise from combining an exclusive focus-sensitive operator *sai* with the prospective aspect and a covert possiblity modal. It remains to be seen whether a similar analysis can be proposed for *kaba*.

6.1.2 Additive particles

Properties of the additive particle *ke(’e)*

The Ngamo additive particle is *ke(’e)*[16] (‘and’, ‘also/too’). The Ngamo dictionary lists two meanings for *ke*, first the additive meaning (‘also’, ‘too’), second, its use as “a topicalizer of a phrase indicating a causal link to the main clause” (Schuh et al., 2009, p.50). The dictionary does not contain an entry for *ke’e*. Again, *ke’e* seems to be a post-focal variant of *ke* (50).

(50) (Kule built a house)
Kule (*ke*) salko **makaranta** (*ke’e*).
Kule also build.PFV school also
“Kule built a SCHOOL, too.”

Example (50) shows that the pre-focal *ke* can associate from a distance. The post-focal form *ke’e* can associate from a distance, too, e.g. even when occurring after an adjunct, cf. (51).

(51) (Kule called Mammadi yesterday.) (DO)
Kule esha **Hawwa** nzono *ke’e*.
Kule call.PFV Hawwa yesterday also
“Kule also called HAWWA yesterday.”

Association with non-subject terms When associating with non-subject terms, *ke(’e)* can in principle occur in the same positions as *yak(’i)*.

(52) (Kule built a school last year) (DO)
(*Ke*) Kule (*ke*) salko (*ke*) **bano** (*ke’e*) mano (*ke’e*).
also Kule also build.PFV also house also last.year also
“Kule also built a HOUSE last year.”

(53) (Mammadi gave a watch to Jajei yesterday) (IO)
(*Ke*) Mammadi (*ke*) onko agoggo (*ke*) **ki Abu** (*ke’e*) nzono (*ke’e*)
also Mammadi also give.PFV watch also to Abu also yesterday also
“Mammadi also gave a watch to ABU yesterday.”

[16] *Ke(’e)* is often used in combination with other particles, particularly *ma*, e.g. (i). For the purpose of this chapter, I concentrated on *ke(’e)* occurring alone, since it is the source of the additivity.

(i) (Hawwa built a house)
Shuwa *ke ma* salko bano.
Shuwa KE MA build.PFV house
“SHUWA also built a house.”

(54) (Kule built a house in Mubi last year) (ADJ)
(*Ke*) Kule (*ke*) salko bano (*ke*) **a Potiskum** (*ke'e*) mano (*ke'e*)
also Kule also build.PFV house also at Potiskum also last.year also
"Kule also built a house in POTISKUM last year."

Association with =*i/ye*-marked foci was not judged to be very good, cf. examples (55)–(57).

(55) (Kule built a school last year) (DO)
(ʔ*Ke*) Kule (ʔ*ke*) salko=i (ʔ*ke*) **bano** (ʔ*ke'e*) mano (ʔ*ke'e*)
also Kule also build.PFV=BM also house also last.year also
"Kule also built a HOUSE last year."

(56) (Mammadi gave a watch to Jajei yesterday) (IO)
(ʔ*Ke*) Mammadi (ʔ*ke*) onko agoggo=i (ʔ*ke*) **ki Abu** (ʔ*ke'e*) nzono (ʔ*ke'e*).
also Mammadi also give.PFV watch=BM also to Abu also yesterday also
"Mammadi also gave a watch to ABU yesterday."

(57) (Kule built a house in Mubi last year) (ADJ)
Kule (ʔ*ke*) salko bano=i (ʔ*ke*) **a Potiskum** (ʔ*ke'e*) mano.
Kule also build.PFV house=BM also at Potiskum also last.year
"Kule also built a house in POTISKUM last year."

This was equally true for non-canonical word order:

(58) (Kule built a school last year) (DO)
(ʔ*Ke*) Kule (ʔ*ke*) salko mano=i (ʔ*ke*) **bano** (ʔ*ke'e*)
also Kule also build.PFV=BM last.year=BM also house also
"Kule also built a HOUSE last year."

(59) (Mammadi gave a watch to Jajei yesterday) (IO)
Mammadi onko agoggo nzono=i (ʔ*ke*) **ki Abu** (ʔ*ke'e*).
Mammadi give.PFV watch yesterday=BM also to Abu also
"Mammadi also gave a watch to ABU yesterday."

(60) (Kule built a house in Mubi last year) (ADJ)
Kule salko bano mano=i (ʔ*ke*) **a Potiskum** (ʔ*ke'e*).
Kule build.PFV house last.year=BM also at Potiskum also
"Kule also built a house in POTISKUM last year."

The rejection of =*i/ye*-marking with *ke('e)* was however not as consistent as e.g. the rejection of *yak('i)* associating with preverbal subjects. Later in this section, examples where it is perfectly acceptable will be shown. Those acceptable examples differ from the examples shown here in that the background-marked part is different from that of the antecedent.

Association with predicates When associating with a focused verb or VP, *ke('e)* can again be in the usual positions (61)–(62).

(61) (Kule repaired his house last year.) (V)
(*Ke*) Kule (*ke*) **shuɗanta** bano=s (*ke'e*) mano (*ke'e*).
also Kule also paint.PFV house=DEF.DET.F also last.year also
"Kule also PAINTED the house."

(62) (Kule bought a car last year) (VP)
(*Ke*) Kule (*ke*) **salko** **bano** (*ke'e*) mano (*ke'e*).
also Kule also build.PFV house also last.year also
"Kule also BUILT A HOUSE."

Same as in association of *yak'i* with the verb, the particle cannot occur in immediately post-verbal position (63).

(63) (Kule repaired his house last year.) (V)
*Kule **shuɗanta** *ke'e* bano=s mano.
Kule paint.PFV also house=DEF.DET.F last.year
"Kule also PAINTED the house."

Although in (61), postfocal *ke'e* was accepted, it was sometimes rejected during elicitation due to the fact that its most salient associate is the subject, cf. (64) for a verb focus context, and (65) for a VP-focus context. In (62), the language consultant even suggested to use *har('i)* (= 'even') instead.

(64) (Kule built a house) (V)
Kule (*ke*) **bo'ytikok** bano=s (#*ke'e*).
Kule also sell.PFV.TOT house=DEF.DET.F also
(intended:) "Kule also SOLD the house."
(Consultant comment: [With a final *ke'e*,] this makes reference to somebody who did the same thing)

(65) (Baba bought a car last year.) (VP)
?Baba **salko** **bano** mano ke'e.
Baba build.PFV house last.year also
(intended:) "Baba also BUILT A HOUSE last year."
(Consultant comment: better: *Baba salko bano mano har'i*. *Ke* & *ke'e* mostly come when you relate two people, it is better to use *har* if something is done by the same person!)

Ke('e) thus seems to preferably associate with terms, perhaps even with the subject.

Association with subjects Unlike *yak'i*, *ke* can associate with preverbal subjects, cf. (66) for the different possible positions for the additive particle. Note that in the position immediately following the subject, plain *ke* is used, not the expected post-focal form *ke'e*.

(66) (Shuwa built a house last year) (Subj)
(*Ke*) **Kule** (*ke*) salko bano (*ke'e*) mano (*ke'e*).
also Kule also build.PFV house also last.year also
"KULE also built a house last year."

Even though the subject is not inverted, answers like these were considered appropriate for subject *wh*-questions (67). In the first clause of the answer, subject inversion was judged to be possible, but not obligatory. In fact, the speakers suggested that they preferred the canonical word order in answer A to the non-canonical word order in A'. Answer A was also considered good as an answer to the wide scope question *Hala=i miya mano?* (= 'What happened last year?').

(67) Q: Salko bano =i lo?
build.PFV house BM who
"Who built a house?"
A: **Hawwa** salko bano, (*ke*) **Kule** (*ke*) salko bano (*ke'e*).
Hawwa build.PFV house Kule also build.PFV house
A': Salko bano =i **Hawwa**, (*ke*) **Kule** (*ke*) salko bano (*ke'e*).
build.PFV house BM Hawwa also Kule also build.PFV house also
"Hawwa built a house and Kule also built a house"

With inverted, focused subjects, again the particle was judged to be not entirely felicitous in the context presented, e.g. (68).

(68) (Who built a house last year?) — Hawwa built a house last year . . .
A: (*ʔke*) salko bano =i (*ʔke*) **Kule** (*ʔke'e*) mano (*ʔke'e*).
also build.PFV house BM also Kule also last.year also
A': (*ʔke*) salko bano mano=i (*ʔke*) **Kule** (*ʔke'e*).
also build.PFV house last.year=BM also Kule also
". . . and KULE also built a house last year."

This was independent of whether there was subject inversion in the first clause or not, cf. (69).

(69) a. ??Hawwa salko bano, salko bano=i ke Kule.
Hawwa build.PFV house build.PFV house=BM also Kule
b. ??Salko bano=i Hawwa, (*ke*) salko bano=i (*ke*) Kule
build.PFV house=BM Hawwa also build.PFV house=BM also Kule
(intended:) "HAWWA built a house, and KULE also built a house."
(Comment: (a) means "Hawwa built a house, who built a house was Kule", (b) is possible if it means "it is Hawwa that built the house and then Kule built a house", not at the same time.)

The comment for (69-b), that Kule has to have built a house at a different time in order for the background-marked part to be able to be parallel is revealing. The next section briefly discusses the parallelity requirement which is sometimes introduced by additive particles, and proposes that Ngamo introduces an *anti-parallelity* or *distinctness* requirement for marked backgrounds.

Parallelity of the background

In many examples in the literature, the antecedent of the *too/also* sentence and the sentence itself have identical backgrounds, and differ only in the focus constituent. Kripke (2009) demonstrates, however, that the backgrounds need not be exactly identical, as long as they are intended and understood to mean the same. For example, in (70) (Kripke 2009, p.380), it is understood that

Karpov is the challenger, Kasparov the champion, and checkmating somebody means defeating them. Similarly, due to the parallelity of the backgrounds, in (71) (Kripke 2009, p.383, attributed to Barbara Partee), the speaker implies that leaving at ten o'clock means leaving the party early.

(70) If Karpov checkmates Kasparov in the next game, probably the challenger will defeat the champion IN THE BERLIN GAME, too.

(71) If John will leave at ten o'clock, JILL will leave the party early, too.

For the focused constituent, in contrast, there seems to be a distinctness condition (Kripke, 2009, Cohen, 2009), demanding that it must be logically independent of the antecedent, i.e. not entail it or be entailed by it e.g. (72)[17]. See also Kripke's example (73), which strongly suggests, according to him, that Herb is not the boss .

(72) a. #JOHN came, and JOHN AND MARY came, too.
b. #JOHN AND MARY came, and JOHN came, too.

(73) If HERB comes to the party, THE BOSS will come, too.

There are however crosslinguistic differences with respect to this parallelity and distinctness. In some languages, additive particles can associate with topical elements instead of foci, and require the comment to be parallel, e.g. stressed AUCH in German (Krifka, 1998) (74)[18]. In other languages, there seem to be no parallelity or distinctness requirements. For example, Turkish *dA* allows for uses in contrastive topic environments (75) (Göksel and Özsoy, 2003, 1160-1161). In several languages, the additive particle can also be used as a sentence connector[19]. Jacobs (1988, p.100) suggests that there is often a certain parallelity in these cases, too, leading to the claim that *and* is a focus-sensitive particle. In addition, Karvovskaya (2013) reports that the additive particle *məs* in Ishkashimi can be used as a sentence connector, but not in contrastive topic contexts like (74)–(75). One possible interpretation of these crosslinguistic differences is that additive particles can differ in two dimensions: (i) whether they associate with topics or foci (or both), and (ii) whether they place a parallelity requirement on the non-associated part or not.

[17]Note however, that there are exceptions. For example, (i), from König (1991, p.36), can have a reading in which the father and the president are the same person. It seems as though these readings can arise when one person can be casted in different roles. See parallel examples with metalinguistic negation, e.g. (ii) from Szabolcsi (1981b, p.525), where the friend and the minister can be the same person.

(i) You have not only insulted your father, but also the President of the United States.

(ii) I invited MY FRIEND and not THE MINISTER.

[18]The comment need not be identical, e.g. in (i), I believe that *auch* can be stressed and what follows can be deaccented, if it is understood to answer a common question like in (i).

(i) (Who brought their partners to the party?)
Peter hat seine Frau mitgebracht, und Pia hat AUCH ihren Mann mitgebracht
Peter has his wife brought and Pia has also her husband brought
"Peter brought his wife, and Pia brought her husband, too."

[19]König (1991, p.65) mentions Latin *et*, Greek *kaí*, Russian *i*, Norwegian *og(så)* , Lezgian *-ni*, Manam *-be*, Zulu *na-*, Sesotho *le*, and Malayalam *-um*. Turkish *dA* also allows for this, cf. Göksel and Özsoy (2003, p.1162).

(74) Den Salat hat PETER gemacht, und die Pizza hat AUCH Peter /#Maria gemacht.
the salad has Peter made and the pizza has also Peter Maria made
"Peter made the salad, and Peter made the pizza, too."

(75) Deniz TIYATRO-YA git-ti. Ahmet **de** arkadaş-lar-ı-yla SINEMA-YA git-ti.
Deniz theatre-DAT go-P Ahmet *dA* friend-PL-3SG.POSS-COM cinema-DAT go-P
"Deniz has gone to the theatre. And Ahmet, (he) went to the cinema with his friends."

This section discusses how Ngamo *ke('e)* fits into this picture. Above, it was noted that *ke('e)* was judged to be marginal when associating with foci in *=i/ye* constructions, independent of the form of the antecedent. The comments given for the following examples (76)–(77) suggest that when there is overt background marking, the backgrounded part must differ. The contexts proposed by the speakers are ones where both the backgrounds and the foci differ, showing that in contrast to English *too* and German AUCH, there is no parallelity requirement in Ngamo.

(76) A: (Hawwa built a house)
B: #Salko bano=i (*ke*) **Kule** (*ke'e*)
build.PFV house=BM also Kule also
(intended:) "KULE built a house, too."
(Consultant comment: Where there is "*salko bano=i*", **this means that the other person did something else!**, e.g. *Hawwa kaja mato, salko bano=i ke Kule*. Here *ke* doesn't indicate that somebody else built a house, but it relates Kule to Hawwa.)

(77) (presented without context)
Esha Lakka=i *ke* **Kule**
call.PFV Lakka=BM also Kule
(intended:) "KULE called Lakka, too."
(Consultant comment: **This sentence can be used e.g. when Yura has called Hasha. Lakka has not been left out in the calling. Kule called her**)

In examples where the backgrounded and focused parts were different in the two clauses, subject inversion was thus accepted, e.g. (78). This was again independent of the form of the antecedent.

(78) a. **Yura** *esha Hasha*, *esha Lakka*=i ke **Kule**
Yura call.PFV Hasha call.PFV Lakka=BM also Kule
b. *Esha Hasha*=i **Yura**, *esha Lakka*=i ke **Kule**
call.PFV Hasha=BM Yura call.PFV Lakka=BM also Kule
"Yura called Hasha, and Kule called Lakka."

These subject inversion constructions with *ke('e)* preferably occur in contrastive topic contexts with focused subjects, e.g. (79). When the context enforces a contrastive topic interpretation for the subjects and a focus interpretation for the VP, canonical word order is used (80).

(79) Q: Mato wonse ki bano wonse, wa zoni=i lo?
car DEM.F and house DEM.F get.PFV 3PL=BM who
"This car and this house, who acquired them?"

A: Kaja mato=i Hawwa, salko bano=i *ke* Kule.
buy.PFV car=BM Hawwa build.PFV house=BM also Kule
"HAWWA bought the car, KULE built the house."

(80) Q: Kule ki Hawwa yanko miya?
Kule and Hawwa do.PL.PFV what
"Kule and Hawwa, what did they do?"
A: Hawwa kaja mato, Kule *ke* salko bano.
Hawwa buy.PFV car Kule also build.PFV house
"Hawwa BOUGHT A CAR, and Kule BUILT A HOUSE."

Answers to all-focus *What happened?*-questions are also possible with *ke*, and occur in the canonical word order, cf. example (81). Ngamo *ke* can thus be used to adjoin two independent clauses, just like *and* in English.

(81) a. Hala =i miya mano?
happen.PFV BM what last.year
"What happened last year?"
b. Hawwa kaja mato, Kule *ke* salko bano.
Hawwa buy.PFV car Kule also build.ofv house
"Hawwa bought a car, and Kule built a house."

The preceding examples show that there is no parallelity requirement for *ke('e)* in Ngamo. It can act as a sentence connector, cf. example (81), and can occur in contrastive topic examples like (80), and is thus very similar to *dA* in Turkish. The previous section has shown examples where *ke('e)* can associate with focused constituents, as long as the background is not *=i/ye* marked, e.g. example (50), repeated here as (82). In addition, examples where *ke('e)* associates with a topic, and the comment is parallel, are also possible, cf. (83). In (83), *ke* associates with *Kule*, which is topical and elided — the fact that it can be elided shows that it is not focused, cf. §6.2 below.

(82) (Kule built a house)
Kule *ke* salko **makaranta**.
Kule also build.PFV school
"Kule also built a SCHOOL."

(83) I know that Hawwa built a house, but what about Kule? What did he build?
Ke salko bano.
also build.PFV house
"He built a house, too."

There are further examples showing that *ke('e)* can associate with out-of-focus constituents: in addition to the telling (contrastive) topic examples above, there are also examples showing that the focused material in *=i/ye* constructions can be the same in the *ke('e)* sentence and its antecedent, cf. (84).

(84) Salko bano=i **Kule**, kaja mato=i *ke* **Kule**.
build.PFV house=BM Kule buy.PFV car=BM also Kule
"Kule built a house, and Kule also bought a car."

Same as *dA* in Turkish, *ke(′e)* can thus associate with foci and topics, and does not have a parallelity requirement[20]. In contrast to *dA*, it however seems to have a kind of *distinctness* requirement, disallowing =*i/ye*-marked parallel backgrounds.

Meaning contribution of sentences with *ke*

English *also* has no truth-conditional meaning contribution, but triggers a presupposition that there is a salient antecedent of a certain kind in the immediately preceding discourse. For *ke(′e)*, this is expected to be the same, with the difference that the relation to the antecedent, as shown above, is not as strict as for *also*.

This expectation is borne out: Sentence (85) has an additive meaning component, which survives embedding in a non-veridical context. The negation test did not work out for Ngamo, it seems as though the additive particle takes scope above negation: in (85), we have an additive implication, which with English *also* is a presupposition, and the prejacent, which is asserted. Example (86) shows that both implications seem to disappear under negation. The effect is similar to *either* in English (König, 1991)[21].

(85) **Dimza** *ke* salko bano
Dimza also build.PFV house
"DIMZA built a house, too."
→ Dimza built a house (prejacent)
→ Somebody else built a house (additive)

(86) **Dimza** *ke* salko bano **bu**
Dimza also build.PFV house NEG
"DIMZA didn't build a house, either."
↛ Dimza built a house
↛ Somebody else built a house

However, the context in (87) shows the desired results: the clause triggering the presupposition is embedded under a (counterfactual) wish. The assertion that Kule built a house does not survive this embedding, the presupposition that somebody else did however does.

(87) A bo ndaltino ka na **Kule** (*ke*) salko bano (*ke′e*).
at mouth wish(?)=1SG.POSS COMP Kule also build.PFV house also
"I wish that Kule had built a house, too."
↛ Kule built a house.
→ Somebody else built a house.

Ke(′e)-sentences are not felicitous out-of-the-blue (88), showing that, like in English, the presupposition is not easily accommodatable (Kripke, 2009, Tonhauser et al., 2011).

[20] This corroborates Schuh et al. (2009, p.50)'s description of *ke(′e)* as a topicalizer.

[21] This was confirmed in the following examples: *ke(′e)* was only felicitous in the negative examples where it was used as *either* (i)–(ii). Malte Zimmermann (p.c.) points out that the relative order of *bu* and sentence-final *ke′e* in (i) already shows that *ke(′e)* must take scope above the negation.

(i) Njelu ki Kule basanko kuleti bu, (*ke*) basanko bido (**ke′e*) bu (*ke′e*).
Njelu and Kule shoot.PL.PFV rabbit NEG also shoot.PL.PFV monkey also NEG also
"Njelu and Kule didn't shoot a rabbit, and they didn't shoot a monkey either."

(ii) Njelu ki Kule basanko kuleti, me(/**ke*) basanko bido (**ke′e*) bu (**ke′e*).
Njelu and Kule shoot.PL.PFV rabbit but/also shoot.PL.PFV monkey also NEG also
"Njelu and Kule shot a rabbit, but they didn't shoot a monkey too."

(88) Q: What happened? / Who built a house?
A: #**Dimza** *ke* salko bano.
Dimza also build.PFV house
(intended:) "Dimza also built a house."
(Comment: without discussing about other people that built a house, this is not ok)

Example (89-a) is parallel to Kripke's famous English example in (89-b) (Kripke, 2009, p.373): both are infelicitous out-of-the-blue, even though all discourse participants know that other people are eating dinner in Abuja/New York on that night, too. This is an indication that *anaphoricity* plays a greater role for additives than for other presupposition triggers (Tonhauser et al., 2011).

(89) a. #**Gabo** andi tina wo'oto zoni kute'e a Abuja ki beɗi *ke'e*.
Gabo there.is eat.FUT food evening today at Abuja at night also
"GABO will eat dinner in Abuja tonight, too."
(Comment: maybe if somebody says something about somebody else who wants to eat dinner, and then gets this information)
b. #SAM is having dinner in New York tonight, too.

To sum up, the additive particle *ke('e)* in Ngamo, like English *also/too*, asserts the prejacent, and carries a projective additive meaning component. Same as in English, the additive meaning component does not behave like a typical presupposition: it requires an antecedent in the recent linguistic context, and is hard to accommodate (cf. Kripke, 2009, for English).

6.1.3 Scalar particles

Properties of the scalar particle *har('i)*

The pattern shown with the additive particle *ke('e)* is repeated with scalar *har('i)* (= "even, until, to the extent that", according to Schuh et al. 2009, p.39): First, this expression also has two forms, *har* and *har'i*. Again, *har'i* seems to be the post-focal form, and *har* the pre-focal form (90).

(90) (Baba bought a car last year) (VP)
#Baba **salko** **bano** *har* mano.
Baba build.PFV house even last.year
(intended:) "Baba even BUILT A HOUSE last year."

Second, as shown in the examples to come, *har('i)*, too, can be adjacent or distant to its associate, and can even associate from a distance when preceding a preverbal subject.

