

J.M.M. Brown | Andreas Schmidt | Marta Wierzba (Eds.)

OF TREES AND BIRDS

A Festschrift for Gisbert Faselow

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Contents

Preface	xiii
J.M.M. Brown, Andreas Schmidt, Marta Wierzba	
I Morphological branch	1
The instrumental -er suffix	3
Susan Olsen	
<i>Bienenfresserortungsversuch</i>: compounding with clause-embedding heads	15
Barbara Stiebels	
Leben mit Paradoxien	27
Manfred Bierwisch	
Zur Analysierbarkeit adverbialer Konnektive	37
Ilse Zimmermann	
Measuring lexical semantic variation using word embeddings	61
Damir Cavar	
II Syntactic branch	75
Intermediate reflexes of movement: A problem for TAG? . . .	77
Doreen Georgi	
Towards a Fanselowian analysis of degree expressions . . .	95
Julia Bacskai-Atkari	

A form-function mismatch? The case of Greek deponents . .	107
Artemis Alexiadou	
Why is a predicate inversion analysis problematic? Insights from existential, locative and possessive constructions . .	119
Joanna Błaszczak	
Can unaccusative verbs undergo passivization in German? .	135
Gereon Müller	
On doubling unconditionals	155
Radek Šimík	
Wie und wo Ambiguität Ungrammatikalität vortäuscht . . .	171
André Meinunger	
A note on apparent sluicing in Malagasy	185
Craig Thiersch	
III Information-structural branch	211
Verum focus and negation	213
Caroline Féry, Anja Arnhold	
On uninterpretable features	231
Josef Bayer	
Accusative Unaccusatives	243
Elena Titov	
Beware of ‘discourse markers’	257
Henry Fominyam, Thuan Tran	

IV Empirical branch	273
Is it a bird? Is it a mammal? Perspectives on the learnability / trainability of new grammatical constructions	275
Ina Bornkessel-Schlesewsky, Matthias Schlewsky	
Im Korpus gibt's keine Vögel nicht: A corpus study on Negative Concord in Eastern German dialects	287
Malte Zimmermann	
Experimenting with <i>Lurchi</i>: V2 and agreement violations in poetic contexts	307
Jana Häussler, Anne Mucha, Andreas Schmidt, Thomas Weskott, Marta Wierzba	
Noch kindlich oder schon jugendlich? Oder gar erwachsen? Betrachtung von Komplexitätsmerkmalen altersspezifischer Texte	323
Manfred Stede	
Splits and Birds	335
Stavros Skopeteas	
Multistability in speech and other activities	343
Adamantios Gafos	
V Language branch	361
An anthropic principle in lieu of a "Universal Grammar" . .	363
Hubert Haider	
Schritte in der Sprachentstehung und -entwicklung	383
Dieter Wunderlich	
Plato on nature (φύσις) and convention (συνθήκη)	395
Peter Staudacher	

VI Memories 413

**Erinnerungen an die Gründung des Instituts für Linguistik
an der Universität Potsdam 415**

Gisa Rauh

List of Tables

5.1	Measuring lexical semantic variation: Bag-of-Words in Context Counts	63
5.2	Measuring lexical semantic variation: Left and right combined BoW context vectors	64
5.3	Measuring lexical semantic variation: Number of types in FastText models by language	70
5.4	Measuring lexical semantic variation: FastText vocabulary overlap between languages	70
5.5	Measuring lexical semantic variation: Proportional lexical overlap by language pair	71
5.6	Measuring lexical semantic variation: Predicted context words using FastText	71
20.1	Negative Concord in Eastern German dialects: NC-occurrences across dialects	298
20.2	Negative Concord in Eastern German dialects: Frequency of NC in translations of Wenker Sentence 39	302
21.1	V2 and agreement violations in poetic contexts: overall results of the experiment	315
21.2	V2 and agreement violations in poetic contexts: results including ‘motivation’ manipulation	315
22.1	Noch kindlich oder schon jugendlich: syntaktische Komplexitätsindikatoren	325

List of Figures

21.1	V2 and agreement violations in poetic contexts: results of the experiment	316
22.1	Noch kindlich oder schon jugendlich: Beispieltex- te aus den drei Textquellen	326
22.2	Noch kindlich oder schon jugendlich: Word cloud für die Kinder-Texte	329
23.1	Splits and Birds: Linearization of quantified noun phrases in Aristophanes' Birds	339
24.1	Multistability in speech and other activities: speech movement data	346
24.2	Multistability in speech and other activities: speech movement data	347
24.3	Multistability in speech and other activities: vortex pat- terns (flying birds)	348
24.4	Multistability in speech and other activities: phase por- traits of speech vs. non-speech	351
24.5	Multistability in speech and other activities: model pre- dictions	353

List of Abbreviations

AHP	Argument Prominency Hierarchy
ALW	Anzahl langer Wörter
AS	argument structure
AT	auxiliary tree
AUC	accusative unaccusative construction
AW	Anzahl der Wörter
BoW	bag of word(s)
bpm	beats per minute
CS	conceptual structure
DiP	discourse particle
DSL	durchschnittl. Satzlänge
DSW	durchschnittl. Wortlänge in Silben
ET	elementary tree
E-Text	an Erwachsene adressierter Text
GFFS	Festschrift for Gisbert Fanselow
GHT	Guilfoyle, Hung & Travis (1992)
IS	Information structure
IT	initial tree
J-Text	an Jugendliche adressierter Text
K-Text	an Kinder adressierter Text
L1	first language
PF	phonological form
PIE	Proto-Indo European
QVE	quantificational variability effect
SF	semantic form
SLI	specific language impairment
TAG	Tree Adjoining Grammar
TTR	Streuung der Konnektorenmenge
UG	universal grammar

Glossary

1	first person	PART	partitive
2	second person	PASS	passive
3	third person	PASS ₂	adhortative ‘gehören’ passive
ACC	accusative	PASS ₃	adhortative ‘bleiben’ passive
ADE	adessive	PASS ₄	reflexive ‘lassen’ passive
AGR	agreement	PL	plural
ANTIP	antipassive	PFV	perfective
ASP	aspect	PRS	present
AT	actor pivot voice	PRT	particle
AUX	auxiliary	PREP	prepositional
CAT	grammatical category	PROG	progressive
CL	classifier	PST	past
COMP	complementizer	1PST	first past
CONN	connegative	2PST	second past
CT	circumstantial pivot voice	PT	verbal particle
DAT	dative	PTCP	participle
DECL	declarative	REFL	reflexive
DET	determiner	REL	relativizer
FEM	feminine	SM	subject marker
FUT	future	SG	singular
GEN	genitive	SBJV	subjunctive
INF	infinitive	TT	theme pivot voice
INSTR	Instrumental	TOP	topic marker
L	Austronesian linker	UNM	unmarked
LNK	linking element	✎	covert controlled argument
MASC	masculine		
N	nasal		
NACT	non-active morphology		
NEG	negative		
NEUT	Neuter		
NOM	nominative		
NOML	nominalization		
OBL	oblique		

Preface¹

J. M. M. Brown, Andreas Schmidt, Marta Wierzba

Universität Potsdam

This volume is dedicated to Gisbert Fanselow on the occasion of his 60th birthday.

We provide in this preface a short socio-historical context showing how the contributions in the volume link to Gisbert's ongoing work. The range and prolificness of Gisbert's work has led us to try out several approaches. In our first drafts, we compiled lists of specific themes where Gisbert has written influential papers. In grammatical theory, for instance, some of the topics were superiority effects, partial *wh*-movement, scrambling, and discontinuous noun phrases. However there were too many individual areas in the end, and something of the heart of Gisbert's work was lost in the listing.

We next wrote a draft focussing on the contributions and how they could be linked to Gisbert's work from the point of view of their content. However here too, what came out most prominently, more than any one theme or topic, was Gisbert's openness as a scholar and teacher. Each of the papers in this volume presents original work by colleagues of Gisbert, some of which were inspired by Gisbert's writing, or by questions he asked and suggestions he gave during colloquia, whilst bird-

1. We would like to thank both Caroline Féry and Artemis Alexiadou for their advice and support in planning this volume. Thanks also go to the authors for their interesting and diverse contributions, and for their prompt responses and detailed comments during the typesetting process. Our student assistants Johannes Rothert and Ulrike May provided invaluable support with the bibliographies. We would also like to thank Sarah Pertermann for the difficult task of bringing syntax and ornithology together into such a beautiful cover design, and the Universitätsverlag Potsdam for their support during the editing process.

watching with other linguists, or whilst building the linguistics department at the University of Potsdam, and the contributions range from technical discussions of grammatical theory through to computational papers and corpus studies on ancient Greek.

The reader may know that Gisbert's first degree was in linguistics and politics, and in the deepest, best sense, this connection between scholarly work on language, and community and public life is felt throughout Gisbert's work. In this volume, the contributions are grouped into five areas, and the approach we have settled on is to link these areas to Gisbert's ongoing scholarly work in the context of some of the communities that he is part of.

First in this volume, and as a nod to one of Gisbert's very earliest works, comes a branch on **morphology and lexical semantics**. *Zur Syntax und Semantik der Nominalkomposition*, Gisbert's first monograph, was published in 1981, on different types of nominal composition in German. The work grew out of a term paper, and his interest in the semantics of compounds and derivational morphemes can still be seen in his lectures on morphology.

After studying at the universities of Regensburg and Konstanz, Gisbert wrote his doctoral dissertation and habilitation at the University of Passau with a focus on grammatical theory. When he was subsequently appointed Professor of Syntax and Morphology at the newly founded University of Potsdam in 1993, Gisbert was one of the youngest professors in Germany. The contributions in this second branch on **syntax** are inspired by features of Gisbert's work such as the range of syntactic topics and the large number of languages. Also reflected in these contributions, and in Gisbert's work more generally, is the political and philosophical stance of finding universality amongst such surface variation.

A further syntactic topic that has also been a key issue in Gisbert's work is the relation between syntax and information structure. Gisbert was part of the first *Deutsche Forschungsgemeinschaft Collaborative Research Centre* in the Land (county) of Brandenburg, the *SFB (Sonderforschungsbereich) on Information Structure* (2003–2015), which brought the efforts of the diverse group that had been built up at Potsdam towards a common goal. Within this context, Gisbert explored alterna-

tives to the view that the left periphery of sentences is directly linked to information-structural categories like focus and topic, and studied the intricate interplay of factors that influence word order options at the interfaces. The third **branch on information structure** represents this part of Gisbert's work.

The fourth branch contains contributions with an **empirical** focus. Whilst linguistic research in the latter half of the 20th century was characterised by excited interest in theoretical linguistics in the wake of the Chomskyan research programme, one of the deeper questions that the cognitive revolution gave rise to was whether – and what type of – data was needed to build robust theories of language. Gisbert was aware of the limitations of the types of thought experiments and intuitions used in generative linguistics, but instead of abandoning the generative methodology altogether became a leading figure in combining traditional methods of cross-linguistic comparison with large samples of languages and a range of experimental methods. Gisbert's continued influence in the debate on what experiments can and cannot tell us about language has been visible through his work in the *Innovationskolleg on Formale Modelle kognitiver Komplexität* (1994–1999) and in the Deutsche Forschungsgemeinschaft projects *Morphosyntax und Phonologie von diskontinuierlichen Nominal- und Präpositionalphrasen* (2003–2013) and *Theoretische und methodische Fundierung von gradierten Akzeptabilitätsurteilen als empirische Basis der Syntaxtheorie* (2006–2015). Current work takes place in the still ongoing *SFB on the Limits of Variability in Language* (2017–) together with colleagues from psychology and computer science, and uses systematic, replicable methods to investigate variation in language.

The fifth branch is **language** as a whole. Beyond contributions to specific linguistic fields, Gisbert has also published on the underlying principles of generative linguistics. This foundational perspective on linguistics and on science more broadly also shows in every class that Gisbert teaches, in which phenomena are never discussed in isolation, but always in a way that communicates the significance of broader scientific questions to students. In a similar vein, the (sets of) questions that Gisbert asks during colloquia and conferences often uncover surprising and important connections to related phenomena or theories in

different domains. Outside of his scholarly research, Gisbert has created links between linguistics and other departments within the university through his involvement in rebuilding the University of Potsdam from the nineties onwards, and in bringing together a community of computational, clinical, experimental and theoretical linguists within the department. Beyond language, Gisbert contributes to science in Germany more generally through membership in committees within the *Deutsche Forschungsgemeinschaft*.

Finally, when reading the papers, throughout all the branches, you may have noticed feathers and birds in the examples, figures or footnotes. Gisbert is a passionate ornithologist, and no account of his engagement in community life would be complete without mentioning Gisbert's environmental activism, and his pivotal role in incorporating sustainability policies into the communities that he is part of, for instance through the university's Senatskommission für Umwelt.

In putting together a Festschrift, there is always a risk that the result could come across to the recipient more trivialising than tributary, as if several lifetimes of work could be summed up in a single volume, or as if the work were finished and not ongoing. We have known Gisbert's support as prospective students, undergraduate linguistics students, student assistants, PhD students, post-docs and colleagues. Whenever we meet new linguists at conferences and are asked who we work with, the reaction to hearing Gisbert's name is often a happy smile and the comment that we should consider ourselves lucky – and we do indeed. What we hope with this volume, Gisbert, is simply to wish you a very happy birthday, from so many people whose lives and work have been touched by the communities that you have built, and to say that we are excited for what is still to come.

Part I

Morphological branch

The instrumental *-er* suffix

Susan Olsen, Humboldt Universität zu Berlin

1 Introduction

It is well-known and universally accepted that deverbal *-er* nominals denoting agents (in the broadest sense, including, e.g., possessors and recipients) permit the internal argument of their underlying verb to be realized as a complement in a syntactic phrase that they head, cf. (1). It has also been recognized since Roeper (1987: 281–297) and Fanselow (1988: 106) that deverbal *-er* nominals denoting instruments contrast with those denoting agents in that the latter do not permit the realization of the verbal argument, cf. (2).¹

(1) producer of the film

(2) *shredder of paper

Many attempts have been undertaken to explain this difference in behavior between agent and instrument *-er* nominalizations, among others Keyser & Roeper (1984), Rappaport Hovav & Levin (1992), van Hout & Roeper (1998), Borer (2003) and Alexiadou & Schäfer (2010).

The received view in the traditional handbooks of word formation as well as in the linguistic literature is that the suffix *-er* combines with a

1. With this contribution, I would like to express my warmest congratulations to Gisbert Fanselow on the occasion of his 60th birthday. Its contents result from thought-provoking statements by Gisbert against the inheritance of arguments in instrumental nominalizations, cf. Fanselow (1988: 103–108). Actually, that work argues against argument inheritance with “semantically non-vacuous” suffixes like *-er* in general, but I have since forgiven him for that part of his argument. ☺

verb to produce the primary meanings of agent and instrument nouns as well as a number of secondary readings such as patient, location and event (for recent discussion see especially Lieber 2016). This brief article will argue that the two putative primary meanings of the *-er* suffix, that of agent and instrument, are not (metaphorical, metonymical or contextual) variants of a prototypical agentive suffix *-er* (as argued by Ryder 1999, Panther & Thornburg 2002, Lieber 2016 and many others). Rather, as also argued in Olsen (2019), the *-er* suffix is actually ambiguous; it represents two semantically distinct suffixes, an agentive or actor suffix (*-er_{actor}*) on the one hand and an instrumental suffix (*-er_{instr}*) on the other.

2 Earlier analyses of the *-er* suffix

Rappaport Hovav & Levin (1992) attempted to explain the difference in the ability of agent and instrument *-er* nominals to realize arguments in the syntactic phrases they head by assuming a difference, not between agentive and instrumental *-er* nominalizations, but between those nominalizations that are understood as eventive, i.e. in which an event takes place or has taken place, and those that are non-eventive where an event is not implied. In eventive nominals the argument structure of the verb is active and can be realized, while in the case of non-eventive meanings this is not the case.

Van Hout & Roeper (1998), working within a formal syntactic framework of derivational morphology, attempt to capture the generalization in a more principled fashion as a reflex of the aspectual properties that characterize the underlying syntactic representation of the nominal and their need to be licensed. As in a sentential construction, a telic structure in a nominalization requires the quantized object of the base verb to raise to the specifier position of the aspect phrase in order to be licensed. The verb itself moves up through the voice phrase to pick up the external argument of the verb (realized by the *-er* suffix) that is generated in the specifier position of the voice head. This explains the agentive nature of telic *-er* nominals. From there the syntactically united *V+er* complex raises to the N head that dominates the embedded event structure.

An unquantized object in an atelic VP, on the other hand, is licensed in SpecVP and doesn't require the overt movement to a higher position. The verb itself cliticizes to the left of the nominalizing head that immediately dominates the VP. Atelic nominalizations, therefore, are not limited to the role of agent. The *-er* morpheme to which the verb cliticizes originates in the N that dominates VP and not in the specifier position of a higher voice phrase. Consequently, due to the fact that no functional structure above VP is available, there is no agent present and no presupposition of an event. Thus, the nominalization is free to denote an instrument or any other thematic role.

Alexiadou & Schäfer (2010) also make use of the telic–atelic distinction in their more recent analysis of *-er* nominals within the framework of distributed morphology. They assume that the functional morpheme *-er* embeds under it the functional configuration TP, AspectPhrase, VoicePhrase and *v*Phrase characteristic of a sentence. “Little *v*” merges with a category-neutral root, characterizing the root as a verb. The verb root then moves up through the AspectPhrase, picking up either an episodic or a dispositional aspect feature on its way up to unite with the functional morpheme *-er* that categorizes the entire structure as nominal. Dispositional aspect – as opposed to episodic aspect – allows an unquantized object to remain implicit in the structure because of its unspecific nature. This explains the lack of realization of arguments in dispositional (i.e. instrumental) structures. In episodic cases, a quantized object must be licensed by movement into the specifier position of Aspect.

The problem with attempts like these to use the telic–atelic or episodic–dispositional dichotomy to explain when an argument can (and cannot) be realized as the complement of an *-er* nominal is that atelic/dispositional nominalizations permit the realization of an argument just like telic/episodic structures do, cf. (3a) and (4a). But when they do, the agent interpretation is mandatory just as it is in telic/episodic structures, cf. (3b) and (4b). An instrumental interpretation is ruled out in both cases:

- (3) Telic/episodic
- a. The **pruner of the tree** just completed his job. person
 - b. *The **pruner of the tree** was broken. *instrument
- (4) Atelic/dispositional
- a. The park is searching for a reliable **pruner of trees**. person
 - b. *The park purchased a more effective **pruner of trees**.
*instrument

Since syntactic analyses haven't been successful in explaining the inability of argument realization with instrumental nominals, let us turn our attention in the next section to a semantically oriented framework.

3 Characterization of the er_{actor} suffix

Bierwisch (1989, 2015a) has proposed a lexicalist theory of nominalization that is based on a theory of semantics in which meaning is separated into two levels of representation (cf. Bierwisch 1983, 1988, 2007, 2011, 2015a,b, Bierwisch & Lang 1989, Lang & Maienborn 2011, Maienborn 2017). The theory of two-level semantics encompasses, on the one hand, a highly articulated, complex level of conceptual structure (CS) that reflects our conceptual knowledge and can be enriched by contextually relevant features. On the other hand, it envisages a level of lexical-semantic structure (semantic form: SF) that is conceived of as a condensed version of CS. It represents the interface between CS and the system of grammar in that it encodes only the aspects of the more comprehensive conceptual meaning that are needed to establish the categories of grammar with their compositional properties. Consider as an example the entry for the verb *sweep* in (5).

- (5) [swi:p] [V] $\lambda x \lambda y \lambda e$ [$e : [y \text{ SWEEP } x]$]
 PF CAT AS SF

The entry for *sweep* gives its phonological form (= PF), its grammatical category (= CAT) and provides its lexical semantic meaning in its se-

mantic form (SF), which is the level of meaning visible to the grammar. Recall that SF characterizes the invariant aspects of meaning bound to the language system and is strictly compositional. The verb's argument structure (AS) is derived directly from the SF by binding the variable positions that are relevant to the syntax and ordering the corresponding lambda expressions in inverse order. This creates a hierarchy of assignment such that a lower argument is discharged before a higher argument.

Affixes have similar lexical entries, but they are bound morphemes that combine with a lexeme as their argument. For example, the suffix *-er* selects a verb as its lexical argument. Therefore, its AS in (6a) is made up of a predicational argument λP with the annotation [V]. The argument vector $\lambda\vec{v}$ represents the verb's unsaturated arguments to be taken over by the derived nominal. In the case of the verb *sweep* in (6b) these will be the external and internal arguments (= y and x). In the course of inheriting the arguments of *sweep*, the suffix *-er* binds the event variable of the verb (= e) with a generic operator (= $\text{Gen}(e')$). The result is *sweeper* in (6c).

- (6)
- | | | | | | | |
|----|------------|-----|-------------------------------|------------------|------------------|--------------------------------|
| a. | [-əɾ] | [N] | λP | $\lambda\vec{v}$ | $\text{Gen}(e')$ | $[P(\vec{v})(e')]$ |
| | | | [V] | | | |
| b. | [swi:p] | [V] | $\lambda x\lambda y\lambda e$ | | | $[e : [y [\text{SWEEP } x]]]$ |
| c. | [swi:p-əɾ] | [N] | $\lambda x\lambda y$ | | $\text{Gen}(e')$ | $[e' : [y [\text{SWEEP } x]]]$ |

With the event variable of the underlying verb now bound by the generic operator, it is no longer syntactically active. The highest active argument in the AS of the derived noun (= λy) corresponds to the original external argument of the verb *sweep* which has now become the referential argument of the derived nominal, i.e. *sweeper* 'one who sweeps', cf. the discussion in Bierwisch (2015a: 1062–1082).²

Although the variable e' is blocked in AS (i.e. bound by the generic operator), it is present in SF and is therefore part of our conceptual knowledge. So we could ask: what type of event is implicit (as background

2. For the lexical entry of the suffix *-er* in (6a) I have used a formally equivalent variant of Bierwisch's actual proposal for the discussion of which I am indebted to Claudia Maienborn.

information) in a nominal that refers, not to the event itself, but to the actor of an event such as *sweeper*? When they denote actors, *-er* nominals can imply the following types of activity, cf. Rainer (2015):

- (7) Implicit activity types of actor nominals in *-er*
- a. an occasional activity: *protester, voter, gawker*
 - b. a habitual activity: *gambler, smoker, complainer*
 - c. an occupation: *designer, preacher, programmer*
 - d. often all types are possible: *hunter, swimmer, seller, . . .*

In stark contrast to this, the referents of instrumental *-er* nouns such as *shredder, grater, heater* don't imply an activity at all. In fact, what they denote is in no way dependent on an activity being carried out (cf. also Alexiadou & Schäfer (2010), Rappaport Hovav & Levin (1992), among others). They simply denote artifacts that have been constructed for an intended purpose. In contrast to a *protester, gambler* or *designer*, a *shredder, heater* or *grater* is not identified by virtue of any activity taking place or having taken place. The artifact may never have been put to use to shred, heat or grate anything. They are shredders, heaters or graters by virtue of their design which is determined by the purpose for which they were constructed. So, for instance, a *shredder* understood as an actor is identified by the activity of shredding: it is a person who is implementing or has implemented the activity encoded by the base verb. If no shredding has taken place, the person cannot be labeled a shredder. But the instrument shredder is a thing identified by its design and construction from the moment of its creation, irrespective of any activity that may or may not be carried out.

4 Addition of an *er_{instr}* suffix

Bierwisch (2015b: 1118–1120) suggests two possibilities of accounting for the two primary meanings of the *-er* suffix that are intended to relate (what he terms) its “personal” to its “non-personal” readings, cf. (*piano*) *player* and (*record*) *player*. First, the suffix *-er* could derive personal nouns to which a coercive shift would apply to yield non-personal variants (i.e. (*piano*) *player* > (*record*) *player*). Or, alternatively, the relevant

verb could be listed with a personal and a non-personal subject. As for the first option, it is hard to see non-personal *-er* nominals deriving directly from personal *-er* nominals by shifting the referent from a person to a thing. Not all instruments depend on the existence of personal actors for their derivation, cf. the nominals in (8):

(8) Primary instruments

computer, adapter, fertilizer, humidifier, thruster, blower, recliner, heater, trailer, freezer, feeder, condenser, muffler, bumper, beeper, tranquilizer, multiplier, refrigerator, vibrator, simulator, projector, calculator, ventilator, duplicator, monitor

The second option of characterizing verbs for personal and non-personal subjects doesn't contribute a convincing solution to the problem either. Why should the verb *sweep* used with a non-personal subject in (9a) block the realization of its argument in the corresponding derived noun of (9b)?

- (9) a. This device sweeps the floor.
 b. *sweeper of the floor

In light of the evidence induced in the previous discussion, it seems reasonable to adopt an independent *-er* suffix that forms a class of instruments that are not characterized by an activity, but by a purpose. The instrumental suffix *-er_{instr}* would define a class of artifacts with a variable purpose whose specific content is supplied by the verbal lexeme to which the suffix *-er_{instr}* attaches, cf. (10):

- (10) $-er_{instr}$ [N] $\lambda P \lambda z \text{ Gen}(e') [\text{INSTR}(z) \ \& \ z \text{ PURPOSE}(e') \ \& \ P(e')]$
 [V]

The representation of the *-er_{instr}* suffix in (10) requires a verbal predicate to substitute for the predicate variable *P*. Thus, all arguments of the verbal predicate apart from its referential event argument must be existentially bound before entering the formula. Applying the function in (10) to *sweep* in (6b), the result is *sweeper* in (11):

(11) *sweeper*: [N] $\lambda z \text{ Gen}(e') [\text{INSTR}(z) \ \& \ z \ \text{PURPOSE}(e') \ \& \ \text{SWEEP}(e')]$

The class of underived instruments most likely have a similar SF representation, with the difference that each underived instrumental lexeme has lexicalized its individual purpose, cf. *knife* in (12) with the purpose CUT:

(12) *knife*: [N] $\lambda z \text{ Gen}(e') [\text{INSTR}(z) \ \& \ z \ \text{PURPOSE}(e') \ \& \ \text{CUT}(e')]$

Under these assumptions, instrumental *-er* nominals are not the result of transferred or coerced meaning from an agentive nominal as Lieber (2016), Bierwisch (2015b) and others suggest. Rather, they are derived directly by a second suffix *-er_{instr}* that is homonymous with the agentive suffix *-er_{actor}*.

5 Verbal arguments vs. inferred events

Recall that the *er_{actor}* suffix in (6a) – repeated here for convenience – takes over the arguments of the verb with which it combines, while blocking (via a generic binding) the referential event argument of the verb. Thus, what was originally the external argument of the verb becomes the referential argument of the derived noun and the internal argument can be realized in a syntactic phrase, cf. *sweeper of the room*.

(6) a. $[-\text{er}] \text{ [N]} \lambda P \lambda \vec{v} \text{ Gen}(e') [P(\vec{v})(e')]$
[V]

The referential argument λz of the *er_{instr}* suffix – repeated in (10) –, on the other hand, characterizes the derived nominal directly as an instrument via its referential argument λz which binds the variable of the predicated constant *INSTR*(z) in its SF. The verbal predicate enters the formula as a specification of the predicate variable P , and in so doing is stripped of all its arguments except for its bound event argument e' .

(10) *-er_{instr}* [N] $\lambda P \lambda z \text{ Gen}(e') [\text{INSTR}(z) \ \& \ z \ \text{PURPOSE}(e') \ \& \ P(e')]$
[V]

Hence, no arguments of the underlying verb are available for expression in the syntax of a derived instrument, cf. **shredder of paper*.

Nevertheless, derived instruments do allow the verbal event to be accessed by an attributive adjective in a non-intersective reading, cf. *fast shredder* in (13). A non-intersective reading arises when an attributive adjective functions as an adverbial by modifying, not the referent of the noun it accompanies, but an event associated with the meaning of that noun:³

(13) *fast shredder* ‘x shreds in a fast manner’

Non-intersective meanings are possible with agentive nominals as well, cf. (14).

(14) *beautiful dancer* ‘x dances beautifully’

Alexiadou & Schäfer (2010) assume that both “episodic” nominals like *dancer* and “dispositional” nominals like *shredder* (using their terms) share a syntactic representation in which an event structure with its cascade of functional categories (i.e. TP, AspP, VoiceP and *v*P) is present. The head of *v*P (“little *v*”) introduces the event variable that permits the non-intersective reading in both types of nominals.

However, non-intersective modification is found with underived instrumental and agentive nominals as well as with those derived from a verb. The nouns in (15) and (16) are simple, underived nouns. Yet, when modified by an adjective like *fast* or *good*, the adjective takes on an adverbial function.