Association with non-subject terms The particle *har('i)* was accepted in the same positions as *ke('e)* when associating with a direct object: From a distance, preceding or following the subject, immediately preceding or following the focused DO, and clause-final, following an adjunct (91).

(91) (Kule built many things last year) (DO)
(*Har*) Kule (*har*) salko (*har*) **bano** (*har'i*) mano (*har'i*)
even Kule even build.PFV even house even last.year even
"Kule even built a HOUSE last year."

The same is true for association with indirect objects and adjuncts, which was also possible either clause-initial or following the subject, immediately preceding or following the focused indirect object, or clause-final (92)–(93) .

(92) (Mammadi gave a watch to many people yesterday) (IO)
(*Har*) Mammadi (*har*) onko agoggo (*har*) **ki Abu** (*har'i*) nzono (*har'i*).
even Mammadi even give.PFV watch even to Abu even yesterday even
"Kule even gave a watch to ABU yesterday."

(93) (Kule built houses in many places last year.) (ADV)
(*Har*) Kule (*har*) salko bano (*har*) **a Potiskum** (*har'i*) mano (*har'i*).
even Kule even build.PFV house even at Potiskum even last.year even
"Kule even built a house IN POTISKUM last year."

Same as *ke('e)*, *har('i)* was considered to be marginal in sentences in which it associates with *=i/ye* marked focus. Examples (94)–(96) show the grammatical but only marginally felicitous possible positions for *har('i)* in canonical word order with *=i/ye* marking.

(94) (Kule built many things last year) (DO)
(ʔ*Har*) Kule (ʔ*har*) salko=i (ʔ*har*) **bano** (ʔ*har'i*) mano (ʔ*har'i*)
even Kule even build.PFV=BM even house even last.year even
"Kule even built a HOUSE last year."

(95) (Mammadi gave a watch to many people yesterday) (IO)
(ʔ*Har*) Mammadi (ʔ*har*) onko agoggo=i (ʔ*har*) **ki Abu** (ʔ*har'i*) nzono (ʔ*har'i*).
even Mammadi even give.PFV watch=BM even to Abu even yesterday even
"Kule even gave a watch to ABU yesterday."

(96) (Kule built houses in many places last year.) (ADV)
(ʔ*Har*) Kule (ʔ*har*) salko bano=i (ʔ*har*) **a Potiskum** (ʔ*har'i*) mano (ʔ*har'i*).
even Kule even build.PFV house=BM even at Potiskum even last.year even
"Kule even built a house IN POTISKUM last year."

Examples (97)–(99) show the (marginally) possible positions for non-canonical word order.

(97) (Kule built many things last year) (DO)
(ʔ*Har*) Kule (ʔ*har*) salko mano=i (ʔ*har*) **bano** (ʔ*har'i*).
even Kule even build.PFV last.year=BM even house even
"Kule even built a HOUSE last year."

(98) (Mammadi gave a watch to many people yesterday) (IO)
(ʔ*Har*) Mammadi (ʔ*har*) onko agoggo nzono=i (ʔ*har*) **ki Abu** (ʔ*har'i*).
even Mammadi even give.PFV watch yesterday=BM even to Abu even
"Kule even gave a watch to ABU yesterday."

(99) (Kule built houses in many places last year.) (ADV)
(ʔ*Har*) Kule (ʔ*har*) salko bano mano=i (ʔ*har*) **a Potiskum** (ʔ*har'i*).
even Kule even build.PFV house last.year=BM even at Potiskum even
"Kule even built a house IN POTISKUM last year."

Association of scalar particles with focus in marked constructions is thus dispreferred, although it isn't as consistently rejected as would be predicted for semantically exhaustive constructions.

Association with predicates The particle *har('i)* can associate with the verb or VP from a sentence-initial or -final position, or when immediately preceding or following the VP.

(100) (Kule made many changes to his house last year) (V)
(*Har*) Kule (*har*) **shuɗanta** bano=s (*har'i*) mano (*har'i*).
even Kule even paint.PFV house=DEF.DET.F even last.year even
"Kule even PAINTED the house last year."

(101) (Baba bought a car last year) (VP)
(*Har*) Baba (*har*) **salko** **bano** (*har'i*) mano (*har'i*).
even Baba even build.PFV house even last.year even
"Baba even BUILT A HOUSE last year."

Har'i cannot immediately follow the focused verb (102), replicating the findings for *yak'i* and *ke'e*.

(102) (Kule made many changes to his house last year) (V)
*Kule **shuɗanta** *har'i* bano=s mano.
Kule paint.PFV even house=DEF.DET.F last.year
(intended:) "Kule even PAINTED the house last year."

In addition, *har* was rejected when immediately preceding the direct object, since in this word order, association with the direct object is preferred.

(103) (Baba bought a car last year) (VP)
#Baba **salko** *har* **bano** mano.
Baba build.PFV even house last.year
(intended:) "Baba even BUILT A HOUSE last year."
(Comment: only good if he built something else.)

Association with subjects Same as *ke('e)*, and in contrast to *yak('i)*, *har('i)* can associate with a preverbal subject. The following positions are possible:

(104) (Many people built a house last year) (Subj)
(*Har*) **Kule** (*har/har'i*) salko bano (*har'i*) mano (*har'i*).
even Kule even build.PFV house even last.year even
"Even KULE built a house last year."

Again, *har* can immediately follow a preverbal subject without being in its post-focal form *har'i*. In other post-focal positions, however, *har'i* is required. Based on examples like (105), we can hypothesize that the subject is not in its usual position, but in a higher, possibly topical position.

(105) **Kule** *har* nzono onko agoggo ki Gizo.
Kule even yesterday give.PFV watch to Gizo
"Even KULE, yesterday, gave a watch to Gizo."

Again, association of *har('i)* with subject focus in *=i/ye* marked inversion constructions was judged to be marginal, cf. (106).

(106) (Many people built a house last year)
(ʔ*Har*) salko bano=i (ʔ*har*) **Kule** (ʔ*har'i*) mano (ʔ*har'i*).
even build.PFV house=BM even Kule even last.year even
"Even KULE built a house last year."
(Consultant comment: *bano=i* indicates that Kule definitely built a house, so you don't expect *har*.)

(107) (Many people built a house last year) (Subj)
(ʔ*Har*) salko bano mano=i (ʔ*har*) **Kule** (ʔ*har'i*).
even build.PFV house last.year=BM even Kule even
"Even KULE built a house last year."

Evaluative readings Like *only*, English *even* can associate with entailment scales as well as scales leading to a rank-order reading. With rank-order readings, *even* is not additive anymore, cf. e.g. (108), in contrast to the parallel example with additive *too/also*. Wagner (2014) suggests for English that there are two *even* operators: a non-additive one attached to the VP, and an additive one when attached to an NP.

(108) (Susan is a master student.) Mary is *even/#also* a PH.D. student.

In Ngamo, these kinds of non-additive readings seem to be available, too, cf. (109)–(110)[22].

(109) Abu la makaranta Bah me (*har*) **malum** (*har'i*).
Abu child school Bah but even teacher even
"Abu is a student, Bah is even a teacher."
(Consultant comment: Bah is not a student. Can be used e.g. if they are age-mates, and Bah went to school earlier, but Abu is just starting now.)

(110) Kule kaja mato, Gizo *har* **salko** **bano**.
Kule buy.PFV car Gizo even build.PFV house
"Kule bought a car, Gizo even built a house."
(Comment: *har* refers to building a house: it is more difficult to build a house. Does not indicate whether other people built a house.)

In addition, *har* can associate with a universal quantifier, e.g. (111)[23]. This is predicted to be odd if the particle always has an additive presupposition, because the antecedent should be

[22] Alternatively, one could suggest that these kinds of examples, like in the *ke('e)* cases, are due to the lack of a parallelity requirement. However, exchanges like (i) show that *har* does not connect two adjacent sentences, as *ke* does.

(i) Q: Did Kule get a grade 2?
A: Kule *har* wa **lamba yo** **mo**ɗ**ĩ**
Kule even get.PFV grade REL one
"Kule even got a GRADE 1."

The difference seems to be that *ke('e)* adds to a prementioned antecedent, whereas *har('i)* just requires a salient expectation.

[23] The scalar particle *har('i)*, just like the additive particle *ke('e)* (cf. footnote 16 above), often co-occurs with a further particle *ma('i)*, e.g. (i), cf. also the section below on scale-reversing contexts. Malte Zimmermann pointed out to me that in Bura (Central Chadic), *ma* is an additive marker that marks the scope for the additive presupposition.

something that isn't entailed by the current utterance.

(111) (We invited Hadiza's classmates, but expected that only some of them would come. We were wrong: all children came.)
Har **shapsu** ma ndano!
even all.of.them MA go.PFV.PL.VENT
"Even ALL OF THEM came."

These readings will be analysed, on a par with *yak('i)*, as involving rank-order scales, while the additive readings involve entailment scales.

In addition, the scale does not always involve likelihood. For example, in (112), adapted from a similar example in Fauconnier (1976), it was not less likely that Nono ate chicken, but rather, *har* seems to emphasize the large quantity of the things that she ate.

(112) (Nono ate a lot yesterday.)
Ha'akok lu oshi, lu temshi, lu kom, kerwo, **har ki lu yabi**.
eat.PFV.TOT meat goat meat sheep meat cow fish even with meat chicken
"She ate goat meat, sheep meat, cow meat, fish, and even chicken."
(Comment: not surprising that she is eating chicken, it just means that it is additional, in addition to the other things that she ate)

Placement on the scale A further issue in the discussion of additive-scalar particles is whether the prejacent must always be the highest element on the scale (Fauconnier, 1976), or just high on a scale (Kay, 1990). Kay presents the following example (Kay, 1990, p.89), suggesting that *even* is not required to mark an absolute endpoint of a scale, because the natural end of the scale in this case would be the finals, not the semi-finals.

(113) Not only did Mary win her first round match, she even made it to the SEMI-FINALS.

Schwenter (2003) and Schwenter and Vasishth (2001) show that some additive-scalar particles mark such an absolute end of scale, whereas others are like *even* in that they can also mark relative ends of scales: (114), from Schwenter (2003, p.127f), shows that the associate of *hasta* needs to be the absolute endpoint of a scale (here: 'finals'), whereas for *incluso* it is enough if it is higher on a scale than its alternatives.

(114) (Did Marta win in the third round?)
A: ¡Pues claro! ¡*Incluso* ganó la **final/semifinal**!
A': ¡Pues claro! ¡*Hasta* ganó la **final/#semifinal**!
"Of course! She even won in the FINALS/SEMIFINALS!'

Har is like English *even* in that its associate need not be an absolute endpoint on a scale, cf. (115).

(i) Har **Asabe** ma esha ne'e.
even Asabe MA call.PFV 1SG
"Even ASABE called me."

Unfortunately, I don't have sufficient data to attempt an analysis of the Ngamo particle. It seems, however, that it is not additive, since the particle also occurs in non-additive examples like example (111).

(115) (Lakka and Bomato are talking about Tida's tennis tournament.)
L.: Did Tida win in the third round?
B: O'o, *har* si tutkok **yo nem ki tekteke=ni** ma'i.
yes even 3SG.M eat.PFV.TOT REL near to end=3SG.M MA
"Yes, he even won in the semifinals!"

This is also shown in example (116), based on a similar example in Schwenter (2003), Schwenter and Vasishth (2001): here, we can see that *har* can be used with an alternative that is not the endpoint on an absolute scale, because it is followed up with a further, even less likely alternative.

(116) (Angito and Burba are talking about a wedding that Burba attended.)
A: Did Nono come to the wedding?
B: Nono yak'i bu, *har* **Jajam** ma ndino ke *har* **Hasha** ma ndino.
Nono only NEG even Jajam MA go.PFV.VENT also even Hasha MA go.PFV.VENT
"Not only Nono, even Jajam came, and even Hasha came."

To sum up, whereas *har('i)* can interact with alternatives ordered on different kinds of scales, it does not require that the constituent it associates with is an absolute endpoint on the scale.

Scale reversing contexts In nonveridical contexts, there are *even*-type readings in which the associate of *even* is considered to be more likely than its alternatives, instead of less likely. These contexts are thus called *scale-reversing*. In Ngamo, both *har* and the scalar particle *lei* are possible with negation (117)–(118). The *har* example in (118) was translated as *Even Jajam didn't come*, suggesting that the *even*-DP outscopes negation in this case. If that is the case, the alternatives would be of the kind *X didn't come*, for different X, and the scale wouldn't actually be reversed: Jajam would be the *least likely* individual to not come for a visit.

(117) *Lei/har* **ada=ni** ma a ɗapshe enini bu
even dog=3SG.POSS.M MA 3SG.HAB follow.HAB speaking=3SG.POSS.M NEG
"Not even his dog obeys him."

(118) (Jajam is grandmother's favorite grandson. So she thought that at least he would visit her, but he didn't come, just like the other grandchildren.)
Lei/Har **Jajam** ma ndino bu.
even Jajam MA go.PFV.VENT NEG
"Not even Jajam came." / "Even Jajam didn't come"
(Consultant comment: better with *lei*)

This conclusion is confirmed by the fact that in other non-veridical contexts, only *lei* is used in order to get the scale-reversed readings. For example, in the counterfactual wish-environment in (119), *lei* but not *har* can be used if Jajam is most likely to visit; and the same is true for the counterfactual conditional in (120)[24].

[24]Similarly, "minimal sufficiency" readings in examples like (i) use *lei*. Replacing *lei* with *yak('i)* yields a reading in which more people have to enter the boat to prevent it from sinking.

(i) Na *lei* **biya bolo** ranko ton gere=s, a siɗito.
If even people two enter.PFV inside boat=DEF.DET.F, 3SG sink=ICP.
"If only/as much as two people get into the boat, it will sink."

(119) (Same context as (118))
Ne nda ka la *lei/#har* **Jajam** a ndutu ba.
1SG want COMP.IRR DUB even Jajam 3SG.SBJV go.SBJV.VENT indeed
"I wish at least Jajam had come."
(Consultant comment: She wants at least Jajam to come, even if others don't come. With *har* other people are supposed to come and even Jajam.)

(120) (Same context as (118))
Ka la na *lei/#har* **Jajam** na ndino=i, ka dikati ka a ina kuyu.
IRR DUB if even Jajam if go.PFV.VENT=I IRR grandmother IRR 3SG.FUT do.FUT happiness
"If at least Jajam had come, the grandmother would have been happy."
(Comment: she would have been happy even if the others didn't come. With *har*, the coming of Jajam is perhaps more important than others, he plays a significant role)

In contrast, the *har*-sentences in (119) and (120) were judged to be appropriate in the context in (121), which doesn't involve scale reversal. Similarly, the question in (122) received slightly different readings depending on the particles that were used.

(121) Jajam lives in New Zealand, he rarely comes to Nigeria anymore. Grandmother invited him, but didn't expect him to come — and he really didn't come, the flight was too expensive.

(122) (The teacher is correcting essays of her class. One student's spelling is very bad, so that the teacher believes that the student cannot spell anything, not even the easiest things.)
Men ngo=i woye *lei/har* **sun=ni** ma a gitik ture ba?
DUB person=LINK DEM even name=3SG.M.POSS MA 3SG.SBJV be.able.SBJV.TOT etch DUB
"Can this guy even spell his own name?"
(Consultant comment: with *lei* it is 'something as easy as his name' — with *har* it means in addition to other peoples names, he cannot write his own name.)

This particle *lei* is the same particle that is used in concessive conditionals, cf. (123). It is also used to form universal quantifiers, cf. section 3.4.2.

(123) Context: Tida and Bomato desperately want to play football, no matter what the weather conditions will be like.
Lei/#Har **na a ham**, nzuni a ina goyou ye'e.
even if 3SG water 3PL 3PL.FUT do.FUT game DEF.DET.M
"Even if it rains, they're going to play the game."
(Consultant comments: With *har*, this means "They will play when there is rain")

Based on the available evidence, it seems as though *har* is what Gast and van der Auwera (2011) call a BEYOND operator: it does not occur in truly scale-reversing contexts. *Lei*, on the other hand, can occur in these contexts.

(Consultant comment: It is a small boat, only one person can enter it)

This is a translation of a German example using *nur* ("only") from Grosz (2011, p. 279). Note that in German, the same reading can be expressed using *auch nur* ("also only"), which is used as a kind of additive-scalar operator in nonveridical contexts.

Meaning contribution of sentences with *har('i)*

A *har('i)*-sentence like (124) has at least the following entailments: the *prejacent*, i.e. the sentence without the particle, an *additive* meaning component, and a *scalar* meaning component. Following the literature on *even* in English, the former is predicted to be asserted, whereas the two latter entailments are predicted to be projective. In the following, it will however be shown that only the scalar component survives embedding under a non-veridical operator, leading to the conclusion that *har('i)* is scalar, but not obligatorily additive.

(124) *Har* **Dimza** salko bano
even Dimza build.PFV house
"Even DIMZA built a house."
→ Dimza built a house (prejacent)
→ Other people built a house (additive)
→ It is surprising that Dimza built a house (scalar)

In nonveridical contexts like (125) and (126)[25], it can be seen that the prejacent, as predicted by its status as an asserted meaning component, does not survive, while the scalar meaning component survives, cf. (126) . The additive inference, however, doesn't survive (125)–(126). Its negation also does not follow, suggesting that this is not an asserted meaning component, but rather that sentences like *Kule har salko bano* are not obligatorily additive.

(125) A bo ndalti=no ka na Kule *har* salko **bano**.
at mouth wish(?)=1SG.POSS COMP.IRR Kule even build.PFV house
"I wish that Kule had even built a HOUSE."
→ Kule didn't build a house.
↛ He built other things
(Comment: not necessary that he built other things)

(126) Ka na Kule *har* salko **bano**, ka Njelu ina kuyu.
If.IRR Kule even build.PFV house IRR Njelu do.SBJV happiness
"If Kule had even built a HOUSE, Njelu would have been happy."
→ Kule didn't build the house
↛ He built other things
→ Building a house is something important/difficult
(Comment: Maybe he built other things, maybe he didn't build other things.)

[25] Testing for projection in negative sentences was complicated by the fact that *har* doesn't seem to take scope below the negation, as also seen in the section on scale reversing contexts above — thus (i) means "Even Dimza didn't build a house", rather than "Not even Dimza built a house".

(i) *Har* **Dimza** salko bano bu.
even Dimza build.PFV house NEG
"Even DIMZA didn't build a house."
→ Dimza didn't build a house
→ Others didn't build a house
→ It is surprising that Dimza didn't build a house

In section 7.2, the additive inference of the particle *har('i)* will be analysed as arising only when the alternatives are ranked on a special scale, similar the prejacent inference of *yak('i)* (cf. also Beaver and Clark (2008) for the prejacent inference of *only*).

Other uses of *har('i)*

This section briefly describes three further uses of *har('i)*, which will be analysed as scalar, too, in section 7.2. The first two uses, *until* and *as far as*, are not commonly assumed to be scalar (but cf. Grubic 2012a,b for a scalar analysis of *kapa* (= 'even', 'until', 'as far as') in Ngizim). The third use, as *already*, receives a scalar analysis following Krifka (2000)'s analysis of *schon* in German.

Until In addition to its use as *even*, *har('i)* can also be used as *until* or *as far as*[26]. It expresses so-called *durative until* (Karttunen, 1974, De Swart, 1996, Giannakidou, 2002, 2003, Condoravdi, 2008), i.e. it is used in sentences describing a state or activity which continues until the point in time indicated by the *until*-phrase, and possibly even further. As the felicity of (127) in the context in (128) shows, the inference that the activity stops at the time indicated is just a conversational implicature, and does not arise in all contexts.

(127) Nono fell asleep at around 11 p.m. and woke up at midnight.
Nono iko monsom **har** tintil bɛɗī.
Nono do.PFV sleep until middle night
"Nono slept until midnight."

(128) Nono fell asleep at around 11 p.m. When we left, at midnight, she was still sleeping. Possibly she slept the whole night.

The fact that the state or activity need not ever end is evidence for the fact that this is a durative use of *until*: for example, (130) has the same meaning as (129), there is no inference that Njelu got married at or shortly after the time of his death. With so-called *punctual* until, this inference would arise (Karttunen, 1974, p.7), leading to the oddity of (130).

(129) Njelu ɗeiko sompor **har** matunni.
Njelu stay.PFV bachelor until die.ICP
"Njelu remained a bachelor until he died."

(130) Njelu iko mandu bu **har** matunni.
Njelu do.PFV wife NEG until die.ICP
"Njelu didn't marry until he died."

[26]Crosslinguistically, this seems to be relatively common. Gast and van der Auwera (2011) mention the following European languages in which an additive-scalar operator either means "until" or "as far as" in addition, or originates from an expression meaning "until" or "as far as": Welsh *hyd yn oed* ("as far as, up or down to (and including), even"), Polish *nawet* (originally "as far as"), Spanish *aun* (originally "until" < Lat. adhuc), Spanish *hasta*, ("as far as", "until"), Swedish *till och med* ("up to and including", "until"), and Russian/Bulgarian *daže* (originally "until"). In their typology, these operators are either "universal" or "beyond", meaning that they can either be used in all contexts, or are restricted to veridical/PPI contexts. In addition, there is Italian *perfino* (originally "until" according to Visconti (2005, p.239)), and Greek *mexri* (durative "until", can sometimes be used as "even", cf. Giannakidou (2007, p.46)); French *jusqu'à*, Romanian *pîna si* ("until", "even"), Czech *dokonce* ("(up) to the end"), and Arabic *hatta* ("until, as far as, up to, even"), (König, 1991, p.165–166). The latter is suggested to be the source of *har* in the languages of this region, e.g. by Ziegelmeyer (2008, p.11), cf. also the discussion in Schuh and Gimba (in prep.), p.16, in the chapter on quantifying and contrastive prepositions and conjunctions.

There are two readings described in Condoravdi (2008) for the interaction between durative *until* and negation, both of which occur with *har*: (i) the *not-throughout* reading, under which the state or activity ends earlier than the time indicated by the *until*-phrase, and (ii) the *throughout-not* reading, under which there is no such state or activity within the considered interval. According to Condoravdi, the negation scopes above the *until*-phrase in the first case, and below it in the second. In Ngamo, this is confirmed by the different position of the negation, which only follows, and thus takes scope over, the adverbial in the first reading.

(131) (Nono fell asleep at around 11 p.m., but then woke up again at 11:43 and stayed awake for the rest of the night.)
Nono iko monsom *har tintil beɗi* **bu**.
Nono do.PFV sleep until middle night NEG
"Nono didn't sleep until midnight." (not-throughout)
(Consultant comment: Her sleeping didn't reach up to midnight.)