(15) *fast car* = drives fast

(16) *good doctor* = performs the job of a doctor well

Hence, an implicit event must be accessible for modification by the adjective in underived agent and instrumental nouns as well. This is clearly

3. For a thorough discussion of the intersective vs. non-intersective function of adjectives see Larson (1998) who – as argued here – also considers the phenomenon to be semantic in nature.

a semantic, not a syntactic, fact. As basic nouns there is no reason to postulate a full sentence structure in their representation, including verb movement through all the proposed functional heads up to the nominal suffix. It is far more sensible to assume that non-intersective readings arise on the basis of the semantics of the noun in all four cases, and is not anchored in an unfounded syntactic structure. The adjectival modifier is apparently able to access an implicit event suggested by the semantic structure of the noun. This mode of modification is not a compositional semantic process in the strict sense, but requires a coercive step. The adjective doesn't refer to the referent of *shredder*, *dancer*, *car* or *doctor*. This would yield an intersective reading (i.e. *beautiful dancer* 'x is beautiful & dancer'). Rather, a plausible event is induced on the basis of the meaning of the constituents to which the adjective can successively apply. For recent discussions of the role of such coercive processes in the explanation of the flexibility and contextual adaptability of meaning within the context of conceptual semantics and for a formal proposal for such coercive processes, cf. Maienborn (2017) and Bücking & Maienborn (forthcoming).

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Bienenfresserortungsversuch: **compounding with** **clause-embedding heads**

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Research on deverbal/synthetic compounds has usually paid no specific attention to complex deverbal compounds whose head is derived from a clause-embedding predicate (CEP); analyses/discussions of synthetic compounds typically focus on compounds of the type *Lastwagen-fahrer* ('truck-driver'), with the non-head saturating the internal argument of the entity-selecting head (Fanselow 1981; see also Neef 2015, Olsen 2017 for an overview). The structure I am interested in is illustrated in (1a): the head of this German compound is derived from the verb *versuchen* 'try', which selects a clausal argument and usually takes an infinitival complement inducing subject control as in (1b).¹

- (1) a. Gisbert-s [[Biene-n-fresser -ort-ung-s] -versuch]
Gisbert-GEN bee-LNK-eater -spot-NOML-LNK -try.NOML
'Gisbert's attempt to spot bee eaters'
- b. Gisbert_i versucht [$\nearrow_{i/*j}$ die Biene-n-fresser zu orten].
Gisbert try.3SG the bee-LNK-eaters to spot.INF
'Gisbert tries to spot the bee eaters.'

1. I will use \nearrow as notation for the covert (controlled) argument in order to remain neutral concerning its status. A birding enthusiast like Gisbert will probably accept this notational device in a *festschrift* squib ...

The interpretation of the complex compound in (1a) mirrors that of the clausal structure in (1b): the prenominal genitive is interpreted as agent of the deverbal noun *Versuch* ‘attempt’ and as controller of the experienter/perceiver argument of the embedded deverbal noun *Ortung* ‘spotting’. Disjoint/non-control readings seem strongly dispreferred. This squib will focus on the interpretation of such complex compounds and point out some unexpected patterns of argument inheritance. Before dealing with these issues I will briefly discuss the morphological structure of these compounds.

1 Morphological structure

The non-head in (1a), which saturates the clausal argument slot of the head, is a typical deverbal compound in itself: its head is a transitive verb, its non-head is interpreted as the underlying theme argument of the deverbal head. (1a) is formed analogously to examples attested in corpora:

- (2) a. Merkel-s [[**Opel-Rett-ung-s**] -**versuch**]
 Merkel-GEN Opel-rescue-NOML-LNK -try.NOML
 ‘Merkel’s attempt to rescue Opel’ [DWDS Zeit 2010]
- b. der fehlgeschlagene amerikanische [[**Geisel-Befrei-ung-s**]
 the failed American hostage-free-NOML-LNK
 -**versuch**] im Iran
 -try.NOML in.the Iran
 ‘the failed American attempt to free the hostages in Iran’
 [IDS sgt 1997]
- c. [[**Waffe-n-beschaff-ung-s**] -**vorhaben**]
 weapon-LNK-obtain-NOML-LNK -plan.NOML
 ‘the intent/plan to obtain weapons’ [DWDS Zeit 2013]
- d. [[**Organ-spende**] -**bereit-schaft**]
 organ-donate.NOML -willing-NOML
 ‘the willingness to donate organs’ [DWDS Zeit 2016]

(2b) shows that the agent/controller of the nominal *Versuch* may be realized as attributive ethnonymic adjective ('American').

The head of the embedded compound is either a deverbal noun as in ((1a/2) or a verbal stem that is integrated with a linking schwa as in (3).

- (3) [[Rorschach-Form -deut-e] -versuch]
 Rorschach-form -interpret-LNK -try.NOML
 'the attempt to interpret Rorschach forms' [IDS sgt 2008]

Although German nominal compounding is recursive in principle and stacking of CEPs may yield complex recursive structures, deverbal compounds of the type *Bienenfresser-ortungs-versuch* are attested only infrequently in corpora. Structurally more complex examples such as (4) are attested even rarer (mainly in certain registers: Bureaucratese, Journalese).


- (4) Gisbert-s [[[Großtrappen-beobacht-ung-s] -verzicht-s]
 Gisbert-GEN great.bustard-observe-NOML-LNK -waive.NOML-LNK
 -erklär-ung]
 -state-NOML
 'Gisbert's statement of doing without observing the great bustards'

CEP-headed compounds may alternatively take non-heads that do not saturate the internal (clausal) argument of the head (e.g., *Modell-versuch* 'model test', *Lang-zeit-versuch* 'long-term attempt'). With simple nominal non-heads, one can observe coerced eventive/situational readings of the non-head – similar to reinterpretation effects of nominal complements to aspectuals (e.g., *finish the book*):


- (5) ein [**Flanke-n-versuch**] von Gambino
 a cross/flank-LNK-try.NOML by Gambino
 'Gambino's attempt to hit a cross' [IDS hmp 2006]

2 The interpretation of CEP-headed compounds


As indicated above, the complex compound in (1a)/(6) only seems to allow an interpretation in which the prenominal genitive is a controller of the experiencer argument of *Ort-ung* ‘spotting’.

(6) Gisbert_i-s [[ _{i/*j} [Biene-n-fresser -ort-ung-s]] -versuch]

Unlike its equivalent in other languages (see Grano 2017), non-control uses of *versuchen* are rare and dispreferred by many speakers of German. The necessary causative coercion of the clausal complement that can be observed in languages with non-control interpretations does not seem to be available in (6). In Stiebels (2007, 2010) I have argued for a distinction between “structural control” (= the regular syntactic notion of control) and “inherent control”, i.e., the lexical requirement of certain CEPs for argument identification (control readings) in all types of clausal complements – even finite ones. For many speakers of German, *versuchen* is an inherent control predicate. This property is inherited to the nominalized form *Versuch*. If *Versuch* is replaced by a CEP that does not display inherent control, no control reading is required in the compound. In (7a) the covert experiencer argument of *Ort-ung* may, but need not, be co-indexed with the prenominal genitive because *hoffen* ‘hope’ and its derived nominal do not require argument identification with an argument of the clausal complement in non-control contexts (see (7b)).

- (7) a. Gisbert_i-s [[ _{i/j} [Biene-n-fresser -ort-ung-s]]
 Gisbert-GEN bee-LNK-eater -spot-NOML-LNK
 -hoffn-ung]
 -hope.NOML
 ‘Gisbert’s hope that he/someone has spotted/will spot the bee eaters’
- b. Gisbert hofft, dass Derk die Biene-n-fresser ortet.
 Gisbert hope.3SG that Derk the bee-LNK-eaters spot.3SG
 ‘Gisbert hopes that Derk will spot the bee eaters’

As the compound in (8) illustrates, the agent of a nominalized CEP may be realized as non-head and even act as controller:

- (8) das **Kanzler_i-versprechen**, [ _{i/*j}] die Erwerbslosen-zahl
 the chancellor-promise.NOML the unemployed-number
 bis zur Wahl auf unter 3,5 Millionen zu drücken]
 till to.the election on under 3.5 million to lower.INF
 ‘the chancellor’s promise to lower the unemployment rate below
 3.5 million by the time of the election’ [DWDS BZ 2002]

Therefore, CEP-headed compounds do not necessarily induce structures of control; the highest argument of the embedded head could be realized within the compound in principle. The control properties of the CEP head are crucial for the interpretation. For a compound such as (9a) the question arises as to which bracketing is correct, the one suggested in (9a) or the one in (9b).



- (9) a. [Kanzler- [Rücktritt-s -droh-ung]]
 chancellor- resign.NOML-LNK -threaten-NOML
 ‘the chancellor’s threat to resign’ [DWDS TS 2003]
 b. [[Kanzler- Rücktritt-s] -droh-ung]

(10a) shows that a non-control-relation between the agent of *Drohung* and the agent of *Rücktritt* is unacceptable because the spokesperson does not have the authority to threaten the resignation of the chancellor. If the CEP head is replaced by CEP that is not an inherent control predicate, disjoint referents for the agents of the CEP head and the embedded deverbial head are possible.


- (10) a. *die [[Kanzler-Rücktritt-s] -drohung] des
 the chancellor-resign.NOML-LNK -threaten-NOML the.GEN
 Pressesprechers-s
 spokesperson-GEN
 ‘the spokesperson’s threat that the chancellor will resign’


- b. die [[Kanzler-Rücktritt-s] -ankündig-ung] des
 the chancellor-resign.NOML-LNK -announce-NOML the.GEN
 Pressesprechers-s
 spokesperson-GEN
 ‘the s.person’s announcement that the chancellor will resign’

Thus, the compound in (9a) displays a word-internal control relation as indicated in (11a); the representation proposed in (11b) would resemble backward control (Polinsky & Potsdam 2002), with the controller being in a lower-ranked position than the controlled argument. Since backward control is not attested in German otherwise, I stick to the presentation in (11a).

- (11) a. [Kanzler_i- [[ _{i/*j} Rücktritt-s] -droh-ung]]
 b. [ _{i/*j} [[Kanzler_i- Rücktritt-s] -droh-ung]]

As expected, control readings can also be observed in CEP-headed compounds based on (inherent) object control predicates. The compound in (12a) is based on the object control verb *vorwerfen* ‘reproach’, which takes a dative object (see (12b)); the compound in (12c) is based on the object control verb *auffordern* ‘request’, which takes an accusative object (see (12d)).


- (12) a. [[Daten-vernicht-ung-s] -vorwurf]
 data-destroy-NOML-LNK -reproach.NOML
 ‘the reproach of data destruction’ [DWDS Zeit 2012]
- b. Sie_i warf ihrem Bruder_j vor [ _{*i/j} die
 she reproach.PST.3SG her.DAT brother PT the
 Daten vernichtet zu haben].
 data destroy.PTCP to AUX.INF
- c. [[Feuer-einstell-ung-s] -aufforder-ung]
 fire-stop-NOML-LNK request-NOML
 ‘the request to stop firing’ [DWDS KK 1967]

- d. Sie_i forderten die Polizisten_j auf, [*i/j] das Feuer
 they request.PST.3PL the policemen PT the fire
 ein-zu-stellen].
 PT-to-put.INF
 ‘they requested the policemen to stop firing’

The controllers are left implicit in (12a/c). However, one can also find examples with overt controllers. As has been already observed for English (see Pesetsky 1991, Sichel 2010), internal arguments of nominalized object control predicates are – apart from very rare exceptions – not realized structurally (i.e., with genitive), but obliquely (i.e., with a PP). The internal argument of *Vorwurf* may be realized with a PP headed by *gegen* ‘against’ as shown in (13).


- (13) ... den falschen [[**Vergewaltig-ung-s**] -**vorwurf**]
 the.ACC wrong rape-NOML-LNK -reproach.NOML
 einer Lehrerin gegen einen Ex-Kollegen
 a.GEN teacher against a.ACC ex-colleague
 ‘a teacher’s wrong accusation of a colleague to have raped
 her/s.o.’ [DWDS Zeit 2013]

The obliquely realized internal argument of *vorwerfen/Vorwurf* controls the covert argument of the embedded head *Vergraul-ung* ‘scaring away’ in (14), thus mirroring object control with infinitival complements.

- (14) Gisbert_i-s [*i/j/*k] [Kormoran-vergraul-ung-s]
 Gisbert-GEN great.cormorant-scare.away-NOML-LNK
 -**vorwurf**] gegen die Fisch-züchter_j
 -reproach.NOML against the fish-producers
 ‘Gisbert’s accusation of fish producers scaring away the great cor-
 morants’

Note that object controllers may not be realized as non-heads in CEP-headed compounds. Thus, (15) only allows an interpretation in which the non-head corresponds to the agent of the CEP head. The controller

is covert; it would be realized with a PP headed by *an* ‘at’.

- (15) die **Kanzler_i-aufforder-ung**, [**i/j* sich zu melden], ...
 the chancellor-request-NOML REFL to report.INF
 ‘the chancellor’s request to report for sth.’ [DWDS TS 2002]

3 Argument inheritance

Previous research on compounds has shown that inheritance of arguments of the non-head to the compound may occur, yet rather restrictively (e.g., *Härte-grad des Wassers* ‘degree of hardness of the water’). Siebert (1999) assumes that argument inheritance is restricted to abstract heads, which, however, still leads to overgeneration of forms.

If the CEP head and the embedded head would undergo Functional Composition, all arguments of the embedded head should be inherited to the compound, which, however, is not correct. The following example is not really acceptable.

- (16) */??Gisbert-s [Überleben-s -hoffnung] der
 Gisbert-GEN survive.NOML-LNK -hope-NOML the.GEN.PL
 Kampfläufer in Unterleuten
 ruffs in Unterleuten
 ‘Gisbert’s hope that the ruffs will survive in Unterleuten’

Nevertheless, one can find examples of argument inheritance in the corpora, some of which are shown in (17) and (18). If the theme argument of the embedded head is not saturated within the compound, it may be realized as genitive DP as in (17a/c) or as PP as in (17b). Note that the agent/controller argument is covert in (17a/c) and realized as genitive DP in (17b).

- (17) a. erster [**Über-gabe-versuch**] der 14
 first over-give.NOML-try.NOML the.GEN.PL 14
 Sahara-Geiseln in Mali
 Sahara-hostages in Mali
 ‘the first attempt to hand over the 14 Sahara hostages in Mali’
 [IDS mm 2003]
- b. die mangelnde [**Rück-nahme-bereit-schaft**] der
 the lacking back-take.NOML-willing-NOML the
 nord-afrikanischen Staaten für abgelehnte
 North-African countries for reject.PTCP
 Asyl-bewerber
 asylum-seekers
 ‘the lacking willingness of the North-African countries to take
 back rejected asylum seekers’ [DWDS Zeit 2016]
- c. [**Rück-zahlung-s-aufforder-ung**] der gesamten
 back-pay-NOML-LNK-request-NOML the.GEN.PL total
 staatlichen Gelder
 public funds
 ‘the request to pay back all public funds’ [DWDS Zeit 2016]

If the embedded head is ditransitive and the theme argument is realized as non-head of the embedded compound (see (18)) the recipient argument may be inherited to the complex compound and realized as PP (never as DAT):

- (18) a. [[**Heroin-ab-gabe**] -**versuch**] für Alt-junkies
 heroin-off-give.NOML -try.NOML for old-junkies
 ‘the attempt to hand out heroin to old junkies’ [IDS stern 1999]

- b. ein erneuter [[**Geld-über-gabe**] -**versuch**] an
 a repeated money-over-give.NOML -try.NOML at
 den Karstadt-Erpresser “Dagobert”
 the.ACC Karstadt-blackmailer Dagobert
 ‘a repeated attempt to hand over the money to the Karstadt
 blackmailer Dagobert’ [DWDS BZ 1994]

At this point I am not able to give a characterization of those CEPs that are transparent for inheritance of arguments of the embedded head; more empirical research is needed.

Though belonging to a marked register, CEP-headed compounds give interesting insights into word-internal control relations – highlighting the semantic contribution of the CEP – and patterns of argument inheritance.



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Leben mit Paradoxien

Manfred Bierwisch

Das Frege zugeschriebene Prinzip der Kompositionalität der Bedeutung, nach dem die Bedeutung eines komplexen Ausdrucks eine Funktion der Bedeutungen seiner Teile und der Art ihrer syntaktischen Kombination ist, gehört zu den produktiven Glaubenssätzen der Theorie über die Beziehung zwischen Syntax und Semantik natürlicher Sprachen.¹ Zwar ist nicht so klar, was zur Art der syntaktischen Kombination gehört und was nicht, aber in jedem Fall ergeben sich bei näherer Betrachtung für dieses außerordentlich plausible Prinzip schon in einfachen Sätzen wie (1) beträchtliche Probleme.

(1) Das Boot legte an der Mole an.

Wie seit langem bekannt ist, erschließt sich die Kompositionalität der Bedeutung im Deutschen eher aus der Struktur der Nebensatzform, so dass (1) besser auf dem Hintergrund von (2) zu verstehen ist:

(2) dass [[das Boot] [[an [der Mole]] [an [leg te]]]]

Für die Art der syntaktischen Kombination ist dabei zumindest die durch Klammern angegebene Form der Gruppierung oder Phrasenstruktur anzunehmen, die sowohl innerhalb der lexikalischen Einheiten wie zwi-

1. Als Referenz werden dafür im allgemeinen die Aufsätze in Frege (1962) angegeben, doch enthalten die nicht die angedeutete Formulierung des Prinzips, wie überhaupt zu vermerken ist, dass das, was im Folgenden als Semantik behandelt wird, bei Frege eher als „Sinn“ denn als „Bedeutung“ eines Ausdrucks verstanden wird. Für die hier erörterten Probleme des Kompositionalitätsprinzips ist das – bei aller Bedeutsamkeit des Unterschieds – jedoch nicht entscheidend.

schen ihnen gilt, sodaß *an der Mole* sich als lokale Funktion auf die Bedeutung des selbst schon komplexen Bewegungsverbs *anlegen* bezieht und das ganze als Prädikat auf das als Satzsubjekt fungierende Argument *das Boot*. Das gilt zunächst ohne Bedingungen der Art, die mit Beziehungen wie Rektion, Kongruenz, Bindung oder Kontrolle verbunden sind. Ein sozusagen doppeltes Paradox ergibt sich aber aus der Zuordnung des Präteritalmorphems *te*: Einerseits ist das Präteritum semantisch dem Satz als Ganzem zugeordnet – was in (2) nicht formal angezeigt ist – und ordnet den Sachverhalt zeitlich vor der Äußerungszeit ein, andererseits ist *te* morphologisch ein Flexiv, das nicht einmal dem Verb als Ganzem, sondern nur dem Stamm ohne Präfix zugeordnet ist. Morphologisch gehört das Tempus also als Flexiv zur kleinstmöglichen Einheit – der Wurzel *leg* –, semantisch hingegen zur größten – der Bedeutung des Satzes als ganzem.²

Diese Paradoxie wird noch gesteigert in Verben mit stark flektiertem, also ablautendem Stamm wie *eintreffen*. Das Präteritum ist in solchen Fällen morphologisch nicht als Suffix an das Verb adjungiert, sondern durch Vokalwechsel in den Stamm inkorporiert, die Numeruskongruenz nun als Affix realisierend, im vorliegenden Fall durch das Nullsuffix \emptyset . Am Beispiel (3) ist der morphologisch engste Rahmen (der Stamm *traf*) und der semantisch weiteste Bereich (der ganze Satz für das Tempus) direkt ablesbar:

(3) als [[der Bote] [[in [der Stadt]] [ein [traf \emptyset]]]]

Für die syntaktische Struktur des Hauptsatzes (1) führt nun kein Weg an der Annahme der zwei einander korrespondierenden Positionen a und b vorbei, die in (4) durch geschweifte Klammern markiert sind, gleich-

2. Zu diesem kommt ein weiteres Paradox, weil Tempus und Modus im Deutschen (wie in vielen flektierenden Sprachen) als morpho-syntaktische Merkmale mit den Merkmalen für Person und Numerus morphologisch integriert realisiert werden: *leg-te* ist zugleich Präteritum und 1./3. Person Singular. Von diesem Merkmalsbündel unterliegen Person und Numerus, nicht aber Tempus und Modus, überdies der Kongruenzbeziehung mit den entsprechenden Kategorien im Subjekt des Satzes, was aber in der Phrasenstruktur keine Nachbarschaft zum flektierten Verb verlangt. Diese Subjekt-Verb-Kongruenz ist zwar syntaktisch relevant, insofern Verletzungen der Bedingung als ungrammatisch gelten, doch spielt das für die Bedeutungskomposition keine Rolle.

gültig ob man eine Umstellungsoperation von *b* nach *a* – technisch gesprochen ein ‚internes Merge‘ im Sinn von Chomsky (1995) – oder ein Strukturschema mit zwei Positionen etwa im Sinn von Culicover & Jackendoff (2005) annimmt:

(4) [[das Boot] [{leg te}_a [an [der Mole]] [[an { }]_b]]]

Dabei gibt *a* die lineare Position an, an der der Verbstamm artikulatorisch realisiert wird, und *b* die hierarchische Position, in der er – unter Einbeziehung der bereits kommentierten Paradoxie von Verbstamm und Flexion – semantisch zu interpretieren ist. Die Bedeutung des komplexen Ausdrucks ergibt sich dabei allerdings nicht als Funktion der Bedeutungen der Teile und der Art ihrer syntaktischen Kombination, sie ist vielmehr trotz der formal fehlenden Kombination verfügbar. Denn zu den in (2) identifizierten Paradoxien kommen in (4) noch zwei entscheidende Probleme hinzu. Erstens bildet der Stamm *leg-* nur zusammen mit dem Präfix *an-* die lexikalische Einheit anlegen mit der Funktion eines intransitiven Bewegungsverbs, auf der die Bedeutung von (1) beruht. Diese lexikalische Einheit kommt in (1) bzw. (4) formal aber gar nicht vor: Stamm und Präfix sind getrennt.³ Und das heißt zweitens, dass nicht klar ist, welchem der syntaktisch separierbaren Teile die Bedeutung des Ganzen zuzuordnen wäre. Zwar sind beim Vergleich von Kontrastpaaren wie *anlegen* vs. *ablegen* oder auch *ansetzen* vs. *absetzen* durchaus Teile der Verbbedeutung erkennbar, aber das sind nicht Komponenten, auf denen die Kombination beruht.⁴ Paradoxerweise geht die lexikalische Bedeutung als ungeteilte Einheit in die semantische Kombinatorik ein, ungeachtet der Eigenständigkeit der Teile, deren Eigenschaften morpho-

3. Diese Lexikalisierungsbedingung gilt natürlich auch für die drei ganz verschiedenen Bedeutungen der transitiven Version des Verbs *anlegen* (*eine Robe, viel Geld*, oder *einen Park anlegen*): auch sie haben nur zusammen mit dem Präfix, von dem sie durch die Verbstellung getrennt werden, die relevanten lexikalischen Eigenschaften: *er legt das einen Garten an*.

4. Dieses Problem ist noch offensichtlicher in Fällen wie *durchsetzen, anfangen, aufhören*, und vielen anderen, in denen das Präfix oder der Stamm oder auch beide von sich aus gar nicht an der Bedeutungskomposition beteiligt sind: Die Bedeutung von *anfang-* hat weder mit der von *an* noch von *fang* kombinatorisch zu tun, obschon Präfix und Stamm die kanonischen morpho-syntaktischen Eigenschaften, einschließlich der Ablautflexion *fang/fing*, mitbringen.

logisch wirksam bleiben, semantisch aber zugunsten der Kombination suspendiert werden.

Diese Paradoxien, die in der syntaktischen Separierung von Verbstamm und Präfix einen Höhepunkt erreichen, sind keineswegs ein Randphänomen. Brüche der Kompositionalität, bei denen sich die Bedeutungskombination offenbar von den Bedingungen der morphologisch-syntaktischen Struktur löst, finden sich an zahlreichen Stellen. Hier ist ein Beispiel aus dem Bereich der Komparation, also der Morphologie und Semantik der Adjektive. Das formale Paradoxon steckt im Komparativ (6a) zum Positiv (5a), wie der Vergleich mit (6b) zeigt:

- (5) a. Die Sache ist unklar.
 b. Die Sache ist nicht klar.
- (6) a. Die Sache ist unklarer als vorher.
 b. Die Sache ist nicht klarer als vorher.

Während die morphologische Negation *un-* in (5a) und die syntaktische Negation *nicht* in (5b) Strukturen ergeben, die sachlich unter den gleichen Bedingungen zutreffen, gilt das für die Komparativstrukturen in (6a) und (b) nicht: (6a) stellt eine Zunahme der Unklarheit fest, (6b) verneint nur die Zunahme der Klarheit. Das entspricht der Negierung des Komparativs *klarer* in (6b) und der Anwendung des Komparativs auf die Negation *unklar* in (6a), obwohl formal das Morphem *-er* enger mit dem Stamm *klar* verbunden ist als die Negativpartikel *un-*. Das heißt aber, dass (6a) dem Klammerparadox (7a) entspricht, (6b) dagegen auf der strikt hierarchischen Kombination beruht, wobei eckige Klammern die morpho-syntaktische, geschweifte Klammern die davon abweichende semantische Kombination andeuten:

- (7) a. { un [klar } er] b. [neg [klar er]]

Sowohl (7a) wie (b) entsprechen der direkten Verbindung von Stamm und Komparativsuffix.⁵ In (7b) ist diese Kombination syntaktisch der Ne-

5. Die zeigt sich, neben rein phonologischen Bedingungen wie Silbenstruktur und Intonation, morphologisch unter anderem darin, dass Stämme mit Umlautdisposition –

gation zugeordnet, was auch semantisch dem Kompositionalitätsprinzip entspricht, in (7a) setzt sich dagegen – ähnlich wie bei Verbstamm und Präfix – die semantische Kombination gegen die Morphologie durch.

Das gilt ganz parallel auch bei komplexen Adjektiven, die kompositionell transparente Derivate sein können, wie *ruh-ig*, *sach-lich*, *schäd-lich*, oder mehr oder weniger idiosynkratisch lexikalisierte Bedeutungen haben wie *deut-lich*, *gründ-lich*, *höf-lich*, *vorher-seh-bar* etc. (wobei die Frage nach dem genauen Format ihrer lexikalischen Repräsentation hier offen bleiben kann). In jedem Fall ergeben sich die in (8) und (9) angedeuteten Paradoxien zwischen morphologischer und semantischer Kombinatorik: unruhigere Zeiten sind durch mehr Unruhe gekennzeichnet, nicht durch die Negation von mehr Ruhe:

- (8) a. unruhigere Zeiten als früher
 b. { un [[ruh ig] } er]
- (9) a. eine unhöflichere Mitteilung
 b. { un [höf lich } er]

Ähnliche Paradoxien finden sich in vielen Bereichen der Derivationsmorphologie. Hier sind Beispiele aus verschiedenen Arten der Nominalisierung: Die Dimensions- oder Eigenschaftsnominalisierung in (10), in der zunächst das Suffix semantisch eine Eigenschaft zu einer Entität macht, führt durch die Qualifizierung der Eigenschaft in (11) zur bereits vertrauten Paradoxie: die Steigerung durch *über* oder die Negation durch *un* betrifft nicht die Entität, die durch die Nominalisierung entsteht, sondern die Eigenschaft oder Dimension, von der die Nominalisierung ausgeht.

und nur die – bei Komparativ Umlaut zeigen – *lang/länger*, *kalt/kälter*, *hoch/höher*, *klug/klüger* etc. – solche ohne Komparativumlautdisposition dagegen nicht: *klar/klarer*, *falsch/falscher*, *hohl/hohler*, *rund/runder*. – Die Spannung, die sich dabei in Fällen wie (7a) in Kontrast zu (7b) zwischen morphologischer und logischer Struktur ergibt, analysiert fürs Englische entsprechend Pesetsky (1985).