(132) (Nono went to bed at around 11 p.m. and tried to sleep but couldn't. When we left, at midnight, she was still trying to fall asleep. Perhaps she didn't manage to sleep all night.)
Nono iko monsom **bu** *har tintil beɗi*.
Nono do.PFV sleep NEG until middle night
"Nono didn't sleep until midnight." (throughout-not)

Thus, whereas the *har*-sentence in (132) is also felicitous in a context where Nono didn't sleep before midnight, and then fell asleep at midnight, which would license *punctual until*, it crucially is also felicitous in contexts like (132), which only allow for durative until.

As far as As (133) shows, *har* also has locative uses as *as far as*, used in sentences describing a motion towards and reaching a location specified by the *har*-phrase. Like in its *until* meaning, the inference that the motion stopped at the location contributed by the *har*-phrase is a conversational implicature, and can be cancelled.

(133) Nono nduko *har* **bo** **dumno**, kai, *har* **nduko hena**.
Nono go.PFV up.to opening door EXCL even go.PFV outside
"Nono went as far as the door, in fact, she even went outside!"

Already Recall from section 4.1.2 that *har('i)* can be used meaning *already*, cf. (134).

(134) Q: Will Kule shoot a duiker?
A: A'a, Kule *har* **basatkok** bo'i.
no Kule already shoot.PFV.TOT bush.duiker
"No, he already shot a duiker."

This was not only found for TAM-focus contexts like (134), but also in other examples, e.g. (135)–(136)[27].

[27]Note that *har* was also used together with the temporal adverbial *kaiso* (= 'now') to mean *still* — this will however be treated as an instance of the usual scalar '*even*' use.

(135) Ba'ano sanito (*har*) **ba**ɗ (*har'i*)
my.daughter age.her already five already
"My daughter is already five years old."

(136) Kule (*har*) **a ka monsom** (*har'i*)
Kule already 3SG IPFV sleep already
"Kule is already sleeping."
(Comment: you are expecting him not to be asleep, it is too early for him to sleep)

Har was not accepted as *already* in negative sentences, compare (137) to (138). In counterfactual contexts, however, it is visible that the mirative meaning component ("surprisingly early") survives, cf. (139).

(137) (We were expecting rain in the evening, but it started raining now, in the afternoon.)
Har a ka ham ndeyi.
HAR 3SG.IPFV IPFV water God
"It is already raining."

(138) (We are expecting rain in the evening. Now, it is afternoon and isn't raining.)
#*Har* a ka ham ndeyi bu.
HAR 3SG.IPFV IPFV water God NEG
(intended:) "It is not yet raining."
This means 'it was not even raining'. You have to say instead 'Dongo a ham ndeyi bu.'
[Dongo = not yet, according to Schuh et al. (2009, p.23)])

(139) Ka na *har* a ham ndeyi, ka ne komɗinno.
if.IRR HAR 3SG water God IRR 1SG get.wet.ICP
(offered translation:) "If it were raining (earlier than expected), I would get wet."

To sum up, *har('i)* can receive an interpretation as *already*, indicating that the event described takes place earlier than expected. In section 7.2, this will be analysed as a further scalar use of *har('i)*, with the difference that the alternatives are ordered on a temporal scale (Krifka, 2000).

6.1.4 Summary

The exclusive particle *yak('i)*, the additive particle *ke('e)*, and the scalar particle *har('i)* have several properties in common: First, each particle has two forms: a pre-focal, shorter form, and a post-focal, longer form. Second, they occur in the same positions: (i) immediately preceding or following the subject; following the VP, either preceding or following any adjuncts or IOs, (ii) immediately preceding any focused (non-subject) term. It is assumed here that the uses in (i) are adverbial, and the use in (ii) is adnominal. The particles can thus all associate with the focus from a distance, and are not subject to any adjacency or locality requirements known from other languages (cf. e.g. Büring and Hartmann, 2001).

The particles differ however with respect to their association behavior: The exclusive particle

(i) Kule *har* kaiso a monsom
Kule even now 3SG sleep
"Kule is still sleeping."

yak('i) does not associate with pre-verbal subjects, but requires the associated subject to be inverted. Non-subjects, in contrast, can remain unmarked when associating with *yak('i)*. This is important evidence for the different information-structural status of subjects and non-subjects in canonical word order. In contrast, the additive and scalar particles can associate with pre-verbal subjects, but are degraded when associating with a focus in *=i/ye*-marking constructions.

Whereas *yak('i)* was very similar in meaning to English *only*, e.g. being able to express both *rank-order* and *complement-exclusion* readings, the additive and scalar particles were found to be very different from their English counterparts. First, the additive particle *ke('e)* and the scalar particle *har('i)*, in contrast to English *also*, do not require the background to be parallel — to the contrary: when there is overt background marking, the backgrounded part must differ. The particle *har('i)* is a multifunctional scalar particle: apart from the *even* readings discussed here, it also has other scale-related interpretations, e.g. as *until/as far as* and as *already*.

The following section discusses the association behavior of the three particles. In particular, it is discussed whether they always need to associate with a focused constituent in their scope. This has bearings on the questions raised in section 2: what is the relation between focus interpretation and association with focus? Do all focus-sensitive particles, crosslinguistically, have to associate with focus, or can they also associate with out-of-focus constituents? It will be shown that *yak'i* obligatorily associates with focus, whereas the associate of *ke'e* and *har'i* does not have to be in focus.

6.2 The association behaviour of *yak'i*, *ke'e* and *har'i*

6.2.1 *Yak'i* conventionally associates with focus

The exclusive particle *yak('i)* is the only focus-sensitive operator discussed in this dissertation that *conventionally associates* with focus. A conventionally focus-sensitive operator like English *only* differs from other focus-sensitive operators in that its dependence on focus is encoded directly in its lexical entry, via the Current Question (cf. the discussion in section 2.2.2). A *free* focus-sensitive operator like English *always*, in contrast, relies on a contextually provided set of alternatives, which can — but crucially doesn't have to — be the Current Question alternatives.

In the work of Beaver and Clark (2003, 2008), the difference between conventionally focus-sensitive operators like English *only* and free focus-sensitive operators like English *always* is tested using several tests: (i) association with unstressable material, (ii) association with phonologically empty material, e.g. traces, and (iii) association with presupposition. As discussed in section 2.2.2, most of these tests rely on the assumption that conventionally focus-sensitive operators c-command a focused constituent that they associate with, while free focus-sensitive operators are more free in their association behavior. This was tested for Ngamo, comparing the exclusive particle *yak'i* (= 'only') with the complex adverbial expression *lei ki tomiya (ke)* (= 'always', 'at any time')[28].

As was discussed in section 4.1, in Ngamo, focus, at least on non-subjects, can remain completely unmarked, e.g. in examples like (140).

[28]One of the speakers sometimes used the Hausa expression *kullum* (= 'always'), which according to Greenberg (1960, p.208) is an expression borrowed from Arabic (*kull yu:m* meaning 'every day'), possibly via Kanuri.

(140) (Kule wanted to build a house and a granary last year)
Kule *yak* salko **bano** mano.
Kule only build.PFV house last.year
"Kule only built A HOUSE last year."

Therefore, it seems to be possible in Ngamo for the conventionally focus-sensitive particle *yak'i* to associate with unmarked material in its scope. As this section shows, *yak'i* is nevertheless less free in its association behavior than *lei ki tomiya*: it cannot associate with dependent IO pronouns, and it cannot associate with empty material.

Association with unstressed material Beaver and Clark (2008, p. 150) note that in English, the freely associating *always* can associate with prosodically dependent pronouns (so-called *leaners*) (141-a), whereas conventionally associating *only* cannot (141-b). Example (141-c) shows that the same sentence with a stressed associate of *only* is fine in this context.

(141) You had many discussions with Sandy, but what I want to know is the extent to which you talked about Fred. Of all the times you talked with Sandy, how often was Fred the person you talked about?
a. I ALWAYS discussed'im with Sandy.
≈ Whenever I discussed someone with Sandy, I discussed Fred.
b. #I ONLY discussed'im with Sandy.
Cannot mean: I only discussed Fred (and no one else) with Sandy
c. I ONLY discussed FRED with Sandy.

This is thus one piece of evidence that there is a difference between the association behavior of *only* and *always*, in that *only* needs a focused associate in its scope.

For Ngamo, this is tested using indirect object pronouns (cf. section 3.4.3). Unstressed indirect object pronouns are usually realized as dependent pronouns cliticized to the verb, without a preposition (142). Indirect object pronouns can also occur in their independent form with the preposition *ki* (= 'to', 'for'), in environments where they are focused (143)–(144).

(142) Q: (What happened?)
A: Shuwa o**no** agoggo.
Shuwa give.PFV.1SG watch
"Shuwa gave me a watch."

(143) Q: (From among Shuwa, Dimza, and you, whom did Kule give a watch?)
A: Si onko(=i) **ki ne'e**.
3SG.M give.PFV=BM to 1SG
"He gave it TO ME."

(144) A: (Why are you wearing this watch? Kule gave it to your son!)
B: A'a, onko=i **ki ne'e**.
no give.PFV=BM to 1SG
"No! He gave it to me!"
B': A'a, o**no**.
no, give.PFV.1SG
"No! He gave it to me!"
(Comment: [B] emphasizes that definitely, the watch was given to him)

As shown in (145), *yak('i)* could not associate with a dependent IO pronoun: these sentences, where possible, were reinterpreted so that the exclusive particle associates with the direct object.

In contrast, in (145-c) *yak('i)* is shown to associate with the independent IO pronoun.

(145) Q: Did Kule give a watch to Dimza and Jajei?
A: O'o, Kule (#yak) on**to** (*yak'i) agoggo (#yak'i)
No Kule only give.PFV.3SG.F only watch only
A': O'o, Kule (ʔyak) onko agoggo=i **ki te** (ʔyak'i).
No Kule only give.PFV watch=BM to 3SG.F only
"No, Kule only gave a watch to HER."
(In the #-marked ones in (b), the speaker commented that 'Jajei is expecting a watch and other things' (i.e. association with the DO); he judged the sentences in (c) marginal because it is difficult to tell who 'te' refers to, it is better if there is intermediate discussion about Jajei.)

Association with empty material A further test by Beaver and Clark (2008, p. 160ff.) used to differentiate free and conventional association with focus is the possibility to associate with something that was either moved or elided. An example of the former is shown in (146), an example for the latter in (147) (from Beaver and Clark, 2008, p. 165 and p. 177, respectively)

(146) a. Fishsticks, I believe Kim always buys.
(Can mean: I believe that whenever Kim buys something, she buys fishsticks)
b. Fishsticks, I believe Kim only buys.
(Cannot mean: I believe that the only thing that Kim buys is fishsticks)

(147) (At the ceremony, some soldiers salute and others fire a round in the air. Some do both. What about Kim and Sandy?)
a. Kim always SALUTES, because Sandy always does
≈ Kim salutes at every ceremony because Sandy salutes at every ceremony.
b. *Kim only SALUTES, because Sandy only does

For the extraction test, topicalization was tested. Whereas (148-a), with a focused resumptive pronoun, receives the intended interpretation on which *yak'i* associates with *Hawwa*, (148-b) does not: here, *yak'i* must associate with the verb. (149), in contrast, was considered to be fine.

(148) a. **Hawwa=s**, ne moishe Daho a esha**=i** **te** *yak'i*
Hawwa=DEF.DET.F 1SG see.HAB Daho 3SG.HAB call.HAB=BM 3SG.F only
"Hawwa, I think Daho only calls HER (nobody else)"
(Can mean: I think that the only person that Daho calls is Hawwa)
b. **Hawwa=s**, ne moishe Daho a esha *yak'i*.
Hawwa=DEF.DET.F 1SG see.HAB Daho 3SG.HAB call.HAB=BM 3SG.F only
"Hawwa, I think Daho only CALLS (she doesn't do anything else)"
(Cannot mean: I think that the only person that Daho calls is Hawwa)

(149) **Hawwa=s**, ne moishe Daho *lei ki tomiya* a esha.
Hawwa=DEF.DET.F 1SG see.HAB Daho always 3SG.HAB call.HAB
"Hawwa, I think Daho always calls (nobody else)."
(Can mean: I think that whenever Daho calls somebody, she calls Hawwa)

Since pronouns can be elided in Ngamo, the elision test was conducted using pronouns. In (150-a), *yak'i* associates with the focused pronoun *te*. When the pronoun is elided, as in (150-b), this sentence was not accepted. The corresponding sentence with *lei ki tomiya* (= 'always') was perfectly felicitous (151) .

(150) a. Hasha hoti maɗɗi a esha Lakka, Gamba me esha**=i** **te** *yak'i*.
Hasha day some 3SG.HAB call.HAB Lakka Gamba but call.HAB=BM 3SG.F only
"Hasha sometimes calls Lakka, and Gambo only calls her."
(Consultant comment: he always calls only her (never anybody else))
b. *Hasha hoti maɗɗi a esha Lakka, Gambo me a esha *yak'i*.
Hasha day some 3SG.HAB call.HAB Lakka Gamba but 3SG.HAB call.HAB only
(intended:) "Hasha sometimes calls Lakka, and Gambo only calls her."

(151) Hasha hoti maɗɗi a esha Lakka, Gambo me *lei ki tomiya* a esha.
Hasha day some 3SG.HAB call.HAB Lakka Gamba but always 3SG.HAB call.HAB
"Hasha sometimes calls Lakka, and Gambo always does."

In this context, a further variant of Rooth (1992)'s example in (152-a) was tested. Rooth used this example to show that what receives the main accent (here *eat*) is not necessarily what associates with *only* (here *rice*). Beaver and Clark (2008, p. 153) however, building on the observation mentioned in von Fintel (1994) that *rice* cannot be replaced by the unstressed pronoun *it* (152-b)[29], argue that there must be some kind of focus marking on *rice* in (152-a), to allow *only* to associate with it.

(152) a. People who GROW rice generally only EAT rice.
b. ??People who GROW rice only EAT it.

In Ngamo, this was tested with elided pronouns instead of unstressed pronouns. As shown in (153), *yak'i* was understood to associate with the verb. Association with the elided direct object was impossible.

(153) Biya ma maranko shinkafa a tishe yak'i
people REL farm.PL.PFV rice 3SG.HAB eat.HAB only
(i) "People that grow rice only EAT it (they don't sell it, or give it out)."
(ii) # "People that grow rice only eat it (nothing else)."

The Ngamo focus-sensitive operator *yak'i* thus seems to pattern like English *only* in that it does not associate with elided material, it seems to require a focused associate in its scope.

Association with presupposition This is a test used by Beaver and Clark (2008) to show a further difference in the association behavior of *always* and *only*. The test is based on the observation that in sentences with quantificational adverbs like *always*, presuppositions triggered by other parts of the sentence usually appear in the restrictor of the q-adverbs.

In (154), the exclusive meaning contribution of *always* in (154-a) is not so different from that of *only* in (154-b): both sentences exclude situations in which Mary completes something which

[29] Von Fintel attributes this test to Susanne Tunstall (p.c.).

is not an exam.

(154) a. Mary always completes EXAMS.
≈ "Always [when Mary completes something]$_{restrictor}$, [Mary completes exams]$_{scope}$"
b. Mary only completes EXAMS.

If the example contains a presupposition trigger like *manage*, *only* and *always* however yield different readings, cf. (155)–(156) (Beaver and Clark, 2008, p.204). The verb *manage* triggers the presupposition that Mary tried to complete her exams. In the most natural reading of (155), the presupposition ends up in the restrictor of *always*, cf. (155-i). The corresponding sentence with *only* in (156), however, can't have this reading. Instead, what is excluded is that Mary managed to complete other things. This is similar to the marginal reading of (155) in (155-ii).

(155) Mary always managed to complete HER EXAMS.
(i) Always [when Mary **tried to complete her exams**]$_R$, [Mary managed to complete her exams]$_{SC}$
(ii) ?Always [when Mary **managed to complete something**]$_R$, [Mary managed to complete her exams]$_{SC}$

(156) Mary only managed to complete HER EXAMS.

This test thus again shows that *always* is more free in its association behaviour, in that it can be influenced by other factors in the sentence apart from the focus/background structure.

As shown in (157), *gìtkô* (= "be able to") has the same presupposition as *manage* in English: the inference that Samaye tried to pass the exams survives embedding under negation.

(157) Samaye *gitko* tina jarabawa=to **bu**.
Samaye be.able.PFV eat.FUT exam=3SG.F.POSS NEG
"Samaye wasn't able to pass her exams"
(Consultant comment: Yes, Samaye tried to pass)

While *yak('i)* does not seem to be able to associate with the presupposition of the verb (158), *lei ki tomiya* can receive the expected reading, cf. (159)[30].

(158) Samaye gitkok tishe=i jarabawa=to *yak'i*.
Samaye be.able.PFV.TOT eat.HAB=BM exam=3SG.F.POSS only
"Samaye only managed to pass HER EXAMS."

(159) Samaye *lei ki tomiya* a gishentik tina=i jarabawa=to.
Samaye always 3SG.HAB be.able.HAB.TOT eat.FUT=BM exam=3SG.F.POSS
"Samaye always manages to pass her exams"
(Consultant comment: this one can mean that whenever she tries, she passes.)

In this respect, too, *yak('i)* behaves like the conventionally associating *only*, whereas *lei ki tomiya* behaves like the freely associating *always*.

[30]It remains to be seen what effect — if any — the TAM forms of the verbs have on this result.

Summary In this section, it was shown that *yak('i)* exhibits characteristic properties of conventional association with focus: it must have focused material somewhere in its scope. This was demonstrated using the tests from Beaver and Clark (2008): First, *yak('i)* associates with stressable independent IO pronouns instead of dependent, cliticized IO pronouns. Second, *yak('i)* cannot associate with elided pronouns. Third, the presuppositions of the prejacent sentence do not change what *yak('i)* associates with, in contrast to q-adverbs in English, which are influenced by the presuppositions of their prejacent. *Yak('i)* thus behaves on a par with *only*.

6.2.2 Ke and har do not conventionally associate with focus

In the preceding section, it was shown that the exclusive particle *yak'i* patterns with English *only* in that it needs a focus in its scope: it neither associates with dependent pronouns, nor does it associate with elided material. The additive particle *ke*, in contrast, does not necessarily need a focused constituent in its scope.

First, *ke* can associate with dependent indirect object pronouns, as shown in (160) for *ke* and (161) for *ke'e*. In this respect, *ke('e)* thus patterns like *lei ki tomiya ke* ("always"), and unlike *yak'i*.

(160) Q: Kule onko agoggo=i ki lo?
Kule give.PFV watch=BM to who
"Whom did Kule give a watch?"
A: Si onko agoggo=i ki Shuwa, (*ke*) si (*ke*) o**no**
3SG.M. give.PFV watch=BM to Shuwa also 3SG.M also give.1SG.DEP
"He gave a watch to Shuwa, and he also gave (it) to me."

(161) Maleka ono agoggo, me moiko ta yaɓtitkok tili Baba, ke te
Maleka give.PFV.1SG watch but see.PFV COMP spoil.PFV.TOT heart Baba and 3SG.F
o**ni** agoggo=s *ke'e*.
give.PFV.3SG.M watch=DEF.DET.F also
"Maleka gave a watch to me, but then she saw that Baba was sad, so she also gave the watch to him."

(162) shows a similar example: here, an independent DO pronoun in an *=i/ye*-marking construction was rejected in favour of a dependent DO pronoun with a totality-extended verb form.

(162) Q: Kule esha=i lo?
Kule call.PFV=BM who
Whom did Kule call?
A: #Kule esha=i Dimza, *ke* esha=i **ne'e**.
Kule call.PFV=BM Dimza also call.PFV=BM 1sg
Kule called Dimza and he also called me
A': Kule esha=i Dimza *ke* eshi**no**.
Kule call.PFV=BM Dimza also call.PFV.TOT.1SG
Kule called Dimza and he also called me

Second, it can even associate with an elided topical subject, cf. (163), a variant of a test from Krifka (1998). This is similar to the elision test shown above. Again, *ke('e)* behaves like *lei ki tomiya*, and unlike *yak'i*.

(163) Q: Ne manoti Hawwa salko bano, Kule me? Si salko miya?
1SG know Hawwa build.PFV house Kule but 3SG.M build.PFV what
"I know that Hawwa built a house, but what about Kule? What did he build?
A: (*Ke*) salko bano (*ke'e*)
also build.PFV house also
"(He) also built a house"

Thus, *ke('e)* does not need to associate with focus, and is thus not conventionally focus-sensitive. This was additionally demonstrated in the section on parallelity above, where it was shown that it can also, for example, associate with topics. *Har('i)* patterns like *ke('e)*: First, it associates with the temporal phrase in its *until* use, independent of the position of the focus. Second, association with a dependent IO pronoun was accepted, cf. (164).

(164) Kule onko agoggo=i ki Shuwa, ke *har* o**no**.
Kule give.PFV watch=BM to Shuwa and even give.PFV.1SG.DEP
"Kule gave a watch to Shuwa, and he even gave (one) to ME."

Third, as discussed in the next section, this is corroborated by its association behaviour with respect to subjects.

6.2.3 Consequences for the status of preverbal subjects

In section 4.1.1, the question whether there is a subject/non-subject asymmetry in Ngamo was discussed, but not fully resolved. Schuh (2005b) noted that focused subjects are inverted. My own elicitation, using felicity judgments, however did not confirm this: subject *wh*-elements as well as the constituents replacing them in the corresponding answer were accepted in preverbal position. My language consultants however consistently indicated that the construction with inverted subjects was preferred in these answers. This section has shown that *yak('i)* is a conventionally associating particle in the classification of Beaver and Clark (2008), i.e. it must associate with a focused constituent in its scope, and that it cannot associate with preverbal subjects. This is an indication that Schuh's assessment of preverbal subjects in Ngamo is correct: they cannot be focused (Grubic and Zimmermann, 2011). The fact that *ke('e)* and *har('i)* can associate with preverbal subjects, cf. e.g. (165), is therefore further evidence that these particles can associate with out-of-focus constituents[31].

(165) Hawwa salko bano, (*ke*) Kule (*ke*) salko bano (*ke'e*).
Hawwa build.PFV house also Kule also build.PFV house also
"Hawwa built a house, and Kule also built a house."

Following e.g. Fiedler et al. (2010), the preverbal subject can be hypothesized to be topical (cf. also Kidwai, 1999). The findings in section 6.1.2 that *ke('e)* was sometimes rejected in predicate focus contexts, because it was understood to associate with the subject, might thus indicate a preference for association with topicalized material. Note that Schuh et al. (2009, p.50) observed that *ke* is sometimes used as a topicalizer.