- (10) a. lang Länge (11) a. { über [läng } e]
 b. schön Schönheit b. { un [schön } heit]
 c. empfindlich Empfindlichkeit c. { über [[empfind lich] } keit]

Deutlicher als diese ziemlich subtilen Paradoxe bei Eigenschaftsnominalisierungen sind solche bei Aktornominalisierungen wie in (12a) und (b), wo nicht ein *passer* oder *färber* durch entsprechende Determinativelemente modifiziert wird, sondern die Stämme der Verben *auffassen* und *schönfärben* als Ganze nominalisiert sind, obwohl das Suffix nur zum eigentlichen Stamm gehört; ebenso gehört *lang* in (12c) semantisch zum Verb, obwohl das morphologisch enger an den Stamm gebundene Akteur-Suffix den Umlaut bedingt. Ganz parallel ist in (12d) *leise* Adverbial zu *tret* und nicht Determinans zum Nomen *treter*:

- (12) a. Auf pass er { auf [pass } er]
 b. Schön färb er { schön [färb } er]
 c. Lang schläf er { lang [schläf } er]
 d. Leise tret er { leise [tret } er]

Diese Paradoxie kommt nicht oder nicht eindeutig zustande, wenn semantisch ein reguläres Determinativ-Kompositum möglich ist, wie in (13): Der morphologischen Struktur nach kann ein *Freidenker* verstanden werden (i) als einer der frei denkt – also mit Klammerparadox –, oder (ii) als ein freier Denker – also als reguläres Determinativkompositum – ohne Paradox, während für (13b) nur die reguläre Nominalkomposition (ii) in Frage kommt und die inkorporierende Agens-Nominalisierung (i) praktisch ausgeschlossen ist:

- (13) a. Frei denk er
 (i) { frei [denk } er] (ii) [frei [denk er]]
 b. Ruhe stör er
 (i) ? { [ruh e] [stör } er] (ii) [[ruh e] [stör er]]

Das Determinans *ruhe* besetzt in *Ruhe-störer* eine Argumentstelle des aktor-nominalisierten Verbs, analog zu *Unruhestifter*, *Feuerlöscher*, *Buchleser* und zahllosen anderen Komposita. (13) kennzeichnet gewissermaßen

die Grenze zwischen regulär gültigen Paradoxien der bisher betrachteten Art und solchen, die unbeschadet semantischer Interpretierbarkeit als abweichend gelten:

- (14) a. die *[{ leitend-e [Arzt } stelle]]
 ~ die Stelle des leitenden Arztes
- b. ein *[{ grün-er [Star } patient]]
 ~ ein Patient mit Grünem Star
- c. ein *[{ flüssig-er [Seifen } behälter]]
 ~ ein Behälter für flüssige Seife

Bei Fällen wie (14), die zum oft zitierten Typ der *reitenden Artilleriekaserne* gehören, treten zwei einander bekräftigende Diskrepanzen auf: erstens ordnet die syntaktische Hierarchie das Attribut dem Kompositum als Ganzem zu, und das heißt semantisch dem Determinatum statt dem Determinans, was der intendierten Bedeutung zuwider läuft; zweitens wird diese falsche Zuordnung auf morphologisch korrekte Weise durch die Kongruenz bekräftigt, die sich nach Kasus, Genus und Numerus des Determinatums richtet. Diese Diskrepanz ist ein manifester Verstoß gegen das Kompositionalitätsprinzip, das durch Konstruktionen wie (14) verletzt wird und zu semantischer Anomalie führt.

Daraus ergibt sich die interessante Frage, wieso die zuvor betrachteten Konstruktionen wie (9), (11) oder (12) und vor allem (1) bzw. (4) zwar eindeutig Paradoxien enthalten, die gegen das Kompositionalitätsprinzip verstoßen, aber weder semantisch noch morphosyntaktisch defekt sind. Da es einiger analytischer Aufmerksamkeit bedarf, die fraglichen Paradoxien überhaupt als solche zu identifizieren, gibt es Grund zu der Auffassung, dass sich die semantische Interpretation gar nicht auf diesen Aspekt der Morphologie bezieht, dass also die Zuordnung der Derivations- oder Flexionselemente den Bedingungen der Wortstruktur folgt, ohne an der Kompositionalität der Semantik beteiligt zu sein, deren Rangordnung ihrerseits durch die konzeptuelle Struktur determiniert ist. Das heißt zugleich, dass die Kombinatorik morphologischer Elemente innerhalb der Wortstruktur weitgehend autonom ist, ohne direkt der semantischen Interpretation zugeordnet zu sein, solange sie nicht

Abhängigkeiten über die Wortstruktur hinaus betreffen, wie im Fall der Kongruenz in Konstruktionen wie (14).

Das gilt nun allerdings nicht für das zentrale Phänomen des finiten Verbs im Deutschen, also in Fällen wie (1), (2) und (4): Die morphologischen Merkmale des Finitums sind durch die Kongruenzbedingung an Person und Numerus des Subjekts gebunden und determinieren durch Tempus und Moduskategorien semantisch den Satz als Ganzes. Das heißt, die Person-, Numerus-, Tempus- und Modus-Merkmale des Verbs werden im Rahmen wortstruktureller Bedingungen realisiert, die syntaktische und semantische Bedingtheit des Verbs aber ist an die Satzstruktur gebunden. Trotz dieser diskrepanten Bezugsdomänen ist damit kein Anomalie-Effekt verbunden, vielmehr geht es um ganz reguläre Satzstrukturbildung.

Die hat für die Position des finiten Verbs – sehr stark vereinfacht – zwischen drei Optionen zu entscheiden: Spitzen-, Zweit- und Endstellung für Frage-, Haupt- und Nebensatz. Diese Optionen sind verbunden mit der von der regulären semantischen Kompositionalität völlig separaten Bedingung, dass im Fall eines Präfixverbs Stamm und Präfix eine gemeinsame Bedeutung aufweisen, auch wenn sie syntaktisch im Satz völlig separiert sind. Dabei können Stamm und Präfix kombinatorisch transparent verbunden sein wie in (15a) oder arbiträr zu einer unauflöselichen Einheit zusammengefaßt wie in (15c) oder etwas dazwischen wie in (15b) – für die rein syntaktischen Positionen in ganz einfachen Fällen wie (16) ist das gleichgültig.⁶

- (15) a. { ab [schreib } en] ~ *kopieren*
 b. { auf [sag } en] ~ *rezitieren*
 c. { auf [hör } en] ~ *beenden*

- (16) a. Wann hörst du endlich damit auf?
 b. Wenn du endlich damit aufhörst...

6. Zu den wortstrukturellen Bedingungen gehört dabei auch der Wortakzent auf dem Präfix oder dem Stamm, der in Fällen wie *únterstellen* vs. *unterstéllen* zu syntaktisch und semantisch unterschiedlichen Strukturen führt mit gravierenden Konsequenzen, sodass es zwar *Er stellt das bei mir unter*, aber *Er unterstellt mir das* heißt, scheinbar jenseits aller Kompositionalität.

Natürlich kommt die Bedeutung komplexer Ausdrücke durch die Kombination der Bedeutung der Teile zustande – im Prinzip der im lexikalisch Wissen fixierten Einheiten –, und zwar auf Grund ihrer grammatisch artikulierten Kombination. Dabei haben aber die morpho-syntaktischen Muster und Regeln eine systematische Eigenständigkeit, die bereits in dem engen, hier betrachteten Ausschnitt eine wichtige und stabile Rolle spielt, die die semantisch strukturierte Bedeutung in manchen Punkten gar nicht tangiert.

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Zur Analysierbarkeit adverbialer Konnektive

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1 Einführung

Eine nicht geringe Zahl komplexer adverbialer Konnektive in verschiedenen Sprachen erweist sich phonologisch, morphosyntaktisch und semantisch als analysierbar. Andererseits bilden die Bestandteile solcher Konnektive relativ fest gefügte Einheiten und sind nur bedingt frei kombinierbar.

Der vorliegende Beitrag diskutiert, wie diesen Besonderheiten in einer Theorie der Laut-Bedeutungs-Zuordnung, in der das Lexikon eine zentrale Rolle spielt, Rechnung getragen werden kann.

Sprachvergleichend werden subordinierende adverbialer Konnektive des Deutschen, Russischen und Spanischen behandelt. Die Arbeit konzentriert sich auf Ausdrücke, die mit einer Präposition oder einem adverbialen Kasus markiert sind.

- (1) a. nachdem Peter zurückgekehrt war
b. posle togo kak Pëtr vernulsja
c. después (de) que Pedro retornó
- (2) a. dadurch, dass Peter regelmäßig Sport treibt
b. tem, čto Pëtr reguljarno zanimaetsja sportom
c. dado que Pedro regularmente hace deporte

- (3) a. mit dem Ziel, dass Peter Italienisch lernt
 b. s cel’ju, čtoby Pëtr učilsja italjanskomu
 c. a fin (de) que Pedro aprenda italiano
- (4) a. unter der Bedingung, dass es regnet
 b. pri uslovii, čto idët dožd’
 c. a condición de que llueva

Mit Ausnahme von (1a) und (1b) zeigen die Beispiele, dass die in adverbialen Fügungen eingebetteten Sätze, CPs, durch neutrale Konjunktionen eingeleitet sind: im Deutschen mit *dass*, im Russischen entsprechend mit *čto* und im Spanischen mit *que*. In (1a) fehlt eine vergleichbare Nebensatzeinleitung, und in (1b) steht das Formativ *kak*. In den Nebensätzen von (3b), (3c) und (4c) tritt Subjunktivmarkierung auf. Solche Eigenschaften haben auch Komplementsätze von Verben oder Adjektiven.

In (1)–(4) handelt es sich um Nebensatzeinbettungen in adverbialen Phrasen, die in der Regel mit einer Präposition oder wie in (2b) mit einem adverbialen Kasus gekennzeichnet sind. Die Präposition ist im Deutschen im Gegensatz zum Russischen und zum Spanischen von einem definiten Artikel und einem Nomen oder einem kataphorischen Pronomen begleitet, deren Kasusform sie determiniert. Auffällig ist das Auftreten des eingebetteten Nebensatzes CP nach dem oft fakultativen *de* im Spanischen wie in (1c), (3c) und (4c).

Entsprechend diesen Befunden wird sich die folgende Analyse damit beschäftigen, welche Rolle dem Lexikon in der Laut-Bedeutungs-Zuordnung zukommt, welche phonologischen, morphosyntaktischen und semantischen Eigenschaften die adverbialen Konstruktionen und ihre Bestandteile haben und welchen Status die in adverbialen Phrasen eingebetteten Nebensätze haben. **Gisbert Fanselow**, dem ich diese Studie widme, wird unschwer erkennen, dass die analysierten Adverbialphrasen opak für Auswanderungen aus der in sie eingebetteten CP sind.¹

1. Mit “Auswanderungen” meine ich Extraktionen und erinnere mich dabei an eine Begebenheit in meinem Garten vor mehreren Jahren mit einem Vorschulkind. Jakob, der älteste Sohn von Gisbert, war damals über die vielen leeren Schneckenhäuser sehr verwundert und entgegnete mir: “Nein, die Schnecken sind nicht tot. Sie sind ausgewandert.”

2 Analyse

2.1 Grammatiktheoretische Voraussetzungen

Es wird von einem minimalistisch verstandenen Modell der Laut-Bedeutungs-Zuordnung ausgegangen, in dem das Lexikon eine zentrale Rolle spielt (Zimmermann 1987). Es gibt für jedes Formativ die phonologische Form, die morphosyntaktische Kategorisierung und die Bedeutung an. Ich rechne mit phonologisch leeren Kategorien sowie mit bedeutungsleeren Formativen (Zimmermann 1990, 2018c). Es wird ein lexikalistisches Morphologiekonzept verfolgt, dem zufolge derivierte und flektierte Wortformen Produkte des Lexikons sind (Wunderlich 1997; Zimmermann 1988, 2013).

Zu einem minimalistischen Konzept sprachlicher Bedeutungen gehört auch die wesentliche Frage, wie sich Weltkenntnis der Kommunikationspartner und grammatisch determinierte Bedeutungen sprachlicher Einheiten zueinander verhalten. In dieser Hinsicht teile ich die Unterscheidung von Semantischer Form (SF) und Konzeptueller Struktur (CS), wie sie seit Jahren von Bierwisch & Lang (1987, 1989); Dölling (1997); Bierwisch (2007); Lang & Maienborn (2011) und vielen Anhängern dieser Konzeption vertreten wird. Und nicht zuletzt mache ich von semantischen Anpassungen (type shifts) bei der Amalgamierung der Bedeutung von Struktureinheiten Gebrauch (Partee 1987). Diese Operationen sind als semantische Nothelfer anzusehen, die bei der semantischen Interpretation zur Verfügung stehen.

2.2 Struktureinheiten

In den semantischen Strukturen der wort- und phrasenstrukturellen Komponenten figurieren als Variable x , y , z für Individuen (Typ $\langle e \rangle$), e für Eventualitäten (Typ $\langle e \rangle$), t für Zeitintervalle (Typ $\langle i \rangle$), ferner p , q für Propositionen vom Typ $\langle t \rangle$, w für Welten vom Typ $\langle s \rangle$ und Variable für Prädikate, generalisierte Quantoren und intensionalisierte Propositionen, die entsprechend komplexe semantische Typen haben. Vielfach ist auch mit Multifunktionalität zu rechnen. Ungebundene Variable bieten

bei der semantischen Amalgamierung von Konstituentenbedeutungen die Möglichkeit der Aktivierung durch Lambdaabstraktion. Andernfalls sind es Parameter, die in CS spezifiziert bzw. existenzquantifiziert werden. Regularitäten der semantischen Selektion beziehen sich auf die genannten semantischen Typen der beteiligten Struktureinheiten.

Mit folgenden Strukturdomänen wird hier in der Satzsyntax gerechnet:²

(5) ((PP) (DP)) CP MODP TP ASPP vP VP

Zahlreiche adverbelle Nebensätze wie auch andere Satzeinbettungen sind als PPs bzw. DPs zu analysieren. CP gilt für Hauptsätze, Komplementsätze und Relativsätze.³ In MODP erfolgt die Bindung des referentiellen Arguments des Verbs sowie die mögliche Intensionalisierung der Proposition durch den Bezug auf Welten w vom Typ $\langle s \rangle$ (Zimmermann 2009, 2015, 2016a). TP liefert die Tempusspezifizierung des finiten Verbs. In ASPP wird eine Aspektrelation zwischen der Ereigniszeit $\tau(e)$ und der Topikzeit t spezifiziert. Es handelt sich bei MODP, TP und ASPP um die semantische Interpretation der modalen, temporalen und aspektuellen morphologischen Merkmale des Verbs (siehe auch Pitsch 2013, 2014).

DPs haben die in (6) angegebene Struktur und können bis auf ihren funktionalen Kopf D reduziert werden.

(6) [_{DP} [_{DP} [_{D'} D (XP)] (YP)] (ZP)]

Es wird deutlich werden, dass D die Position des Korrelats ist. YP ist ein explikativer Modifizierer. Ihm kann XP als nominaler Kern der DP vorausgehen. ZP ist eine mögliche Apposition.

Die folgende Syntax einiger Beispiele illustriert das.

2. Unter minimalistischer Perspektive wären syntaktische Kategorien wie V, N, A, P, C, D etc. eigentlich als Bündel morphosyntaktischer Kategorien lexikalischer Einheiten bzw. als ihre Projektionen darzustellen. Aus Gründen der Lesbarkeit sehe ich hier von dieser im Grunde zwingenden Lösung ab.

3. Auch Infinitivkonstruktionen können CPs sein. Ich sehe hier – mit einer Ausnahme in 2.7 – von ihrer Analyse ab.

- (1'a) [PP nach [DP [D' dem] [CP \emptyset_C [ModP Peter_i [Mod' \emptyset_{Mod} [TP \emptyset_T [AspP \emptyset_{Asp} [vP t_i zurückgekehrt war]]]]]]]]]]]
- (2'b) [PP \emptyset [DP [D' tem] [CP čto [ModP Pětr_i [Mod' \emptyset_{Mod} [TP \emptyset_T [AspP \emptyset_{Asp} [vP reguljarno [vP t_i [v' v [VP zani_{ma}e_tsja [DP \emptyset_D [NP sportom]]]]]]]]]]]]]]]]]]]]]]]
- (3'c) [PP a [DP [D' \emptyset_D [NP fin]]] ([CP de] _{α} [CP que [ModP Pedro_i [Mod' \emptyset_{Mod} [TP \emptyset_T [AspP \emptyset_{Asp} [vP t_i [VP aprenda italiano]]]]]]]]])(\emptyset] _{α})]

In (1'a) ist der temporale Adverbialsatz durch die den Dativ regierende Präposition nach, das dativische Korrelat *dem* und einen Zero-Komplementierer eingeleitet.⁴

In (2'b) figuriert am linken Rand des Adverbialsatzes eine Zero-Präposition, die den Instrumental regiert. Nur semantisch zu interpretierende kasusmarkierte DPs werden als PPs repräsentiert (Zimmermann 2002, 2003, 2013). Die DP *sportom* im Instrumental ist idiosynkratisch regiertes internes Argument des Verbs *zanimat'sja*.⁵ Auch bezüglich der Besetzung von D ist die Strukturierung in (2'b) aufschlussreich. Im Gegensatz zu Deutsch und Spanisch ist Russisch keine Artikelsprache. Der Gegensatz zwischen bestimmtem und unbestimmtem Artikel bleibt unausgedrückt. Als Termbildner wird wie bei der DP *sportom* in (2'b) ein phonologisch stummes D angenommen.⁶ Demonstrativa wie in (2'b) das russische Korrelat *to* im Instrumental sind sichtbare Repräsentanten von D (Zimmermann 2016b, 2018b).

(3'c) macht deutlich, dass zahlreiche adverbialle Nebensätze durch eine PP eingeführt werden, die neben der adverbialisierenden Präposition ein typisches, den Adverbialtyp charakterisierendes Nomen aufweisen. Die Präpositionen sind dabei idiosynkratischer Natur (vgl. *unter der Bedingung, dass ...*, *pri uslovii, čto ...*, *a condición de que ...*). Außerdem kann in (3'c) vor der Satzeinbettung das Formativ *de* auftreten. Es ist die Frage,

4. In süddeutschen Dialekten kann der Komplementierer durch *dass* realisiert sein.

5. Zu idiosynkratisch regierten (lexikalischen), strukturellen und inhärenten Kasus siehe Smirnova & Jackendoff (2017).

6. Andere Vorschläge zur Termbildung in artikellosen Sprachen wie im Russischen können hier nicht besprochen werden.

ob es sich hier um eine Präposition handelt.⁷ Jedenfalls ist dieses Formativ vor CPs oft weglaßbar.

In der phonologischen Strukturierung figurieren die einleitenden Präpositionen zusammen mit dem ersten rechten Nachbarformativ: /nachdem/, /afin/, und die eingebettete CP ist aus SpecDP nach SpecPP gewandert.

Was soll unter dem Gesichtspunkt der Sprachkompetenz und des Spracherwerbs angesichts solcher Vielfalt von Ausdrucksbesonderheiten bei adverbiellen Nebensatzeinleitungen (siehe auch Pasch u. a. 2003) über die strukturelle Durchsichtigkeit der Konstruktionen gesagt werden? Welche systematischen Zusammenhänge lassen sich erkennen? Zudem bleibt auch noch festzustellen, welchen Status die jeweils eingebettete CP und der in ihr auftretende Modus haben.

2.3 Lexikoneinträge

Auf der Basis meiner Arbeiten versuche ich, ein lexikalistisches Morphologiekonzept zu verteidigen, das davon ausgeht, dass Wortwurzeln nicht in der Syntax figurieren, sondern morphosyntaktische Wörter als syntaktische Basiseinheiten aus dem Lexikon kommen (Zimmermann 2018c). Ferner ist es erforderlich, auch mit (partiell analysierbaren) Wortverbindungen als Lexikonprodukten zu rechnen.

Für bestimmte komplexe adverbielle Konnektive erscheint – wie (1'a), (2'b) und (3'c) zeigen – folgende strukturelle Analyse möglich: Der eingebettete Nebensatz figuriert in einer PP. Die PP besteht aus einer Präposition, die eine Relation zwischen dem Matrixsatz und einer DP, in die die CP eingebettet ist, herstellt. Durch die DP wird die Satzeinbettung zu einem explikativen Attribut, das nach (6) in SpecDP figuriert und dort von außen regierbar ist (Zimmermann 2018b).

Konstitutiv für diese Rolle der CP ist das kataphorische D.⁸ Dabei han-

7. Ich nehme an, dass es sich in romanischen Sprachen bei Formativen wie *de* im Spanischen vor finiten und infinitivischen Satzeinbettungen um Relikte von Präpositionen handelt, die ihren typischen DP-Partner und ihre Eigenbedeutung verloren haben.

8. Zur Nominalisierung von Sätzen durch Einbettung in eine DP siehe Pütz (1986); Sudhoff (2003, 2016); Schwabe (2013); Schwabe u. a. (2016); Willer-Gold (2013); Bondaruk (2015); Knjazev (2016); Zimmermann (1983, 1993, 2016b,c, 2018a,b,c)).

delt es sich um den ι -Operator, der neben dem Restriktor P_1 einen diesen explizierenden Modifikator Q und den Nukleus P_2 zusammenfügt. Der Lexikoneintrag dieses Operators ist in (7) angegeben. Er repräsentiert den Kopf einer definiten, spezifisch referierenden nominativischen bzw. akkusativischen DP für das Deutsche, Russische und Spanische. Auch ein Zero-Korrelat wird vorgesehen.⁹

- (7) a. $/es_\alpha/to/lo, \emptyset/, ([DP _])_\alpha$
 b. $+D +def +spec -deict \beta given -I -II -pl -fem -masc \{\gamma gov-
 erned -oblique/\gamma R -P -U\}$
 c. $(\lambda P_1)_{-\alpha} \lambda Q \lambda P_2. [P_2 (\iota x [[P_1 (x)] \wedge [Q (x)]])]$
 $Q, P_1, P_2 \in \langle \delta t \rangle, \delta \in \{e, i, st, \langle st \langle st \rangle \rangle\}$

Bei kataphorischen Korrelaten wie in (7) handelt es sich um besondere ι -Operatoren. Sie weisen ein spezifizierungsbedürftiges modifikatorisches Prädikat, Q , auf. Die von dem Operator gebundene Variable x ist multivalent.¹⁰ Sie steht für Individuen wie in (3) und (4), Zeitabschnitte wie in (1), intensionalisierte Propositionen bei Matrixsatzprädikaten des Sagens und Denkens und für Mengen solcher Propositionen bei eingebetteten Fragesätzen. Der Restriktor P_1 kann unspezifiziert bleiben und geht dann als Parameter in die konzeptuelle Interpretation des Ausdrucks ein.¹¹ Das Merkmal *given* ist nicht auf den Wert $+$ festgelegt.

9. Indizes in Lexikoneintragen betreffen systematische Zusammenhänge zwischen verschiedenen lexikalischen Informationen (vgl. Smirnova & Jackendoff 2017). In (7) zeigt der Index α an, dass die Anwesenheit des Formativs *es* mit der Abwesenheit der Argumentstelle λP_1 für die Spezifizierung des Restriktors kovariiert. Außerdem bezieht sich α auf die phonologische Beschränkung für *es*, keine Kokonstituenten unter DP zu haben. Die Indizes β und γ kennzeichnen die möglichen Werte $\{+, -\}$ für die Merkmale *given* bzw. *governed*. Die Kasusmerkmale *governed* und *oblique* entstammen Bierwisch (1967), *R*(ichtung), *P*(eripherie) und *U*(mfang) gehen auf Jakobson (1936, 1958) zurück.

10. Wie weit die Multivalenz des ι -Operators geht, verlangt eine separate Studie. Ein umfassendes Bild von der Kombinationsfähigkeit des spanischen Artikels *lo* gibt Fernández López. In Zimmermann (2016c) habe ich das deutsche Pronomen *es* in seinen verschiedenen Referenzmöglichkeiten näher betrachtet.

11. Bondaruk u. a. (2017) zeigen, dass das Korrelat *to* in der polnischen Umgangssprache durch das Nomen *fakt* substituiert (bzw. ergänzt) werden kann. Dabei signalisiert es nicht notwendig Faktivität des eingebetteten Satzes. *Fait* im Französischen, *hecho* im Spanischen und *činjenica* im Kroatischen verhalten sich parallel.

Korrelate dienen oft lediglich der Satzeinbettung in eine DP. Das deutsche Korrelat *es* hat die phonologische Eigenschaft, keine Kokonstituenten unter DP zu dulden. Der eingebettete CP-Partner muss extraponiert werden.

2.4 Type shifts

Für seine Rolle als Prädikat Q muss die semantische Interpretation der gemäß (6) in SpecDP eingebetteten CP entsprechend angepasst werden. Dazu dienen die type shifts (8)–(10).

- (8) $TS_{LA}: \lambda p \lambda X. [p] \in \langle t \langle \alpha t \rangle \rangle$
- (9) $TS_{PM1}: \lambda Y \lambda Z. [Z = Y]$
 $Y, Z \in \{ e, i, st, \langle st \langle st \rangle \rangle, \dots \}$
- (10) $TS_{PM2}: \lambda Y \lambda z. [CONSIST_IN(Y)(z)]$
 $Y \in st, \langle st \langle st \rangle \rangle, \dots, z \in \{ e, i \}$

Es handelt sich um drei Prädikatmacher (PM). In (8) liegt einfach nur Lambdaabstraktion (LA) vor. Die Anwendung der drei type shifts wird nacheinander vorgeführt werden.

2.5 Semantische Komposition

In (1''a) ist die SF des Beispiels (1a) mit der syntaktischen Struktur (1'a) schrittweise dargestellt.

- (1''a) $[[CP]] = \exists e' \exists t'' [[(t') < (t^0)] \wedge [[(t'') < (t')] \wedge [[\tau(e') \supseteq (t'')] \wedge [(e') INST [RETURN (PETER)]]]]]$
- (8) $(([CP])) = \lambda t'. \exists e' \exists t'' [[(t') < (t^0)] \wedge [[(t'') < (t')] \wedge [[\tau(e') \supseteq (t'')] \wedge [(e') INST [RETURN (PETER)]]]]]$
- (7c) $((8) ([CP])) = \lambda P_2. [P_2 (\iota t' [[P_1 (t')] \wedge \exists e' \exists t'' [[(t') < (t^0)] \wedge [[(t'') < (t')] \wedge [[\tau(e') \supseteq (t'')] \wedge [(e') INST [RETURN (PETER)]]]]]])]]$
- $[[nach]] = \lambda t' \lambda t. [(t) > (t')] \in \langle i \langle it \rangle \rangle$

$$\begin{aligned} \llbracket \text{nach} \rrbracket ((7c) ((8) (\llbracket \text{CP} \rrbracket))) &= \lambda t. [(t) > (\iota t' \llbracket [P_1(t')] \wedge \exists e' \exists t'' \llbracket [(t') \\ < (t^0)] \wedge \llbracket [(t'') < (t')] \wedge \llbracket [\tau(e') \supseteq (t'')] \wedge [(e') \text{ INST } [\text{RETURN} \\ (\text{PETER}) \rrbracket] \rrbracket] \rrbracket] \end{aligned}$$

Das Ergebnis ist ein Prädikatausdruck vom Typ $\langle it \rangle$, der sich passend als temporaler Modifikator an den Matrixsatz anschließen lässt. Die in den Adverbialsatz eingebettete CP weist die Topikzeit t' als Parameter auf, der durch die Lambdaabstraktion (8) aktiviert wird, ein Prädikat ergibt und die Prädikatvariable Q in (7c) des Korrelats spezifizieren kann.

Das russische Beispiel (1b) weist mit der Nebensatzeinleitung *kak* (wörtlich: 'wie') eine Besonderheit auf. Das Formativ drückt einen Vergleich, und zwar hier Identität zweier Zeitabschnitte, aus. Durch die Semantik dieser Satzeinleitung kompliziert sich die Bedeutung des temporalen Adverbialsatzes in einer Weise, die erlaubt, die resultierende SF zu reduzieren, sodass sich für die Beispiele in (1) äquivalente Bedeutungen ergeben.¹²

$$\begin{aligned} (1''b) \quad \llbracket \text{kak} \rrbracket &= \lambda t'. \exists t''' \llbracket [P(t''')] \wedge [(t''') = (t')] \rrbracket \in \langle it \rangle \\ \llbracket \text{kak} \rrbracket ((8) \exists e' \exists t'' \llbracket [(t') < (t^0)] \wedge \llbracket [(t'') < (t')] \llbracket [\tau(e') \supseteq (t'')] \wedge \\ &[(e') \text{ INST } [\text{RETURN} (\text{PETER}) \rrbracket] \rrbracket] \rrbracket) = \\ &\lambda t'. \exists t''' \llbracket [\exists e' \exists t'' \llbracket [(t''') < (t^0)] \wedge \llbracket [(t'') < (t''')] \llbracket [\tau(e') \supseteq (t'')] \\ &\wedge [(e') \text{ INST } [\text{RETURN} (\text{PETER}) \rrbracket] \rrbracket] \rrbracket] \wedge [(t''') = (t')] \rrbracket \equiv \\ &\lambda t'. \exists e' \exists t'' \llbracket [(t') < (t^0)] \wedge \llbracket [(t'') < (t')] \llbracket [\tau(e') \supseteq (t'')] \wedge [(e') \\ &\text{INST } [\text{RETURN} (\text{PETER}) \rrbracket] \rrbracket] \rrbracket \\ \llbracket \text{posle} \rrbracket &= \llbracket \text{nach} \rrbracket = \lambda t' \lambda t. [(t) > (t')] \in \langle i \langle it \rangle \rangle \\ \llbracket \text{posle} \rrbracket ((7c) (\lambda t'. \exists e' \exists t'' \llbracket [(t') < (t^0)] \wedge \llbracket [(t'') < (t')] \llbracket [\tau(e') \supseteq \\ &(t'')] \wedge [(e') \text{ INST } [\text{RETURN} (\text{PETER}) \rrbracket] \rrbracket] \rrbracket) = \\ &\lambda t. [(t) > (\iota t' \llbracket [P_1(t')] \wedge \exists e' \exists t'' \llbracket [(t') < (t^0)] \wedge \llbracket [(t'') < (t')] \\ &\llbracket [\tau(e') \supseteq (t'')] \wedge [(e') \text{ INST } [\text{RETURN} (\text{PETER}) \rrbracket] \rrbracket] \rrbracket] \rrbracket] \end{aligned}$$

Entsprechend der Bedeutung des Korrelats bleibt in allen drei Beispielen von (1) der Restriktor P_1 unspezifiziert und kann in CS als TIME charakterisiert werden. In SF kommt diese Spezifizierung von P_1 in temporalen Satzeinleitungen wie Russisch *v to vremja kak* 'zu der Zeit als', *s togo vremeni kak* 'seitdem' zum Ausdruck.