[31] Note that *ke('e)* and *har('i)*, when immediately following the preverbal subject, are often in their 'pre-focal' form. I assume that this indicates that they adjoin to the vP rather than to the subject DP, and thus do not c-command the subject.

6.2.4 Summary

In this section, *yak('i)* (= 'only') and *lei ki tomiya ke* ('always') were shown to pattern like their English counterparts (Beaver and Clark, 2003, 2008): whereas *yak('i)* strictly requires a focus in its c-command domain, *lei ki tomiya ke* can associate with constituents that are unstressed, elided, or moved out of the c-command domain of the operator. In addition, presuppositions triggered by other parts of the sentence influence the meaning contribution of *lei ki tomiya ke*, whereas that of *yak'i* always only strictly depends on the focus. It was therefore suggested that *yak('i)*, like *only* in English, conventionally associates with focus.

In contrast, *ke* and *har* can associate with out-of-focus constituents: they can associate with unfocusable, dependent pronouns, and with elided constituents. It was therefore proposed that *ke('e)* and *har('i)* do not associate with focus conventionally. This differs from Beaver and Clark (2008)'s proposal for *also* and *even*: they classify these particles as conventionally focus-sensitive.

6.3 Summary and discussion

This chapter answers the following research questions for the alternative-sensitive operators *yak('i)*, *ke('e)* and *har('i)* in Ngamo:

2a) *What are the meaning components contributed by the alternative-sensitive particles?*

2b) *Are the alternatives that are excluded* (yak('i)) *or included* (ke('e)/har('i)) *the alternatives indicated by focus?*

2c) *How does association with focus (or alternatives) interact with focus realization?*

The **meaning components contributed by these operators** are the following: A *yak('i)*-sentence like (166) has an asserted exclusive meaning component, and projective mirative and prejacent inferences. In sentences with *ke('e)/har('i)*, cf. (167)–(168), the prejacent is asserted, and the other additive or scalar inferences are projective. The inferences called *mirative* and *scalar* are very similar: both indicate that some other alternative was expected to be true. In the case of *yak('i)*, a stronger alternative was expected to be true, whereas in the case of *har('i)*, a weaker alternative was expected to be the strongest true alternative.

(166) Dimza *yak* salko **bano**.
Dimza only build.PFV house
"Dimza only built a HOUSE."
→ Dimza didn't built anything else (exclusive)
→ He was expected to build more (mirative)
→ Dimza built a house (prejacent)

(167) Dimza *ke* salko **bano**.
Dimza also build.PFV house
"Dimza also built a HOUSE."
→ Dimza built a house (prejacent)
→ Dimza built something else (additive)

(168) Dimza *har* salko **bano**.
Dimza even build.PFV house
"Dimza even built a HOUSE."
→ Dimza built a house (prejacent)
→ He was expected to build less (scalar)
→ Dimza built something else (additive)

The prejacent inference in (166) and the additive inference in (168) are due to the fact that the kind of scale that the alternatives are ranked on in these examples is an entailment scale: with rank-order scales as in (169)–(170), these inferences either do not arise at all — in the case of the additive inference with *har'i* — or do not survive negation — in the case of the prejacent inference with *yak'i*.

(169) Ne **sakatari** *yak'i*
1SG secretary only
"I'm only a SECRETARY."
→ The speaker is nothing 'better' than a secretary (exclusive)
→ The speaker was expected to be something 'better' (mirative)

(170) Bah **malum** *har'i*.
Bah teacher even
"Bah is even a TEACHER."
→ Bah is a teacher (prejacent)
→ He was expected to be something 'worse' (scalar)

It was also discussed that the additive meaning component in the case of *ke('e)* is harder to accommodate than many other presuppositions. This property is shared by the corresponding English sentences.

Section 6.2 discussed question (2b), **the association behaviour of *yak('i)*, *ke('e)* and *har('i)***. It was found that *yak('i)* conventionally associates with focus: it cannot associate with out-of-focus constituents. *Ke('e)* and *har('i)*, by contrast, do not conventionally associate with focus.

The association behaviour of these particles also gives new **insights into focus realization patterns more generally** (cf. question (2c)): *yak('i)* can associate with unmarked focus, with the exception of unmarked subjects, suggesting that the latter are indeed are out-of-focus. *Ke('e)* and *har('i)*, however, cannot associate with foci in *=i/ye*-constructions. In section 4.3.2, it was suggested that this is due to the fact that *=i/ye*-marked backgrounds are default anaphoric, and that *ke'e* requires *=i/ye*-marked backgrounds to be different from the antecedent.

6.3.1 Questions for the analysis

The QUD account for *yak('i)*, *ke('e)* and *har('i)* to be put forward needs to address the similarities between *yak('i)* and *har('i)* on the one hand, and between *har('i)* and *ke('e)* on the other hand. First, an account of *yak('i)* as a conventionally associating exclusive operator should be formulated based on the account of Beaver and Clark (2008), Coppock and Beaver (2014), which takes the syntax of *yak('i)* into account, e.g. the fact that initial *yak* can associate with constituents within the vP. The fact that *yak('i)* can have rank-order and complement exclusion readings also needs

to be addressed.

The QUD-based analysis of *ke('e)* should address the question what role the QUD plays for a particle that does not conventionally associate with focus. In particular, the analysis should answer the question how the particle associates with alternatives, and why it does not have a parallelity requirement, but instead has a distinctness requirement for backgrounds in *=i/ye* constructions. In addition, the analysis should account for both the subject preference of *ke('e)*, and the different behaviour of additive particles in other languages, mentioned above.

For *har('i)*, a unified analysis for the different uses should be attempted. This analysis also needs to explain the different scales involved for the different uses, and what the similarities and differences with respect to the analysis of *yak('i)* are. In particular, the fact that *har('i)* does not conventionally associate with focus needs to be taken into account.

Finally, the analysis also needs to address what this means for the situation semantic account of focus proposed in section 5, i.e. what role the topic and resource situation play, and how they are influenced by these particles. For *yak'i* and *har'i*, the notion of scalarity should be addressed.

Chapter 7

A QUD-based Analysis of Alternative-Sensitive Operators in Ngamo

In the previous chapter, the focus-sensitive operators *yak('i)* (="only"), *ke('e)* (= "also/too") and *har('i)* (= "even") were introduced. It was found that while the meaning contribution of *yak('i)* was just like that of English *only*, the behaviour of *ke('e)* and *har('i)* was very different. First, association of *ke('e)* and *har('i)* with focus in *=i/ye*-constructions was judged to be only marginally possible. Second, association with focus is not conventional, as predicted by Beaver and Clark (2008): the associate can be an unstressable pronoun, and could even be elided. Third, the use of these particles is much less restricted than that of their counterparts in English: In contrast to English *also*, *ke('e)* does not require the background to be parallel and the focus to be distinct. Instead, it seems that there is a distinctness requirement for *=i/ye*-marked backgrounds. *Har('i)* differs from its English counterpart *even* in that it has several more scalar uses: it can be used as *until*, *as far as*, and *already*. This chapter argues that all of these uses of *har('i)* are scalar and alternative-sensitive, but not all are additive.

The chapter is structured as follows: First, the proposal for the conventionally focus-sensitive exclusive *yak('i)* is presented in section 7.1. This section also discusses the different parameters noted in Coppock and Beaver (2014): (i) the semantic type of the complements that *yak('i)* can take (the *type parameter*), (ii) the question of whether a *yak('i)* sentence can answer all kinds of QUDs or only certain, specialized QUDs (the *question parameter*), and (iii) the kind of scale that alternatives are ranked on (the *strength ranking parameter*). It is shown that *yak('i)* (i) can take TP-, VP- or NP-complements, (ii) can occur in answers to all kinds of QUDs, and (iii) allows for entailment as well as rank order scales. *Yak('i)*, same as its English counterpart *only*, is thus a very general exclusive that can occur in a broad variety of contexts, as long as its associate is in focus.

Section 7.2 then presents a proposal for *har('i)* modeled on the *yak('i)*-proposal. *Har('i)* triggers a presupposition that a (contextual) implication of the prejacent is ranked high on a salient scale. The scales in question are very similar to the ones discussed for *yak('i)*, namely rank-order scales and entailment scales. It is shown that whereas all *har('i)* examples are scalar, just a subset of them is additive. The section also shows how this proposal can be extended to the *until/as far as*

uses, for which a specialized QUD and different type is proposed, and to the *already* use, where special scales are assumed, on which alternatives are e.g. temporally aligned (Krifka, 2000).

Section 7.3 discusses the additive particle *ke('e)*. In contrast to *har('i)*, the additive presupposition is not modelled in form of a contextual implication, but instead is formulated as a requirement on the discourse context of the utterance, a requirement is that there be a salient antecedent about a different topic situation.

7.1 *Yak('i)* (= "only") in a QUD approach

In section 2.1.4, the analysis proposed in Beaver and Clark (2008) for *only* was introduced. In this section, this analysis is adopted for *yak('i)*. In a QUD-analysis of several different exclusive particles in English, Coppock and Beaver (2014) point out that exclusives can differ from each other in the following respects: (i) their scope, i.e. the syntactic category and semantic type of their complements, (ii) the kind of QUD that is answered, and (iii) the nature of the scale that the alternatives are ranked on. What is the same in each case, however, is (i) the presupposition that the prejacent is ranked low on a salient scale compared to the other considered alternatives, and (ii) the assertion that the prejacent is the strongest true alternative.

While *only* is versatile and e.g. can take a range of different complements, answer various kinds of QUDs, and presuppose entailment and rank-order scales, there are other English exclusives that are more specialized. For example, Coppock and Beaver propose that *mere* in (1) hat the following properties: (i) it takes a N' complement of type $\langle e, \langle s, t\rangle\rangle$, (ii) it is restricted to answering the question *'What properties does Peter have?'*, and (iii) the alternative answers are ranked on a scale of 'power to affect people'. To fully describe the meaning of an exclusive particle, these parameters (type, question, and strength ranking) thus have to be investigated.

(1) Peter is a mere mortal.

The following is the basic meaning of *yak('i)* as a propositional operator (Coppock and Beaver, 2014, p.24). For English, Coppock and Beaver reject the possibility that *only* takes propositional complements (Coppock and Beaver, 2014, p.33f.), but for Ngamo, this seems plausible, since *yak* can associate with constituents within the VP from a pre-subject position. It takes a complement of type $\langle s, t\rangle$ and contributes the presupposition that an answer which ranks at least as high as the prejacent on a salient scale is true. Thereby, it excludes lower-ranked alternatives from being the strongest true answer. It also contributes the assertion that no stronger alternative is true, thereby excluding all higher-ranked alternatives[1].

(2) $[\![\text{yak('i)}_{TP}]\!]^S = \lambda p.\lambda w\text{: } \textsc{min}_S(p)(w).\ \textsc{max}_S(p)(w)$, where
(i) $\textsc{min}_S(p) = \lambda w.\ \exists p' \in CQ_S\ [p'(w) \wedge p' \geq_S p]$
(ii) $\textsc{max}_S(p) = \lambda w.\ \forall p' \in CQ_S\ [p'(w) \rightarrow p \geq_S p']$

[1] The scalar strength, in this account, is either rank-order or entailment. Presumably, for a situation account, *lumping* may play a role, too. This is a relation similar to entailment: One proposition lumps another if any situation in w in which the former is true is also a situation in which the latter is true, cf. (i). The propositions themselves do not entail each other.

(i) Lumping (Kratzer, 1989, p.616): For all propositions p and q ∈ P(S) and all w ∈ W:
p lumps q in w if and only if the following conditions hold:
(i) w ∈ p (ii) For all s ∈ S, if s ≤ w and s ∈ p, then s ∈ q.

English *only* can take NPs, VPs, and N′ as complements (3) ((3-a–b) are from Coppock and Beaver (2014, p.27)) . In contrast, *yak('i)* cannot take N′ complements, but NPs, VPs, and TPs (4).

(3) a. Only JOHN invited Mary.
b. John only invited MARY.
c. Mary is the only invitee.

(4) (*Yak*$_{TP}$) Kule (*yak*$_{VP}$) salko (*yak*$_{NP}$) **bano** (*yak'i*$_{NP/VP}$) mano (*yak'i*$_{VP/TP}$)
only Kule only build.PFV only house only last.year only
"Kule only built A HOUSE last year."

For adverbial and adnominal *only*, Coppock and Beaver assume the following denotations[2], which are adopted for *yak('i)*, too. The operator in (5), adapted from Coppock and Beaver (2014, p.27), is derived from (2) by an application of the Geach rule[3].

(5) $[\![\text{yak('i)}_{VP}]\!]^S = \lambda P_{\langle e,\langle s,t\rangle\rangle}.\lambda x.\ \lambda w\text{: } \text{MIN}_S(P(x))(w).\ \text{MAX}_S(P(x))(w)$

(6) $[\![\text{yak('i)}_{NP}]\!]^S = \lambda Q_{\langle\langle e,\langle s,t\rangle\rangle,\langle s,t\rangle\rangle}.\lambda P_{\langle e,\langle s,t\rangle\rangle}.\ \lambda w\text{: } \text{MIN}_S(Q(P))(w).\ \text{MAX}_S(Q(P))(w)$

The operator in (6) takes a generalized quantifier as a complement, and is again derived from (2) by an application of the Geach rule (Coppock and Beaver, 2014, p.32). In both cases, no specialized Current QUD is assumed, and both entailment and "evaluative" scales are possible — although entailment scales are the default[4], in English as in Ngamo.

Due to this definition of the three operators, the outcome of the derivation is the same in each case, cf. examples (7)–(9), namely the one in (10)[5].

(7) *Yak* Kule salko **bano**.
$[\![\text{yak}_{TP}]\!]^S$ ($[\![$Kule salko bano$]\!]^S$)
= $\lambda w\text{: } \text{MIN}_S([\![\text{Kule salko bano}]\!]^S)(w).\ \text{MAX}_S([\![\text{Kule salko bano}]\!]^S)(w)$
= $\lambda w\text{: } \text{MIN}_S(\lambda w.$ Kule built a house in w$)(w).\ \text{MAX}_S\ (\lambda w.$ Kule built a house in w$)(w)$

(8) Kule *yak* salko **bano**.
a. $[\![\text{yak}_{VP}]\!]^S$ ($[\![$salko bano$]\!]^S$)
= $\lambda x.\lambda w\text{: } \text{MIN}_S(\lambda w.$ x built a house in w$)(w).\ \text{MAX}_S(\lambda w.$ x built a house in w$)(w)$
b. $[\![\text{Kule}]\!]^S([\![\text{yak salko bano}]\!]^S)$
= $\lambda P.P(\text{Kule})\ (\lambda x.\lambda w\text{: } \text{MIN}_S(\lambda w.$ x built a house in w$)(w).\text{MAX}_S(\lambda w.$ x built a house in w$)(w))$
= $\lambda w\text{: } \text{MIN}_S(\lambda w.$ Kule built a house in w$)(w).\ \text{MAX}_S\ (\lambda w.$ Kule built a house in w$)(w)$

[2]Coppock and Beaver assume that *only* is ambiguous, i.e. instead of assuming a single lexical entry from which the different uses are derived via type shift, the assumption is that every use of only has a separate lexical entry. I will not discuss this question here, but since I assume for Ngamo that the propositional variant exists, and since the different variants do not differ with respect to the question parameter or the strength ranking parameter, the ambiguity assumption seems less desirable for Ngamo than for English.

[3]Coppock and Beaver (2014, p.27f.) describe the Geach rule as follows: "The Geach rule converts a function f with type $\langle a, b\rangle$ into a function f' with type $\langle\langle c, a\rangle, \langle c, b\rangle\rangle$ of the form $\lambda R.\lambda x.f(R(x))$, where R has type $\langle c, a\rangle$ and x has type c." For VP-only, c is e, for NP-only, it is $\langle e, \langle s, t\rangle\rangle$.

[4]In contrast, N′-only answers a specialized question ("What things have property P?"), with the answers ranked on an entailment scale (Coppock and Beaver, 2014, p.39ff.). This will be ignored here, since *yak('i)* cannot be used as an adjectival exclusive.

[5]Note that Coppock and Beaver (2014) treat all NPs/DPs as generalized quantifiers.

(9) Kule salko *yak* **bano**.

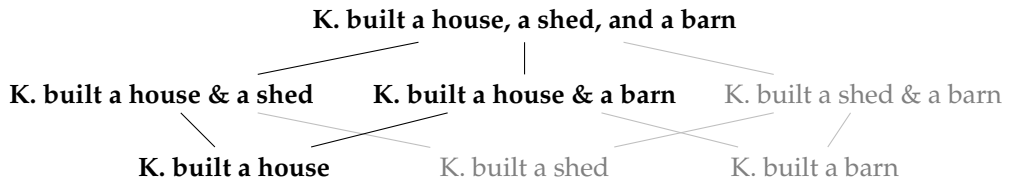
a. $[\![\text{yak}_{NP}]\!]^S$ ($[\![\text{bano}_1]\!]^S$)
$= \lambda Q_{\langle\langle e,\langle s,t\rangle\rangle,\langle s,t\rangle\rangle}.\lambda P_{\langle e,\langle s,t\rangle\rangle}.\lambda w{:}\textsc{min}_S(Q(P))(w).\textsc{max}_S(Q(P))(w)$ ($\lambda R.\lambda w.\exists x[\text{house}(x)(w)$ & $R(x)(w)]$)
$= \lambda P_{\langle e,\langle s,t\rangle\rangle}.\ \lambda w{:}\ \textsc{min}_S(\lambda w.\exists x[\text{house}(x)(w)\&P(x)(w)])(w).\ \textsc{max}_S(\lambda w.\exists x[\text{house}(x)(w)$ & $P(x)(w)])(w)$

b. $[\![\text{yak}_{NP}\ \text{bano}_1]\!]^S$ ($[\![1\ \text{Kule salko}\ t_1]\!]^S$)
$= \lambda P_{\langle e,\langle s,t\rangle\rangle}.\ \lambda w{:}\ \textsc{min}_S(\lambda w.\exists x[\text{house}(x)(w)\&P(x)(w)])(w).\ \textsc{max}_S(\lambda w.\exists x[\text{house}(x)(w)$ & $P(x)(w)])(w)(\lambda x.\lambda w.$ Kule built x in w)
$= \lambda w{:}\ \textsc{min}_S(\lambda w.\exists x[\text{house}(x)(w)\&$ Kule built x in w])(w). $\textsc{max}_S$ ($\lambda w.\exists x[\text{house}(x)(w)$ & Kule built x in w)(w)
$= \lambda w{:}\ \textsc{min}_S(\lambda w.$Kule built a house in w)(w). $\textsc{max}_S(\lambda w.$Kule built a house in w)(w)

(10) $[\![(7)]\!]^S/[\![(8)]\!]^S/[\![(9)]\!]^S$
$= \lambda w.\ \forall p' \in CQ_S\ [p'(w) \rightarrow \lambda w.$ Kule built a house in w $\geq_S p']$, defined iff
$\exists p' \in CQ_S\ [p'(w) \wedge p' \geq_S \lambda w.$ Kule built a house in w].

Thus, any of the sentences in (7)–(9) presupposes a salient QUD *What did Kule build?*, with alternatives ranked on a salient scale, such that the prejacent is the lowest-ranking considered focus alternative. The scale can either be an entailment scale or a rank order scale. For example, in (11), the relevant scale is an *entailment scale*: the focus alternatives are partially ordered[6] so that every considered alternative (in boldface) entails the prejacent *Kule built a house*. Since it is presupposed that there is a true answer that is at least as strong as *Kule built a house*, the alternatives that do not entail the prejacent (in gray) are excluded by the presupposition, under the assumption that the strength relation is an entailment relation. The assertion that *Kule built a house* is the strongest true alternative then excludes all answers stronger than the prejacent.

(11)



Alternatively, the alternatives could be ranked on an *evaluative / rank order scale*, e.g. a scale of importance in (12) . Again, lower-ranked alternatives are excluded because of the presupposition that something at least as strong as the prejacent is true, and higher-ranked alternatives are excluded because of the assertion that the prejacent is the strongest true alternative.

[6] Renans et al. (2011, p.22) mention a further kind of entailment scale, namely an entailment scale with total order. The example they give for this involves numerals: for example in (i) (from Schuh et al. (2009, p.103)), only the prejacent *He gave me two* and stronger alternatives which entail the prejacent (*He gave me three, He gave me four*) are considered, and these stronger alternatives are then excluded by the assertion.

(i) ǒnò **bòlo** yàk'î
give.PFV.1SG.DEP two only
"He gave me only two."

(12)
Kule built a palace

Kule built a compound

Kule built a house

Kule built a shed

When (10) is negated, the negated assertive component now states that not all true alternatives are at most as strong as the prejacent, i.e. that there are stronger true alternatives. Nevertheless, because the presupposition ("There is a true answer at least as strong as *Kule built a house*") survives, still only the alternatives in boldface are considered in (11) and (12). For this reason, the inference that Kule built a house survives when the scale is an entailment scale as in (11), but not in rank order scales as in (12).

Beaver and Clark (2008) note, as discussed in section 2.1.4, that the main discourse function of exclusive particles is their *mirative* meaning component: the "weakening of a salient or natural expectation". This is captured via the presupposition: that the prejacent, the strongest true answer, is the weakest considered answer indicates a speaker assumption about the expectations of the hearer, namely that a stronger alternative is true. This is even the case for examples where there is no weaker alternative to consider, e.g. in sentences like *He found only* ONE *flower*. Here, *one* is already the lowest alternative on an absolute scale, the scale of natural numbers. Nevertheless, the sentence expresses that an expectation that more flowers would be found was disappointed. The mirative component thus does not depend on the exclusion of lower-ranking alternatives, but on the status of the prejacent as being the lowest considered alternative.

As Coppock and Beaver (2014, p.24) note, the presupposition does not constrain the context set, but rather the discourse context, and is thus an unusual presupposition. I understand it as representing the speaker assumptions about the alternatives in the CQ before the utterance, namely, that all alternatives are at least as strong as the prejacent. This means that, like in the discussion of the existence assumption in chapter 5.3.2, the CQ with its alternatives are attributed by the speaker to the hearer. This will be further discussed in section 7.4.2

Since the meaning contribution of *yak('i)* is dependent on the CQ, it is conventionally focus-sensitive, i.e. it needs to associate with a focus in its c-command domain. As discussed in section 6.2, this is only required for *yak('i)*, not for *ke('e)* and *har('i)*, which do not conventionally associate with focus. The fact that *yak('i)* cannot associate with preverbal subjects is taken as evidence that preverbal subjects are out-of-focus in Ngamo (cf. the discussion in sections 4.1.1 and 6.2).