12. Zur Interpretation von (1c) siehe Anmerkung 7 und Abschnitt 2.7.

In diesen komplexen Konnektiven tritt der type shift (10) in Aktion. Ich illustriere das am Beispiel (3a).

$$\begin{aligned}
 (3''a) \quad & [[CP]] = \lambda w. \exists e' [[(e' \leq (w)) \wedge [\neg [(t) < (t^0)] \wedge [[\tau(e') \supseteq (t)] \wedge \\
 & \quad [(e') \text{ INST } [LEARN (ITALIAN) (PETER)]]]]]] \\
 (10) \quad & (\lambda w. \exists e' [[(e' \leq (w)) \wedge [\neg [(t) < (t^0)] \wedge [[\tau(e') \supseteq (t)] \wedge [(e') \\
 & \quad \text{INST } [LEARN (ITALIAN) (PETER)]]]]]]) = \\
 & \lambda x. [(x) \text{ CONSIST_IN } (\lambda w. \exists e' [[(e' \leq (w)) \wedge [\neg [(t) < (t^0)] \wedge \\
 & \quad [[\tau(e') \supseteq (t)] \wedge [(e') \text{ INST } [LEARN (ITALIAN) (PETER)]]]]]])] \\
 [[mit]] & = \lambda x \lambda e. [(e) \text{ R } (x)] \in \langle e \langle et \rangle \rangle \\
 [[mit]] \quad & ((7c) ([Ziel])) (\lambda x. [(x) \text{ CONSIST_IN } (\lambda w. \exists e' [[(e' \leq (w)) \\
 & \quad \wedge [\neg [(t) < (t^0)] \wedge [[\tau(e') \supseteq (t)] \wedge [(e') \text{ INST } [LEARN (ITALI- \\
 & \quad \text{AN) (PETER)]]]]]])]) = \\
 & \lambda e. [(e) \text{ R } (\iota x [[GOAL (x)] \wedge [(x) \text{ CONSIST_IN } (\lambda w. \exists e' [[(e') \\
 & \quad \leq (w)] \wedge [\neg [(t) < (t^0)] \wedge [[\tau(e') \supseteq (t)] \wedge [(e') \text{ INST } [LEARN \\
 & \quad \text{(ITALIAN) (PETER)]]]]]])])]
 \end{aligned}$$

Es ergibt sich ein Prädikat vom Typ $\langle et \rangle$, das als finaler Modifikator des Matrixsatzes fungieren kann, und zwar durch Prädikatunifizierung mit dem Eventualitätsprädikat $\lambda e. [(e) \text{ INST } [\dots]]$.¹³ Der durch die hier idiosynkratische Präposition mit eingebrachte Parameter R läßt sich in CS als HAVE interpretieren.

Im Russischen und Spanischen weist die eingebettete CP Subjunktivmarkierungen auf, die entsprechend zu interpretieren sind (Zimmermann 2015, 2016a). Ich nehme an, dass bestimmte Kompatibilitätsbeziehungen zwischen den Restriktornomen und dem Modus der eingebetteten CP bestehen, bei denen Bedeutungspostulate eine wichtige Rolle spielen.

Der in (3''a) angewendete type shift (10) macht aus der eingebetteten CP vom Typ $\langle st \rangle$ ein Prädikat vom Typ $\langle et \rangle$, das als Modifikator fungiert. Inhaltlich entspricht dieses Template weitgehend Anregungen von Kratzer (2006, 2015, 2016) und dient der verbreiteten Hypothese, dass Sätze als Relativsätze eingebettet werden (vgl. auch Arsenijević 2009, 2018; Caponigro & Polinsky 2017; Moulton 2014, 2015; Hanink 2016;

13. Welche Typen die einzelnen adverbialen Modifikatoren haben, ist klärungsbedürftig. Arsenijević (2018) rechnet auch mit weltbezogenen Adverbialsätzen.

Bogal-Allbritten & Moulton 2018).¹⁴ Ich halte diese Annahme bei Inhaltsnomen und Restriktorbesetzungen in adverbialen Konnektiven für korrekt, folge ihr aber nicht generell (Zimmermann 2016b,c, 2018a,b,c, im Erscheinen).

Prädikatausdrücke des Sagens und Denkens haben Satzeinbettungen vom Typ <st> bzw. <st<st>>. In diesen Kontexten ist in Verbindung mit dem Korrelat (7) das Template (9) wirksam. Es ist ebenfalls ein Prädikatmacher, bewahrt aber den Typ der eingebetteten CP durch einfache Identitätssetzung zweier Einheiten. Dass es auch im Rahmen adverbialer Konnektive anzuwenden ist, wird in 2.7 gezeigt werden.

Generell lässt sich zu den bisher behandelten adverbialen Satzeinleitungen sagen, dass sie der allgemeinen lexikalistisch orientierten Herangehensweise entsprechend mit ihren Bestandteilen als atomare Bausteine der Syntax aus dem Lexikon kommen. Das ist aber nicht selbstverständlich. Sie könnten auch genau wie weniger durchsichtige komplexe Konnektive als syntaktische Fügungen Lexikonprodukte und als solche ganzheitliche Lerneinheiten sein. Betrachten wir das komplexe adverbialle Konnektiv *a fin (de) que* in dem spanischen Beispiel (3c). Ein D-Element fehlt vor dem Nomen, obwohl Spanisch eine Artikelsprache ist, und das Formativ *de* ist weglassbar. Mir schwebt folgende Lösung vor.

2.6 Syntax im Lexikon

Anstelle eines atomaren Formativs ist im Lexikon eine syntaktische Konstituente mit fest eingebauten Formativen verzeichnet, deren Bedeutung, soweit sie mit frei kombinierbaren Einheiten korrespondiert, lexikalisch mit den Formativen assoziiert ist. Dazu dienen Indizes (siehe Anmerkung 9). Für das finale Konnektiv in (3c), *a fin (de) que*, sähe der Lexikoneintrag dann folgendermaßen aus:

14. In diesem Zusammenhang wäre die Arbeit von Fabricius-Hansen & von Stechow (1989) ausführlich zu diskutieren. Die Autoren rechnen mit Nomen, die Propositionen einbetten, und benötigen dadurch keine Adaptierung des Typs von Satzeinbettungen.

- (11) a. $[P' [P /a/]_\alpha [DP [D' [D \emptyset]_\beta [NP /fin/]_\gamma]]$
 c. $(\lambda x \lambda e. [(e) R (x)])_\alpha ((\lambda P_1 \lambda Q_{[(de,)-w+subj]} \lambda P_2. [P_2 (\iota x [[P_1 (x)] \wedge [Q (x)])])_\beta (\lambda y. [GOAL (y)]_\gamma) \equiv \lambda Q_{[(de,)-w+subj]} \lambda e. [(e) R (\iota x [[GOAL (x)] \wedge [Q (x)])])]$
 $e, x \in <e>$

Diese adverbelle Fügung *c*-selektiert eine Kokonstituente in SpecPP, die fakultativ mit dem Formativ *de* markiert ist, und wenn diese den Status einer mit *-w* gekennzeichneten CP hat, wird auch der Subjunktiv *c*-selektiert.¹⁵ Da die durch das hier stumme Korrelat gebundene Variable *x* vom Typ *<e>* ist, bedingt dies die Notwendigkeit der entsprechenden Akkommodierung der eingebetteten CP mit Hilfe des Templates (10), um das modifikatorische Prädikat *Q* spezifizieren zu können.

Während in (11) die semantische Komponente $\lambda y. [GOAL(y)]$ mit dem Nomen *fin* assoziiert ist, gibt es dafür in der russischen finalen Wortverbindung *s tem* keinen Anhaltspunkt. Es ist der folgende Lexikoneintrag vorzusehen:

- (12) a. $[P' [P /s/]_\alpha [DP [D' [D /tem/]_\beta]]$
 c. $(\lambda x \lambda e. [(e) R (x)])_\alpha ((\lambda P_1 \lambda Q_{[-w+subj]} \lambda P_2. [P_2 (\iota x [[P_1 (x)] \wedge [Q (x)])])_\beta (\lambda y. [GOAL (y)]_\gamma) \equiv \lambda Q_{[-w+subj]} \lambda e. [(e) R (\iota x [[GOAL (x)] \wedge [Q (x)])])]$

Hier ist die finale Komponente $\lambda y. [GOAL(y)]$ zwar wie in (11c) Bestandteil der Bedeutung. Ein dieser Komponente entsprechendes Formativ fehlt. Die *c*-Selektion der Wortverbindung verlangt auch fürs Russische den Subjunktiv der Satzeinbettung.¹⁶

15. Ein Operator der Form $\lambda X_{[...]}$ wie in (11c) drückt durch den Index eine morphosyntaktische Kontextbedingung aus, die besagt, dass $\lambda X \dots [\dots] ([YP])$ an die Bedingung geknüpft ist, dass die Konstituente *YP* die im Index $[\dots]$ von λX angegebenen phonologischen und/oder morphosyntaktischen Merkmale hat. Das ist eine Form von *c*-Selektion. Es ist auch möglich, dass bestimmte morphosyntaktische Merkmale in *YP* von entsprechenden Merkmalen im Index von λX regiert werden. Das ist der Fall für *+subj* in (11), das im Spanischen am finiten Verb der CP realisiert wird, im Russischen dagegen an *C*.

Zur Unterscheidung von verbalem Modus in Mod und Satzmodus in *C* siehe Zimmermann (2009, 2015, 2016a).

16. Zur Realisierung des Subjunktivs in der eingebetteten CP siehe Anmerkung 15.

Ganz analog ist das deutsche finale Konnektiv *damit* zu behandeln. Es setzt sich auch aus der Präposition *mit* und dem Korrelat *da(r)* zusammen, das in PF aus D an P angehoben wird.

Bedeutung tragende adverbielle Präpositionen wie *nach*, *seit*, *während* haben die morphosyntaktischen Merkmale $-V -N +adv$ und c-selektieren eine DP im Dativ bzw. im Genitiv, was Nominalisierungen wie *nach dem Essen*, *seit dem Essen*, *während des Essens* belegen. Als subordinierende adverbielle Konnektive verhalten sie sich unterschiedlich: *nachdem*, *seit(dem)*, *während*, alle drei gefolgt von dem Zero-Komplementierer C. Dem ist in der lexikalischen phonologischen Charakterisierung Rechnung zu tragen. Das trifft auch für Fälle wie *dadurch* und *damit* zu.

Der vollständige Lexikoneintrag für das finale Konnektiv *damit* sieht dann folgendermaßen aus:

- (13) a. $[P' [P [D /da/] [P /mit/]_{\alpha}] [DP [D' [D /da/]_{\beta}]]]$
 c. $(\lambda x \lambda e. [(e) R(x)]_{\alpha} ((\lambda P_1 \lambda Q_{[-w-subj-imp]} \lambda P_2. [P_2 (\iota x [[P_1(x) \wedge [Q(x)]])])_{\beta} \lambda y. [GOAL(y)] \equiv \lambda Q_{[-w-subj-imp]} \lambda e. [(e) R(\iota x [[GOAL(x)] \wedge [Q(x)]])])])$
 $e, x, \in \langle e \rangle$

Das komplexe Konnektiv selektiert eine CP im Indikativ vom semantischen Typ $\langle et \rangle$ ¹⁷ und bettet diese als Kokonstituente von P' in SpecPP ein. Die finale Bedeutung resultiert aus dem den Restriktor des ι -Operators P₁ spezifizierenden Prädikat $\lambda y. [GOAL(y)]$, ohne dass dieser durch ein Formativ ausgedrückt ist.

2.7 Multifunktionalität

Neben den für komplexe adverbielle Satzeinleitungen in (11)–(13) vorgeführten phrasalen Lexikoneinträgen soll hier das Phänomen der Multifunktionalität sprachlicher Einheiten diskutiert werden. Es ist in vielen Fällen erforderlich, Präpositionen mehrere Fügungseigenschaften zuzuordnen, die auch mit Bedeutungsnuancen korrespondieren.

17. Wiederum ist das Merkmal $-w$ auf den funktionalen Kopf C der eingebetteten CP zu beziehen, während die Modusmerkmale $-subj -imp$ den funktionalen Kopf Mod charakterisieren.

Nehmen wir die deutsche und die russische Präposition *mit* bzw. *s*. In Verbindung mit den Verben *rechnen* bzw. *ščitat'* markieren sie das interne Argument als präpositionales Objekt, ohne Eigenbedeutung. In adverbialen Fügungen bringen diese Präpositionen komitative Bedeutung ein. In finalen Konnektiven wie *damit* und entsprechend *s tem* kommt neben dem sichtbaren Korrelat die finale Bedeutungskomponente hinzu. Oder die finale Komponente wird durch *Ziel* resp. *cel'* ausgedrückt und das hinzutretende explizite bzw. stumme kataphorische Korrelat verlangt ein finites oder infinitivisches satzartiges oder nominales Attribut.

Die spanische Präposition *para* zeigt folgende Fügungseigenschaften. Sie wird zu finalen Adverbialen mit DPs, mit konjunkional eingeleiteten finiten CPs oder mit Infinitivkonstruktionen kombiniert. Außer der finalen Bedeutung kommen weitere hinzu. Ich gebe in (14) den Lexikonbeitrag für diese multifunktionale Präposition an.

- (14) a. /para/
 b. –V –N +adv
 c'. $\lambda x \lambda z. [(z) \text{ FOR } (x)] \in \langle e \langle \alpha t \rangle \rangle$
 c''. $(\lambda x \lambda z. [(z) \text{ FOR } (x)]) (\lambda P \lambda Q \lambda P_2. [P_2 (\iota x [[P_1(x)] \wedge [Q(x)]])])$
 $(\lambda y. [\text{GOAL}(y)]) \equiv$
 $\lambda Q \lambda z. [(z) \text{ FOR } (\iota x [[\text{GOAL}(x)] \wedge [Q(x)]])]$

Wie das russische *dlja* kann das spanische *para* ein zweistelliger Funktor vom Typ $\langle e \langle \alpha t \rangle \rangle$ sein und 'für' bedeuten. Oder es ist ein eine CP einführendes adverbiales Konnektiv mit der zusätzlichen Finalkomponente $\lambda y. [\text{GOAL}(y)]$, die den Restriktor P_1 eines inkorporierten Korrelats spezifiziert. Die CP-Bedeutung muss wieder durch den type shift (10) zum Prädikat Q von Typ $\langle et \rangle$ akkommodiert werden. Es ergibt sich dann für den finalen Nebensatz die semantische Repräsentation (15'a), mit der einfachen Syntax in (15a), die sich neben (15b) für *para Pedro* aus der multifunktionalen Behandlung der Präposition ergibt.

- (15) a. [PP [_P para] CP]
 b. [PP [_P para] DP]

$$(15'a) \quad \lambda Q \lambda z. [(z) \text{ FOR } (\iota x [[\text{GOAL } (x)] \wedge [Q (x)]])] ((10) ([[CP]])) = \\ \lambda z. [(z) \text{ FOR } (\iota x [[\text{GOAL } (x)] \wedge [(x) \text{ CONSIST_IN } ([[CP]]]])]]]$$

Der Lexikoneintrag (14) für *para* ist für diese Behandlungsweise entscheidend. Ohne syntaktische Entsprechungen enthält er für Finalsätze die semantische Komponente $\lambda y. [\text{GOAL } (y)]$ und die Korrelatbedeutung $\lambda P \lambda Q \lambda P_2. [P_2 (\iota x [[P_1(x)] \wedge [Q (x)]])]$ mit dem Prädikat Q , das die Bedeutung der in die PP eingebetteten CP – durch das Template (10) entsprechend angepasst – spezifiziert.

Kurz sei zu der syntaktischen Struktur (15b) noch ergänzt, dass sie analog zu vielen eingebetteten Sätzen existiert, nämlich für Nominalisierungen, hier im Kontext adverbialer Präpositionen. Ich illustriere das an (16) mit der Amalgamierung der Bedeutungsanteile in (16').

(16) *para la exploración de la naturaleza*

$$(16') \quad [[\text{la exploración de la naturaleza}]] = \\ \lambda P'. [P' (\iota e [(e) \text{ INST } [\text{EXPLORATION } (\iota y [\text{NATURE } (y)) \\ (z)])])]^{18} \\ (9) (\lambda P'. [P' (\iota e [(e) \text{ INST } [\text{EXPLORATION } (\iota y [\text{NATURE } (y)) \\ (z)])])]) = \lambda v \lambda x [(x) = (v)] (\lambda P'. [P' (\iota e [(e) \text{ INST } [\text{EXPLORA-} \\ \text{TION } (\iota y [\text{NATURE } (y)) (z)])])]) \equiv \\ \lambda x [(x) = (\iota e [(e) \text{ INST } [\text{EXPLORATION } (\iota y [\text{NATURE } (y)) \\ (z)])])] \\ [[\text{para}]] ((9) (\lambda P'. [P' (\iota e [(e) \text{ INST } [\text{EXPLORATION } (\iota y [\text{NATURE} \\ (y)) (z)])])])]) = \\ \lambda x \lambda u. [(u) \text{ FOR } (x)] (\lambda P_1 \lambda Q \lambda P_2. [P_2 (\iota x [[P_1(x)] \wedge [Q (x)]])]) \\ (\lambda y. [\text{GOAL } (y)]) (\lambda x [(x) = (\iota e [(e) \text{ INST } [\text{EXPLORATION } (\iota y \\ [\text{NATURE } (y)) (z)])])])]) \equiv \\ \lambda Q \lambda u. [(u) \text{ FOR } (\iota x [[\text{GOAL } (x)] \wedge [Q (x)]])] (\lambda x [(x) = (\iota e [(e) \\ \text{INST } [\text{EXPLORATION } (\iota y [\text{NATURE } (y)) (z)])])]) \equiv \\ \lambda u. [(u) \text{ FOR } (\iota x [[\text{GOAL } (x)] \wedge [(x) = (\iota e [(e) \text{ INST } [\text{EXPLORA-} \\ \text{TION } (\iota y [\text{NATURE } (y)) (z)])])])]]]$$

18. Das Formativ *de* dient hier der Markierung der abhängigen DP und hat keine Eigenbedeutung.

In dieser Amalgamierung kommt das Template (9) zur Wirkung, das das Ziel x mit der Bedeutung der Nominalisierung identifiziert und mit dessen Hilfe die finale Bedeutung der Präposition *para* sowohl mit eingebetteten Nebensätzen als auch mit Nominalisierungen kombinierbar ist. Zwischen (16) und (17) besteht dann die Bedeutungsbeziehung (18).

- (17) $[[\text{para explorar la naturaleza}] = \lambda x \lambda u. [(u) \text{ FOR } (x)] (\lambda P_1 \lambda Q \lambda P_2. [P_2 (\iota x [[P_1(x)] \wedge [Q(x)]])] (\lambda y. [\text{GOAL } (y)]) ((10) ([[\tau(e) \supseteq t] \wedge [(e) \text{ INST } [\text{EXPLORE } (\iota y [\text{NATURE } (y)] (z))]]])))) = \lambda u. [(u) \text{ FOR } (\iota x [[\text{GOAL } (x)] \wedge [(x) \text{ CONSIST_IN } ([[\tau(e) \supseteq t] \wedge [(e) \text{ INST } [\text{EXPLORE } (\iota y [\text{NATURE } (y)] (z))]]]])]]]$
- (18) $\forall u [(u) \text{ FOR } (\iota x [[\text{GOAL } (x)] \wedge [(x) \text{ CONSIST_IN } ([[\tau(e) \supseteq t] \wedge [(e) \text{ INST } [\text{EXPLORE } (\iota y [\text{NATURE } (y)] (z))]]]])]] \rightarrow [(u) \text{ FOR } (\iota x [[\text{GOAL } (x)] \wedge [(x) = (\iota e [(e) \text{ INST } [\text{EXPLORATION } (\iota y [\text{NATURE } (y)] (z))]]]])]]]$

Die Nominalisierung ohne Zeitbezug wird von der Infinitivkonstruktion mit Zeitbezug impliziert.

2.8 Zusammenfassung

Wie mit der Präposition *para* würde ich verfahren in allen Fällen, wo eine adverbielle Präposition wie *dlja*, *während*, *después* unmittelbar vor einer CP oder DP auftritt. Bei *während* muss entsprechend vermerkt werden, dass die eingebettete CP mit einem Zero-Kopf wie in (1'a) auftritt. Für *después* ist das nicht der Fall: Die abhängige CP wird durch (*de*) *que* eingeleitet und vor DPs muss *de* stehen.¹⁹

Anders ist es, wenn zu der Präposition ein Korrelat wie in (1a, b) und in (2a, b) oder eine DP mit einem N als Kopf wie in (3) und (4) tritt. In diesen Fällen rechne ich mit entsprechend komplexen lexikalischen Einheiten, in denen wie in (11)–(13) durch Indizes Korrespondenzen zwischen elementaren phonologischen, morphosyntaktischen und semantischen lexikalischen Informationen festgehalten werden. Diese Korrespondenzen entsprechen der Sprachkenntnis, mit den betreffenden Bausteinen

19. Zu dem Formativ *de* vor CPs siehe Anmerkung 7.

auch frei umzugehen, jenseits der festen Fügung komplexer Ausdrücke wie *damit, mit dem Ziel, zu dem Zweck; dlja togo, s tem, s cel'ju; a fin (de)* etc. im Lexikon.

Ich plädiere also für die in (11)–(13) einerseits und in (14) andererseits vorgeführten Repräsentationen. Dabei ist nicht ausgeschlossen, dass ein Sprachenlerner in verschiedenen Stadien des Spracherwerbs zwei Analysen bei komplexen adverbialen Konnektiven vornimmt: eine, die mit Syntax im Lexikon rechnet, und die andere, die sich an die in komplexen Fügungen vorkommenden atomaren Bestandteile in der Laut-Bedeutungs-Zuordnung hält vgl. (11), (12) und (13) versus (1''a), (1''b) und (3''a).

3 Ausblick

Die hier betrachteten in Adverbialkonstruktionen eingebetteten CPs erlauben also keine Auswanderungen. Die notwendigen Schlupflöcher sind besetzt.

Im Zentrum der Studie stand die Frage nach dem Verhältnis von Syntax, Semantik und Lexikon. Es wurde versucht, strukturelle Übercharakterisierungen zu vermeiden und der Sprachkenntnis Rechnung zu tragen. Anhand von adverbialen Konnektiven wurde diskutiert, wie weit Bausteine sprachlicher Ausdrücke frei kombinierbar sind bzw. feste Fügungen bilden. Im letzteren Fall erscheint es geboten, mit syntaktischen Verbindungen im Lexikon zu rechnen und den Bestandteilen entsprechend ihren Fügungseigenschaften die jeweiligen phonologischen, morphosyntaktischen und semantischen Charakteristika zuzuweisen.

Grundsätzlich ist in der Laut-Bedeutungs-Zuordnung mit Multifunktionalität von Struktureinheiten zu rechnen. Davon wurde bei Präpositionen Gebrauch gemacht, die sich direkt mit DPs bzw. CPs verbinden.

Das kataphorische Korrelat spielt für die Satzeinbettung auch in adverbialen Konnektiven eine fundamentale Rolle, indem es für die eingebettete CP eine modifikatorische Funktion vorsieht. Dieser Modifikator bezieht sich inhaltlich auf den Restriktor des Korrelats. Syntaktisch figuriert er in SpecDP bzw. in SpecPP.

Im Ganzen ist dieser Beitrag ein Entwurf für die Behandlung von

Mehrfunktionalität elementarer sprachlicher Ausdrücke und die mindestens partielle Analysierbarkeit komplexer lexikalischer Einheiten. Und er ist ein Plädoyer für die Wirksamkeit von Syntax im Lexikon. Die Betrachtung von parallelen Konstruktionseigenschaften verschiedener Sprachen erwies sich dabei von Nutzen und mag für den Spracherwerb aufschlussreich sein.

Große Arbeit für den Aufbau einfacher und komplexer lexikalischer Einheiten steht bevor.

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Measuring lexical semantic variation using word embeddings¹

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1 Introduction

This paper discusses an approach to an unsupervised study of lexical semantic variation across languages, dialects, and linguistic variants that is based on a comparison of Distributed Semantics models of lexical items. To achieve this I am using word vectors and embeddings trained on large corpora. My focus in this article is on the South-Slavic languages and variants, Bosnian, Croatian, and Serbian, and taking into account text, corpora, and language models that are explicitly written in Serbo-Croatian. Our focus here is to quantify the lexical overlap and the semantic fields or properties of the lexical items, using a purely unsupervised empirical study based on language use data.

There is a long history of studies related to similarities and dissimilarities between the languages of the Balkans, which I will ignore here entirely. The notion of language as a potentially defining feature for some concept like state, nation, or ethnicity can deviate from the linguists' notion of what determines a language. In this study my focus

1. This work has been presented together with Dejan Ivković at the Balkan Conference in Billings, Montana, in May 2018. I am grateful for Dejan's help and comments on this work. We are both grateful for all the inspiring comments from the conference participants. None of this would be possible without the support from Gisbert Fanselow during my time in Potsdam and and long time after.

is not on *language* as anything else but the communication device for groups of people, manifested in some form in the language faculty of the speaker community and every individual. I assume that language is a dynamic object that is subject to dynamic changes driven by the behavior of the speaker community and the individuals' language faculty. For the study here, the main interest is in the methodology of studying dynamics of the lexicon and semantic properties exploiting distributional lexical models derived using simple neural network architectures and large text corpora.

A statement from Firth (1968) that can be found in many recent papers on distributional semantics summarizes the general idea: "You shall know a word by the company it keeps." This is of course an oversimplification that can only be seen as a rough observational tendency that we can exploit in a more general empiricist approach to lexical semantics that has some practical value. We do not assume this kind of descriptive and purely distributional model to be sufficient in a theoretical approach to lexical semantics.

Vector Space models, using geometrical measures, have been suggested as a tool for the analysis of lexical properties, for example, by Charniak (1997). An overview of the approaches before the Deep Learning and neural network wave can be found in Baroni & Lenci (2010), Turney & Pantel (2010), Erk (2012), and Clark (2014). To capture distributional properties of words in corpora, one could, for example, count the number of times certain words occur in the context of a specific lexical item. This would be represented in form of a vector of scalars that contain the counts or the relative frequency as an estimate of the probability of other words occurring in the context of a particular lexical item.

With the dawn of Deep Learning and the new connectionist wave over the last decade, word embeddings emerged as an elegant way to encode lexical items in form of numerical vectors, capturing aspects of their semantic dimensions that are derived from their distributional properties.

In the following we will discuss geometry-based approaches to lexical semantics and new word embedding approaches used in neural network modeling, before we turn to our analysis of South-Slavic languages using such embedding models.

2 Approaching models of word meaning with geometry

In a bag-of-words (BoW) approach, one would assume that the entire corpus is represented in a table with the number of rows and columns corresponding to the number of different words in the corpus (types). Each row could represent one target word and each column—a context word for the target word. The resulting table or matrix represents word-to-word model for a specific corpus. The numbers in the cells correspond to the counts or the number of times a specific type (column-word) occurs in the local context of n -words left and right of a target or row-word in a specific corpus. One can experiment with the size of the context for enumeration or BoW selection. We could choose n to be 5 words left and right of a target word, or experiment with different window sizes for different analyzes or purposes in our modeling. We then analyze the corpus and count how many times a certain word occurs in the context-window of size n of our target word. Consider Table 5.1, where the type *big* occurred 3 times in a specific context-window of the word *dog*.

Table 5.1: Bag-of-Words in Context Counts

	...	<i>the</i>	<i>a</i>	<i>big</i>	...
<i>dog</i>	...	45	32	3	...
<i>cat</i>	...	39	27	1	...
<i>walked</i>	...	67	49	1	...

For a large corpus, the number of rows and columns in a table like 5.1 could have columns and rows determined by the vocabulary size. If a language has a rich morphology, this table could be even larger and the counts would be lower. There are various ways to optimize and improve the quantitative property. As mentioned, one can experiment with the window size for the BoW approach. We could also remove certain types of words, for example stop words, if we were interested only in content words that would play a larger role in the semantic properties of the target word. Nevertheless, the size of this kind of matrix could be quite large, depending on the corpus size and the text genre.

The model in Table 5.1 captures only general local context. Linguistic

properties, however, are often directional in the sense that semantic and syntactic selection or modification is typically to or from one specific direction in some language. In our case, when looking at some South-Slavic languages, modifiers like adjectives would preferably occur to the left of a head noun, or a complement clause would occur to the right of its governing verb. We expect the context position left or right of target words to be significant for distributional models and to capture semantic properties much better.

To capture contextual distributional properties using the BoW approach, we could generate frequency vectors that represent the left and the right context, respectively, as in Table 5.2.

Table 5.2: Left and right combined BoW context vectors

target	left					right				
	...	the	a	big	...	...	the	a	big	...
dog	...	45	32	3	...	...	0	0	0	...
cat	...	39	27	1	...	...	0	0	0	...
walked	...	0	0	0	...	...	67	49	1	...

It is quite obvious, when looking at Table 5.2, that such a directional BoW vectorization approach for distributional word properties in terms of geometry captures much better distinct lexical semantic properties.

The disadvantage of such an approach is that we would double the dimensionality of the word vectors, thus also the computation and memory requirements for any kind of computational approach based on geometry as an expression of lexical similarities. The bigger problem with larger vector sizes is that of sparseness in the dimensions, with many dimensions being 0. We could generate a more detailed vector model by taking precise positions into account as for example by tracking for every context word whether it occurred one, two, or more words to the left or right of the target word. This would expand our model even further and lead to even more sparseness in the models.

2.1 Similarity metrics

The common approaches to measure word similarities would be based on Euclidean Distance or Cosine Similarity. In Euclidean Distance we measure the absolute distance between two points p and q in n -dimensional space by taking the square root of the sum of the squares of the distance for each coordinate, as in equation 5.1.

$$d(p, q) = \sqrt{\sum_{i=1}^n (p_i - q_i)^2} \quad (5.1)$$

While Euclidean Distance is appropriate for normalized vectors, that is, if the vectors are based on word frequencies from one corpus, it would not be appropriate for comparisons of word frequencies from different corpora, if the corpora are significantly different in size. A normalized measure of similarity for such vectors would be the Cosine Similarity as in 5.2, which measures the angle between two vectors, by dividing the dot-product between by the product of the magnitude of each vector, thus ignoring the relative length of each vector.

$$\cos(\theta) = \frac{A \cdot B}{\|A\| \|B\|} = \frac{\sum_{i=1}^n A_i B_i}{\sqrt{\sum_{i=1}^n A_i^2} \sqrt{\sum_{i=1}^n B_i^2}} \quad (5.2)$$

Independent of the method that we discussed above, by representing distributional properties of words in form of numerical vectors we can express the intuition that more similar words are closer to each other in terms of any of the geometrical distance metrics, i.e. Euclidean Distance or Cosine Similarity.

2.2 Dense vectors and embeddings

Mikolov, Chen, et al. (2013), Mikolov, Sutskever, et al. (2013), Mikolov, Yih, et al. (2013) suggested an innovative way to create word representations that can be processed in neural network architectures, where the word representations are vectors that encode distributional semantic properties, representing in fact predictive models of contexts for target words.

In general, working with lexical meaning in form of string encodings that are associated with potentially complex feature structures, or using the traditional notation for the meaning of a word like *dog* as *dog*², is not very useful in computing environments and machine learning. Words and their meaning need to be converted to computable representations, ideally encoded in form of vectors.

The Word2Vec approach proposed in Mikolov, Sutskever, et al. (2013) uses a feed-forward neural network architecture to train vectors for words such that they maximize the prediction of other words in their contexts. I will simplify here somewhat without going into the technical or mathematical details. In common models a vector of a dimensionality of 300 real values is chosen to represent each target word.² The vector values are chosen such that the dot-product of such two word vectors represents the likelihood that these two words would occur in a local context of n words or within the set of BoWs for the target word in a large corpus.

The word-vectors are trained using a neural network architecture based on the distributional properties of words in some training corpus. The resulting model is a set of vectors for each word where similar words predict similar words in their context, thus, in terms of geometric similarity or closeness metrics, similar word vectors will be very close to each other.

Computing these word vectors from large corpora might require specific computational resources and memory, and it can be quite time-consuming. Various models are available, pre-computed by the colleagues at Google or Facebook, for example. I describe in the following, how I use such a set of pre-computed word vectors to compute lexical similarity between languages including semantic fields of individual lexical items.

2. This choice is often made empirically, by identifying the vector length that makes the maximizes the accuracy and utility of the model in for example real NLP tasks.

3 Word vectors of Slavic languages

The FastText (<https://fasttext.cc>) provides pre-trained vectors for 157 languages, see Grave et al. (2018), Joulin et al. (2016) for more details. Among those language models are Croatian, Bosnian, Serbian in Latin and Cyrillic alphabet, Serbo-Croatian, Macedonian, and Slovenian vectors. Each vector model consists of a list of word and vector pairs in raw text format. A sample entry would look as follows:³

```
godine -0.0186 -0.0258 0.0100 ... -0.0026 0.0066 -0.0221
```

The labeled vectors have a dimension of 300 real numbers. The models, thus, provide us with two sets of information:

1. A list of words per language
2. Vectors for every word that allow us to compute the predicted context words

This enables us initially to compare the lexical inventory of the languages, that is in particular Croatian, Bosnian, Serbian, and Serbo-Croatian.⁴

The nature of the word embeddings allows us to extend the study to a comparison of semantic properties using the predictions of context words for every single lexical item. We expect that there are many lexical overlaps for the Neo-Shtokavian variants spoken in Bosnia, Croatia, and Serbia. In addition to this lexical overlap, we can now compare the semantic fields of the shared vocabulary to study semantic variation and to compute a similarity on the basis of real language use.

The resource is, of course, limited in many ways. The main text-source for computing the word similarities in FastText has been Wikipedia. FastText does not provide any detailed overview of the amount of textual data that has been used for each of the language models. Thus, the size of the lexical inventory for each language, that is the number of types, might vary significantly.

3. The dots representing omitted scalars for space reasons.

4. We assume that the texts that served as the source for the Serbo-Croatian language model have been labeled as such in Wikipedia. The script in the Serbo-Croatian models is mainly using the Latin alphabet.

Another issue is the variation in pronunciation between the variants that is reflected in the orthography. Although the three main languages are variants of Neo-Shtokavian, there are systematic differences in the realizations of certain vowels, reflected in the orthography. For example, in Croatian as the *ije*-kavian variant *-ije-* is realized as in *bijelo* (white), and in Serbian as the *e*-kavian variant as *-e-*, as in *belo* (white). To be able to compare the lexical inventories one needs to utilize some form of automatic orthographic conversion from the *e*-kavian to the *ije*-kavian variant of Neo-Shtokavian, and vice versa. This is also necessary for a study of the context words as representing semantic fields in the sense of Distributional Semantics.

I used automatic orthographic normalization for the lexical inventory comparison. This is, of course, not an ideal approach, since errors can be introduced and some form of false matches could be created. My hope is that applying the conversion bidirectionally, from *e-* to *ije*-kavian and vice versa, the error would be minimized or neutralized.⁵

The orthography-related normalization included *i*-omission in future tense in Croatian, but not necessarily in Bosnian or Serbian, as in *uradit ću – uraditi ću* (I will do it). Certain cases of oppositions were covered as well, as for *-u/e* in *porculan* vs. *porcelan*, *-t/ć* in *plaća* vs. *plata*. Cases of initial *h*-drop were taken into account, as in *hrđa* vs. *rđa* or *čahura* vs. *čaura*. Also final-*r*-drop was covered, as in *jučer* vs. *juče* or *večer* vs. *veče*. Otherwise the more common phenomena are related to the alternation *je/e*, as in *vjetar* vs. *vetar*, and the *ije/e* alternation as in *bijelo* vs. *belo*.

There are certain lexical differences that I would not convert, such as the differences in the following word pairs: *riža – pirinač* (rice), *tvornica – fabrika* (factory), *kruh – hleb* (bread), *špinat – spanač* (spinach), *rajčica – paradajz* (tomato). For some of these terms there seems to be a growing shift with respect to lexical familiarity, as for example for *riža – pirinač* (rice). We expect that there is a much larger shift when it comes to the lexical semantics level or constructions with such dissimilar words.

In addition to my own orthographic conversion utilities, I used Cyr-Translit (<https://github.com/opendatakosovo/cyrillic-transliteration>) by

5. In this study I did not estimate the error introduced by the automatic conversion of the orthography.

the Open Data Kosovo group, which is a free Python module for automatic transliteration.

In addition to the direct vocabulary size comparison, the goal is to study the bags of words that are predicted by the same lexical form across the different languages. Using the FastText model, we can compute the n most likely words in the context for the Croatian word *cvijet* (flower) and the Serbian counterpart *cvet*. Each of the words will make predictions of other words in its context. We want to measure the overlap of words among the n most likely predicted words in the context BoW.

The hypothesis is that language use differences and differences in the semantic fields of the same concept in two different speaker groups will be reflected in the overlap of words in the context BoW. Since the word embedding models allow us to compute probabilistic distributions of words in the context for any given target word, we could also utilize Information Theoretic or Entropy-based measures to compute a similarity score over the entire distribution, using, for example, Kullback–Leibler divergence or Relative Entropy.

Independent of the final metric, the context BoW items need to be orthographically normalized as well. As mentioned, this likely introduces new margins for error and comes with other sets of issues. Nevertheless, we hope that the tendencies would be significant and clear in the resulting comparison.

4 Results and discussion

Using the FastText vector models, I compare the lexical overlap and the overlap in the predicted context BoW for each word that looks the same given orthography and orthographic normalization.

From the language models we can derive the number of types in the vocabulary for the different languages. Table 5.3 gives a vocabulary size overview. In the FastText Wikipedia models we observe the vocabulary overlap as represented in Table 5.4, which only shows the real overlap

Table 5.3: Number of types in FastText models by language

language	# types
Bosnian	166,505
Croatian	451,637
Serbian	452,282
Serbo-Croatian	454,674
Slovenian	281,823
Macedonian	176,947

Table 5.4: FastText vocabulary overlap between languages

	Croatian	Serbian	S.-C.	Slovenian	Mac.
Bosnian	137,409	128,417	144,723	71,627	19,584
Croatian		182,784	246,163	107,705	22,885
Serbian			248,644	95,863	22,946
S.-C.				115,293	29,312
Slovenian					23,758

between the language pairs.⁶ Table 5.4 shows how both Croatian and Serbian are very close to the language model that was labeled Serbo-Croatian. This is in fact more significant than the overlap between Serbian and Croatian as such. There is a slight tendency of the Bosnian model to be closer to Croatian and closest to Serbo-Croatian in terms of lexical overlap.

An interesting analysis is to see how many words from one language can be found in another, and vice versa. Table 5.5 presents these results. Table 5.5 should be read in the following way: for example, in *BS* (Bosnian) we find 30% of words that also occur in the Croatian model of (*HR*).

A discussion of all the predicted word overlaps based on the FastText models goes beyond the scope of this article. I will restrict myself to a brief summary with some examples.

Consider the predicted context words given the word *ban* (governor),

6. A missing overview can be easily generated, which would display the overlap over more than two language groups. I will leave this analysis out for a future publication.

Table 5.5: Proportional lexical overlap by language pair

	in BS	in HR	in SR	in SC	in SI	in MK
of BS		82%	77%	86%	43%	11%
of HR	30%		40%	54%	23%	5%
of SR	28%	40%		54%	21%	5%
of SC	31%	54%	54%		25%	6%
of SI	25%	38%	34%	40%		8%
of MK	11%	12%	12%	16%	13%	

Table 5.6: Predicted context words using FastText

HR	jelačić 0.63265
SR	kuban 0.661549, balaban 0.658383, šaban 0.654212 no jelačić
BS	–

as shown in Table 5.6. The example in Table 5.6 provides the best predicted context words and the corresponding probability from the language model.

Providing a complete analysis of the results would be beyond the scope of this article. I hope that the example is convincing that the method to use Word2Vec type of word embeddings for the study of lexical inventories and lexical semantic field variations across languages and dialects can provide interesting and valuable results.

The Word2Vec model and the general approach to compare the sets of predicted context words to compare lexical differences can in fact be expanded and combined with machine translation approaches that normalize the context BoW results. As with the orthographic normalization to align the variation between two languages, we could in fact translate the context BoW words and compare the semantic fields in terms of Distributional Semantics.

As an unsupervised model based purely on quantitative distributional properties of lexical items, this approach has benefits and some serious drawbacks. The problem with the approach to estimate the semantic field of lexical items using the context BoW prediction based on Word2Vec models is that it is based on single words only, ignoring idioms and

other kinds of multi-word expressions. We do not know to what extent these single word limitations influence the resulting statistics in our case.

The Word2Vec model also ignores lexical ambiguities in that all forms of a word are conflated in one vector. The different meanings and properties of a word like *luka* are a.) port, Nominative Singular or Accusative Plural, b.) onion, Genitive or Partitive, and so on. An approach where different vectors are trained for the different meanings of individual lexical items, potentially using the lemmatized word form, would be more appropriate.

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Part II

Syntactic branch

Intermediate reflexes of movement: A problem for TAG?

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1 Introduction

A major topic in syntax has been the nature and modeling of non-local (i.e. cross-clausal) dependencies. Unsurprisingly, this is also a topic that Gisbert Fanselow has always had a strong interest in, both from an empirical as well as a formal perspective, in particular with respect to long-distance wh-movement in German. Consider the examples in (1) ((1b) is taken from Fanselow & Mahajan 2000: 219, see also Fanselow 2006):

- (1) a. What do you think that the kingfisher saw last night
in Potsdam?
- b. Wen denkst du wen sie meint wen Harald liebt?
who think you who she believes who Harald loves
'Who do you think that she believes that Harald loves?'

The wh-pronoun *wen/what* that occurs at the beginning of the matrix clauses is interpreted as the object of the verbs *saw* and *love*, respectively, but these verbs are part of embedded clauses. The dependency between the thematic position of *wen/what* and its surface position is thus non-local. Since the 1970s, more and more empirical evidence has been accumulated for the hypothesis that such seemingly non-local dependencies are in fact the result of a sequence of smaller steps (Chomsky 1973), i.e. a moving wh-XP makes intermediate stop-overs on the way to its terminal landing site. The empirical evidence for this hypothesis comes from 'visible traces' of these hypothetical intermediate movement steps, also

called reflexes of movement. These are morphosyntactic/phonological changes in the embedded clauses along the path of movement, as well as reconstruction effects into intermediate landing sites or spell-out of (parts of) intermediate copies. In fact, (1b) instantiates the latter type of reflex: The wh-pronoun *wen* is not only pronounced in its terminal position but also in lower (underscored) positions that do not constitute its thematic position. The common interpretation (in GB/Minimalist syntax) is that this pattern arises because the copies of *wen* in intermediate landing sites can also be phonologically realized (in some contexts in some languages), see a.o. Fanselow & Mahajan (2000), Felser (2004) on German wh-copying. Which positions constitute intermediate landing sites is still debated, but most syntacticians nowadays agree on SpecC and Specv (see Abels 2012, van Urk 2018 for discussion and recent overviews of the debate).

Taking into account the vast literature on reflexes of movement that has been published since the 1970s, we can establish a typology of reflexes (see a.o. Lahne 2008, Abels 2012, Zentz 2013, Georgi 2014, van Urk 2015, van Urk 2018): There are (a) reflexes that occur on the heads of the phrases through whose specifier the wh-element has passed (taken to be the result of agreement between the head H and the XP moving through SpecH), and (b) reflexes in intermediate landing sites. Spell-out of (parts of) intermediate copies as in (1b) would be an instance of (b) (see van Urk 2015: ch.6 on copy spell-out); so are semantic reflexes where a moved XP is interpreted in an intermediate landing sites (examples will be provided below). The (a) pattern is illustrated with data from Irish wh-movement in (2):

(2) *go/aL-alternation in Irish (McCloskey 1979: 54, McCloskey 2001: 67):*

- a. Deir said **gu**-r ghoid na síogaí í
 say they *go*-PST stole the fairies her
 ‘They say that the fairies stole her away.’ *declarative*
- b. [CP₁ [cén t-úrscéal]₁ **a** mheas mé [CP₂ **a** dúirt sé
 which novel *aL* thought I *aL* said he
 [CP₃ **a** thuig sé ___₁]]]
aL understood he
 ‘Which novel did I think he said he understood?’
long wh-movement

In Irish, the default form of the declarative complementizer (C) is *go*, see (2a); if, however, C is crossed by \bar{A} -movement, it obligatorily changes to a form glossed as *aL*, see (2b). Crucially, under long-distance movement, this change to *aL* happens in each clause of the dependency, also in those CPs where the moving XP does not have its terminal landing site (see CP₂ and CP₃ in (2b)). The standard analysis for this pattern is that the wh-XP makes stop-overs in each SpecC position on the way to its terminal position, and the form of C reflects this intermediate movement step (either due to agreement with the moving XP or due to C's feature content that enables an intermediate movement step of the wh-XP, see McCloskey 2002 for discussion of the Irish data). Languages with reflexes on heads differ in the distribution of reflexes across clauses. Next to the Irish pattern where (i) each CP along the movement path exhibits the reflex, there are also languages in which (ii) only the clause that hosts the terminal landing site of the wh-XP shows the reflex (CP₁ in (2b)), (iii) the reflex only surfaces in clauses that are crossed by movement but do not host the terminal landing site (CP₂ and CP₃ in (2b)), and (iv) only the clause in which the wh-XP originates contains the reflex (CP₃ in (2b)); see Georgi (2014, 2017) for examples and a discussion of analyses of these patterns.

Given our knowledge of the various types of reflexes of movement in the languages of the world, we can use the patterns to differentiate between various approaches to long-distance displacement dependencies. The question is which of the existing approaches can capture all attested reflex patterns and excludes the non-attested patterns. Van Urk (2018) takes up this question and compares the slash feature percolation approach as pursued in HPSG (where each projection between the base and the terminal position of a moving XP is affected by percolation) with Minimalist movement approaches that postulate either feature-driven or non-feature-driven intermediate movement steps to certain positions. Van Urk concludes that the approach that postulates feature-driven intermediate movement to SpecC and Specv best captures the attested variation. In this paper, I will extend van Urk's work by investigating another influential approach to long displacement dependencies that he did not consider: Tree Adjoining Grammar (TAG). I will first provide a brief introduction of TAG, focusing especially on how long-distance

dependencies are treated in this formalism. This overview will make it clear that reflexes of movement in intermediate positions are potentially problematic for TAG. I will then go through some reflex patterns and discuss whether and how they could be accounted for in TAG, and why some of the previous proposals that try to cover these challenging patterns in TAG cannot be upheld. I conclude that at least the reflex patterns that involve spell-out of / reconstruction into intermediate landing sites remain a challenge for TAG.

2 Long dependencies in TAG

Tree Adjoining Grammar (TAG) is a grammar formalism first presented in Joshi et al. (1975) and further developed mainly at UPenn in the subsequent decades. The following description of its basic properties (especially those relevant for the modeling of long-distance dependencies) is based on Kroch & Joshi (1985), Kroch (1987), Frank & Kroch (1995), Frank (2002); see these references for further details and applications of the formalism. Rather than expanding a single phrase marker by recursively (and potentially infinitely) adding elements to its root node (as in current Minimalism), TAG assumes a finite basic set of *elementary trees* (ETs) that are combined with each other to form more complex structures; in this respect, TAG is similar to Chomsky's (1957) generalized transformations. ETs represent (maximally) a single clause, i.e. a CP. Following Frank (2002), I take these CPs to be built by the basic operations postulated in Minimalism (but nothing hinges on this), including Merge, which combines two elements to form a new constituent. Crucially, all basic operations in TAG are confined to ETs, i.e. there are no cross-clausal dependencies in TAG (= *the fundamental TAG hypothesis*). In order to account for the various seemingly long-distance dependencies in natural language such as long wh-movement as in (1), TAG provides the operation Adjoin that connects ETs. In particular, Adjoin inserts a special class of ETs, the *auxiliary trees* (ATs), into non-auxiliary ETs (also called *initial trees* (IT)) by "splitting up" the IT. ATs have the property of being recursive in the sense that their root node must be identical to one of its terminal nodes. ITs are ETs that do not have this

property. An AT that is recursive on the node N rewrites (viz. is inserted into) the corresponding node N in an IT. The example in (1) is derived as follows (ignoring the adjuncts):

- (3) a. step1: building the IT, wh-movement of the wh-subject to the minimal SpecC:
 ET: [_{CP} What₁ [_{C'} that the kingfisher saw ₋₁]]
- b. step2: creating the AT that is recursive on C':
 [_{C'} do you [_{VP} think C']]
- c. step3: Adjoining AT to IT at [_{C'}]:
 [_{CP} What [_{C'} do you [_{VP} think [_{C'} that the kingfisher saw ₋₁]]]]]]

Thus, wh-movement to SpecC is clause-bound, it takes place in the IT in (3a) but cannot leave it. The impression that it has moved out of the IT is created by adjoining the AT in (3b) to IT's C'-node, see (3c). The C'-node is thus split up by the AT. As a result, the wh-element is further away from the rest (viz. the TP-material) of its IT than before, but it never moved out of the IT. Long-distance dependencies are thus *an illusion* in TAG, created by Adjoining trees to other trees. In even more complex dependencies that span more than one clause-boundary, as in (4a), there are two ATs recursive on C', see (4c). Importantly, in order to derive (4a) the two ATs are first combined with each other before the newly created complex AT is adjoined to and thus expands the IT at C' (Frank 2002: 179), see (4d).

- (4) a. What did Gisbert say that you think that the kingfisher saw (last night is Potsdam)?
- b. IT: [_{CP} What₁ [_{C'} that the kingfisher saw ₋₁]]
- c. ATs: (α) [_{C'} did Gisbert [_{VP} say C']],
 (β) [_{C'} that you [_{VP} think C']]
- d. order of operations: (i) AT(α) adjoins to AT(β); (ii) the result of (i) adjoins to [_{C'}] of the IT

In fact, the alternative view on apparent long-distance dependencies in TAG derives a number of properties of such dependencies, e.g. (some) island phenomena. What I will concentrate on in this paper, however, is TAG's potential to deal with reflexes of movement in intermediate positions. It is crucial to note that since there is no cross-clausal movement in TAG, there is also nothing like successive-cyclic movement from one CP into another. The AT that adjoins to an IT is never affected by operations that take place inside the IT. There are no intermediate movement steps into a higher clause. In this respect "long" dependencies in TAG are fundamentally different from the GB/Minimalist analysis of long movement, where the *wh*-element moves out of the minimal CP and makes stop-overs in the specifier of (at least) every intervening CP on its way to the terminal landing site. The obvious question is thus how intermediate reflexes of movement can be handled in TAG if all syntactic dependencies are strictly clause-bound and never affect higher clauses. In the following section, I discuss challenges and possibilities for modeling some reflexes of movement in TAG.

3 Reflexes of movement in TAG

I will address reflexes of movement on heads first, as illustrated for Irish in (2). Since there cannot be agreement with the moving XP in an intermediate landing site in TAG, languages that exhibit reflexes on heads in clauses in which the XP does not have its terminal landing site are potentially problematic. This does not only hold for languages with the Irish pattern, but also for those mentioned in section 2 in which the reflex only occurs in clauses crossed by movement (but not in the clause that hosts the terminal landing site). Similarly, it is not immediately obvious how TAG accounts for languages that exhibit a reflex of movement only in the clause in which the moved XP has its terminal landing site; this would be Irish' where the special form of the complementizer only occurs in CP₁, as is the case e.g. in Chamorro (Chung 1998). There are ways to handle the Chamorro pattern in TAG without violating the fundamental TAG hypothesis as long as the reflex occurs on the C-head: The *wh*-XP moves to SpecC within the IT and agrees with C from this

position (Spec-head Agree); if we assume that C's features percolate to C' (which seems reasonable), they are present on the node that is later "split up" by Adjoin. Thus, when the AT adjoins to C' of IT, it is possible either to retain the feature of C' (percolated from C) at the upper part of the split C', or to have a copy of the feature on C' present on each subpart of the split C' node. In either way, the agreement features of the wh-XP would end up on the C' node of the matrix clause. If we allow them to percolate or to be handed down to C (in syntax or in a postsyntactic morphological component), we get the desired pattern with the reflex of movement occurring only in the clause where the wh-XP surfaces. More challenging are languages like Duala (Epée 1975): the reflex also occurs only in the clause where the wh-XP has its terminal landing site, but it surfaces on a lower head than C, viz. in the TP-domain. If the T-head agrees with the wh-XP inside the IT and then an AT is adjoined to C' of that IT, the agreement features of the wh-XP should end up in the lower clause of the dependency, not in the highest one where we see them. Technically, we could say that these reflexes are derived in TAG similar to the one Chamorro: Agreement actually happens between the wh-XP in IT's SpecC position and the C-head + percolation of this information to C'. Later, after Adjoin took place, the information is handed down from the C'-node that ends up in the matrix clause even further down, viz. to the T-domain. Something like this seems necessary anyway because the reflex of movement that shows up lower than in the CP-domain of the terminal clause of the dependency (as in Duala), is never triggered by A-movement (targeting SpecT). Thus, it is obviously triggered by wh-movement to SpecC. Hence, there are ways to handle reflexes on heads that only occur in the highest clause of the dependency in TAG. What is, in fact, expected in TAG are languages with the opposite pattern, viz. languages in which the reflex of occurs only in the clause in which the wh-XP originates, as e.g. in French in (5) where participle agreement (in gender and number) with the preposed object DP of the verb 'repaint' can only occur in the clause in which this DP has its θ -position:

- (5) [CP [Quelles chaises]₁ as-tu dit / *dit-es
 which.FEM.PL chairs(FEM.PL) have-you said / said-FEM.PL
 [CP qu' il a *repeint / repeint-es ____₁]]
 that he has repainted / repainted-FEM.PL
 'Which chairs did you say that he repainted?' Branigan (1992)

This follows if the participle / v head in the IT 'Which chairs that he repainted?' agrees with the wh-XP (either in-situ or after movement); after Adjoin of the AT 'did you say that' to IT's C'-node took place, the v-head that agreed with the object is in the lower clause of the dependency – the only position of IT that ends up in the matrix clause is SpecC (and potentially a part of C', see the discussion above). Interestingly, this French type of reflex is rather challenging for the GB/Minimalist view of reflexes of movement (see Georgi 2014: sec. 4.3 for discussion). Thus, reflexes on heads that occur either only in the top-most or only in the lowest clause of a long dependency can be handled more or less straightforwardly in TAG. What remains is the question how reflexes in intermediate clauses can be accounted for (viz. reflexes in C₂ and C₃ as in Irish in (2)). The aforementioned mechanisms are not sufficient to derive reflexes in these positions. Zentz (2013) discusses this issue for Kinande, another language in which reflexes of movement occur on heads in intermediate clauses. In Kinande, the complementizer exhibits agreement in noun class with an \bar{A} -moved XP, and this is possible in every clause of the dependency (see the C-head *kyo* agreeing in class 7 with the wh-XP in (6), Schneider-Zioga 2009: 47).

- (6) [CP₁ ekihi **kyo** Kambale asi [CP₂ nga **kyo** Yosefu
 7.what 7.WH 1.Kambale 1.know if 7.WH 1.Yosefu
 akalengekanaya [CP₃ **kyo** Maty akahuka]]
 1.thinks if 1.Marya 1.cooks
 'What did Kambale know that Yosefu thinks that Mary is cooking
 (for dinner)?'

Zentz, following ideas in Frank (1992, 2002), proposes a feature-percolation / matching algorithm to account for such reflexes: As postulated above, the wh-XP moves to SpecC of the IT and agrees with the C-head

in a Spec-head-configuration; these features also percolate to C' of the IT. As a consequence, the C' -node that will be 'split' by Adjoin bears the relevant features of the wh-XP. By assumption, the features of the C' -nodes of the AT that is adjoined to the IT's C' -node must match. Thus, only an AT that also bears class information on its C' -root node (projected from C^0) can adjoin to the IT with a wh-XP in SpecC in Kinande. The features on C' of the AT cannot be the result of agreement with the wh-XP, of course (the wh-XP is not present in the AT); rather, they can be added freely in the AT. However, Adjoin will only be successful if the features of the C' -nodes in the IT and the AT match. To summarize, if we assume feature percolation and matching requirements on Adjoin, it is possible to derive all attested patterns of movement reflexes on heads in TAG without violating the fundamental TAG hypothesis (all operations are strictly clause-bound). Let me briefly discuss an older proposal for how to capture intermediate reflexes on heads from the literature: Kroch & Joshi (1985) discuss how stylistic inversion (SI) in French can be analyzed in TAG. SI involves (optional) inversion of the subject and the finite verb of a clause. In a nutshell, it applies in clauses along the path of \bar{A} -movement (see Kayne & Pollock 1978 for details); in (7) SI occurs in the matrix and the embedded clause (inverted elements are underlined):

- (7) [PP Avec qui]₁ a prétendu Marie [CP que sortirait
with whom has claimed Marie that would.leave
Jean]₁]?
Jean

'With whom did Marie claim that Jean would leave?'