To sum up, *yak('i)* can take TP, VP or NP complements. The proposed denotations, adopted from Coppock and Beaver (2014), yield the same meaning at the propositional level. Sentences with *yak('i)* do not answer any specialized QUD, and the scales that the alternatives are ranked on are rank order or entailment scales, whereby there is a preference for the entailment scale interpretation. This is summed up in table 7.1, where "(entailment)" means that all scales are possible, but entailment scales are the default interpretation. As Beaver and Clark (2008)'s analysis is adopted, this analysis captures the conventional association of *yak('i)* with focus by the restriction that the alternatives quantified over are always provided by the CQ.

Form	Cat.	Type of the complement	Question	Strength
yak('i)$_{TP}$	TP	$\langle s,t\rangle$	—	(entailment)
yak('i)$_{VP}$	VP	$\langle e,\langle s,t\rangle\rangle$	—	(entailment)
yak('i)$_{NP}$	NP	$\langle\langle e,\langle s,t\rangle\rangle,\langle s,t\rangle\rangle$	—	(entailment)

Table 7.1: Summary of *yak('i)* variants

7.2 *Har('i)* (= "even") in a QUD approach

It was shown in section 6.1.3 that *har('i)* is a multifunctional scalar particle, which, apart from its use as "even", can also be used meaning "until", "as far as", and "already". In this section, I will argue that it is inherently scalar, presupposing that a (contextual) implication of the utterance is ranked high on a salient scale. Additivity is not a part of the meaning of *har('i)*, but arises in special entailment scale cases. In the following, first the notion of *contextual implication* is discussed, then the proposal for the core meaning of *har('i)* and examples for the different uses are presented.

I assume, following Gast and van der Auwera (2011)'s analysis of *even*, that for *har('i)*, it is often the relation between a *contextual implication* of the utterance and its alternatives that plays a role. A contextual implication of an utterance is an entailment of the utterance together with its context (Wilson and Sperber, 2004, Gast and van der Auwera, 2011): this entailment follows from the Common Ground as soon as it is updated with the new utterance's assertion and presupposition. Assume, for example, that *Kule built a shed and a barn* is in the CG, and that somebody utters (13). It then follows from this utterance together with the CG that Kule built a house, a shed, and a barn. I will assume that in the additive reading of (13), it presupposes a scale as in (14), with this contextual implication of the utterance ranking higher on an entailment scale than its alternative(s). Here, only one alternative is important: the alternative that was in the CG before. Like in the case of *yak('i)* above, the mirative meaning component is modeled by assuming that the true alternative is at the endpoint of the range of alternatives considered. This yields the interpretation that the true alternative is *unexpectedly strong* compared to its alternative(s).

(13) Kule *har* salko **bano**.
Kule even build.PFV house
"Kule even built a HOUSE."

(14) **Kule built a house, a shed, and a barn**
|
Kule built a shed and a barn

Same as with *yak('i)*, the scale can however also be rank order scale. Then example (13) is not additive anymore, i.e. it does not follow that Kule built other things. Instead, there is just an evaluative component, that building a house is in some way more impressive, or costly, or complicated, etc. than building something else. The corresponding scale is just like the rank order scales for *yak('i)*, with the difference that the prejacent (or a contextual implication of it) is ranked high on the scale, cf. e.g. (15). Note that Gast and van der Auwera (2011) assume only entailment scales for English *even*, i.e. they would assume the scale in (16) for the evaluative use. However, since the range of possible scales seems very similar to the scales assumed for *yak('i)* above, which are not all entailment scales, I do not adopt their assumption here.

(15)
Kule built a house
|
Kule built a barn
|
Kule built a shed

(16) *How important was the building that Kule built?*
Kule built a house ⟶ It was extremely important
Kule built a barn ⟶ It was very important
Kule built a shed ⟶ It was important

The particle ***har('i)*** is proposed to be a scalar particle with the core meaning in (17)[7]: A sentence with *har('i)* asserts the prejacent, and presupposes that a (contextual) implication of the prejacent is ranked high on a salient scale. The definition of (contextual) implication is given in (18). It includes contextual implications, that follow from the Common Ground after dynamic update with the new proposition, but not from either alone, and also includes normal implications of the new proposition. This means that it allows for examples where it is the prejacent that ranks high on a salient scale, as e.g. in (15).

(17) $[\![\text{har('i)}_{TP}]\!] = \lambda p.\lambda w\text{: } \exists q[(\text{C-})\textsc{impl}(q)(p) \wedge \forall q' \in \text{ALT}(q)\ [q'(w) \rightarrow q \geq q']\text{. } p(w)$

(18) $(\text{C-})\textsc{impl} = \lambda q_{\langle s,t\rangle}.\lambda p_{\langle s,t\rangle}.[\text{CG} \nrightarrow q\ \&\ [\text{CG} \cup p] \rightarrow q]$

Har('i), like *even* under the standard view, does not contribute anything to the truth-conditional meaning of the sentence[8]. With respect to its non-truthconditional meaning component, the account here however differs from other proposals for additive-scalar particles, in several ways.

First, it differs from most accounts (e.g. Horn 1969, Karttunen and Peters 1979, Rooth 1985, König 1991, Wilkinson 1996, Schwenter and Vasishth 2001, i.a.) in the fact that it doesn't assume an additive meaning component. In this respect, it thus follows Fauconnier (1975, 1976), Krifka (1992), Rullmann (1997), Gast and van der Auwera (2011), who do not assume a special additive meaning component for *even*.

Second, the account presented here does not assume a fixed kind of scale, i.e. neither a scale of likelihood, as assumed e.g. in Karttunen and Peters (1979), nor an entailment scale, as assumed e.g. in Fauconnier (1976), Kay (1990). Rather, like with *only* in Beaver and Clark (2008)'s account, the scale can either be a rank-order or an entailment scale.

Third, following Gast and van der Auwera (2011), it is not the prejacent but its (contextual) implication that ranks high. This has the advantage of allowing for a semantic entailment scales like (14) rather than resorting to rules which state that 'Kule built a house' entails its lower-ranked alternatives, e.g. 'Kule built a barn'[9]. The current theory seems empirically adequate, because in scales like (14), where the highest-ranking alternative is an actual contextual implication of the prejacent, the example needs *Kule built a shed and a barn* to be given. In the scale in (15), where the highest-ranking alternative is the prejacent itself, there is no such requirement on the

[7]The presupposition of *har('i)* is very similar to the MAX component above. If *har('i)* were conventionally focus-sensitive (as Beaver and Clark (2008) suggest for English *even*) and would always presuppose a ranking of the prejacent on a salient scale, this would be equivalent to (i).

(i) $\lambda p.\lambda w\text{: } \textsc{max}_S(p)(w)\text{. } p(w)$

[8]Schwarz (2005) assumes an analysis for *einmal/auch nur*, i.e. the two kinds of German NPI *even*, under which they have a truth-conditional effect that the particle *sogar*, which can occur in positive contexts, does not have: they entail that the other considered alternatives are false. He notes that, as far as he knows, there is only one other account, namely Lycan (1991), which proposes a truth-conditional impact of additive-scalar particles (Schwarz, 2005, p.127).

[9]As formulated in Kay (1990, p.64) and, implicitly, in Fauconnier (1975, p.361).

context. The two different kinds of scales also explain why in scales like (14), the lower-ranked alternatives are true, whereas in scales like (15), the lower-ranked alternatives are false.

Fourth, with respect to the question of whether the highest-ranking alternative needs to be a scalar end-point, as suggested in Fauconnier (1976), and dismissed for *even* by e.g. Kay (1990), Schwenter and Vasishth (2001), Schwenter (2003), this analysis again borrows heavily from the analysis of *only* in Beaver and Clark (2008): it assumes that it outranks all *considered* alternatives, but not necessarily all possible alternatives (cf. also the discussion on "placement on the scale" in section 6.1.3). This means that the set of alternatives yielded by ALT in (17) is restricted to a set of considered alternatives, e.g. by taking into account which alternatives the addressee considers relevant and expectable.

Fifth, due to the fact that *har('i)* does not associate with focus conventionally (Beaver and Clark, 2003, 2008), the alternatives referred to need not be the focus alternatives — they can be other salient alternatives. For this reason, the lexical entry in (17) does not refer to the CQ directly, but more generally to contextually given alternatives.

Since *har('i)* can occur in the same kinds of positions as *yak('i)*, it is necessary to formulate lexical entries for VP- and NP-*har('i)*, cf. (19)–(20), which are also arrived at via the Geach rule.

(19) $[\![\text{har('i)}_{VP}]\!]^S = \lambda P_{\langle e,\langle s,t\rangle\rangle}.\lambda x.\ [\![\text{har('i)}_{TP}]\!]\ (P(x))$

(20) $[\![\text{har('i)}_{NP}]\!]^S = \lambda Q_{\langle\langle e,\langle s,t\rangle\rangle,\langle s,t\rangle\rangle}.\lambda P_{\langle e,\langle s,t\rangle\rangle}.\ [\![\text{har('i)}_{TP}]\!]\ (Q(P))$

As in the case of *yak('i)* above, this leads to the desireable result that the following three sentences, with *har('i)* at different positions, receive the same denotation. During the derivation of a sentence with har_{VP} or har_{NP}, there is an intermediate step at which har_{TP} is applied to the prejacent (marked in bold font in (21)–(22)). The result is therefore the same as in the har_{TP}-example in (23).

(21) [[Kule har salko bano]] = $[\![\text{har}_{VP}]\!]$ ([[salko bano]])([[Kule]])
= $[\lambda P_{\langle e,\langle s,t\rangle\rangle}.\lambda x.\ [\![\text{har('i)}_{TP}]\!]\ (P(x))]$ ($\lambda x.\lambda w.$x built a house in w) (Kule)
= **$[\![\text{har('i)}_{TP}]\!]$ (λw.Kule built a house in w)**

(22) $[[[\text{har bano}]_1$ 1 Kule salko $t_1]] = [\![\text{har}_{NP}]\!]$ ($[\![\text{bano}_i]\!]$)($[[1$ Kule salko $t_i]]$)
= $[\lambda Q_{\langle\langle e,\langle s,t\rangle\rangle,\langle s,t\rangle\rangle}.\lambda P_{\langle e,\langle s,t\rangle\rangle}.\ [\![\text{har('i)}_{TP}]\!]\ (Q(P))]$ ($\lambda R.\lambda w.\exists x[\text{house}(x)(w) \,\&\, R(x)(w)]$) ($\lambda x.\lambda w.$Kule built x in w)
= $[\![\text{har('i)}_{TP}]\!]$ ($\lambda R.\lambda w.\exists x[\text{house}(x)(w)$ & $R(x)(w)](\lambda x.\lambda w.$Kule built x in w))
= $[\![\text{har('i)}_{TP}]\!]$ ($\lambda w.\exists x[\text{house}(x)(w)$ & Kule built x in w])
≈ **$[\![\text{har('i)}_{TP}]\!]$ (λw.Kule built a house in w)**

(23) [[Har Kule salko bano]] = $[\![\text{har}_{TP}]\!]$ ([[Kule salko bano]])
= $[\lambda p.\lambda w$: $\exists q[$(C-)IMPL$(q)(p) \wedge \forall q' \in \text{ALT}(q)\ [q'(w) \rightarrow q \geq q'].\ p(w)]$ ($\lambda w'$. Kule built a house in w')
= λw. Kule built a house in w
defined iff $\exists q[$(C-)IMPL$(q)(\lambda w.$ Kule built a house in w) $\wedge\ \forall q' \in \text{ALT}(q)\ [q'(w) \rightarrow q \geq q']$

In (14) and (15) above, two common kinds of scales for *even* examples were presented: entailment scales and ranking scales. While I believe that additive *har('i)*-examples always involve entailment scales, there are entailment scales that do not involve additivity. For example, (24) is not additive, i.e. it does not presuppose that anybody else came apart from all of the classmates. Nevertheless,

the strongest true alternative (*All of them came*) entails the expected alternative(s) (e.g. *Some of them came*), so that the scalar strength would be entailment.

(24) (We invited Hadiza's classmates, but expected that only some of them would come. We were wrong: all children came.)
Har **shapsu** ma ndano!
even all.of.them MA go.PFV.PL.VENT
"Even all of them came."

A further kind of example are those cited in the literature which aim to show that alternatives are not ranked on a scale of unexpectedness, e.g. (25) from Fauconnier (1976). Fauconnier observes that (25) can be felicitously uttered even if George's drinking of armagnac is not more surprising than his drinking of rum, the French particle *même* (= "even") just marks that the sum or range of drinks that George had was surprisingly large[10]. The same was found for Ngamo, cf. example (26). I assume for this case, following Kay (1990, p.72), that the relevant proposition ranked high on the salient scale is the whole sentence, and that the considered lower-ranking alternatives are ones in which Nono ate less, e.g. *Nono ate goat meat, sheep meat, and cow meat*.

(25) Georges a bu un peu de vin, un peu de cognac, un peu de rhum, un peu de calva, et même un peu d'armagnac.
"George drank a little wine, a little brandy, a little rum, a little calvados, and even a little armagnac."

(26) (Nono ate a lot yesterday.)
Ha'akok lu oshi, lu temshi, lu kom, kerwo, *har* **ki lu yabi**.
eat.PFV.TOT meat goat meat sheep meat cow fish even with meat chicken
"She ate goat meat, sheep meat, cow meat, fish, and even chicken."
(Comment: not surprising that she is eating chicken, it just means that it is additional, in addition to the other things that she ate)

Examples (24) and (26) are thus examples where the salient scale is an entailment scale, but there is no additive meaning component: the prejacent itself ranks high on the scale and entails its alternatives, no additional information from the context is needed, only the host sentence itself.

In the following, a further use of VP-*har('i)* is presented, which uses special kinds of scales on which alternatives are aligned with times.

Har('i) as *already*

Har('i), at least *har('i)* taking a VP complement, is sometimes translated as *already*. For this use, Krifka (2000)'s focus-sensitive analysis is adopted and adapted, in order to formulate a unified analysis for the different uses of *har('i)*[11]. Krifka proposes an analysis for German *schon* (= "already") as a focus-sensitive operator which triggers the presupposition that all other considered alternatives are ranked lower on a salient scale than the expressed alternative. For examples similar to (27), Krifka notes that the salient scale is as in (28). Like in the proposal for the *even* readings above, this ranking accounts for the mirative meaning component, i.e. the inference

[10] Kay (1990) seems to suggest that the same holds for the English translation.
[11] Thanks to Anne Mucha (p.c.) for pointing out the relevance of this paper to me.

that a lower-ranked alternative was expected to be true.

(27) Ba'ano sanito (*har*) **ba**ɗ (*har'i*)
my.daughter age.her already five already
"My daughter is already five years old."

(28)
My daughter is 5
My daughter is 4
My daughter is 3
...

There are two differences between Krifka's account and the one used here for *har('i)*: First, Krifka assumes that the focused constituent and its alternatives are ranked on a salient scale, rather than propositions, as the *har('i)* account suggests. Second, Krifka adopts the suggestion of Löbner (1989), Michaelis (1996) that the mirative component, e.g. the inference that in (27) that five years is older than expected, is a conversational implicature. In the account I assume for *har('i)*, the mirative meaning follows from the fact that the true alternative is on the border of the range of considered alternatives. The mirative component is thus predicted to be projective, and non-cancellable[12].

The corresponding German examples with *schon* (= 'already') are already acknowledged in the literature as focus-sensitive uses (Löbner, 1989, p.184, i.a.). Krifka however proposes that examples like (29) are focus-sensitive, too, with the focus being on the polarity of the sentence, and the alternatives being {p, ¬p}. These alternatives are temporally aligned, with the negative alternative preceding and thus being ranked lower than the positive alternative, cf. (30)[13].

(29) Kule (*har*) a ka monsom (*har'i*)
Kule already 3SG IPFV sleep already
"Kule is already sleeping."

(30)
Kule is sleeping
Kule isn't sleeping

Like in other *har('i)* uses, the higher-ranked alternatives, i.e. Kule's sleep or awakeness at later times, are simply not considered. The lower-ranked alternative is considered, but is not the strongest true alternative. There is no requirement that the lower-ranked alternatives be true, i.e. (29) is compatible with contexts in which there was no previous interval of Kule being awake. Krifka notes that this is desireable in the light of examples like (31) (Mittwoch, 1993), where there is no previous interval of A's husband not being an American citizen, cf. (32) for the same example in Ngamo.

(31) A: I've applied for American citizenship.
B: Is your husband also applying?
A: He is already American, for he was born in America.

[12] I do not have the Ngamo data to show this, but I believe that it is case for English: The sentences in (i) still give rise to the inference that five years is older than expected, and sleeping now is sleeping earlier than expected. (ii-a) is not felicitous with *already*, unless someone who is not part of "us", for example the addressee, expected Kule to be awake now. In contrast, (ii-b), a presupposition test where the mirative inference is added before the test sentence, is fine.

(i) a. I wish my daughter were already 5 years old.
b. If Kule were already sleeping, Jajei would be happy.

(ii) a. Kule is (?already) sleeping, and all of us expected Kule to be asleep now.
b. All of us expected Kule to be awake now, but he is already sleeping.

[13] Krifka notes that Löbner (1999) also calls this type of *schon* a "sentence focus particle".

(32) Asabe knows that Hadiza is applying for an American citizenship, and asks whether her husband is also applying. Hadiza answers:
Si *har* ɗeinni ngo=i Amurika — Si le'i=s Amurika.
3SG.M HAR sit(?).ICP person=LINK America 3SG.M birth=DEF.DET.F America
"He is already American — he was born in America."
(Comment: possible even if he had no other citizenship.)

Krifka's analysis also predicts something else: the expectation that the prejacent will hold at some later time (König, 1977, Ippolito, 2007). The alternatives in the examples discussed here are aligned on a temporal scale[14]. For example, in (27), the age of the daughter is naturally aligned with time, since she is e.g. four before she is five. In (29), the two alternatives are also aligned with time, so that the alternative *Kule isn't sleeping* is earlier than *Kule is sleeping*. When (29) is negated, the prejacent *Kule is sleeping* is negated. Because there are only the two polar alternatives, we thus know that the other, more expected, alternative *Kule isn't sleeping* is true. The presupposed scale in (30) with its temporal order *Kule isn't sleeping* < *Kule is sleeping* however survives negation. The expectation that Kule will sleep sometime in the near future follows from this presupposed salient scale (cf. also Krifka's discussion of *not yet / noch nicht*, the negated form of *already/schon* — he however analyses this expectation as an implicature).

In the elicited examples, *har('i)* always takes a VP complement, i.e. the VP-*har('i)* defined above can be used. For example, (29) is calculated as follows, with *q* then being the prejacent *Kule is sleeping*, ranked higher on a salient scale than its alternative *Kule isn't sleeping*.

(33) [[Kule har a ka monsom]] = [[har_{VP}]] ([[a ka monsom]])([[Kule]])
= [$\lambda P_{\langle e,\langle s,t\rangle\rangle}.\lambda x.$ [[har('i)$_{TP}$]] (P(x))] ($\lambda x.\lambda w.$x is sleeping in w) (Kule)
= [[har('i)$_{TP}$]] (λw.Kule is sleeping in w)
= [$\lambda p.\lambda w{:}\exists q[$(C-)IMPL(q)(p)$\wedge\forall q' \in$ALT(q)[q'(w)$\rightarrow$q$\geq$q'].p(w)] ($\lambda$w'.Kule is sleeping in w')
= λw. Kule is sleeping in w,
defined iff $\exists$q[(C-)IMPL(q)(λw. Kule is sleeping in w) $\wedge$ $\forall$q' $\in$ ALT(q) [q'(w) $\rightarrow$ q $\geq$ q']

To sum up, when *har('i)*$_{VP}$ is used with an *already* reading, the only effect of *har('i)* is a presupposition that a (contextual) implication of the prejacent ranks high on a salient scale. In the cases considered, the alternatives are aligned with times, so that lower-ranked alternatives are earlier alternatives. This presupposition yields two inferences which are also projective: (i) the *mirative* inference ("This is happening surprisingly early"), which is argued to be due to the endpoint position of the true alternative on the scale, and (ii) the *future actualization* inference ("This will hold at some future time") that is visible especially in non-veridical contexts. The latter is due to the presupposed temporal alignment of alternatives, which reflects the expectations of the discourse participants, and is not found with any other scales[15], while the mirative inference is

[14] In other examples, the alternatives are aligned with something else than time, e.g. "degrees of membership or prototypicality" (Umbach, 2009, p.6), cf. (i) (König, 1977, p.183). It is not sure whether *har('i)* is possible in these contexts.

(i) Paul ist noch gemäßigt. Peter ist schon radikal.
"Paul is still moderate. Peter is already radical."

[15] For this reason, accounts that write this inference into the lexical entry of *already* as a presupposition (e.g. König, 1977, Ippolito, 2007) need to assume something different for *marginality* uses of *already*, which have no such inference, cf. (i).

(i) a. Subcompact cars are already dangerous
b. If subcompact cars were already dangerous, I would buy a compact car.

expected to occur with all uses of *har('i)*.

Har('i) as *until/as far as*

I discuss these readings together, since they are very similar. In both cases, the particle acts as a preposition, taking either a nominal or a clausal complement. In the *until* example in (34), the relevant (contextual) implication is one where the state or durative eventuality expressed by the verb is stated to hold from an implicit startpoint to the point indicated by the *until*-phrase. The alternatives ranked lower on a scale in this case are intervals with the same startpoint, but earlier ending times, so that the alternatives to the (contextual) implication are all of the form 'Nono slept from t_{start} to X'[16]. The scale in these cases is an entailment scale, cf. (35). Note that stronger (i.e. later) alternatives are not truth-conditionally excluded, they are simply not considered. This means that (34) is compatible with a context in which Nono slept longer, but not with a context in which she woke up before midnight.

(34) Nono iko monsom *har* **tintil** **be**ɗ**i**.
Nono do.PFV sleep until middle night
"Nono slept until midnight."

(35) **N. slept (from t_{start}) until 12**
N. slept (from t_{start}) until 11
...

With the *as far as* interpretation, the considered alternatives are closer alternatives. For example, in (36), the alternatives are of the form 'Nono went from l_{start} to X', with the considered answers ranked on an entailment scale, cf. (37).

(36) Nono nduko *har* **bo** **dumno**.
Nono go.PFV up.to opening door
"Nono went as far as the door."

(37) **N. went (from l_{start}) to the door**
N. went (from l_{start}) to the hallway
...