(Kayne & Pollock 1978: 604)

Kroch & Joshi (1985: 81) state that "[...] French must contain a constraint that makes the appearance of an inverted subject dependent on the appearance of a wh- in the COMP of the same simplex sentence." However, in the TAG-formalism the wh-element *qui* (pied-piping the preposition *avec*) has never been in COMP (=SpecC) of the embedded clause at any stage of the derivation. The elements in italics in (7) constitute the AT that is adjoined to C' of the IT. So how can SI be triggered

in embedded clauses of long \bar{A} -dependencies in TAG? Kroch and Joshi propose the following solution: Inversion is possible in ATs (but not enforced); in addition, there is a constraint “imposed on the adjoining of an inverted auxiliary tree to an initial tree. If the initial tree contains a fronted wh-, the inverted auxiliary tree will be adjoinable to the right of the wh-COMP. Otherwise, it will not be.” In other words, while inversion is freely available in ATs, it must be licensed by the presence of a wh-element in the local COMP via adjoining; if the context for inversion is not met within the AT, it must be met after adjoining the AT to the IT. Indeed, this is the case in (7): The inversion in the AT is licensed by the fact that after adjoining there is a wh-element in the now local c-commanding SpecC. If we adopt such constraints on well-formedness and the condition that they can also be met in the output structure, examples as in (7) with a reflex of movement in an embedded clause of a long \bar{A} -dependency can indeed be modeled in TAG. However, this is not the end of the story. Long-distance dependencies can span several clauses, not just two as in (7). If there is just one more level of embedding, SI can apply in the most deeply embedded CP, see (8) (Kayne & Pollock 1978: 606; SI may or may not apply to higher clauses as well, but this is irrelevant here):¹

- (8) [_{CP} Les filles [_{CP} [avec qui]₁ tu disais [_{CP} que
 the girls with whom you say.PST that
 prétendait cette pauvre femme [_{CP} que sortirait son
 claimed this poor woman that would.go.out her
mari __1]]] sont toutes là]
 husband are all here

Recall that in order to derive such an example, the two ATs that correspond to the strings *tu disais que* (AT1) and *prétendait cette pauvre femme que* (AT2) must first be combined before the resulting structure is adjoined to the C' -node of the IT *avec qui sortirait son mari* (which is itself combined with another tree representing the matrix clause). In

1. Kayne and Pollock argue that the somewhat degraded grammaticality of (8) is not due to the application of SI in CP3, because the example improves once the subject of this CP is made “heavier” and undergoes extraposition.

this derivation, the most deeply embedded AT2 (= CP3) exhibits SI, but it is not licensed by Kroch and Joshi's condition on well-formedness of SI: It is not licensed by a *wh*-element (here, a relative operator) in the local SpecC when it first combines with AT1 since there is no such element in AT1; it is also not licensed by the relative operator in the IT after adjoining [AT1+AT2] to the IT: though there is such an element in COMP of the IT, it is not local to AT2 (the more deeply embedded of the two ATs). The relation between elements in AT2 and the material inside the IT (above C') would be non-local and thus impossible to state in TAG. The only way to circumvent this problem would be to first adjoin AT2 to IT, and then to adjoin AT1 to [IT+AT2]. After the first step, AT2 is local to the operator in COMP of IT and SI is thus licensed; SI is also well-formed in AT1 since it is also local to the same COMP after adjoining to IT + AT2. However, such a derivation is explicitly excluded in TAG. Thus, Kroch and Joshi's analysis of this reflex of movement cannot be a generally viable solution to reflexes of movement in intermediate clauses of long \bar{A} -dependencies. A feature percolation/matching algorithm along the lines of Zentz (2013) may provide the required mechanism, though. See also Frank (2002: ch.4) and Frank (2006: sec.5) on a similar feature percolation-based TAG-conform analysis of (apparent) long-distance agreement.

Now that we know how TAG can handle (intermediate) reflexes of movement on heads, I turn to reflexes in intermediate positions (XP positions). These involve scope reconstruction to intermediate positions and copy spell-out. Scope reconstruction in TAG is discussed in Frank & Kroch (1995: 15, fn.12). Consider the raising-to-subject example in (9), which is ambiguous:

- (9) [TP A unicorn [T' T [VP *seems* [T' to be in the garden]]]]

The existential can have wide scope or narrow scope with respect to *seem*. The IT of the sentence is *A unicorn to be in the garden*; the AT *seem* (recursive on T') is adjoined to the IT's T'-node. The wide scope reading follows since the existential in its derived position SpecT in the IT scopes over T' of the IT, and this is the position to which the AT, containing *seem*, is adjoined. Low scope is derived if the subject starts out

inside the VP (or vP) in the IT and then moves to SpecT: In the combined IT+AT, *seem* scopes over the trace of the existential inside the VP (which is part of the IT). Thus, the relevant scope can be reduced to two distinct positions of the existential in the IT – one is below the adjoining site and the other is above it, no non-local dependencies across IT/AT-boundary need to be postulated.² However, this analysis cannot cover all cases of reconstruction. Again, the approach breaks down once we consider more levels of embedding, e.g. as in (10), where the subject raises across two TP-boundaries:

- (10) *Evidence for successive-cyclic A-movement* (Castillo et al. 1999: 93):
 [TP₁ [John_i]₁ seems to Mary_j [TP₂ to appear to himself_i [TP₃ 1
 to be happy.]]]

Castillo et al. (1999) note that in this sentence the reflexive pronoun can be bound by *John*. However, *John* and the reflexive are not in the required structural condition to fulfill Principle A, neither when we consider *John* in its surface position (to far away from the anaphor, intervenor *Mary* should block binding), nor in its base position inside the most deeply embedded TP₃. According to Castillo et al., the only way to account for this binding possibility is to postulate an intermediate landing site of the raising subject *John* in SpecT₂. Thus, they take (10a) to provide evidence for successive-cyclic A-movement through every SpecT. As with SI in French, we thus have a reflex of movement in an intermediate clause, and the same problem arises: Unlike in (10), the attested scope of *John* cannot be attributed to the two positions *John* has in the IT *John*₁ *to be* 1 *happy*: The upper one in SpecT corresponds to its surface position in (10a) (after adjoining of the two ATs *seems to Mary* and *to appear to himself* that are recursive on T'); the lower vP-internal one corresponds to its base position. But none corresponds to the inter-

2. Simple (IT) clauses with two quantifiers as in (i) also exhibit scope ambiguity.

- (i) Some man loves every woman. $\forall > \exists, \exists > \forall$

Here, the two position of the existential (VP-internal and SpecT) are not sufficient to derive the ambiguity. But this kind of scope ambiguity can be derived by quantifier raising (QR) of the Q-XPs at LF. Since QR is clause-bound, QR-movement would in principle be compatible with TAG, it is a local, i.e. IT-bound operation.

mediate position at the edge of TP₂ that we need to get the binding facts in (10); *John* never moves into or establishes any relations with elements in the ATs.

The same abstract configuration — and thus the same problem for TAG — arises with reconstruction in \bar{A} -dependencies that span more than two clauses. In the famous pit-stop reflexive configuration from Barss (1986), see (11), a reflexive contained in an \bar{A} -moved XP cannot only be bound by the subject of the lowest clause CP₁ in which the XP has its base position, but also by the subject of CP₂:

- (11) *Evidence for successive-cyclic \bar{A} -movement: pit-stop reflexives* (Barss 1986: 25):
 [CP₁ [DP Which pictures of himself_i]₁ did John_i think [CP₂ ___₁ Fred liked ___₁]]

This example is derived in TAG by adjoining the C'-recursive AT *did John think (that)* to the IT [CP [*Which picture of himself*]₁ [C' *Fred liked* ___₁]]. As with the long raising cases, the anaphor is bound by *John* neither in its base position in the IT, nor by its surface position in SpecC (there is a clause boundary between *John* and the anaphor that blocks binding). Frank & Kroch (1995) propose to solve this problem by claiming that binding by the matrix subject (here: *John*) is not the result of successive-cyclic movement of the wh-phrase through SpecC of the embedded clause, but rather comes about “by allowing a subject to bind into an element in [spec,cp] of its own clause, following Reinhart (1981)”. This works for an example like (11), but again, problems may arise when we consider more levels of embedding:

- (12) [CP₁ [DP Which picture of himself_i]₁ did Peter believe [CP₂ that John_i thinks [CP₃ Fred liked ___₁]]]

To the extent that *John* in (12) can still bind the anaphor in the fronted wh-XP, Frank & Kroch's (1995) solution does not work anymore, because the wh-XP that includes the reflexive is not contained in the same clause (CP) as *John*.³ A similar problem arises for reflexes of movement

3. My native speaker informants have different opinions on this binding option, though.

that involve the spell-out of (parts of) intermediate copies as in example (1). Since there are no copies of moved XPs in intermediate clauses (corresponding to ATs) in TAG, spell-out of multiple copies is not an option in this framework. Given the solutions proposed for intermediate reflexes on heads outlined above, a way out would be to copy all features of the wh-XP to C' in the IT and to freely add them to C' in ATs; in addition, there must be a matching requirement for features on nodes targeted by Adjoin. In this way, ATs could be forced to bear features of wh-XPs. However, there is no XP position (SpecC) in the ATs that these features could be realized in. New XP positions would have to be created in the ATs counter-cyclically; and copying would have to involve the entire feature structure of the wh-XP present in the IT – this is not what well-known copying operations like agreement do, they only copy a small subset of features (e.g. phi-features) from one node to another. The copy mechanism that is needed here rather resembles total reduplication in morphology. But reduplication is a local process, while it would need to skip quite a lot of structure to create copies as in (1). Even if we can find a technical way of achieving doubling of the moved XP in ITs, the general question remains why this process (as well as the feature percolation mechanism discussed above) should apply. In HPSG and GB/Minimalism, the answer is clear: stop-overs / smaller steps, indicated by (intermediate) reflexes, apply for reasons of locality. But in TAG, where all operations are local (clause-bound) by definition, it is not obvious why a doubling of information across ETs is necessary in the first place. What do reflexes of movement encode instead, why are they useful? Imposing matching conditions on nodes that are subject to Adjoin (and thus 'shared' between ETs) is a technical possibility – there are a number of matching requirements in natural language; but why double information beyond those nodes that are the interfaces between elementary trees? I do not see any motivation for this in the TAG formalism.

More empirical work is needed to find out whether the binding indicated in (12) is indeed robustly available for speakers; if it is not, Frank and Kroch's analysis is sufficient.

4 Conclusion

In this paper, I have investigated how TAG, a formalism in which all operations are clause-bound, deals with reflexes of movement in intermediate positions, i.e. visible ‘traces’ of (seemingly) cross-clausal dependencies in between the base position and the landing site of a displaced XP. In HPSG or GB/Minimalism, these reflexes are taken to indicate smaller steps that are chained together to create a long dependency. Since there are no intermediate movement steps in TAG, these reflexes cannot be assumed to indicate intermediate stop-overs. I have shown that reflexes on intermediate heads can be accounted for if feature percolation and feature matching requirements are assumed, as proposed in the TAG-literature. Reflexes in intermediate XP positions (scope reconstruction, copy spell-out) are more challenging since the additional feature percolation mechanisms are not sufficient to describe these phenomena. The accounts proposed in the literature were shown to be untenable once more complex sentences are taken into account. The results thus corroborates van Urk’s (2018) arguments for an approach that invokes true successive-cyclic transfer of information across clause-boundaries (as in approaches that postulate successive-cyclic movement). Similar problems for TAG also arise with other cross-clausal phenomena that are not addressed in this paper, e.g. raising to object, case switch, and case stacking. They are at least challenging for TAG, and it still needs to be shown whether and how they can be accounted for under the fundamental TAG hypothesis.

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Towards a Fanselowian analysis of degree expressions¹

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1 Introduction

Degree constructions constitute an important area of syntactic research in generative grammar, since at least the landmark paper of Bresnan (1973). While Bresnan's paper addresses both comparatives and degree equatives, most of the subsequent literature focuses on comparatives proper. The two constructions are illustrated in (1) below:

- (1) a. The eagle is as big as the vulture.
b. The eagle is bigger than the falcon.

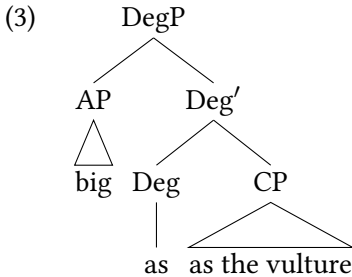
In both examples, two degrees are compared: the degree to which the eagle is big is the same (or higher) as the degree to which the vulture is big in (1a), rendering a degree equative, while in (1b), illustrating comparatives proper, it is definitely higher than the degree to which the falcon is big. The strings *as the vulture* and *than the falcon* constitute the standard value of comparison (to which something is compared, in this case the size of the eagle): I assume that in Germanic languages, these are reduced CPs (see, for instance, Bacskai-Atkari 2018).

1. I owe many thanks to Gisbert for inspiring discussions about the clausal left periphery and comparative constructions during all these years, both during my doctoral studies and afterwards. The present article is a mixture of the issues mentioned above and is a first attempt at eliminating the QP from degree expressions, which has been on my agenda ever since I introduced it in my dissertation. I also owe many thanks to Malte Zimmermann and Agnes Jäger for discussions of equative-related issues.

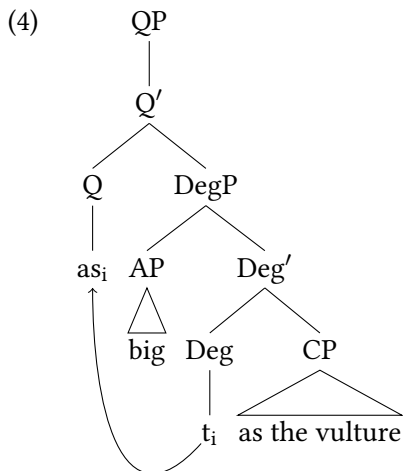
It is a well-known fact that the matrix degree element imposes selectional restrictions on the element introducing the standard value. For instance, if the matrix element is *as*, then the standard is introduced by *as*, see (1a), and not by *than*, see (2):

(2) *The eagle is as big than the woodpecker.

Based on this observation, it has been proposed in the literature (Lechner 2004: 22) that the comparative standard (*than*-CP or *as*-CP) is the complement of the degree head. The gradable adjective (e.g. *big*) can then be located in the specifier of the DegP. Adopting this view for equatives like (1a) above, the following structure arises:



While this structure successfully caters for selectional restrictions (as well as for various other problems not to be discussed here), there is an obvious problem with the word order: the representation in (3) gives the string *big as as the vulture*, which is obviously not the desired output. Note that Lechner (2004) considers only cases of morphological comparatives like (1b), where the matrix degree marker is *-er* and in fact assumes that *bigger* is an AP (unlike the compositional approach of Bresnan 1973). However, taking *as big* to be an AP would be highly questionable, and hence the analysis of Lechner (2004) necessarily runs into a problem. In order to overcome this, Bacskai-Atkari (2014, 2018), building on an original footnote of Lechner (1999), proposes that there is an additional QP layer on top of the DegP, and the degree element moves from Deg to Q, as given in (4) below:



This structure produces the right word order; in addition, certain modifiers showing agreement with the degree element can be located in the specifier of the QP (Bacskai-Atkari 2018: 36–43). However, the question arises why movement takes place in the first place as there seems to be no obvious trigger. In what follows, I am going to argue that the head movement of the degree element indeed takes place and that it is in essence similar to the Münchhausen-style head movement proposed by Fanselow (2004).

2 Münchhausen-style head movement

Head movement probably constitutes one of the most problematic issues in minimalist syntax: while it seems evident that head movement exists, analyses attempting to answer how it works (including the issue whether it is really a “head” that moves) tend to run into theoretical problems. This is extensively discussed by Fanselow (2004), who provides an attractive alternative to previous approaches (see also a recent critical overview by Dékány 2018 on head movement, though note that she does not offer an alternative herself).

German, like indeed most Germanic languages, is well-known for its so-called V2 property: the finite verb in main clause declaratives occupies the second position in the linear string, and is preceded by one constituent. This is illustrated in (5a) and (5b) below: the examples also show that the first position is not tied to a particular function (for instance, subject). The example in (5c) shows that the verb is not fronted to the second position in embedded clauses but remains in its base position; while in some other Germanic languages (like Yiddish, as Fanselow 2004: 34 also mentions), verb movement is possible if a complementiser like *dass* “that” is inserted (see also Vikner 1995), this is excluded in German, suggesting that the complementiser somehow appears in the same position as the finite verb in main clauses.

- (5) a. Gisbert **hat** gestern einen Graureiher im
 Gisbert has yesterday a.MASC.ACC grey.heron in.the
 Wildpark gesehen.
 Wildpark seen
 ‘Gisbert saw a grey heron in the Wildpark yesterday.’
- b. Gestern **hat** Gisbert einen Graureiher im
 yesterday has Gisbert a.MASC.ACC grey.heron in.the
 Wildpark gesehen.
 Wildpark seen
 ‘Gisbert saw a grey heron in the Wildpark yesterday.’
- c. Ich glaube nicht, **dass** Gisbert gestern im
 I believe.1SG not that Gisbert yesterday in.the
 Wildpark einen Papageitaucher gesehen hat.
 Wildpark a.MASC.ACC Atlantic.puffin seen has
 ‘I don’t think that Gisbert saw an Atlantic puffin in the Wild-
 park yesterday.’

It is a standard assumption (see also, for instance, den Besten 1989, Fanselow 2002, 2004, Frey 2005) that in V2 patterns, the verb is in C and the first constituent is in the specifier of the CP. The movement of the verb to C posits some problems for the theory: it can potentially be an

instance of head adjunction, which has certain problems, but it definitely cannot be treated as remnant phrasal movement, as shown by Fanselow (2004). Instead, Fanselow (2004: 23–27) proposes that the moved head is attached to a non-minimal projection, and that after such movement takes place, either of the elements may project. If an element X is merged to a YP, either X or YP may project: if YP projects, this is an instance of phrasal movement (and X is in fact a maximal projection), as in the case of the first constituent moving to the specifier of the CP. If X projects, then this is an instance of head movement, as in the case of verb fronting: there is in this sense no pre-given C (and, strictly speaking, no CP either). The movement operation is triggered by the need to check a feature at a given point in the structure where the element carrying the feature is too deep.

In our case, we can suppose that TP has a finiteness feature, [fin], that needs to be checked (Fanselow 2004: 30) and while TP was in fact projected from the verb, the strong feature cannot be checked automatically. The only possibility is to re-merge (move) the verb possessing the finiteness feature: this ultimately produces a finite clause (as the satisfied finiteness feature projects as a label), which is, without the addition of clause-type markers proper (e.g. interrogative elements) is declarative. In the absence of verb movement, as in the embedded clause in (5c), a finite complementiser is merged (external merge).

3 Movement in equative phrases

Since the model based on Münchhausen-style head movement applies to all instances of head movement, it naturally carries over to the kind of movement described in section 1 above. The question is rather what feature triggers this movement. Unlike the case of finiteness and TP, where finiteness may be marked by an externally merged element as well, the separation of Q and Deg in the literature on comparatives does not easily suggest that there is a strong quantifier feature somehow independent of the degree feature.

But the fundamental question is whether elements like English *as* and German *so* are necessarily degree elements. Let us consider the following examples from German:

- (6) a. Die Eule ist **so schlau** wie die Krähe.
 the.FEM owl is so smart as the.FEM crow
 ‘The owl is as smart as the crow.’
- b. **So** einen Graureiher hat Gisbert gestern in Golm
 so a.MASC.ACC grey.heron has Gisbert yesterday in Golm
 gesehen.
 seen
 ‘Gisbert saw such a grey heron in Golm yesterday.’

In (6a), the element *so* refers to a certain degree of a given quality (smartness), while in (6b), it refers to an unspecified quality without making reference to any degree. The construction in (6b) is a non-degree equative or similitive construction (cf. Haspelmath & Buchholz 1998), as it simply expresses that the grey heron in question is similar to the one that Gisbert saw the day before but there is crucially no gradable property mentioned. In this sense, it is very improbable that *so* should be treated as a degree marker in this case, there being no degree notion whatsoever.

As indicated in (6), degree and non-degree interpretations differ from each other also with respect to the presence or absence of a gradable predicate (an adjective in this case): there is a gradable adjective (*schlau*) in (6a) but not in (6b). Of course, the element *so* takes a *wie*-clause in (6a) but not in (6b); however, non-degree equatives may also feature a *wie*-clause, as in (7):

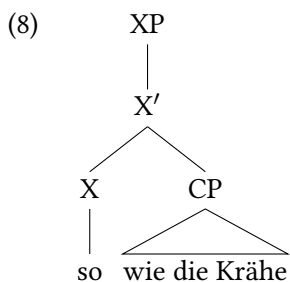
- (7) Die Eule ist **so** wie die Krähe.
 the.FEM owl is so as the.FEM crow
 ‘The owl is like the crow.’

The example in (7) differs from that in (6a) only regarding the presence or absence of the adjective (*schlau*); this indicates that while the degree complement (the *wie*-clause) is possible both with degree and non-degree interpretations, the presence of the gradable adjective makes a difference here. The availability of the complement clause suggests that the underlying syntax is similar: here I would like to take up the claim

made by Hohaus & Zimmermann (2014) that the element *so* is semantically not tied to a degree interpretation either. Crucially, this strongly suggests that the degree notion should not be pre-given in the syntax either.

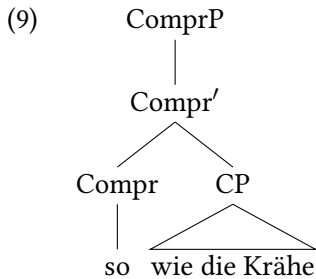
Considering now the representation given in (4) (and also in (3), for that matter), it seems obvious that the analysis so far is very much dependent on the notion of degree. In other words, we seem to have the following problem. On the one hand, based on the argumentation given in section 1, it should be obvious that there are two functional projections including head movement of the equative element from the lower to the higher head. On the other hand, while non-degree equatives seem to take a complement analogous to degree equatives, there is no AP in the specifier of the DegP and in fact no obvious reason for postulating a QP layer and head movement; moreover, it is difficult to see why *so* should be labelled as Deg if it is not associated with degree in a non-degree equative construction.

Let us consider the following scenario. Taking non-degree equative (similative) constructions, there should be a functional projection headed by the element *so*, hosting the *wie*-clause as a complement. Calling this projection XP, the structure is as follows:



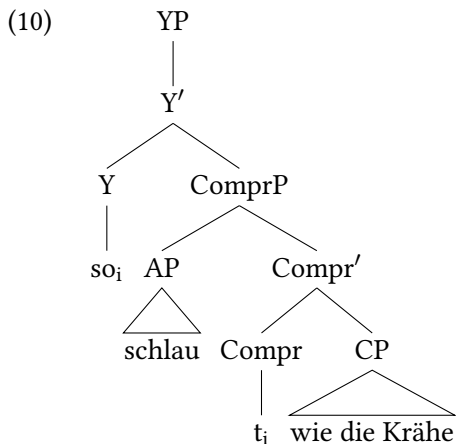
As discussed before, there is no gradable predicate in the specifier, and hence there is, in strict minimalist terms, no specifier either (the X-bar conventions are used here for representational purposes only to visualise the relative position of various elements). In addition, there is no further layer projected as there is nothing in a structure like (7), or in (6b), that would indicate the necessity thereof.

The question arises what the label of X actually is. My aim here is not so much to introduce various new functional projections in the syntax as rather to try to determine what happens syntactically and semantically at a given point in the derivation: in this sense, the labels proposed here are clearly descriptive, but they are ideally congruent with the relevant properties to be represented. At any rate, what X expresses is similarity without making reference to a degree: in other words, X merely expresses some kind of comparison. Let us therefore call it ComprP (comparative phrase):



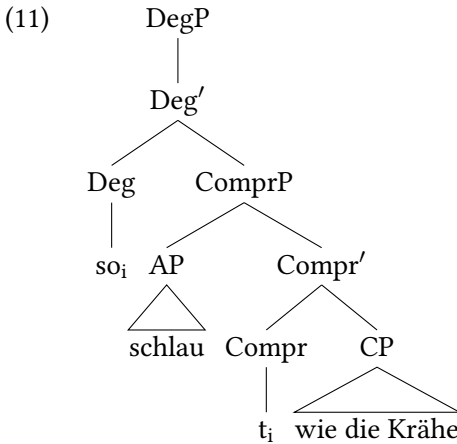
This kind of comparison allows for a comparative complement but makes no reference to degree. Expressing comparison is an inherent property of elements like *so* and *as* and requires no further projections.

In degree equatives, the comparative head is associated with degree and takes an AP argument in the specifier. As described in section 1, there is in these cases a further projection triggering the movement of the equative head. Calling this projection YP, the structure is as follows:



Crucially, (10) differs from (9) in the argument-taking abilities of the Compr head and in whether a degree interpretation arises: I assume that the two are actually interrelated, i.e. a degree interpretation arises with Compr heads that take an AP argument in addition to the complement. It is logical to suppose that such heads differ in their feature properties from ones that do not have this argument. There should therefore be an additional feature triggering head movement.

Adopting the Münchhausen-style head movement based on Fanselow (2004), as presented in section 2 above, this should be a strong feature present on the head undergoing movement, and the movement of the head checks off the feature in question on ComprP. Since the difference between equatives that involve head movement and ones that do not lies in the presence or absence of degree, I suggest that this feature is itself degree, call it [deg], and hence the label projected is DegP. The structure is then as follows:



Again, just as with the movement of the verb to C, there is in fact no head prior to movement in the Deg position, as the position itself is created by movement. The representation in (11) gives the right word order, just like the one in (4); however, unlike in (4), the movement of the head is motivated by a feature.

Note that equative elements differ from each other with respect to this feature. In German, the element *so* may or may not be specified as [deg], whereas English *as* is always specified as [deg], contrasting with English *so*.

Naturally, this also means that the original QP layer is lost, as the DegP is actually higher in the structure than originally supposed. The difference is, however, more than simply changing the labels of the relevant projections. The original idea was contingent upon the presence of degree and could not have accommodated non-degree equatives without additional assumptions. The present proposal starts from non-degree equatives and treats degree as a secondary property that is not necessarily present in comparison constructions.

4 Conclusion

In this article, I proposed a reconsideration of the structure of degree expressions, concentrating on degree and non-degree equatives. I argued

that equative elements like *as* and *so* do not directly project a degree phrase (DegP) but rather a comparative phrase (tentatively referred to as ComprP), which projects further via head movement only in degree equatives. One immediate advantage is that non-degree equatives may be accommodated into the structure without further assumptions. Another advantage is that degree can in this way be taken as the feature driving head movement, and no additional head has to be postulated in a higher functional projection. I argued that this movement operation is analogous to the Münchhausen-style head movement proposed by Fanselow (2004) for verb movement to C in German main clauses, and hence the higher head position is created by movement itself. Naturally, future research will have to investigate how other comparison constructions fit into the proposal exactly; nevertheless, the present proposal can be taken as a first step in the direction of a more principled account building on general properties of head movement.

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A form-function mismatch? The case of Greek deponents¹

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1 The puzzle

Greek has a class of verbs bearing non-active morphology (NAct) called deponent verbs (Mackridge 1985, Embick 1998). These are special, as, although they bear the marking typically associated with intransitive members of verbs undergoing transitivity alternations, they are not part of a transitivity alternation. Deponents are either transitive verbs bearing NAct, (1a), or intransitive verbs which lack active forms altogether, (1b).

- (1) a. O Janis metahirizete kialia ja na di
 the John.NOM use.NACT.3SG binoculars.ACC for SUBJ see.3SG
 ta pulia.
 the birds
 ‘John uses the binoculars in order to see the birds.’
- b. *erho-Active vs. erhome-NActive ‘come’

These verbs have been discussed in the literature, as they seem to exhibit, according to Baerman (2007), a mismatch between form and function. In particular, in systems such as the one put forth in Embick (1998),

1. To Gisbert, who has always been interested in morpho-syntactic puzzles and as we wanted to investigate psych verbs all those years ago, with great respect and appreciation.

and adopted in Alexiadou et al. (2015), deponents challenge the treatment of NAct as being subject to the rule in (3). The rule in (3) signals that NAct morphology appears realizing a Voice projection which lacks a specifier, i.e. a structure of the type (4a), which is basically an intransitive/unaccusative structure. It is the structure associated with passives, (2d), reflexives, (2e), and NAct marked anticausatives (e.g. burn, in (2b)-(4c)). By contrast, active Voice morphology is associated either with a structure that lacks Voice altogether (unmarked anticausatives, e.g. open in (2c)-(4b) or a transitive structure, (2a)-(4c), which projects an external argument in its specifier. Active Voice is the default Voice in Greek. The problem deponents thus raise is that NAct appears, yet the corresponding verbs are either transitive or if they are intransitive they lack transitive counterparts that would enforce the application of rule (3).