When the sentence is negated, there are two different interpretations, depending on whether the negation is inside or outside the scope of the *har('i)*-phrase[17]. In (38-a), the negation scopes higher than *har('i)*. The alternatives, in this case, are all positive (i.e. of the form *Nono slept from t_{start} to X*), and are ranked as assumed above. The effect of the negation is that the truth of the prejacent is negated, i.e. the strongest considered alternative is asserted to be false. Weaker, lower-ranking alternatives are still under consideration, leading to the inference that Nono slept up to a point in time preceding midnight. In (38-b), the negation is in the scope of the *until*-phrase. I assume that here, the alternatives are of the form *Nono didn't sleep from t_{start} to X*, for different X.

(38) a. Nono iko monsom *har* *tintil* *be*ɗ*i* **bu**.
Nono do.PFV sleep until middle night NEG
"Nono didn't sleep until midnight."
≈ Nono slept from t_{start} to a time preceding midnight. (not-throughout)

[16] See also a similar analysis for the particle *kapa* in Ngizim in Grubic (2012a,b).

[17] In Ngamo, the scope of the negation is more transparent than in English. Condoravdi (2008) assumes the following scope for the different readings:

(i) Nono didn't sleep until midnight.
a. NOT-THROUGHOUT: Past(Not((Until(12))(Nono-sleep)))
b. THROUGHOUT-NOT: Past(Until(12)(Not(Nono-sleep)))

b. Nono iko monsom **bu** *har tintil bɛɗi*.
Nono do.PFV sleep NEG until middle night
"Nono didn't sleep until midnight."
≈ From t_{start} to midnight, Nono didn't sleep. (throughout-not)

A unified proposal would look as follows. First, *har('i)*, in this use, modifies adverbials of type $\langle\langle s,t\rangle,\langle s,t\rangle\rangle$, (e.g. $\lambda p_{\langle s,t\rangle}.\lambda s.$ *i*=INTERVAL(t_{start}, *midnight)* & AT(*p(s),i)*). Second, following Coppock and Beaver (2014), the requirement that the alternatives are of a special form[18], and that the scale is an entailment scale is part of the presupposition of the particle. The lexical entry would thus look like (39): a further variant of *har('i)* formed by application of the Geach rule, but one with a presupposition that the other uses of *har('i)* do not share. Since TP-*har('i)* adds no requirement of its own as to the nature of the scale or the alternatives involved, the presupposition proposed in (39) does not clash in any way with the requirements of TP-*har('i)*.

(39) $[\![\text{har('i)}_{Adv1}]\!] = \lambda P_{\langle\langle s,t\rangle,\langle s,t\rangle\rangle}.\lambda Q_{\langle s,t\rangle}.\ [\![\text{har}_{TP}]\!](P(Q))$,
defined iff (i) and (ii) both hold:
(i) ENTAILMENT(≥). (Entailment scale requirement)
(ii) ALT ⊆?t[λw. i =INTERVAL(t_{start},t) & AT(Q(w),i)]] (ALT ⊆ Until when did Q hold?)

It is however unclear whether this unified proposal is possible. This proposal assumes that *har('i)* is merely a modifier adding a presupposition, without any truth-conditional meaning contribution. It thus predicts that the sentence would be felicitous without the particle *har('i)*, albeit with a different meaning (*at* instead of *until*). This was not tested for Ngamo. In the available data, no such sentences without any prepositions were found, it is therefore very unlikely that this unified proposal is on the right track. Instead, I propose a different, but related, analysis of *har('i)* in its *until/as far as* reading. Under this analysis, *har('i)* is a true preposition, with a truth-conditional meaning contribution. It takes two arguments: a DP or CP argument denoting a (temporal) interval or (locative) region, and a propositional argument, and states that the proposition holds for all subintervals or subregions from an implicit startpoint to the specified interval/region (40)[19], and presupposes a ranking on a salient scale as shown in (35) and (37) above. This proposal has the required truth-conditional meaning, but is also related to the other *har('i)* uses above.

(40) $[\![\text{har('i)}_{DP/CP}]\!] = \lambda t.\lambda Q_{\langle s,t\rangle}.\ [\![\text{har('i)}_{TP}]\!]\ (\lambda s.\ \forall t'[t_{start} \leq t' \leq t]\ \text{AT}(Q(s),t'))$
defined iff (i) and (ii) both hold:
(i) ENTAILMENT(≥). (Entailment scale requirement)
(ii) ALT ⊆?t[λs.∀t'[$t_{start} \leq t' \leq t$] AT(Q(s),t')]] (ALT ⊆ Until when did Q hold?)

To sum up, *har('i)*, like *yak('i)*, can take TP, VP or NP complements, and presupposes that a (contextual) implication of the prejacent is the highest-ranking considered alternative on a salient scale. The alternatives often, but not necessarily, correspond to the alternatives in the CQ, i.e. the particle does not associate with focus conventionally. The admissable scales, like in the *yak('i)* examples, seem to be entailment or rank-order scales. The scale is relative rather than

[18] In Coppock and Beaver (2014), this is a requirement on the current QUD, but since *har('i)* is not conventionally focus-sensitive, this is formulated as a requirement on the form of the scalar alternatives here, without requiring that these are focus alternatives.

[19] This is inspired by the proposals in De Swart (1996, p.232), Condoravdi (2008, p.639) for durative *until*, which are however not focus-sensitive.

absolute, in the terminology of Schwenter and Vasishth (2001), and Schwenter (2003), i.e. the scale in principle allows for the existence of stronger alternatives, but they are not considered. The mirative meaning component of *har('i)* is due to the fact that the (contextual) implication is on the borderline of the considered alternatives.

The use of *har('i)* as *already* shows that the scales can also be more complex: in these cases, VP-*har('i)* is used, and the scales are alternatives aligned with times. Apart from this difference in scale, the same *har('i)* meaning can be used in these cases. The available data do not show whether TP- and NP-*har('i)* can associate with alternatives aligned on such scales.

Finally, in the case of *har('i)* as *until/as far as*, there is a further kind of complement that *har('i)* takes, namely temporal intervals or locative regions. The relevant contextual implication is one where a state, durative eventuality or motion continues up to the endpoint indicated by the *har('i)*-phrase. The other considered alternatives, in this case, are alternatives in which it continues up to an earlier or closer endpoint. The alternatives are ranked on an entailment scale, and seem to allow only for a certain kind of alternatives, namely those that answer *until when?* or *up to where?*-questions.

The different *har('i)* variants are summarized in table 7.2. Again, I assume that VP-, and NP-*har('i)* can in principle be derived from TP-*har('i)* by type-shift. CP/DP-*har('i)*, with the *until/as far as* meaning, however warrants its own lexical entry: it has a different, but related meaning.

Form	Cat.	Type of the complement	Question	Strength
har('i)$_{TP}$	TP	$\langle s,t\rangle$	—	—
har('i)$_{VP}$	VP	$\langle e,\langle s,t\rangle\rangle$	—	—
har('i)$_{NP}$	NP	$\langle\langle e,\langle s,t\rangle\rangle,\langle s,t\rangle\rangle$	—	—
har('i)$_{CP/DP}$	CP/DP	i/r	*Up to where/when does Q hold?*	entailment

Table 7.2: Summary of *har('i)* variants

7.3 *Ke('e)* (="also") in a QUD approach

In chapter 6, it was shown that *ke('e)* (= "also, too, and") differs from its English counterpart *also* in many respects: first, there is no requirement that the background be parallel and the focus distinct, cf. (41), where both are distinct, and (42), where the focus is parallel. The background can also be parallel (43), if it is not background-marked with *=i/ye*, but, importantly, *ke('e)* is dispreferred with *=i/ye*-marked parallel backgrounds (44). *Ke('e)* can also be used as a sentence coordinator, to connect entirely unparallel sentences[20]. Thus, while *ke('e)* requires a salient antecedent, it also poses an distinctness requirement on this antecedent: if the background of the host sentence is *=i/ye* marked, the background of the antecedent has to differ.

(41) **Kaja** **mato** =i *Hawwa*, **salko** **bano** =i *ke* *Kule*.
buy.PFV car BM Hawwa build.PFV house BM also Kule
"Hawwa bought a car, Kule built a house."

[20]To coordinate DPs, *kì* (= 'and', 'with') is used.

(42) Salko bano=i **Kule**, kaja mato=i *ke* **Kule**.
build.PFV house=BM Kule buy.PFV car=BM also Kule
"Kule built a house, and Kule also bought a car."

(43) Kule salko **makaranta** mano, Kule *ke* salko **bano** mano
Kule build.PFV school last.year Kule also build.PFV house last.year
"Kule built a SCHOOL last year, and Kule also built a HOUSE last year."

(44) **Salko bano**=i Hawwa, # **salko bano**=i *ke* Kule.
build.PFV house=BM Hawwa build.PFV house=BM also Kule
"Hawwa built a house, and Kule built a house, too."

Second, *ke('e)*, in contrast to what was proposed for English *also/too* in Beaver and Clark (2008), does not conventionally associate with focus. In many cases, it associates with topics, instead. For this reason, its associate is not obligatorily in focus, and there should be no direct reference to the focus alternatives provided by the CQ in the lexical entry of *ke('e)*.

For *ke('e)*, the following proposal is made: the particle has no truth-conditional meaning contribution. It presupposes, however, that there is a salient antecedent. This salient antecedent is required to have a different topic situation. (45-a) is the basic, propositional version of *ke('e)*, where ∘ is the overlap relation[21]. A VP- and DP-version are presented in (45-b–c).

(45) a. $[\![\text{ke('e)}_{TP}]\!] = \lambda p.\lambda s.\ p(s)$,
defined iff there is a salient antecedent $q \in \text{ALT}$ such that $\neg\ (\iota s'\ \text{EX}(?q)(s') \circ \iota s''\text{EX}(?p)(s''))$
b. $[\![\text{ke('e)}_{VP}]\!] = \lambda P_{\langle e,\langle s,t\rangle\rangle}.\lambda x.\ [\![\text{ke('e)}_{TP}]\!]\ (P(x))$
c. $[\![\text{ke('e)}_{NP}]\!] = \lambda Q_{\langle\langle e,\langle s,t\rangle\rangle,\langle s,t\rangle\rangle}.\lambda P_{\langle e,\langle s,t\rangle\rangle}.\ [\![\text{ke('e)}_{TP}]\!]\ (Q(P))$

The anaphoric nature of additive particles was noted e.g. in Kripke (2009), Geurts and van der Sandt (2004), and Tonhauser et al. (2011), where they are likened to pronouns or other anaphoric expressions. Kripke (2009, p. 373–375) proposes a requirement that there is an antecedent in what he calls the *salient or active context*, in contrast to the *passive context*. Thereby, he does not make explicit how the salient context is formalized, but seems to assume that it is more complex than simply a part of the Common Ground (Kripke, 2009, p.375)[22].

Malte Zimmermann (p.c.) notes that since topic situations are attained via the CQ, this proposal has the consequence that there is indirect reference to the CQ in the lexical entry of the particle. This reference to the CQ does not make the particle conventionally focus-sensitive, however, since it does not make use of the focus alternatives provided by the CQ via its resource situation, but merely uses the CQ to identify the topic situation.

Anaphoricity

The previous proposition needs to be *salient*, i.e. pre-mentioned or otherwise clearly in the consciousness of the discourse participants. This requirement captures the fact that it is not

[21] This relation can be defined as follows: $x \circ y$ iff $\exists z(z \leq x \wedge z \leq y)$ (Varzi, 2015)

[22] Geurts and van der Sandt (2004), in contrast, propose that additives trigger two presuppositions: one which is hard to accommodate because its descriptive content is low, which simply states that there is another individual, and one which is a kind of an existential presupposition due to the focus/background structure, and is easy to accommodate. Since focus does not trigger an existential presupposition in Ngamo, and *ke('e)* does not conventionally associate with focus, this account is not suitable for *ke('e)*.

enough that it follows from the Common Ground that some other proposition is true, but instead, the antecedent proposition must be immediately (or at least recently) pre-mentioned (cf. the section on accommodation below for a discussion of this). In this, *ke('e)* differs from the (additive-)scalar *har('i)*, which places no such requirement on the previous discourse. Note, furthermore, that like in English (Geurts and van der Sandt, 2004, p.29), the antecedent can be modalized, cf. (46). For theories which assume that additive particles trigger the presupposition that some other focus alternative is true, examples like (46) are problematic, since *it will rain tomorrow* is not asserted to be true, and thus cannot be a presupposition of the *ke('e)* sentence — it is merely given[23]. Thus it is neither necessary nor sufficient that the antecedent proposition be in the CG. For this reason, the proposal given (45) for *ke('e)* does not require that the antecedent be true, but merely that it be pre-mentioned.

(46) Bei a ina ham ɗoshi, ke a ina ham **tuha** *ke'e*.
maybe 3SG do.FUT water tomorrow and 3SG do.FUT water day.after.tomorrow also
"It is possible that it will rain tomorrow, and it will also rain the day after tomorrow."

Parallelity

The only restriction placed upon the antecedent is that its topic situation should differ from that of the current proposition in some way, i.e. it should answer another QUD (or the same QUD, but about a different topic situation). There is no requirement that the coordinated sentences be parallel in any way. For the sentential coordinator *and* in English and *und* in German, it was observed that the connected sentences are often, but not always, parallel in their information-structure, cf. e.g. Jacobs (1988, p.100), who presents the examples in (47), using an acute accent to mark the accent pattern. Jacobs contrasts examples like (47-a) showing parallel patterns in the coordinated clauses, with examples like (47-b), which is odd because the coordinated clauses are not parallel enough, since *yesterday* and *reluctantly* cannot be focus alternatives. Jacobs however notes that (47-c) is fine, even though the accent patterns and clause structures of the coordinated sentences are different.

(47) a. Gérda hat Otthéinrich eingeladen, *und* Luíse (hat) Kláus (eingeladen).
Gerda has Ottheinrich invited and Luise has Klaus invited
"Gerda invited Ottheinrich, and Luise (invited) Klaus,"

b. ?Síe ist géstern gekommen, *und* ér ist úngern gekommen.
she is yesterday come and he is reluctantly come
"She came yesterday and he came reluctantly."

c. Ér war es, der die Scheune angezündet hat, *und* dann ist er auch noch in
he was it who the barn set.fire.to has and then is he also in.addition in
den Kéller eingebrochen.
the cellar broke.in
"It was him who set fire to the barn, and he also broke into the cellar."

[23] Malte Zimmermann (p.c.) points out that this proposal would make the prediction that the antecedent can be negated. In English, this does not seem possible, cf. (i).

(i) It won't rain tomorrow, and # it will *also* rain the day after tomorrow.

For Ngamo, I don't have any data like this, this will have to be checked in future fieldwork. If Ngamo patterns like English, a possible solution would be to pose a further requirement on the antecedent, concerning its polarity.

For Ngamo, sentences like (48) were accepted, which, like (47-c), do not have a parallel information structure, which suggests that parallelity is not a requirement of *ke('e)*.

(48) **Salko bano** =i Hawwa, Kule *ke* **salko bano**.
build.PFV house BM Hawwa Kule also build.PFV house
"HAWWA built a house and Kule also built a house"

While Jacobs (1988, p.101) seems to conclude that there is a kind of lexical ambiguity between a 'focussing' and a 'non-focussing' *und*, the parallelity of (47-a) and oddness of (47-b) is attributed to general discourse requirements in the current approach: Two felicitous adjacent sentences always address some common superquestion in the QUD hierarchy, even if it is a very general one (e.g. *What happened since we last met?*). Many examples that Jacobs presents as examples for the parallelity of coordinated sentences are *contrastive topic* examples, which are analysed in QUD approaches as sharing the immediate superquestion of their Current Question (e.g. *Who invited who?* in (47-a)), cf. Büring (2003), and thus have an independent reason for their parallelity. Examples like (47-c) also address some common higher QUD, e.g. here it might be something like *Why don't you trust him?*, but the lack of information-structural parallelity and the use of discourse-topic shifting devices like *dann* and *noch* indicate that it is neither the Current Question, nor its superquestion, but a higher QUD. (47-b) is therefore odd because its parallelity seems to suggest a common CQ-superquestion (e.g. *Who came when?* or *Who came how?*), but there is no question of this kind that would make any sense. It is thus predicted that the judgments of (47) would stay the same even if the sentences were just juxtaposed, without *und* inbetween. The parallelity found in many examples of sentence coordination is thus not due to a requirement of *und/and*, but due to general discourse-structural requirements.

Inacceptability of *ke'(e)* with parallel *=i/ye*-marked backgrounds

The parallelity of backgrounds is not only not mandatory with *ke('e)*, parallel *=i/ye*-marked backgrounds are even judged to be marginal, cf. (49). Recall that *=i/ye*-marking was shown in section 4.2.2 to be only pragmatically exhaustive, just like unmarked sentences with narrow focus — exhaustivity of *=i/ye*-marked sentences can thus not explain this pattern. The pattern can however be explained if one makes two assumptions: First, that the two sentences that *ke('e)* connects need to be about different topic situations, and second, that *=i/ye* marked backgrounds are default anaphoric: if there is a salient prementioned referent of the required kind, the *=i/ye*-marked constituent preferably refers back to it. The extent to which *ke('e)* sentences with parallel backgrounds are possible has to do with the possibility of accommodating the necessary topic situation shift. For example, (49) is deemed to be possible if a temporal shift is accommodated.

(49) ??Salko bano=i Hawwa, (*ke*) salko bano=i (*ke*) Kule
build.PFV house=BM Hawwa also build.PFV house=BM also Kule
(intended:) "HAWWA built a house, and KULE also built a house."
(Comment: **possible if it means "it is Hawwa that built the house *and then* Kule built a house", not at the same time.**)

This is similar to the default anaphoricity of *=i/ye* definite determiners, cf. (50). Here, the first *=i/ye* definite can be used deictically, it need not be anaphoric. The second *=i/ye* definite is interpreted anaphorically, since there is a prementioned individual of the required kind — it cannot be used

deictically, to refer to an individual that is pointed at. Only if the definite description is changed to an expression meaning *the other book*, which also uses the *=i/ye* marker, but overtly marks a shift in reference, can it be used deictically.

(50) Shuwa is standing in front of her bookshelf, and says, pointing:
??Ne kaja takarda**=s** ki Potiskum, takarda**=s** me ki Borno
1SG buy.PFV book=DEF.DET.F at Potiskum book=DEF.DET.F but at Maiduguri
(intend.:) "I bought this book in Potiskum, and this book in Maiduguri."
(Consultant comment: even though you are pointing, it should be "takardas ... takardas so'otos" [(='the book ... the other book'] — **'takardas' sounds as though you are still talking about the same book**.)

To sum up, the presupposition of *ke('e)* that there is a prementioned proposition about a different topic situation can explain the Ngamo judgments about possible antecedents: first, the givenness requirement can explain why the antecedent is not accommodatable, and need not be entailed by the Common Ground. Second, the requirement that the previous proposition should be about a different topic situation explains why parallel *=i/ye* marked backgrounds are only marginally accepted, since they preferably make anaphoric reference to a previous situation. The fact that sentences conjoined with *ke('e)* are not entirely unrelated is due to general discourse requirements of coherence and relevance, as is independently assumed in the QUD framework.

7.4 Alternative-sensitive particles in a situation semantic account

So far, this chapter has shown a proposal for alternative-sensitive particles in Ngamo. It was proposed that the scalar particles *har('i)* (= "even") and *yak('i)* (= "only") presuppose that the considered alternatives are ranked on a scale in a certain way, and assert that the prejacent (or its contextual implication) is the strongest true alternative. The scalar ranking, with the prejacent at one end of the range of considered alternatives, leads to a projective mirative inference. In the case of *yak('i)*, where the prejacent ranks low on the scale of considered alternatives, the mirative inference is that the prejacent is surprisingly weak. In the case of *har('i)*, where the prejacent (or its contextual implication) ranks high on the scale of considered alternatives, the mirative inference is that this alternative is surprisingly strong. Other projective inferences arise when the scale is an entailment scale: for *yak('i)*, the prejacent becomes a projective inference; for *har('i)*, a projective additive inference can arise in some cases. *Ke('e)* just presupposes that there is a salient antecedent in the previous discourse.

Section 5.2.2 noted that there are at least two situations that play a role for *wh*-questions, and thus for focus alternatives: the topic situation, that the question is about, and the resource situation, which restricts the alternatives under consideration. Section 7.4.1 discusses the role that topic situations and resource situations have for the use of alternative-sensitive particles. Section 7.4.2 briefly discusses scales.

7.4.1 Alternative-sensitive particles, topic situations, and resource situations

Any sentence answers the current question under discussion, and thus inherits its topic situation from this question. Since *yak('i)* is conventionally focus-sensitive, the alternatives that *yak('i)* interacts with come about as described in chapter 5 for focus alternatives: the focus-background marking — if it is marked at all — indicates the current QUD, and thereby uniquely describes the topic situation of the sentence. The resource situation restricts the focus alternatives to those that are relevant for the addressee.

In the previous sections, the scalar particles *yak('i)* (= "only") and *har('i)* (= "even", "as far as", "until", "already") were analysed as further restricting the considered alternatives via their presuppositions: *yak('i)* presupposing that only alternatives that are at least as strong as the prejacent are considered, and *har('i)* presuppositing that only alternatives that are at most as strong as the prejacent (or a contextual implication of it) are considered. Scalar, conventionally associating particles like *yak('i)* therefore influence the resource situation, as do non-conventionally associating particles like *har('i)*, in those cases when they associate with focus.

Reopening a question with respect to a new resource situation Note that for scalar particles[24], this restriction can be temporary: a question can be re-opened with respect to a larger resource situation, i.e. previously unconsidered alternatives can be added. In the case of *only* and its counterparts, weaker alternatives can be newly considered, whereas in the case of scalar particles like *even*, stronger alternatives can be newly considered. When a previously unconsidered alternative is stated to be the strongest true answer, this is done via cancellation, cf. (51). For example, in the first clause in (51-a), a contextual implication of *John came* — e.g. *Mary, Peter, Sam and John came* — is presupposed to be the strongest considered alternative on an entailment scale. In the second clause, the scale of considered alternatives is broadened to now include e.g. *Mary, Peter, Sam, John and Bill came* as the strongest considered alternative.

(51) a. Even John came, and even Bill.
b. John stayed until 9 O'clock, he even stayed until 10 O'clock.
c. John walked as far as the door, he even walked outside.
d. John is already three years old, he's even already four years old.

When the new strongest true answer does not entail the previous one, only suspension is possible (52). This is e.g. the case in all kinds of *only* examples, where the newly considered answer is weaker than the previous one (e.g. (52-a–b)), and e.g. in *even* examples where the scale is not an entailment scale. For *har('i)*-like particles, which restrict alternatives in a way that higher-ranking alternatives are not considered, cancellation and suspendability can thus be used as a test for the status of the scale: *entailment* vs. *rank-order*.

(52) a. Only 3 students came, perhaps/ # in fact even only 2.
b. Kule is only a masters student, perhaps/ # in fact even only a bachelor student.
c. John is even a Ph.D. student, perhaps/# and even a PostDoc.

In contrast, neither cancellation nor suspension is a possible means to state that the speaker believes that an alternative that was previously under consideration, but excluded as strongest true answer, is now the strongest true answer, cf. (53)-(54).

[24] In the case of *ke('e)*, the CQ cannot be reopened this way, cf. section §7.3 above.

(53) a. John stayed until 10 O'clock, # in fact/# perhaps (only) until 9 O'clock.
b. John walked as far as the door, # in fact/# perhaps he walked (only) to the doorway.
c. John is already four years old, # in fact/# perhaps (already) three years.

(54) a. Only 2 students came, # in fact/# perhaps (even) 3.
b. Kule is only a bachelor student, # in fact/# perhaps (even) a master student.
c. John is even a PostDoc, # in fact/# perhaps even a Ph.D. student.

Note that the oddity of the suspension cases is not due to the fact that the new answer contradicts the assertion of the previous answer, since this was fine in the examples in (52) above. Instead, it is due to the fact that the new answer entails that an alternative that was previously considered and discarded as the strongest true alternative is in fact the strongest true alternative.

Note that this discussion leads to the conclusion that the notion of 'Inquiry Termination', suggested by Velleman et al. (2012) for particles like *only* and clefts, is not on the right track. Velleman et al. define Inquiry Terminating constructions as constructions which "mark an answer to the current question under discussion as a maximal answer, thereby resolving the question and terminating it as an active line of inquiry" (Velleman et al., 2012, p.443). Whereas *only* does assert that the answer is a maximal answer to the CQ, this doesn't mean that the question is necessarily terminated, and cannot be reopened again. It can be reopened to consider weaker alternatives, but this is a suspension-type reconsideration, not cancellation-type.

To sum up, scalar particles restrict the resource situation so that only certain alternatives are considered[25]. The question can retroactively be reconsidered, with new, previously unconsidered alternatives. For *har('i)*-like particles, the way in which this is done, i.e. whether the previously given answer is cancelled or suspended, is an indication of whether the scale the alternatives are ranked on is an entailment scale or a rank-order scale. Cancellation/suspension is not possible if previously considered alternatives are reconsidered.

Reopening a question with respect to a new topic situation It was just suggested that a question can be reopened in order to add new, previously unconsidered focus alternatives, i.e. with a different resource situation. In addition, a question can be reopened with respect to a new topic situation. In this case, previously discarded alternatives, and even previous answers, should be available again. For example, if a shift in topic situation is made overt, e.g. by stating that one is talking about an entirely different place or time, previously discarded alternatives are available again.

In section 6.1.2, two possible cross-linguistic differences between purely additive particles were identified: (i) whether they conventionally associate with focus or can associate with topics, too, and (ii) whether they enforce that the non-associated part, i.e. the background or comment, is parallel to that of the antecedent. The well-described focus-sensitive particles, like English *also*, seem to conventionally associate with focus, and require parallelity of the background (Beaver and Clark, 2008, Kripke, 2009). German *auch/AUCH* can associate with either topic or focus, and requires parallelity. *Ke('e)* in Ngamo, in contrast, can associate with either topic or focus, and has no parallelity requirement. For additive particles which conventionally associate with focus, a QUD approach would usually assume that a previously answered question is reopened (e.g. Beaver and Clark, 2008, p.42). As already discussed in §5.3.1, I suggest that a previously

[25]Note that the discussion of *har('i)* in this section concentrated on cases where it does actually associate with focus. I assume that, although it does not necessarily associate with focus, it however does in the default case, since it relies on contextually given alternatives, and the CQ, via the resource situation, provides such alternatives.

answered question can either be reopened by including further alternatives (i.e. it can be posed again with a different resource situation, (55-a)), or it can be asked about a different topic situation (55-b), in which case the resource situation can differ, too.

(55) a. Who s_{r_1} ... in s_{t_1}? Who s_{r_2} ... in s_{t_1}?

b. Who s_{r_1} ... in s_{t_1}? Who s_{r_2} ... in s_{t_2}?

Additive particles seem to differ with respect to whether they require a shift in resource situation or in topic situation. Particles which conventionally associate with focus and require the background to be parallel require a shift in resource situation, i.e. the question is reopened with respect to new focus alternatives, while the topic situation stays the same. Particles which allow for association with topics, or do not require parallel backgrounds, allow for a shift in topic situation, too: a question can be reopened with respect to a different topic situation, or a new, related, question can be posed. Thus, additive particles all require a salient antecedent, but differ in the way the QUD of the host sentence is related to that of the antecedent. In this chapter, *ke('e)* was proposed to belong to the kind of additive particles that require that the host sentence is about a new topic situation.

7.4.2 Alternative-sensitivity and attributed hearer belief

In section §5.3.2, it was suggested that a more hearer-centered account than a Common Ground model is necessary to account for all information-structural phenomena, for example, to account for what expectations a speakers attributes to a hearer. Here, it will be argued that the notion of *mirativity* belongs to the focus phenomena which would benefit from such an account. The particles *yak('i)* (= "only") and *har('i)* (= "even", "already", "until", "as far as") have a projective mirative meaning component, e.g. in (56-a), Kule built surprisingly few things (or something surpringly easy, depending on the scale the alternatives are ranked on), whereas in (56-b), Kule built surprisingly many things / something surprisingly difficult.

(56) a. *Yak* Kule salko **bano**.
only Kule build.PFV house
"Kule only built a HOUSE."

b. *Har* Kule salko **bano**.
even Kule build.PFV house
"Kule even built a HOUSE."

The analysis presented in the previous sections follows that of Beaver and Clark (2008) in assuming that the mirativity follows from the fact that the strongest true alternative is at the border of the considered alternatives: e.g. in (56-a), *Kule built a house* is the weakest considered alternative, in (56-b), the (contextual) implication of the prejacent, e.g. *Kule built a house and a shed* is the strongest considered alternative. This analysis therefore suggests that the restriction of focus alternatives made via the resource situation, in order to consider only alternatives that are *relevant* to the hearer, simultaneously also restricts the considered alternatives to those that are expected by the hearer.

In section 5.3.2, it was suggested that, by attributing a QUD to the hearer, the speaker also attributes all presuppositions of the QUD to the hearer, cf. (57).

(57) **Attributed hearer-belief** When an utterance u indicates that the speaker attributes a covert move m to a hearer, it simultaneously indicates that she assumes any presupposition $\underline{m}$ of move m to meet or exceed a high threshold θ according to the hearer's epistemic state.

Scalar focus-sensitive particles are thus a further device to signal what kinds of presuppositions are attributed to the hearer. For example, in the case of *only*, it is MIN component: the expectation that at least the prejacent is true. Thus, (58) presupposes that at least John came, i.e. this has a probability higher than θ.

(58) Only JOHN came.
Attributed CQ: Who came?

Since the speaker is assumed to keep track of the epistemic state of the hearer in this way, it would make sense to assume that the relative probability that the different focus alternatives have for the hearer before (58) is uttered is kept track of, too. Thus, the attributed hearer-belief that the prejacent is less probable than its considered alternatives could be modelled in this way, too.

Such a separation between the mirative component and the position on the scale is desireable in the light of proposals, e.g. the one in Velleman et al. (2012, p.443) for clefts in (59), which assume focus alternatives to be scalar endpoints without, at the same time, assuming that they indicate a mirative meaning component. The proposal in (59) is the mirror image of Beaver and Clark (2008)'s proposal for *only* in (60): it presupposes that at most the prejacent is true, and asserts that at least the prejacent is true, thereby excluding all other focus alternatives.

(59) It was MARY who laughed.
= λw: MAX_S(laughed(m))(w).MIN_S(laughed(m))(w)

(60) Only MARY laughed.
= λw: MIN_S(laughed(m))(w).MAX_S(laughed(m))(w)

In contrast to *only*, however, no mirative meaning component is assumed for (59), even though the meaning components assumed are exactly the same. Since this is thus a proposal in which the position at an endpoint of the range of considered alternatives does not amount to mirativity, accounts of this kind would benefit from assuming that mirativity is not due to the position of the prejacent on the scale, but attained differently.

7.5 Summary

This chapter presented the proposals for the alternative-sensitive particles *yak('i)* (= "only"), *ke('e)* (= "also"), and *har('i)* (= "even"). Following the proposal in Coppock and Beaver (2014) for exclusive particles in English, the scope of the different particles is, as far as possible, represented by different "Geached" versions of the lexical entries of the particles. For *yak('i)*, due to its similarity with *only*, the account for *only* in Coppock and Beaver (2014) is adopted. The particles *ke('e)* and *har('i)* are however very different from their English counterparts, and are thus treated differently: *har('i)*, which can also mean *until*, *as far as*, and *already*, is analysed as a scalar particle without any additive meaning component. *Ke('e)*, which can also function as a sentence connector similar to *and* in English, is proposed to have a very weak additive presupposition, requiring that there is an antecedent with a different topic situation in the immediate context. Note that the accounts presented for *ke('e)* and *har('i)* depart from the similarity usually assumed between counterparts of *also* and *even* crosslinguistically: *ke('e)* and *har('i)* are assumed to be very different:

while the former is purely additive, and thus dependant on a salient antecedent in the discourse, no additivity is assumed to be encoded in the lexical entry of the latter at all. Instead, an additive meaning arises when the alternatives are ordered on certain kinds of scales. The only similarity assumed between *ke('e)* and *har('i)* is that they are not conventionally focus-sensitive, a property that they also share with other particles, e.g. the exclusive operator *mo*ɗ- (= "alone").

It was proposed that alternative-sensitive particles are a device to provide more information about the assumed resource situation, in the case of *yak('i)* and *har('i)*, which restrict the focus alternatives, and about the topic situation, in the case of *ke('e)*, which indicates a shift in topic situation. In addition, it was proposed that these particles provide information about what the speaker considers the hearer to believe, by indicating some of the presuppositions attributed to the hearer by the speaker.

Chapter 8

Conclusion

The main questions of this thesis concerned the correspondence between (i) focus and focus realization, and (ii) focus and association with focus in Gudi Ngamo (West Chadic). In this section, I sum up the main findings of the thesis (§8.1), give an outlook to future work that arises from this (§8.2), and then discuss some consequences of the main proposals (§8.3).

8.1 Summary

8.1.1 Descriptive findings

On the descriptive side, this thesis provides an in-depth discussion of the focus/background marking in Gudi Ngamo, and of three alternative-sensitive particles, *yak('i)*, *har('i)*, and *ke('e)*.

Concerning **focus/background marking**, it was found that when non-subject terms are focused, the focus/background distinction is optionally marked with a background marker *=i/ye*, cf. (1). When the focus/background distinction is not morphosyntactically marked, there seems to be no prosodic marking, either. For subject focus, subject inversion and use of an overt background marker is obligatory (2), whereas predicate focus is usually unmarked (3).

(1) (What did Kule build in Potiskum?)
   a. Kule salko **bano** a Potiskum
      Kule build.PFV house at Potiskum
   b. Kule salko **=i bano** a Potiskum
      Kule build.PFV BM house at Potiskum
      "Kule built A HOUSE in Potiskum."

(2) (Who built a house?)
   Salko bano **=i Kule**
   build.PFV house BM Kule
   "KULE built a house."

(3) (What did Kule do?)
   Kule **basa bo'i**.
   Kule shoot.PFV bush.duiker
   "Kule shot a/the duiker."

Ngamo is thus an interesting addition to the repertoire of focus/background marking strategies found crosslinguistically. Much of the literature on information structure in intonation languages centers on the question of whether the intonation patterns found in these languages can be explained by recourse to the notion of focus alone, givenness alone , or whether both are required (e.g. Kratzer and Selkirk, 2010, Krifka, 2008, i.a.). It has been argued for English that grammatical

marking of givenness might be sufficient to explain the accenting patterns, and, consequently, that grammatical marking of focus is superfluous (Schwarzschild, 1999, Büring, 2007). Chapter 4, after introducing the focus realization patterns found in Ngamo, showed that the *=i/ye* marker actually marks backgrounded material, irrespective of its status as *given* or *new*, and of pragmatic factors such as noteworthiness. This section showed that while backgrounded material can occur after the focus, outside of the scope of the background marker, no part of the focus can occur in the scope of the background marker. This chapter also showed that the semantic difference between unmarked and *=i/ye* marked constructions does not correspond to differences found crosslinguistically, e.g. *contrastive/non-contrastive*, or *exhaustive/non-exhaustive*. It was suggested instead that the semantic effect of background-marking is explicit reference to the *topic situation*, while this is only implicit in unmarked focus constructions. Building upon the observation by Schuh (2005b), that focus markers in many languages in the region where Ngamo is spoken are related to the definite determiners found in the respective language, the section also investigated the definite determiner *=i/ye*. It was found that this determiner is used when the referent is anaphoric or otherwise salient (Schwarz, 2009b, 2013, Barlew, 2014). The *=i/ye* background marker was likewise found to be possible when the corresponding QUD is salient.

Concerning **association with focus**, the three particles *yak('i)* (= "only"), *ke('e)* (="also") and *har('i)* (= "even") were investigated. *Yak('i)* is very similar to *only* in English: It obligatorily associates with a focused constituent in its scope, i.e. it *conventionally* associates with focus. Like *only*, it can either have an *evaluative* (or *rank order*) reading, or a purely exclusive (or *complement exclusion*) reading, cf. (4)–(5).

(4) A: Hello, Audu! *(Rank order)*
B: Ne'e ne Audu bu, (*yak*) ne **sakatarini** (*yak'i*).
1SG.INDEP 1SG.DEP Audu NEG only 1SG.DEP secretary.3SG.M only
"I'm not Audu, I'm just his secretary."

(5) (Kule wanted to build a house and a granary last year, but...) *(Complement excl.)*
Kule *(yak)* salko **bano** mano *(yak'i)*.
Kule only build.PFV house last.year only
"Kule only built A HOUSE last year."

The main difference found between *yak('i)* and *only* was one of scope: Coppock and Beaver (2014) show that *only* can take VPs, NPs, and nouns as complements. *Yak('i)*, it seems, cannot take nouns as complements, but VPs, NPs, and full propositions. In addition, the post-focal variant *yak'i* can occur in a post-VP position that is not available for *only*. Concerning the meaning contribution, however, *yak('i)* is exactly like *only*.

Ke('e) and *har('i)*, in contrast, differ from their English counterparts in several respects. First, their scope and admissible positions are the same as those of *yak('i)*, and thus different from those of *also* and *even*. Second, they differ from both *yak('i)* and *even/also* (cf. Beaver and Clark 2008) in that they do not conventionally associate with focus: their associate need not necessarily be in focus, nor does it necessarily have to be in the scope of the particle, cf. (6), where the associate of *ke* is topical and elided.

(6) I know that Hawwa built a house, but what about Kule? What did he build?
Ke salko bano.
also build.PFV house
"HE built a house, too."

Har('i) was found to be a scalar particle with many more uses than *even*: it is translated as *even*, *until*, *as far as*, and *already*, cf. (7)–(10). In all of these uses, *har'i* indicates that the true alternative is ranked higher on salient scale than the other considered alternatives.

(7) *Har* **Kule** salko bano mano
even Kule build.PFV house last.year
"Even KULE built a house last year."

(8) Nono iko monsom *har* **tintil bedî**.
Nono do.PFV sleep until middle night
"Nono slept until midnight."

(9) Nono nduko *har* **bo dumno**.
Nono go.PFV up.to opening door
"Nono went as far as the door."

(10) *Har* **a ka ham ndeyi**.
HAR 3SG.IPFV IPFV water God
"It is already raining."

Ke('e), like *also* in English, requires a salient antecedent to which it is related in some way. Like *har('i)*, it is however more widely used than its English counterpart: it can also be used as a sentence coordinator, like English *and*. It also has different requirements concerning *parallelity* and *distinctness*. In English *also*-sentences, the background needs to be parallel to its antecedent: for example, (11) implies that leaving at ten means leaving the party early. The focus, in contrast, needs to be distinct, e.g. in (12), Jill cannot be part of the Millers.

(11) If John will leave at ten o'clock, Jill will leave the party early, too.

(12) If the Millers leave the party early, Jill will leave the party early, too.

In Ngamo, there are no such requirements that the background be parallel and the focus distinct. For example, in (13), the backgrounds of the *ke*-sentence and its antecedent are distinct, and the foci are the same. Ngamo does however seem to have a *distinctness* requirement for marked backgrounds in *ke*-sentences: Sentences like (14), with parallel *=i/ye*-marked backgrounds, are very odd, unless a shift in time is accommodated.

(13) Salko bano=i **Kule**, kaja mato=i *ke* **Kule**.
build.PFV house=BM Kule buy.PFV car=BM also Kule
"Kule built a house, and Kule also bought a car."

(14) ??**Salko bano=i** Hawwa, (*ke*) **salko bano=i** (*ke*) Kule
build.PFV house=BM Hawwa also build.PFV house=BM also Kule
(intended:) "HAWWA built a house, and KULE also built a house."
(Comment: possible if it means "it is Hawwa that built the house and then Kule built a house", not at the same time.)

To sum up, the notion of background marking plays an important role for the explanation of the focus/background realization patterns in Ngamo. Background-marking constructions were not found to be connected with greater contrastiveness, exhaustivity, or stronger existence implications, instead they were proposed to make reference to their topic situation, via a salient QUD. The additive particles *ke('e)* and *har('i)* are alternative-sensitive rather than strictly focus-sensitive, and are used in a greater variety of contexts than their English counterparts. The exclusive particle *yak'i* is however strictly focus-sensitive, which could be used to confirm that (nonsubject) focus in unmarked constructions is actually in focus.

8.1.2 Theoretical findings

One of the main theoretical contributions is the exploration of the notion of *background marking*. Since backgrounding is grammatically marked in Ngamo, this thesis contributes to the cross-linguistic discussion of whether focus or givenness alone are sufficient to describe the focus/background realization. It was shown that in Ngamo, (i) givenness alone is not sufficient to describe the realization pattern, and that (ii) to distinguish focus and background, the background rather than the focus is marked.

The current account proposes that the background is a definite description of the topic situation, identified via the *question under discussion* (QUD). The semantics proposed for the background marker is a combination of three approaches. Its first ingredient is a QUD approach (e.g. Roberts, 1998, Büring, 2003, Beaver and Clark, 2008), under which the focus/background divide indicates which implicit or explicit (hearer-)question the sentence answers. Second, this account adopts the situation semantic approach of Kratzer (2011), under which the topic situation, i.e. the situation that the sentence is about, is indicated via the QUD. Third, influenced by Schuh (2005b)'s proposal that the background marker is related to the definite determiner *=i/ye*, the current account draws heavily from accounts of backgrounding as definite descriptions of events (Hole (2011), Onea (t.a.)), and proposes that it is a definite description of a situation. (15) shows some examples for the function of the background in the different accounts, cf. (i)–(iv).

(15) **Salko bano=i** Kule
build.PFV house=BM Kule
"KULE built a house."

(i) **QUD**: focus/background divide indicates a QUD "Who built a house?"
(ii) **Situation semantics**: this QUD in turn can be used to identify the situation that (15) is about.
(iii) **Event anaphoricity**: background is a definite description "the event of someone building a house"
(iv) **Current account**: background is a definite description "the topic situation that the QUD 'Who built a house?' is about"

The current approach thus provides a formal description of the background marker which links it to existing theories on the identification of the topic situation, and the anaphoric nature of backgrounds.

A further new proposal was the proposal that the restriction of *wh*-question or focus alternatives, like that of quantifiers, can be modelled using *resource situations*. These resource situations are used to model that the set of individuals in the restrictor of quantifiers is often different from the set of individuals present in the topic situation. For example, the sleeping people in (16) are present in the topic situation, but are not in the restrictor of the quantifier.

(16) [In a sleep lab, where assistants are required to monitor sleeping people. The sleep lab doctor checks whether all assistants are awake.]
Sleep lab doctor: **No one** is asleep.

Applied to *wh*-question restriction, this account allows for a novel treatment of additive particles. Additive particles are seen as reopening an already answered QUD. The QUD can be reopened with respect to a new resource situation, i.e. it is posed about the same topic situation, but different alternative answers are newly considered. Alternatively the same QUD can be posed again about a different topic situation. In this case, the considered focus alternatives can be the

same, but the background must somehow indicate a shift of topic situation. These are thus two ways in which an exhaustive implicature can be cancelled: (i) a change in the considered focus alternatives, cf. (17-a), or (ii) a change in the topic situation that the utterance is about, cf. (17-b).

(17) a. Who s_{r_1} ... in s_{t_1}? Who s_{r_2} ... in s_{t_1}?

b. Who s_{r_1} ... in s_{t_1}? Who s_{r_2} ... in s_{t_2}?

This accounts for some of the differences between English *also* and *ke('e)*: *also* indicates that a QUD is reopened with respect to a new resource situation. The background must thus be parallel. *Ke'e*, in contrast, connects answers with different topic situations, the QUD does not even have to be the same. Parallel *=i/ye*-marked backgrounds are not possible because the *=i/ye*-marker is default anaphoric: if there is an entity of the required kind in the context, it refers back to it. The additive particle however requires the topic situation to be different; this leads to a clash. In general, restriction or broadening of the resource situation seems to be an important function of alternative-sensitive particles: the *mirative* particles *yak('i)* (= "only") and *har('i)* (= "even") indicate that certain stronger or weaker alternatives are not considered.

A further notion used throughout this thesis is the notion of *QUD attribution*. The QUD indicated by the focus/background marking is in most cases not overt, but covert, and thus attributed to the hearer by the speaker. The marking is a cue for the hearer as to what QUD is attributed to him. It was proposed that all presuppositions that the indicated QUD might trigger are also attributed to the hearer, even if the speaker herself does not share this belief. For example, a *wh*-question triggers an existence presupposition. Nevertheless, a speaker can attribute a *wh*-question to her hearer via her focus/background marking, even if she doesn't share this existence belief. There is thus a difference in felicity requirements between uttering a sentence containing a presupposition trigger and merely attributing such a sentence to a hearer. Similar to the background marking, the use of alternative-sensitive particles also provides an indication of the beliefs attributed to the hearer. In this case, it is e.g. beliefs about the likelihood of certain alternatives being the strongest true answer: *yak('i)* indicates an attributed hearer belief that the strongest true answer is surprisingly weak, whereas *har('i)* indicates an attributed hearer belief that the strongest true answer is surprisingly strong.