- (2) a. O Janis ekap**se** ti supa. *causative*
 the John.NOM burnt.3SG the soup.ACC
 ‘John burnt the soup.’
- b. I supa keget**e**. *marked anticausative*
 the soup.NOM burns.NACT.3SG
 ‘The soup is burning.’
- c. I porta anik**se**. *unmarked anticausative*
 the door.NOM opened.3SG
 ‘The door opened.’
- d. To vivlio diavast**ike** ktes. *passive*
 the book.NOM read.NACT.3SG yesterday
 ‘The book was read yesterday.’
- e. I Maria hteniz**ete**. *reflexive*
 the Mary.NOM combs.NACT.3SG
 ‘Mary combs herself.’
- (3) Voice → NAct/___ (no specifier)

- (4) a. [MiddleVoiceP [-D] NAct [_{vP} [_{ResultP} √burn]]] *NAct*
 b. [_{vP} [_{ResultP} √open]] *active*
 c. [VoiceP DP [_{vP} [_{ResultP} √burn]]] *active*

In this contribution, I will propose an analysis of deponents that builds on insights in Zombolou & Alexiadou (2014), and Oikonomou (2011). These authors have shown that there are four main types of deponents in Greek. Once we pay particular attention to the verb classes participating in deponent formation and see how these can be structurally analyzed, deponents seem no longer problematic, but see Weisser (2014) for an alternative. I will offer an account of the presence of NAct morphology in both the transitive and intransitive cases, updating the proposal in Alexiadou (2013). The account dispenses with Embick's (2000) proposal that the information marking deponency can be added as a diacritic on the root, but see Lavidas & Papangeli (2007). In my discussion, I focus on two classes: the subject experiencer class and the unaccusative deponents. I will then turn to a brief comparison of deponents to Germanic (and Romance) inherent reflexives.

2 Deponents are not transitive verbs

According to Zombolou & Alexiadou (2014), the main classes of Greek deponent verbs are (all Greek verbs are in 1st person singular, as the language lacks infinitives):

1. *Psych verbs (mental stative verbs)*: A large number of deponents falls into this class and they are both intransitive and transitive (esthanome (feel), xerome (I'm happy), (erotevome (fall in love), sevome (respect), sixenome (loath), fovamai (fear), etc.
2. *Mental dynamic verbs*: diamartrome / paraponieme (complain), astievome (kid), ironevome (quip), isxirizome (claim), katarieme (curse), dexome (accept), arnume (deny), ipopsiazome / ipoptevome (suspect), empistevome (trust), etc.
3. *Benefactives*: epofelume (benefit from), danizome (borrow), ek-metalevome (exploit), ekdikume (take revenge) etc.

4. *Unaccusatives*: *erxome* (come), *prospeionome* (land), *apogeionome* (take off), etc.

While certain of the intransitive verbs had a transitive counterpart in earlier stages of Greek, most of them did not. Although, as Weisser (2014) also points out, deponent verbs are not a sub-class of psych verbs, it is quite surprising that most deponent verbs are actually psych verbs. As can be seen from the list Zombolou & Alexiadou (2014) provide, these verbs correspond to class I experiencer predicates in Belletti & Rizzi (1988). As we will see below, I will argue that the reason why these verbs surface with NAct relates to the special syntax associated with this verb class.

Beginning with transitive deponents, we observe that these behave unlike typical transitive verbs on a number of criteria. To begin with, they do not passivize, as shown in (5):

- (5) a. O Janis fovate tus aetus.
 the John.NOM fears.NACT the eagles.ACC
 ‘John fears eagles.’
- b. *Oi aeiti fovithikan apo to Jani
 the eagles.NOM fear.NACT by Janis.ACC

Second, as Markantonatou (1992) and Oikonomou (2011) note, the experiencer argument is included in the psych nominalization, unlike other nominalizations which only maintain the internal argument, see Alexiadou (2001); the external argument can only be introduced via a *by*-phrase in non-psych nominalizations:

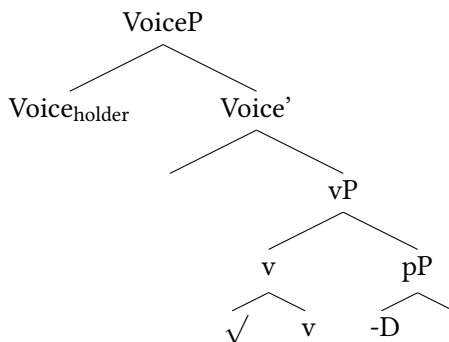
- (6) o fovos tu Jani ja tus aetus
 the fear the John.GEN for the eagles
 ‘John’s fear of eagles’
- (7) i katastrofi tis polis apo tus varvarus
 the destruction the city.GEN by the barbarians
 ‘the destruction of the city by the barbarians’

This seems to point to the conclusion that the experiencer argument patterns like an internal argument. Assuming, following Kratzer (1996) and Alexiadou et al. (2015), that external arguments are introduced at the layer of VoiceP, crucially, subject experiencers are thus not introduced in Voice, but must be introduced in some layer lower than Voice.

The psych verbs under investigation, being class I psychological verbs, are stative verbs, and their external argument is not agent but a holder in Kratzer's (1996) system. We have already established that the experiencer argument cannot be introduced in VoiceP, as its presence would trigger default active Voice, see (3) and (4) above. Thus, the structure of these types of predicates must be more complex than previously assumed.

I will assume, following Hale & Keyser (2002), Doron (2003), Landau (2010), and Alexiadou (2011, 2013), that stative subject experiencer verbs include an abstract preposition in their structure, labeled pP in (8a-b) below, see Wood (2014) and work by Svenonius (2007) and many others. According to Svenonius (2007), the figure argument is introduced in pP, (8b), in a way similar to agent and state holders in VoiceP. Following Hale & Keyser (2002), the preposition phrase involved is one of central coincidence, which blocks a change of state interpretation.

(8) a.



b. [_{pP} figure [_{pP} ground]]

The pP in (8b) contains a place for the figure argument and a place for the ground argument. According to Wood, in Icelandic *-st* appears in intransitive variants of verbs that undergo the causative alternation, but

also on verbs that appear together with PP complements, (9), figure reflexives. The latter group bears active morphology in the absence of the PP, and *-st* is obligatory in the PP context. Unlike the verbs discussed here, the Icelandic figure reflexives are agentive verbs.

- (9) Þau vilja brjótast inn í húsið.
 they.NOM want break.ST in to house.the
 ‘They want to break into the house.’ (Wood 2014: 11)

Building on and extending Wood’s (2014, 2015) analysis of figure reflexives, and see also Kastner (2017), I propose that the non-active morphology found with this class is the result of a [-D] feature on the head *p*, which is always contained within stative verbs: this prohibits a DP from appearing in its specifier, in analogy to Voice[-D], see Schäfer (2008), which triggers NAct in Greek. The subject-less predicate *p* undergoes what is termed by Kastner “late saturation”, i.e. an argument introduced later satisfies the requirement of that head. Importantly, “the composition will result in the DP in Spec,VoiceP bearing two roles: the role introduced by Voice and the role introduced by *p*.” (Wood 2014: 4). Crucially, however, the morphology of Voice will be NAct.²

Let me now turn to the other classes of deponents. First, note that the unaccusative deponents belong to the change of location class and/or contain prefixes related to prepositions. Notice that in some cases, the nominal form corresponding to land occurs in the structure, which could arguably be the ground element in the *pP* structure:

- (10) pros-gei-on-ome, apo-gei-on-ome
 to-land-v-NAct from-land-v-NAct
 ‘land’, ‘take off’

2. The question that arises is whether this analysis predicts that all stative and class I psych verbs should surface with NAct. This is clearly not the case, e.g. the Greek counterparts of *love* and *hate* surface with Act morphology and have an NAct variant, although it is unclear whether this form is a true passive. If indeed they form a true passive, this points to a split: there are certain psych verbs of class I that have truly external arguments, as suggested in Hale & Keyser (2002). We can speculate whether this has to do with either DP movement from Spec,*pP* to Spec,VoiceP or *p* incorporation to the v-Voice layer.

Change of location verbs have arguably a structure as in (11) below, where the pP is not one of central coincidence, Alexiadou & Schäfer (2011). We could thus assume that a single DP is interpreted both as the figure and the undergoer of the event, but NAct morphology appears as the pP bears a [-D] feature:

(11) [_{vP} [_{pP}]]

In fact, note that prefixes are also found in several of the transitive deponents in the other verb classes, e.g. *apo* ‘from’, *pros* ‘towards’, *meta* ‘with’, *ek* ‘from’, *kata* ‘against’, *ipo* ‘under’, etc.

(12) para-ponieme (complain), ipo-psiazome / ipo-ptevome (suspect), em-pistevome (trust), ep-ofel-ume (benefit from), ek-metal-ev-ome (exploit)

This enables us to propose that these too contain a pP in their structure as well thus leading to an analysis similar to what we have seen in (8a), in the presence of an agentive Voice head in some cases.

Turning now to the unavailability of passivization with these verbs, since they bear NAct morphology already, they simply cannot provide the input to passive formation. As to why the internal argument bears accusative in the case of transitive verbs, this follows from the theory of dependent case: the lower argument bears accusative when it is c-commanded by another argument in the same domain, VoiceP in our case (Marantz 1991, Baker 2015). With respect to nominalization, the claim is that the structure that is nominalized is the one below the v layer (Alexiadou 2011).

This treatment of NAct enables us to offer a novel approach to the following puzzle: Alexiadou et al. (2015: 96) note that in Greek most prefixed verbs form an anticausative with NAct. Similar observations are made for French:

(13) a. To pedi isihase.
the child quietened.ACT
‘The child got quiet.’

- b. To pedi kath-isihastike.
 the child recomposed.NACT
 ‘The child got recomposed.’

If such verbs contain a pP and the presence of NAct is conditioned by the presence of pP, then we do not need to analyze the prefix as the head of an adjunct to VoiceP. The contrast between the prefixed form and the one without in terms of morphological realization is thus explained.

3 Deponent verbs and inherent reflexives

Kallulli (2013) argued that the counterpart of Greek deponents in German and Romance are inherent reflexive verbs, which obligatorily co-occur with *sich* and *se* respectively. Of special interest here are inherent reflexives that are psychological verbs. Such reflexives are also transitive, as *sich* bears accusative case (Fanselow 1991, Schäfer 2008). As these verbs passivize, see Fanselow (1987), Schäfer (2012) among others and references therein, we cannot analyze *sich* as a reflex of intransitive Voice. We can, however, extend Schäfer’s (2008) and Wood’s (2014) analysis and analyze *sich* as an expletive form, occupying Spec,pP. From this perspective, inherent reflexive *sich* is the counterpart of anticausative *sich* in Schäfer’s treatment of this form. According to Schäfer, anticausative *sich* is located in the specifier of an expletive Voice. In the cases at hand, *sich* is introduced in Spec,pP. This, as Wood suggests, will give us a reflexive and transitive type of structure, without the typical properties that characterize reflexive pronouns, cf. Fanselow (1991).

- (14) a. Er fürchtet sich vor dem Adler.
 he fears REFLEXIVE from the eagle
 ‘He is afraid of the eagle.’
- b. *Er fürchtet mich vor dem Adler
 he fears me from the eagle

Such a structure can thus feed impersonal passive formation. The anaphor could be licensed by the implicit argument of the passive (Fanselow

1987), although that would lead to problems with respect to dependent case, which ideally should only take overt DPs into consideration. Schäfer (2012) discusses this in detail and concludes that dependent case can be assigned to *sich* if default agreement has valued T.

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Why is a predicate inversion analysis problematic? Insights from existential, locative and possessive constructions¹

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1 The issue

It is a well-known fact that cross-linguistically, locative, existential and possessive sentences show close affinities (Clark 1970, 2004). In many languages the only difference between locative and existential sentences seems to be a different arrangement of the locative and the nominal phrases: while in locative sentences the nominal phrase precedes the locative phrase, in existential sentences the opposite is the case, i.e., it is the locative PP that precedes the NP; cf. (1a, b). In addition, in many languages also possessive sentences closely resemble existential/locative sentences in that the possessor is realized by means of a prepositional (locative) phrase; cf. (1c) (see Jung 2011; Myler 2014; Stassen 2009 for an overview).

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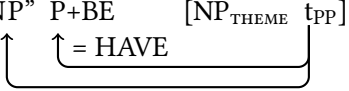
- (1) Russian (Freeze 1992: 553–4)
- a. *Kniga* byla na stole. *locative*
 book.NOM was on table
 ‘The book is on the table.’
- b. Na stole byla *kniga*. *existential*
 on table was book.NOM
 ‘There was a book on the table.’
- c. U menja byla *kniga*. *possessive*
 at me was book.NOM
 ‘I had a book.’

In view of the above facts, it is often assumed that existential, locative and possessive constructions are all derived from the same underlying structure in (2a) (Hoekstra & Mulder 1990; Freeze 1992; den Dikken 1997, 2006; Moro 1977; Witkoś 2000; Harves 2002). The different types of constructions arise as the result of moving either the NP_{THEME} (locative sentences) (cf. (2b)) or the PP_{LOC} (existential/possessive sentences) (cf. (2c)) into a sentence-initial position (mostly understood as SpecIP):

- (2) a. BE [_{SC} NP_{THEME} PP_{LOCATION}]
- b. NP_{THEME} BE [t_{NP} PP_{LOCATION}] *locative*
 ↖
- c. PP_{LOCATION} BE [NP_{THEME} t_{PP}] *existential/possessive*
 ↖

However, in many languages possessive sentences have a nominal possessor instead of a prepositional one, and HAVE as the predicate; see (3a). In order to account for these differences, it is usually assumed that BE and HAVE are not lexical verbs, but rather spell-outs of (various) functional heads in syntax (see den Dikken 2006). More precisely, HAVE is a result of syntactic incorporation of a(n abstract) prepositional locative head into BE, giving rise to an NP possessor; cf. (3b) (see Myler 2014 for another version of this view going back to Benveniste 1966).

(3) Polish

- a. Jan miał dwie papużki faliste. *possessive*
 John.NOM had two budgerigars.ACC
 ‘John had two budgerigars.’
- b. “NP” P+BE [NP_{THEME} t_{PP}] *possessive*


Such a unified analysis based on predicate inversion might seem appealing and attractive at first glance, but on a closer inspection it turns out to be “too simple”. There are a number of problems which a predicate inversion analysis must face even in its modified version proposed by den Dikken (2007a,b). The goal of this short contribution is to point out some particularly problematic aspects of this analysis.²

2 A “predicate inversion + phase extension” analysis (den Dikken 2007a,b)

2.1 The basic idea

Den Dikken assumes that all predication relationships are syntactically represented as in (4a). The relationship between a predicate and its subject in the base representation of predication structures is mediated by a RELATOR, an abstract functional head. In Predicate Inversion constructions there is a need for linkers. They connect the raised predicate to the small clause harbouring its subject; cf. (4b). Importantly, both relators and linkers are meaningless elements (in the sense of having no semantic load). In addition, den Dikken’s (2007a, 2007b) analysis is based on the following premises, summarized below in (5).

- (4) a. [RP SUBJECT [RELATOR [PREDICATE]]] *canonical*
 b. [FP PREDICATE_i [F [RP SUBJECT [RELATOR t_i]]]] *inverse*

2. The reader is referred to Błaszczak (2007, 2018) for a more detailed discussion.

- (5) a. *Phase Impenetrability*
 Syntactic relationships (Agree) and processes (Move) are constrained by the Phase Impenetrability Condition (PIC) of Chomsky (2000 et passim): in phase α with head H, the domain is not accessible to operations outside α , only H and its edge are accessible to such operations.
- b. *Inherent Phase*
 An inherent phase is a predication (subject-predicate structure).
- c. *Phase Extension*
 Syntactic movement of the *head* H of a phase α up to the head X of the node β dominating α *extends* the phase up from α to β ; α loses its phasehood in the process, and any constituent on the edge of α ends up in the domain of the derived phase β as a result of Phase Extension.³

The structure in (4b) raises two questions: (i) How can F establish an *Agree* relationship with the predicate from its vantage point outside the RP, which (in light of (5b)) is a phase?, and (ii) How can the predicate *Move* to a higher A-specifier position across the A-specifier position in which its subject is base-generated? Den Dikken answers these questions as follows: (i) in order for F to establish an *Agree* relationship with the predicate, there must be no phase boundary in between F and the predicate, and (ii) for raising of the predicate across its subject to be allowed, the two phrases must be equidistant. How can this be established? Den Dikken proposes two options, given in (6), as to how the predicate can be made visible to F and equidistance can be ensured.

- (6) a. Option 1: The head of the small-clause predicate is raised up to the RELATOR:
 [RP DP [RELATOR+X_j [XP t_j ...]]]

3. Note that den Dikken's system reintroduces the dynamicity of barrierhood that Barriers was known for: the idea that constituents can inherit barrierhood (or phasehood) from categories they dominate (see den Dikken 2007b: 2).

- b. Option 2: The RELATOR raises to a functional head introduced outside the small clause:

$$[_{FP} \text{Spec } [F+\text{RELATOR}_i [_{RP} \text{DP } [t_i [XP \text{PREDICATE}]]]]]$$

Regarding Option 1, it is assumed that movement of the head H of a phrase HP embedded inside a phase ϕ to the head of the phase makes both H and its maximal projection visible to probes outside the phase. However, it should be noticed that given the definition of ‘closeness’ in Chomsky (1995 and later works), closeness is satisfied even without head movement (cf. also den Dikken 2007a, Surányi 2007). As far as Option 2 is concerned, it is assumed that movement of the RELATOR up to F extends the RP phase to FP; cf. (7). The predicate is no longer separated from the attracting head F by a phase boundary, the inherent small-clause phase RP is extended up to FP. Both the probe (F) and the goal (the predicate) are within this extended phase. As a result of phase-extending head movement of the RELATOR to F, it is also ensured that the predicate’s landing site and the base position of the subject are in the same minimal domain, hence equidistant: β (the base position of the subject, SpecRP) in (7c) is not closer to the predicate’s base position than α (the predicate’s landing site, SpecFP) because β is in the same minimal domain as α (but see the comment above).

- (7) a.
$$[_{RP} \text{SUBJECT } [\text{RELATOR } [\text{PREDICATE}]]]$$

 ϕ
- b.
$$[_{FP} F+R_i [_{RP} \text{SUBJECT } [t_i [\text{PREDICATE}]]]]]$$

 $\phi \longleftarrow (\phi)$
- c.
$$[_{FP} \text{PREDICATE}_j [F+R_i [_{RP} \text{SUBJECT } [t_i t_j]]]]]$$

 ϕ

Another important consequence of the phase-extending movement is that the subject of RP, while originally on the edge of the RP phase (cf. (7a)), ends up being embedded within the domain of the extended phase (FP) as a result of movement of the RELATOR up to F (cf. (7c)). Thus, in (7) the subject will be invisible to any outside probes, and hence unable to establish any Agree relationships with outside probes.

2.2 Conceptual problems

At first glance, the analysis seems plausible. It gives rise to several questions, though, which are not clearly answered in den Dikken's account. For instance, what is this enigmatic RELATOR? What properties make it be a phase head? Similarly, it is not clear what the F-head is. Den Dikken's suggestion is that it is "a radically empty and meaningless place-holder whose sole purpose is to provide a landing-site for phase-extending movement of the RELATOR" (den Dikken 2007a: 154). Does it mean a return to radically empty, meaningless categories, like Agr-heads (contra Chomsky 1995 et sub.)?⁴ Besides, notice that the presence of such categories would seem to involve a Look-ahead.

Another issue is the question of the motivation behind the Predicate Inversion. Why does the predicate move instead of the subject? Given that this movement is an A-movement, it should be a phi-features and case-related movement. But given den Dikken's analysis, this would be a "revitalization", hence back to a "Move"-perspective (instead of the "Attract"-perspective), Greed instead of "Suicidal Greed" and consequently a case of Look-ahead.

In a similar vein, one wonders why Phase Impenetrability should hold in den Dikken's system or how Spell-Out works in this system and how Spell-Out can be delayed. It is also completely unclear why head-movement should extend phasal domains. Why should inherent phases lose their phasal character under head-movement?⁵ Den Dikken (2007a: 154) suggests that "movement of the RELATOR up to F is typically (though perhaps not systematically) a case of substitution rather than adjunction [...] with R-to-F movement being substitution, and with FP = RP upon substitution of the RELATOR for F, Phase Extension is an automatic result of movement of the RELATOR: the boundaries of the original RP phase are simply stretched up to FP, with the original FP (which is re-

4. Den Dikken points out that "F is not an Agr-type head" and "agreement is a relationship, not a head" (den Dikken 2007a: 154, fn. 24).

5. These questions are discussed in Boeckx (2007: 46). He points out that it is not clear how something like phasehood can be inherited in a framework that assumes Inclusiveness (Chomsky 1995). Is phasehood a lexical property? How can it be transferred upon head-movement? How can it be lost under head-movement, since movement is copying?

duced to a segment of the new, bigger RP) automatically losing its status as a phase in the process.” See (8).

- (8) a. [_{FP} Spec [F [_{RP} SUBJECT [RELATOR [PREDICATE]]]]]
 b. [_{FP=RP} Spec [F=RELATOR_i [_{RP} SUBJECT [t_i [PREDICATE]]]]]

One can be sceptical though whether this really helps. Does RP really cease to be a phase? (cf. Pesetsky 2007 for a notion of “property delay”). Another question is why R-to-F movement is necessary for Predicate Inversion. Why can’t a predicate simply move to the edge of RP to be visible to an outside probe? Den Dikken’s suggestion is that this would lead to improper movement (adjunction to RP (A-bar) would be followed by an A-movement (SpecFP)).⁶ And finally, the reason for why the subject could not move to the edge of FP to avoid PIC is—according to den Dikken—the assumption that adjunction to meaningless categories is disallowed. Matushansky (2007: 96f.) notices a potential problem here. If the impossibility of extracting the small clause subject out of inverted copular constructions is due to the Phase Impenetrability Condition, agreement with this subject should also be impossible, which—as she noticed referring to Heycock & Kroch (1998)—is empirically incorrect; cf. (9).

- (9) Delinquency is a menace to our society.
 Also a menace are / *is factory closings and fascist propaganda.

Potentially, to solve this problem, one could assume that F+R raises further to T, thus extending the phase to TP. However, Matushansky (2007: 97) observes this solution would be problematic: Lexical verbs also license copular inversion, as shown in (10), but lexical verbs do not raise to T in English (according to a standard assumption).

- (10) The best solution remains instant retreat.

6. One might be skeptical though why this should be the case. Notice that “A- and A’-movement have no status in the present framework; the terms are used only for convenience. It follows that no principles can be formulated in terms of the A-/A’-distinction [...]” (Chomsky 2004: 125, fn. 30).

2.3 Polish-specific problems

If the derivation of existential and possessive sentences proceeds in a parallel way (via a “PP preposing” / “Predicate Inversion”) and HAVE arises as the result of the incorporation of a prepositional head into BE, then we would expect that (11) is true. What is not expected are examples of the type (11c), in which the verb HAVE is used and there is still a (locative) preposition present, contrary to fact, as shown in (12c).⁷

- (11) a. ✓“NP” HAVE NP
 b. ✓PP BE NP
 c. *PP HAVE NP

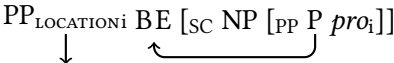
(12) Polish

- a. Samochód **ma** silnik. cf. “NP” HAVE NP (11a)
 car.NOM **has** motor.ACC
 ‘A/The car has an engine.’
- b. **W** samochodzie **jest** silnik. cf. PP BE NP (11b)
in car.LOC **is** motor.NOM
 ‘There is an engine in the car.’
- c. But:
W samochodzie nie **ma** silnika. cf. *PP HAVE NP (11c)
in car.LOC NEG **has** motor.GEN
 ‘There is no engine in the car.’
- d. But:
W samochodzie nie **było** silnika. cf. PP BE NP (11b)
in car.LOC NEG **was** motor.GEN
 ‘There was no engine in the car.’

7. Notice that Polish is not isolated in this respect; similar facts can be found, e.g., in Croatian and Bulgarian. See Błaszczak (2007, 2008) for details; cf. also Broekhuis & Cornips (1997) for a similar objection made on the basis of Dutch data.

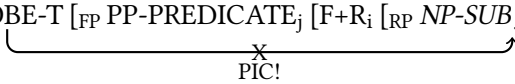
To account for the cooccurrence of P(P) and HAVE, one could assume, for example, that there is an incorporation of some element into BE but such incorporation does not automatically give rise to a BE→HAVE switch (cf., e.g., Muromatsu 1997 for an idea along such lines). The effects of this incorporation might be different in different languages depending on the prepositional status of the incorporating element. Or one could assume, following a suggestion by Belvin & den Dikken (1997) and den Dikken (2006), that there is in fact a P-into-BE incorporation but the underlying structure is much more complex. Neither of these options is satisfactory. If the result of the incorporation (BE or HAVE) depends on the prepositional status of the incorporating element or similarly, if we follow Belvin & den Dikken's (1997)/den Dikken's (2006) suggestion that the 'have' form in (12c) is indeed due to the P-into-BE incorporation but the examples in question actually have a more complex structure, as indicated in (13), why should there be a difference between (12c) and (12d) or between (12c) and (12b)? Myler (2014: 214) suggests in reference to example (11c)/(12c), his (135c)/(136), that PPs possibly have an articulated adpositional functional sequence and "if it is one of these higher heads that incorporates into BE to yield HAVE, then [(11c)] becomes a possible surface form." Even if one assumes such a possibility, this does not explain yet why there is a difference between (12c) and (12d) or between (12c) and (12b). Why would the incorporation of such a higher head (in the adpositional functional sequence in a PP) into BE give rise to HAVE in (12c) but not in (12b) and (12d)? If in the latter cases, there is no incorporation (to explain the BE form of the verb), how to account for that? What would make the incorporation obligatory in one case but not in the other analogous cases?⁸

8. Myler (2014) assumes that BE is a copula—a dummy verb needed to "‘sentencify’ fundamentally non-sentency meanings" (p. 61). In Myler's account both the existential copula (used in existential constructions) and a predicative copula (i.e., a copular verb used with nominal predicates) are instantiations of the same *v*. The special existential interpretation of an existential sentence is thus argued not to come from the copula itself, but from "a separate syntactic piece", namely an expletive "which (sometimes silently, sometimes overtly) is present in the structure of such sentences" and "introduces simple existential closure" (p. 55). See also Hartmann & Milićević (2008) for a related discussion.

- (13) PP_{LOCATION_i} BE [$_{\text{SC}}$ NP [$_{\text{PP}}$ P pro_i]]

 base-generated in a topic position and co-indexed with a *pro*-predicate

Another problem is that, in the light of the discussion above, long-distance agreement with the subject (in inverted structures) should be expected to be impossible, given that there is arguably no V-to-T raising in Polish (cf. Witkoś 1998), but see (14).

- (14) W ogrodzie często były [jakieś ptaki].
 in garden often be.3.PL.PST [some birds].NOM.PL
 ‘There were often (some) birds in the garden.’

- (14’) a. [$_{\text{RP}}$ NP-SUBJECT [RELATOR [PP-PREDICATE]]]
 ϕ
- b. [$_{\text{FP}}$ F+R $_i$ [$_{\text{RP}}$ SUBJECT [t_i [PREDICATE]]]]
 $\phi \longleftarrow (\phi)$
- c. [$_{\text{FP}}$ PP-PREDICATE $_j$ [F+R $_i$ [$_{\text{RP}}$ NP-SUBJECT [t_i t_j]]]]
 ϕ
- d. PROBE-T [$_{\text{FP}}$ PP-PREDICATE $_j$ [F+R $_i$ [$_{\text{RP}}$ NP-SUBJECT [t_i t_j]]]]


Furthermore, it is not clear how ACC/GEN assignment would work in possessive sentences; cf. (15) and (16). Which element/elements is/are here the assigner of ACC case?

- (15) a. Jan ma papugę.
 John.NOM has parrot.ACC
 ‘John has a parrot.’
- b. Jan nie ma papugi.
 John.NOM NEG has parrot.GEN
 ‘John does not have a parrot.’