The focus/background marking and alternative-sensitive particles like *yak('i)* (= "only"), *har('i)* (= "even, as far as, until, already"), and *ke('e)* (= "also, and") thus provide information about different situations. The background provides information about the topic situation that the sentence is about. *Yak('i)* — and *har('i)*, in those cases where it associates with focus — provides information about the resource situation, i.e. what alternatives the speaker assumes, and how probable she believes them to be for the hearer. *Ke('e)* indicates a shift in topic situation from the antecedent sentence to its host sentence.

8.2 Outlook

There are some questions concerning Ngamo that should be investigated in further research, which were pointed out throughout the thesis. Some are generally interesting in any language, for example, the interaction of different alternative-sensitive operators with each other and other operators (e.g. the negation); others are very language-specific. I want to concentrate here on two points that are important for the analysis of the *=i/ye* marker as a definite determiner of situations: the definite determiner *=i/ye*, and the *if*- and *when*-clause marker *=i/ye*.

§5.4.1 pointed out that the discussion of the background marker would benefit from a further exploration of the Ngamo DP, including its syntax, and its semantics. One important semantic issue to be explored is the interaction of the so-called *indefinite* and the *definite* article, which can co-occur. The resulting meaning is the one in (18), a complement anaphoric reading.

(18) a siyasa=i *yo'oto* **ye'e**
one.who.is politician=LINK DET.INDEF DET.DEF
"the other politician"

In section 5.4.1, a pragmatic analysis for this was proposed, which relies on coercion in order to yield the relational reading necessary for examples like (18). Further data are however needed in order to ensure that this analysis is correct. The available data suggests at least two different directions which are worth investigating. First, a comparison with *wani* indefinites in Hausa is warranted. These are indefinites indicating specificity, which can have a wide-scope reading, cf. (19) (from Zimmermann and Grubic 2010a, where a choice function analysis of *wani*-DPs was proposed, following Reinhart 1997, Kratzer 1998, Matthewson 1998b, Chung and Ladusaw 2004, i.a.). In contrast to *yo'oto* indefinites in Ngamo, these *wani* indefinites do not necessarily receive a relational reading when combined with a definite determiner, cf. (20) (from Zimmermann 2008b). Exceptional wide-scope examples like (19) should thus be elicited for *yo'oto* indefinites.

(19) In **wani mutum** ya yi aiki mai kyau sai ya samu lada, amma idan **wani**
if some man 3SG.M do work good then 3SG.M get praise but if some
mutum ya yi aiki mai kyau, ba wanda zai kula da shi.
man 3SG.M do work good NEG ONE.REL FUT.3SG.M notice 3SG.M
"If some man does a good job, he will be praised, but if some other man does a good job nobody will notice."
(Consultant comment: This is okay when referring to two specific men.)

(20) **wata mootà=ř** taa ɓaacì
some car=DEF 3SG.PFV break.down
"A specific car (previously mentioned?) broke down."

Another possible strand of research concerns the additivity inherent in the *another/other* reading of *yo'oto*. A main topic of this thesis is the parallelity of the DP and the TP domain concerning definiteness. It is therefore necessary to explore whether such complement anaphoric readings of DPs are comparable with something in the TP domain. For example, Ippolito (2007, p.11f.) suggests that *same* and *another* are parallel to *still* and *again* in the domain of eventualities, which she analyses as additive. Since additive particles were proposed to be felicitous when a situation (either resource situation or topic situation) are shifted, the question whether a similar analysis is feasible for *yo'oto* suggests itself.

Another important topic left for further research is how the *=i/ye* marker found with conditionals and *when*-clauses (cf. §4.3.3) fits into this picture, cf. e.g. (21)–(22). As Klein (2008) notes, *when*-clauses certainly provide information on the topic situation of the sentence.

(21) Nduko njina roi=ye, sorom mati=n=ni a ho'yi=ni zugoni.
go.PFV lean.on.PFV tree=YE sorom die=TOT=ICP 3SG dry=ICP body=3SG.POSS
"When he went under the tree, *sorom* he died and dried up next to it."

(22) To, kaiso na mu ndanko bano=ye, mu ɗeya tiya?
well now COMPL 1PL go.PL.PFV house=YE 1PL stay where
"Well, now if we return to the house, where will we stay?"

Schuh (2005b) proposes that the relatedness of the definite determiner *=i/ye* and the marker of conditionals might be evidence for a definiteness proposal for conditional antecedents as e.g. proposed by Schlenker (2004). Schlenker (2004) analyses the antecedents of conditionals as denoting plural definite descriptions, using a choice function analysis in which *if* takes an evaluation world w* and a proposition as an argument, and returns the worlds most similar to w* in which the proposition is true[1].

(23) If John snores
= If (w*) ([[John snores]])
≈ The worlds out of [[John snores]] which are most similar to w*

This proposal is in some ways similar to the proposal made in §5.4.1 above for *=i/ye*-marked relational nouns. Like there, the assumption can be made that the worlds that the *if*-clause refer to are not themselves salient, but can be *=i/ye*-marked because they relate to something salient: the evaluation world. In Schlenker's proposal, salience plays a role for definite descriptions, which are analysed using similar choice functions, but not for conditionals, for which similarity replaces the notion of salience. It would be worth investigating whether *=i/ye*-marked conditionals can be treated like relational nouns. Such a proposal would, of course, have to discuss the interaction of conditionals with focus/background marking: focus/background marking within the *if*-clause has an immediate influence on the way the referent worlds are similar, and on the way they differ, cf. (24) (a modified version of the examples in Dretske, 1972): in (24-a), the worlds are similar to w* in that Clyde married someone, but differ in that he married Bertha, whereas in (24-b), they are similar to w* in that Clyde did something with Bertha, but differ in that he married her.

(24) a. If Clyde had married Bertha$_F$, he would have been eligible for the inheritance.
b. If Clyde had married$_F$ Bertha, he would have been eligible for the inheritance.

To sum up, the analysis of the background marker would benefit from a closer look at *=i/ye* marking on other domains, and their interaction.

8.3 Consequences

It is expected that there are other languages which also have grammatical marking of backgrounding. This background-marking alone should not influence the exhaustivity or existence inferences of these sentences, but merely indicate what the QUD is, and thus, which topic situation the sentence is about. For several languages, a correspondence between particles used for definites, for topicalized constituents, and for conditionals is reported, cf. e.g. Ewe (Ameka, 1991, who also mentions Thai)[2], and Ga (Agata Renans, p.c.). Haiman (1978) shows that conditionals and

[1] For other analysis of conditionals as definite descriptions, cf. Schein (2003), Ebert et al. (2014), cf. also syntactic proposals analysing them as correlatives, which can be analysed as conditionals (Bhatt and Pancheva, 2006), cf. also an example in Partee (1973) for *when*.

[2] Ameka cites several other languages in which topics and definites are marked the same: Godié and Klao (Kru, Niger-Congo), Baule and Akan (Tano, Niger-Congo), Zulgo (Biu-Mandara, Afroasiatic), Ga and Dangme (Kwa, Niger-Congo).

topics are marked the same in Hua (Papuan). Larson (2003) proposes that the definite articles in Fɔ̀n (Kwa, Niger-Congo) and Haitian Creole are also used to mark an event as definite. The relation between the markers in these languages and backgrounding should be explored. An interesting question is whether background marking is always expected to be definiteness marking. Güldemann (2015) mentions several languages in which definite determiners and background markers are related, e.g. Bagirmi (Bongo Bagirmi, Nilo-Saharan), Dagbani and Gurene (both Gur, Niger-Congo). However, he also lists Fula (Atlantic, Niger-Congo), Hausa (West Chadic, Afroasiatic), and Kanuri (Western Saharan, Nilo-Saharan), which use verb morphology rather than determiners to indicate backgrounding. In Hartmann and Zimmermann (2012), the special verb morphology used in Hausa was explicitly linked to the indication of the topic situation.

Another expected difference concerns additive particles found in different languages. The current account predicts that at least some differences found cross-linguistically are due to the fact that some additive particles shift the resource situation of the QUD, whereas others shift the topic situation. One way to test this is to see whether the focus can be the same in the test sentence as in its antecedent. If this is possible, as in the Ngamo sentence in (13) above, then this indicates a shift in topic situation, allowing for the same focus alternative to be available again. It is e.g. imaginable that some differences between the additive particle *auch* (= "also, too") in German and the multi-functional particle *noch* (= "still, in addition"), which can also have an additive use, cf. (25) (examples from Umbach, 2012), is due to topic vs. resource situation shift.

(25) (Otto is slightly drunk. He had a beer.)

a. Otto trank **auch** einen SCHNAPS.
Otto drank AUCH a Schnaps.
"Otto also drank a SCHNAPS."

b. Otto trank **noch** einen SCHNAPS.
Otto drank NOCH a Schnaps.
"In addition, Otto drank a SCHNAPS."

It may be that *noch* is used when a QUD is reopened, but about a different topic situation. One indication of this is that sentences with *noch* like (25-b) most often occur with initial elements which seem to shift topic situation, e.g. *dann* (lit. "then"), *sonst* (= "apart from that"), i.a., cf. (26) (Umbach, 2012, p.1844), where *dann* does not have its usual, temporal meaning: (26) is entirely felicitous in a context where Otto first had a schnaps, and then a beer.

(26) (Otto had a beer)
Dann hat er noch einen SCHNAPS getrunken.
then has he NOCH a schnaps drunk
"Then he had a schnaps in addition."

In addition, if Umbach (2012, p.1853f.) is correct in the assumption that *noch* associates with the deaccented *Schnaps* in (27), then this is an example where the focus is the same in the host sentence as in the antecedent. This is predicted to be possible when a QUD is reopened with respect to a new topic situation: all previously available alternatives should be available again. For *auch*, in contrast, this is not possible: *auch* associates with the subject in (27).

(27) Otto had a schnaps. And you won't believe it:
Er hat NOCH / #AUCH einen Schnaps getrunken.
he has NOCH also a schnaps drunk
"He had another schnaps."

It seems that even in better-studied languages, the discussion of alternative-sensitive particles would benefit from taking situation semantics into account.

Appendix A

The projection questionnaire

This appendix discusses a written questionnaire filled out by the two main consultants and six further Ngamo speakers (8 participants, all male, age 33 to 50 (mean age: 44.6)). This questionnaire was designed to test the projection behavior of the prejacent, and the exhaustive and existential meaning components, e.g. for (1), the meaning components in (2) were tested.

(1) Njelu esha=i Sama nzono.
Njelu call.PFV=BM Sama yesterday
"Njelu called SAMA yesterday."

(2) a. Prejacent: Njelu called Sama yesterday
b. Exhaustive inference: Njelu didn't call anybody else yesterday
c. Existence inference: Njelu called somebody yesterday

The questionnaire consisted of English contexts, test sentences, and questions asking for the truth of the prejacent, exhaustive inference, and existential inference, respectively. The most relevant test sentences were of the form in (3), either unembedded, oder embedded under negation.

(3) a. Njelu esha=i **Sama** *(bu)* nzono (SV-iOA)
Njelu call.PFV=I Sama NEG yesterday
b. Njelu esha nzono=i **Sama** *(bu)* (SVA-iO)
Njelu call.PFV yesterday=I Sama NEG
"Njelu called SAMA yesterday." / "Njelu didn't call SAMA yesterday."

The other test sentences were used as a baseline for comparison. The *=i/ye*-marked constructions were compared to broad focus sentences (3-c). In addition, the prejacent and exhaustivity projection behavior of *=i/ye*-marked constructions was compared to that of *only*-sentences (3-d). For existence, the pseudocleft sentences in (3-d') were used instead.

(3) c. Njelu esha Sama *(bu)* nzono (SVOA)
Njelu call.PFV Sama NEG yesterday
"Njelu called Sama yesterday." / "Njelu didn't call Sama yesterday."
d. Njelu esha=i **Sama** *yak'i (bu)* nzono (SV-O only A)
Njelu call.PFV=BM Sama only NEG yesterday
"Njelu only called SAMA yesterday." / "Njelu didn't only call SAMA yesterday"

d'. *Ngo=i* *yo* Njelu esha nzono=i **Sama** *(bu)*. (pseudocleft)
person=DET REL Njelu call.PFV yesterday=DET Sama NEG
"The one that Njelu called yesterday was(n't) SAMA."

Examples (4)–(6) are examples for some of the questionnaire tasks. The context in (4) tests whether the prejacent inference projects. If the participants choose *yes* as an answer, the prejacent inference is projective. In (4), the test sentence is an *=i*-marked canonical word order construction, but all sentences in (3-a-d) were tested in this context.

(4) **Prejacent context**
Sama told Njelu that they can make a business deal, if Njelu calls her on a certain date, namely yesterday. Jamal says: Jamal says: **Njelu esha=i Sama bu nzono.**

Considering what Jamal said, do you think that Njelu and Sama made the deal?
□ Yes □ No □ I don't know

Example (5) shows the context for for the exhaustivity projection context, and (6) for existence.

(5) **Exhaustivity context**
Sama told Njelu that they can make a business deal, if Njelu doesn't call anyone who isn't Sama on a certain date, namely yesterday. Jamal says: **Njelu esha=i Sama bu nzono.**

Considering what Jamal said, do you think that Njelu and Sama made the deal?
□ Yes □ No □ I don't know

(6) **Existence context**
Yura told Njelu that they can make a business deal, if Njelu calls somebody, no matter who, on a certain date, namely yesterday. Jamal says: **Njelu esha=i Sama bu nzono.**

Considering what Jamal said, do you think that Njelu and Yura made the deal?
□ Yes □ No □ I don't know

There were four different items in four conditions each. Each participant saw only one condition per item, i.e. 24 questions (prejacent/exhaustivity/existence x positive/negative x 4 items), in randomized order. The following are the four different items used in the questionnaire. In the result tables, (7-a) will be abreviated as *a*, (7-b) as *b*, etc.

(7) a. Njelu esha Sama nzono.
Njelu call.PFV Sama yesterday
"Njelu called Sama yesterday."

b. Burba kaja fari ki gargu.
Burba buy.PFV melon at market
"Burba bought a melon at the market."

c. Hassana tamko Urwa ki Tunza.
Hassana show.PFV Urwa to Tunza
"Hassana showed Urwa to Tunza."

d. Ibrahim onko agoggo ki Lakka.
Ibrahim give.PFV watch to Lakka
"Ibrahim gave a watch to Lakka."

In the following, the three parts of the test — prejacent, exhaustivity, and existence projection — are described in detail.

Prejacent projection

Predictions In positive sentences, it was predicted that the prejacent inference should hold for all sentences under consideration. In negative broad focus sentences, the prejacent was not expected to project. It was however predicted to project in negative *only* sentences. The *=i/ye*-marked sentences were expected to behave either like *only* sentences, if they share their semantics, or like English clefts, which seem to behave like broad focus sentences in this respect (but differ in the projection behavior of existence inferences, cf. the secton on existence below).

Results The eight study participants replied as predicted: in simple sentences, they understood the prejacent to be entailed in 31/32 cases (96,875%), cf. table A.1. For negative sentences, the answers show that the prejacent follows from the sentences with *yak'i* ('only') — in eight out of eight answers (100%) —, but not from the other negative sentences, where only one out of twenty-four answers (4,166%) indicated the survival of the prejacent inference, cf. table A.2. Like prosodic focus and *it*-clefts in English, but unlike English and Ngamo *only*-sentences, the Ngamo *=i/ye* constructions thus do not trigger a prejacent presupposition.

	SVOA		SV-iOA		SVA-iO		SV-iO only A		
speaker	item	answer	item	answer	item	answer	item	answer	
A1	b	yes	c	**no**	d	yes	a	yes	
A2	b	yes	c	yes	d	yes	a	yes	
B1	a	yes	b	yes	c	yes	d	yes	
B2	a	yes	b	yes	c	yes	d	yes	
C1	d	yes	a	yes	b	yes	c	yes	
C2	d	yes	a	yes	b	yes	c	yes	
D1	c	yes	d	yes	a	yes	b	yes	
D2	c	yes	d	yes	a	yes	b	yes	
		8/8		7/8		8/8		8/8	31/32

Table A.1: Prejacent inference, positive sentence

	SVO neg A		SV-iO neg A		SVA-iO neg		SV-iO only neg A		
speaker	item	answer	item	answer	item	answer	item	answer	
A1	c	no	d	no	a	no	b	yes	
A2	c	no	d	no	a	no	b	yes	
B1	b	**yes**	c	no	d	no	a	yes	
B2	b	no	c	no	d	no	a	yes	
C1	a	no	b	no	c	no	d	yes	
C2	a	no	b	no	c	no	d	yes	
D1	d	no	a	no	b	no	c	yes	
D2	d	no	a	no	b	no	c	yes	
		1/8		0/8		0/8		8/8	9/32

Table A.2: Prejacent inference, negative sentence

Exhaustivity projection

Predictions Concerning the positive sentences, the sentences with narrow focus and *only* were predicted to be exhaustive, whereas the broad focus sentences were not predicted to be exhaustive. Since, in positive *only* sentences, the exhaustive inference is asserted, negative *only* sentences were expected to assert non-exhaustivity. Negated broad focus sentences were likewise not predicted to be exhaustive. The *=i/ye*-marked negative sentences were predicted to be exhaustive if the exhaustive inference is a presupposition or conventional implicature, but not if it is a conversational implicature or part of the assertion.

Results Table A.3 shows the answers for the exhaustivity inference in positive sentences. As shown, thirty of the thirty-two sentences (93.75%) were judged to be exhaustive. The answers for the corresponding negative sentences are shown in table A.4. The expectation that the *only*-sentences would be clearly judged as non-exhaustive ("no") was borne out. The other sentences were also judged as non-exhaustive ("no" or "no (IDK)"), indicating that exhaustivity is not presuppositional here.

	SVOA		SV-iOA		SVA-iO		SV-iO only A		
speaker	item	answer	item	answer	item	answer	item	answer	
A1	a	**no**	b	yes	c	yes	d	yes	
A2	a	yes	b	yes	c	yes	d	yes	
B1	d	yes	a	yes	b	yes	c	yes	
B2	d	yes	a	**no**	b	yes	c	yes	
C1	c	yes	d	yes	a	yes	b	yes	
C2	c	yes	d	yes	a	yes	b	yes	
D1	b	yes	c	yes	d	yes	a	yes	
D2	b	yes	c	yes	d	yes	a	yes	
		7/8		7/8		8/8		8/8	30/32

Table A.3: Exhaustivity inference, positive sentence

	SVO neg A		SV-iO neg A		SVA-iO neg		SV-iO only neg A		
speaker	item	answer	item	answer	item	answer	item	answer	
A1	b	no (IDK)	c	no	d	no (IDK)	a	no	
A2	b	no (IDK)	c	no (IDK)	d	no (IDK)	a	no	
B1	a	no	b	no	c	no	d	no	
B2	a	yes	b	no	c	no (IDK)	d	no	
C1	d	yes	a	no	b	no	c	no	
C2	d	no (IDK)	a	yes	b	no	c	no	
D1	c	no (IDK)	d	no (IDK)	a	no	b	no	
D2	c	no	d	no (IDK)	a	no	b	no	
		2/8		1/8		0/8		0/8	3/32

Table A.4: Exhaustivity inference, negative sentence

Interestingly, many *=i/ye* marked sentences, especially those in non-canonical word-order,

were interpreted as explicitly non-exhaustive, similar to the *only*-sentences. The reason, as shown below, lies in the projection of the existence inference in *=i/ye* constructions: the speakers interpret them as indicating that some other alternative is true (e.g. *Njelu called somebody else*). In a way, these results thus show more about existence than about exhaustivity.

Existence projection

Predictions: The existence implication is predicted to follow from all positive sentences. For the negated sentences, the following is predicted: First, the existence implication should still follow from negated pseudocleft sentences, because these constructions trigger an existence presupposition. Second, no existential inference should follow from the broad focus sentences. For the two *=i*-marked constructions, there are no clear predictions. If they pattern like English *it*-clefts, the existence inference should project. If, on the other hand, they pattern like English prosodic focus examples, the existence inference should not project, or at least not always.

Results: Table A.5 shows the answers for the existence questions in positive contexts for the questionnaire with eight speakers. A 'no' in the table means 'no existence implication', whereby 'no (IDK)' means that the speaker chose 'I don't know' as an answer, and a 'yes' corresponds to an existence implication[1]. Unsurprisingly, the majority of speakers judged all simple sentences to have an existence implication (thirty out of thirty-two sentences (93.75%)).

	SVOA		SV-iOA		SVA-iO		pseudocleft		
speaker	item	answer	item	answer	item	answer	item	answer	
A1	d	yes	a	yes	b	yes	c	**no**	
A2	d	yes	a	yes	b	yes	c	yes	
B1	c	**no**	d	yes	a	yes	b	yes	
B2	c	yes	d	yes	a	yes	b	yes	
C1	b	yes	c	yes	d	yes	a	yes	
C2	b	yes	c	yes	d	yes	a	yes	
D1	a	yes	b	yes	c	yes	d	yes	
D2	a	yes	b	yes	c	yes	d	yes	
		7/8		8/8		8/8		7/8	30/32

Table A.5: Existence inference, positive sentence

The results for embedding under negation can be seen in table A.6. In negated pseudoclefts, the existence inference was projective, but not in negated broad focus sentences. The negated *=i/ye* sentences with non-canonical word order were more readily interpreted as having an existence inference than the canonical structure, namely in seven out of eight cases (87,5%). In *=i/ye* sentences with canonical word order, half of the speakers (50%) judged the existence inference to project, i.e. merely on a chance level.

Thus, whereas there is a stronger tendency for speakers to understand negative marked focus structures as existential, the inference is not as clear as in the pseudocleft examples. The test

[1]This was done for ease of understanding, since in some contexts, e.g. (6), a 'yes'-answer means 'no existence implication'.

	SVO neg A		SV-iO neg A		SVA-iO neg		pseudocleft		
speaker	item	answer	item	answer	item	answer	item	answer	
A1	a	no	b	**no** (IDK)	c	yes	d	yes	
A2	a	no (IDK)	b	yes	c	**no**(IDK)	d	yes	
B1	d	no	a	yes	b	yes	c	yes	
B2	d	no	a	**no**	b	yes	c	yes	
C1	c	no	d	yes	a	yes	b	yes	
C2	c	no (IDK)	d	yes	a	yes	b	yes	
D1	b	no	c	**no**	d	yes	a	yes	
D2	b	no (IDK)	c	**no**(IDK)	d	yes	a	yes	
		0/8		4/8		7/8		8/8	19/32

Table A.6: Existence inference, negative sentence

results thus clearly show that there is no existence presupposition in *=i/ye* constructions, although there seems to be a tendency for negation to associate with focus in the ex-situ constructions.

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