- (16) a. $[_{RP} [_{NP} \text{SUBJECT} [_{\text{RELATOR}} = \emptyset [_{PP} P \emptyset \text{NP}]]]]$
 a'. $[_{RP} [_{NP} \text{parrot} [_{\text{RELATOR}} = \emptyset [_{PP} P \emptyset \text{John}]]]]$
 b. $[_{FP} [_{PP} t_i \text{John}]_j [F [_{RP} [_{NP} \text{parrot}] [_{\text{RELATOR}} = \emptyset + P_i t_j]]]]]$

Given Belvin & den Dikken's (1997: 155) assumption that "[t]he complex F-head resulting from P-to-Agr-to-F-movement is realised on the surface as *have*, not *be*, due to the fact that the Agr-head that incorporates into F has come in the possession of the dative preposition's case-feature"⁹ (cf. (17)), we would expect R+P to raise further to F (which would result in 'have').

- (17) a. $[_{FP} \text{Spec} [_{F'} F [_{\text{AgrP}} \text{DP}_{\text{subj}} [_{\text{Agr}'} \text{Agr} [_{PP} P \text{DP}]]]]]]$
 b. $[_{FP} [_{PP} t_j \text{DP}]_i [_{F'} F+[_{\text{Agr}} \text{Agr}+P_j]_k [_{\text{AgrP}} \text{DP}_{\text{subj}} [_{\text{Agr}'} t_k [_{PP} t_i]]]]]]$

However, following den Dikken (2007b: 11), as a result of the raising of the head of the small clause predicate up to the RELATOR, (i) the features of the predicate head are transferred up to RP and thereby made visible to the outside probe F that seeks to attract the predicate, and (ii) the base position of the predicate and the base position of its subject are made equidistant. This in turn has the beneficial effect of rendering the predicate inversion into SpecFP grammatical without the need for movement of the RELATOR up to F ever arising: such movement is literally redundant; the derivation in (16b) is grammatical without it. Let us assume for the sake of argumentation that there is some ACC-assigning V-head higher up in the structure, as indicated in (18). Notice, however, if 'John' also needs case (it surfaces as NOM), it will prevent 'parrot' from being assigned ACC. But then, 'John' should surface as ACC; see (19).

- (18) $V_{\text{ACC}} [_{FP} [_{PP} t_i \text{John}]_j [F [_{RP} [_{NP} \text{parrot}] [_{\text{RELATOR}} = \emptyset + P_i t_j]]]]]$

9. According to Belvin & den Dikken (1997: 155), "in a language like English, the incorporating dative P is phonologically null and must incorporate into Agr in order to be licensed (...)".

- (19)
- a. $\overbrace{V_{[FP [PP t_i John_{[uCASE]}]_j] [F [RP [NP parrot_{[uCASE]}] [RELATOR = \emptyset + P_i t_j]]]]}^{\begin{matrix} \times \\ ACC \end{matrix}}$
- b. $\overbrace{V_{[FP [PP t_i John_{[uCASE]}]_j] [F [RP [NP parrot_{[uCASE]}] [RELATOR = \emptyset + P_i t_j]]]]}^{ACC}$
- c. *John_{ACC} has parrot_{??}.

On the other hand, if ‘John’ has already been assigned structural case, it should cause Defective Intervention Effects, as indicated in (20). In contrast, if ‘John’ does not have any structural case feature (just a lexical/inherent case feature), it will not cause Defective Intervention Effects, but the question will still be what happens to the NOM case and agreement (of T). Compare (21).

- (20) $\overbrace{V_{[FP [PP t_i John_{[uCASE]}]_j] [F [RP [NP parrot_{[uCASE]}] [RELATOR = \emptyset + P_i t_j]]]]}^{\begin{matrix} \times \\ ACC \end{matrix}}$

- (21)
- a. $\overbrace{V_{[FP [PP t_i John]_j] [F [RP [NP parrot_{[uCASE]}] [RELATOR = \emptyset + P_i t_j]]]]}^{ACC}$
- b. $\overbrace{T V_{[FP [PP t_i John]_j] [F [RP [NP parrot_{[uCASE]}] [RELATOR = \emptyset + P_i t_j]]]]}^{\rightarrow \text{agreement / NOM?}}$

3 Concluding remarks

To sum up the preceding discussion, though there are certainly similarities between locatives, existentials and possessives, the idea that they all derive from the same underlying small clause structure seems to be too simple to account for all the different properties of the respective constructions. Such a uniform analysis would require assuming that there are two different BEs: BE incorporating the P-head (thus accounting

for the change from BE to HAVE) and BE not incorporating the P-head (thus not changing to HAVE). But even if one made such an assumption, it would still not be clear what accounts for the use of a HAVE form in (some) existential sentences. Similarly, it is not clear what accounts for different interpretations given that locatives, existentials and possessives have underlyingly the same argument structure. What decides which element (NP_{THEME} or PP_{LOCATION}) has to move? If BE is not a lexical item with its own meaning but just a spell-out of functional heads in syntax, how do the different interpretations (existence vs. location etc.) arise? Błaszczak (2007, 2018) put forward an analysis which differentiates between different verbs BE (with different argument structures). More specifically, the difference between existential and locative sentences is syntactically encoded in terms of what (LOC or THING) is the subject of inner predication (at the vP/VP level). Definitely more research is needed to decide what the best analysis of such constructions is.

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Can unaccusative verbs undergo passivization in German?¹

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1 Background

It is arguably a standard assumption about German syntax that unaccusative intransitive verbs cannot participate in passivization (see, e.g., Fanselow 1987, Grewendorf 1989, Sternefeld 1995, and Kiss 1995, among many others). In line with this assessment, a ban on unaccusative verbs can be derived under many theories of passivization, beginning at least with Perlmutter & Postal's (1984) *1 Advancement Exclusiveness Law*. In contrast, it has sometimes been claimed that passivization of unaccusatives is a straightforward grammatical option in German; see Primus (2010, 2011a,b) and Kiparsky (2013).² Some relevant examples are listed in (1).

- (1) a. In jedem Krieg wird gestorben.
in every war PASS died
- b. Gewachsen wird nachts.
grown PASS at night

1. A paper written for Gisbert Fanselow should focus on experimental data, surprising correlations, and deep generalizations (perhaps also on fixed numerical scales in behavioural investigations). Since I am unable to come up with any of this, I am at least offering here a study with a narrow empirical focus and some birds (which I picked up on an autumn bike ride).

2. Also cf. Haider (1991) and Eisenberg (1999) for earlier formulations of this view.

- c. In seinen Vorlesungen wird häufig eingeschlafen.
 in his lectures PASS often fall asleep
- d. Hingefallen wird dann auch entsprechend oft.
 fall down PASS then also proportionately often
- e. In fünf Minuten wird ins Bett gegangen.
 in five minutes PASS into the bed gone
- f. Wo angekommen wird, muss abgefahren werden.
 where arrived PASS must left PASS

However, the existence of these data (in corpora, or as grammaticality judgements, either informally or as part of experiments) as such has never been called into question. A widespread view has always been that there is some form of coercion going on according to which the unaccusative verb is reinterpreted as an unergative verb, accompanied by a modification of the original theta-role of the argument affected by passivization (it acquires agentive or related properties). See, e.g., Růžička (1989), Fanselow (1992), and Müller, St. (1999; 2002) for proposals along these lines. Assuming that the nominative argument of an intransitive verb in active environments is a DP merged externally, in Specv, if the verb is unergative, but is a DP merged internally, in VP, if the verb is unaccusative, the following two hypotheses can thus be postulated to account for the data in (1).

- (2) a. *Hypothesis A:*
 Passivization in (1) can affect the DP argument α showing up with nominative case in corresponding active clauses because α has undergone externalization, and either is, or would be, merged as a specifier of v.³

3. This latter issue is somewhat orthogonal to my present concerns: If a lexical approach to passive is adopted (as, e.g., in Chomsky 1981), a demoted external argument DP will never actually show up in Specv; if a syntactic approach is pursued (as, e.g., in Collins 2005 and Mueller 2016), it will be merged in Specv. For the sake of concreteness, I will generally presuppose the latter option, though.

b. *Hypothesis B:*

Passivization in (1) can affect the DP argument α showing up with nominative case in corresponding active clauses even though α is, or would be, merged as a complement of V.

One might initially think that evidence discriminating between the two options should be easy to come by: The literature contains a number of standard syntactic tests for unaccusativity vs. unergativity in German (see Grewendorf 1989, Brandner & Fanselow 1989, and Fanselow 1992). Unfortunately, for the most part the established tests cannot apply since they presuppose the presence of the argument DP that bears nominative; but this DP does not show up (at least not overtly) with passives of intransitive verbs.⁴ Furthermore, there are unaccusative verbs which take two (internal) DP arguments, but these never permit passivization as in (1).⁵

In what follows, I will argue that the available empirical evidence favours hypothesis A: If what looks like an unaccusative verb can undergo passivization, it is reinterpreted as an unergative verb. More specifically, I will discuss two kinds of arguments: first, *direct* arguments suggesting that the (sole) DP argument of a passivized unaccusative verb exhibits properties that are indicative of external arguments merged in Specv, and not properties that are typical for internal arguments merged in VP; and second, *indirect* arguments that shed further doubt on the correctness of hypothesis B.

4. Note also that typical tests indicating the presence of a non-overt argument in passives, such as control into argument and adjunct infinitives, and control into secondary predicates, do not discriminate between external and internal arguments in the case of intransitive verbs.

5. See, e.g., (i).

(i) a. dass dem Fritz der Karl aufgefallen ist
 that the Fritz_{dat} the Karl_{nom} struck is

 b. *dass dem Fritz aufgefallen wurde
 that the Fritz_{dat} struck was

Incidentally, this additional restriction may already look suspicious from the perspective of hypothesis B.

2 Direct arguments

2.1 Resultatives

As noted by Geuder (2002) for German (also cf. Levin & Rappaport 1995 on English), resultative adverbs are object-oriented. In active clauses, they work with unaccusative verbs (3a,b) but typically not with unergative verbs (3c) (unless the latter have an expletive pseudo-object).

- (3) a. Der Graureiher ist zu Tode gestürzt/in den Dreck gefallen.
 the grey heron is to death fallen/in the dirt fallen
- b. Einer der Höckerschwäne ist bis an die Käfigdecke
 one of the mute swans is up to the cage ceiling
 gewachsen.
 grown
- c. Die Mäusebussarde haben *(sich) zu Tode gearbeitet/ins
 the common buzzards have REFL to death worked/to the
 Verderben geschrien.
 perdition screamed

With passivization of unaccusatives, resultative adverbs are clearly worse; see (4a,b). As expected, (4c), with passivization of an unergative verb, is also impossible. This supports hypothesis A over hypothesis B: Under passivization, the sole argument of an unaccusative verb behaves like the sole (external) argument of an unergative verb.

- (4) a. ?*Es wurde (vom Graureiher) zu Tode gestürzt/in den
 it PASS by the grey heron to death fallen/in the
 Dreck gefallen.
 dirt fallen
- b. ?*Bis an die Käfigdecke wurde (von einem der
 up to the ceiling PASS by one of the
 Höckerschwäne) gewachsen.
 mute swans grown

- c. *Es wurde (von den Mäusebussarden) zu Tode
it PASS by the common buzzards to death
gearbeitet/ins Verderben geschrien.
worked/to the perdition screamed

2.2 Telicity

A related observation is that unaccusative verbs in German are typically telic (cf. Primus 2011a); see (5a) vs. (5b).

- (5) a. Der Grünspecht starb innerhalb von drei Tagen.
the green woodpecker died within three days
b. ?*Der Grünspecht starb drei Tage lang.
the green woodpecker died three days for

However, unaccusative verbs invariably lose their telicity under passivization; see (6a,b).

- (6) a. ?*Hier wurde innerhalb von drei Tagen gestorben.
here PASS within three days died
b. Hier wurde drei Tage lang gestorben.
here PASS three days for died

This can plausibly be related to the fact that unergative verbs are typically atelic; see (7a,b), and also the expected behaviour under passivization in (8a,b). On this view, passivization in (6a,b) applies to an external DP-argument (in Specv) rather than to an internal one (in the VP), in accordance with hypothesis A (but not with hypothesis B).

- (7) a. ?*Der Grünfink hat in drei Tagen gearbeitet.
the green finch has in three days worked
b. Der Grünfink hat drei Tage lang gearbeitet.
the green finch has three days for worked

- (8) a. ?*Es wurde in drei Tagen gearbeitet.
 it was in three days worked
 b. Es wurde drei Tage lang gearbeitet.
 it was three days for worked

2.3 Agent-oriented adverbs

A reasonably well-established assumption about agent-oriented adverbs (see Roeper 1987, Anagnostopoulou 2003) is that they need a DP in Specv. Such an external argument DP is provided by unergative verbs in both active and passive environments; see (9a,b) and (10a,b).

- (9) a. Die Saatkrähe hat dort absichtlich gekrächt.
 the rook has there deliberately croaked
 b. Dort wurde absichtlich gekrächt.
 there PASS deliberately croaked
- (10) a. Der Graureiher hat heimlich geschlafen.
 the grey heron has secretly slept
 b. Es wurde heimlich geschlafen.
 it PASS secretly slept

Against this background, hypothesis A predicts that with unaccusative predicates, agent-oriented adverbs should be impossible in active environments, and possible in passive environments; hypothesis B predicts ungrammaticality in both cases. As shown by (11a,b) and (12a,b), the former prediction would seem to be borne out.

- (11) a. ?*Die Saatkrähe ist dort absichtlich/extra
 the rook is back then deliberately/specially
 gestorben.
 died
 b. Dort wurde absichtlich/extra gestorben.
 there PASS deliberately/specially died

- (12) a. ?*Der Graureiher ist heimlich eingeschlafen.
 the grey heron is secretly fallen asleep
- b. Es wurde heimlich eingeschlafen.
 it PASS secretly fallen asleep

2.4 Knight move binding

Hole (2012, 2014) argues that so-called *free* (i.e., non-subcategorized) datives of a certain kind (“possessive datives”) cannot in fact be derived via movement out of theme DPs (“possessor raising”, see Gallmann 1992, Müller 1995, Lee-Schoenfeld 2006); but they need to *locally c-command* a variable within the theme DP, giving rise to a configuration that Hole identifies as “knight move binding”. For knight move binding, base positions are relevant. Thus, external arguments in Specv (as in (13a)) cannot license a free dative, not even after scrambling of the dative to a higher position (as in (13b)). Arguments of unaccusative verbs are acceptable, though (see (14a,b)); cf. Grewendorf (1989).

- (13) a. *dass das₁ Junge dem Höckerschwan₁
 that the hatchling_{nom} the mute swan_{dat}
 gelebt/geschlafen hat
 lived/slept has
- b. *dass dem Höckerschwan₁ das₁ Junge
 that the mute swan_{dat} the hatchling_{nom}
 gelebt/geschlafen hat
 lived/slept has
- (14) a. dass dem Höckerschwan₁ das₁ Junge
 that the mute swan_{dat} the hatchling_{nom}
 gestorben/eingeschlafen ist
 died/fallen asleep is

- b. dass das₁ Junge dem Höckerschwan₁
 that the hatchling_{nom} the mute swan_{dat}
 gestorben/ingeschlafen ist
 died/fallen asleep is

As one might expect, in cases of passivization of regular transitive verbs, free datives can effect knight move binding of a nominative DP base-generated in VP; see (15a,b).

- (15) a. dass dem Höckerschwan₁ das₁ Junge
 that the mute swan_{dat} the hatchling_{nom}
 genommen/getötet wurde
 taken/killed pass
- b. dass das₁ Junge dem Höckerschwan₁
 that the hatchling_{nom} the mute swan_{dat}
 genommen/getötet wurde
 taken/killed pass

If passivization of unaccusatives affects an argument in VP (as under hypothesis B), free datives may be expected to persist, as in (14). If, however, passivization of unaccusatives exceptionally involves an argument in Specv (as under hypothesis A), this can never be the case, as in (13). As shown in (16), the latter prediction is the correct one: The free dative is neither licensed in an unergative context (see (16a)), nor can it show up in an unaccusative context (see (16b)).⁶⁷

7. Note that it is unlikely that the ungrammaticality of (16b) is due to a requirement that the free dative needs an *overt* VP-internal DP for knight move binding. As argued in Müller (2011), there is a non-overt VP-internal DP argument in so-called verbless directives (see Jacobs 2006, Wilder 2008), as in (i-a) (where DP₁ can control PRO₁ in a secondary predicate). This non-overt DP argument is sufficient for licensing of the free dative via knight move binding; see (i-b).

- (i) a. [DP₁ Ø] [PRO₁ ungelesen] in den Rucksack (mit dem großen BLV
 unread into the backpack (with the big
 Vogelführer für unterwegs₁)!
 bird guide for outdoors)

- (16) a. *dass dem Höckerschwan₁ – gelebt wurde
 that the mute swan_{dat}
- b. *dass dem Höckerschwan₁ – gestorben wurde
 that the mute swan_{dat}

2.5 Quantificational variability effects

In Alexiadou & Müller (2018) we note that the external argument in passive sentences with unergative verbs (here rendered as DP_{ext}) can be unselectively bound by an adverb of quantification; see (17a). However, there is no such quantificational variability effect (QVE) with unaccusative verbs; see (17b).

- (17) a. Es wurde größtenteils DP_{ext} geschlafen beim
 it was for the most part slept at the
 Vortrag.
 talk
 ‘Most people slept during the talk.’
- b. *Es wurde größtenteils DP_{ext} gestorben im
 it was for the most part died in the
 Krieg/ingeschlafen im Seminar.
 war/fallen asleep in the seminar
 ‘Most people died during the war.’/‘Most people fell asleep in the seminar.’

Assuming that the adverbs of quantification involved here can occupy specifiers of vP, and that binding of the external argument presupposes c-command, the QVE in (17a) is accounted for: DP_{ext} is in a lower Specv position here. According to hypothesis A, DP_{ext} is externalized in (17b). Suppose that externalization involves genuine movement from a VP-internal position to an argument position Specv, with no trace in the

b. Dem Jäger₁ [DP₁ Ø] auf den Teller (mit dem Fasan₁)!
 the hunter onto the plate (with the pheasant)

original position (because the argument, by assumption, is not interpreted there). Then, given Chomsky's (2000) Merge over Move constraint, (17b) is excluded because the (derived) external argument variable is not c-commanded by the adverb. In contrast, hypothesis B has nothing to say about the illformedness of (17b) because the (sole) VP-internal argument variable is in a position where it is c-commanded by the adverb.

2.6 Reduced wh-clauses

Reduced wh-clauses like *wie vermutet* or *wie befürchtet* can modify VPs; but there seems to be an additional restriction that some (nominal) material shows up within VP to make modification by reduced wh-clauses possible. This distinguishes unaccusative (see (18a)) and transitive (see (18c)) from unergative verbs (see (18b)). Passives of unergative verbs are impossible in the relevant context (see (18d)); but it looks as though the same restriction also holds for passives of unaccusatives (see (18e)).

- (18) a. Er ist [_{CP} wie vermutet/befürchtet] (im Zimmer)
 he is as suspected/feared in the room
 eingeschlafen/gestorben.
 fallen asleep/died
- b. Er hat [_{CP} wie vermutet/befürchtet] ?*(im Zimmer)
 he has as suspected/feared in the room
 gearbeitet/gelebt.
 lived/worked
- c. Er hat [_{CP} wie vermutet/befürchtet] ein Buch geschrieben.
 he has as suspected/feared a book written
- d. Es wurde [_{CP} wie vermutet/befürchtet] ?*(im Zimmer)
 it PASS as suspected/feared in the room
 gearbeitet/gelebt.
 worked/lived

- e. Es wurde [_{CP} wie vermutet/befürchtet] ?*(im Zimmer)
 it PASS as suspected/feared in the room
 eingeschlafen/gestorben.
 fallen asleep/died

2.7 VP topicalization across wh-islands

Fanselow (1987) observes that objects can undergo topicalization from wh-islands in German, whereas subjects cannot do this; see (19a) vs. (19b).

- (19) a. Graureiher₁ weiß ich nicht [_{CP} wie man t₁ fängt].
 grey heron_{acc} know I not how one_{nom} catches
 b. *Graureiher₁ weiß ich nicht [_{CP} wie t₁ Fische
 grey herons_{nom} know I not how fish_{acc}
 fangen].
 catch

Remnant vPs (where argument extraction has taken place from vP before it is fronted) can in principle undergo topicalization from wh-islands, like objects (cf. Müller 2014 and references cited there); see (20a) (transitive verb) and (20b) (unaccusative verb). However, such vP fronting leads to reduced acceptability if the fronted vP has an unergative verb, as in (20)(c).

- (20) a. Gelesen weiß ich nicht [_{CP} ob er es hat].
 read know I not whether he it has
 b. ?Gestorben weiß ich nicht [_{CP} ob er ist].
 died know I know whether he is
 c. ?*Gelebt weiß ich nicht [_{CP} ob er hat].
 lived know I not whether he has

In view of (20), the correct generalization might be that vP topicalization across a wh-island (or, possibly, non-clause bound vP topicalization in

general) is ruled out if the lowest non-overtly realized argument in the fronted vP is in Specv. Under this assumption, hypothesis A (also under the specification in section 2.5) predicts that both unergative and unaccusative passives pattern with unergative actives; in contrast, hypothesis B predicts that long-distance vP topicalization should *ceteris paribus* be an option with unaccusatives but not with unergatives. The data in (21a,b) confirm hypothesis A.

- (21) a. ?*Gelebt weiß ich nicht [CP ob (noch) wurde].
 lived know I not whether yet pass
- b. ?*Gestorben weiß ich nicht [CP ob (noch) wurde].
 died know I not whether yet pass

3 Indirect arguments

The following observations do not per se provide evidence for an externalization of the VP-internal argument with passivization of unaccusatives, but they suggest that something extra needs to be done to make passivization of unaccusatives possible; thus, they indirectly support hypothesis A over hypothesis B.

3.1 Empirical findings

Primus (2011a: 85) (also cf. Primus 2011b: 219), while arguing for the existence of a regular grammatical option of passivization of unaccusative verbs in German, reports results of an acceptability judgement test according to which passives of unaccusatives are actually systematically rated worse than passives of unergatives (and in this latter group, there are differences between volitional and non-volitional predicates, with the former being even more preferred). Thus, there is an acceptability cline, and each step qualifies as significant. This would seem to be compatible with the view that passivization of unaccusatives is special in that it requires an additional externalization operation.⁸

8. Primus takes the data to suggest that even passivization of unaccusatives still crosses the grammaticality threshold.

A look at corpus data may also prove instructive. A simple search for strings where a past participle of an intransitive V is left-adjacent to some inflected form of *werd-* (which reliably indicates a passivization environment) in the *Zeit* corpus (1946-2018) contained in *Digitales Wörterbuch der deutschen Sprache* reveals massive differences between unergative and unaccusative verbs. As for the former, there are 2102 such co-occurrences of the past participle *gearbeitet* with an inflected form of the auxiliary *werd-* to the right, out of 20894 occurrences of this past participle in the whole corpus, which amounts to a probability of 0.1; for *geschlafen werd-* the probability is 0.025 (53/2085); for *getanzt werd-* it is 0.1 (141/1376, after manual exclusion of transitive uses with cognate objects); and so on. In contrast, the likelihood of passivization is vastly reduced with unaccusative verbs. With *gestorben werd-*, the probability in the corpus is 0.005 (120/22547); *aufgestanden werd-* has a probability of 0.003 (3/897); and *hingefallen werd-* (0.0; 0/123), *ingeschlafen werd-* (0.0; 0/1067), *gewachsen werd-* (0.0; 0/14387) and other such bigrams instantiating passivizations of unaccusative verbs do not show up in the corpus at all. In addition, it can be noted that for *sterben*, which appears to be the only unaccusative verb with a substantial number of passivizations in the corpus, the exact string *gestorben wird* occurs 67 times all in all, but 26 of these occurrences involve coordination with a past participle of an unergative verb, giving rise to a coercion effect; a further ten occurrences directly exhibit an agent-oriented adverb.⁹ Finally, it is worth pointing out that unergative and unaccusative past participles have similar probabilities in active contexts, e.g., when showing up left-adjacent to a perfect auxiliary: Compare, e.g., unergative *gearbeitet hab-* (0.1) and *geschlafen hab-* (0.079) on the one hand with unaccusative *gestorben sei-* (0.084) and *aufgestanden sei-* (0.07) on the other. Of course, one must not

9. Note also that *gegangen werd-*, which at first sight seems to show a comparatively high probability of 0.007 (268/35300) that even exceeds the one for *gestorben werd-* turns out to have a much lower probability on closer inspection: 160 occurrences involve transitive uses with cognate objects like *Weg* ('path') or *Schritt* ('step'), and a further 33 occurrences involve metalinguistic transitive uses where a person shows up as the subject that is interpreted as the internal argument of the verb ('to go someone' ~ 'to fire someone'); the actual probability of a passive string with unaccusative *gegangen werd-* in the corpus is 0.002 (75/35300).

conclude from all this that passivization of unaccusatives does not exist; but the drastic differences in probability in the *Zeit* corpus would seem to support the hypothesis that something extra is required to render legitimate the passivization of unaccusatives.

3.2 Other passive auxiliaries

German has a large number of passive constructions with different kinds of passive auxiliaries (in different stages of grammaticalization), with different kinds of modal flavours, etc.; basically all of these are subject to varying numbers of additional restrictions that go beyond those that hold for the regular, standard verbal passive (see Höhle 1978). Interestingly, it seems that unaccusatives are banned from all of these contexts.

The data in (22)–(25) show for four different passive constructions that passivization of unergatives is possible (sometimes only marginally, sometimes at variance with Höhle's original claims to the contrary, but always substantiable by google hits, and always in accordance with my own judgements); however, passivization of unaccusatives is impossible throughout (and there are no google hits for the bigrams involved here). The pair of examples in (22a,b) illustrates this for what Höhle (1978) calls *adhortative 'gehören' passive*, where the passive auxiliary *gehören* has a modal component of necessity.

- (22) a. ?Jetzt gehört gearbeitet.
 now PASS₂ worked
 'Now work needs to be done.'
- b. *Jetzt gehört gestorben.
 now PASS₂ died
 'Now one must die.'

The same asymmetry arises with the *adhortative 'bleiben' passive*; see (23a,b).

- (23) a. Jetzt bleibt noch zu arbeiten.
 now PASS₃ yet to work
 'Now work needs to be done.'

- b. *Jetzt bleibt noch zu sterben.
now PASS₃ yet to die
'Now one must die.'

Next, (24a,b) illustrates that unergatives can participate in the *reflexive* 'lassen' passive whereas unaccusatives cannot do so:

- (24) a. Hier lässt (es) sich arbeiten.
here PASS₄ it refl work
'One can work here.'
- b. ?*Hier lässt (es) sich sterben.
here PASS₄ it refl die
'One can die here.'

Furthermore, the *modal* 'gehen' passive is marginally possible with unergative verbs, but ungrammatical with unaccusative verbs; see (25a,b).

- (25) a. ?Hier geht zu arbeiten.
here PASS₅ to work
'One can work here.'
- b. *Hier geht zu sterben.
here PASS₅ to die
'One can die here.'

And so on. Again, this can be taken to indicate that passivization of unaccusative verbs in German requires some extra effort, like an externalization operation of the internal argument (as postulated under hypothesis A but not under hypothesis B): On this view, passives of unaccusatives are only possible with the most canonical type of passive auxiliary. With other auxiliaries, where evidence is much rarer for speakers to begin with, and where the passive auxiliaries may not yet have fully undergone grammaticalization, this operation cannot take place.

4 Concluding remarks

The two hypotheses in (2a) and (2b) do not exhaust the logical space for analyses of unaccusative passivization in German. E.g., against the background of Legate (2014), Legate (2018) advances what could be called hypothesis C: Passivization of unaccusatives in German involves an impersonal construction; “impersonal constructions”, by assumption, involve an empty category in the subject position that has D- and ϕ -features and requires an animate (or even human) interpretation, and they can in principle license accusative case. However, there are various reasons to call into question hypothesis C: There is never any accusative case licensing in this context; there is no indication of an active construction (the passive morphology is completely regular); and, as noted by Kaufmann (1995: 168), the animacy requirement seems to hold of *all* impersonal passives in German, with unergative as well as with unaccusative verbs; see (26).¹⁰

- (26) Die Tür wurde geschlossen. (ok: by Peter; *: by the wind)
 the door PASS closed

Finally, hypothesis C (in the form adopted by Legate 2018) predicts that *by*-phrases cannot appear with passivized unaccusative verbs. However, as has been presupposed throughout this paper (see (4), and also (i) of the previous footnote), there is little evidence for this claim. Indeed, counter-examples can be found in the literature (see (27a), from Kaufmann 1995); and Legate 2018 provides one herself (see (27b)).

10. Kaufmann further claims that an interpretation as [+human,+animate] is preferred to an interpretation as [-human,+animate]; cf. her examples (i-ab) (vs. (i-c), with a [-animate] interpretation).

- (i) In dieser Region wird viel herumgeflogen.
 in this area PASS a lot flown around

- | | | |
|----------------------|------------------------|-------------------|
| a. von Segelfliegern | b. ?von Rauchschwalben | c. *von Zeitungen |
| by glider pilots | by barn swallows | by journals |

There does not seem to be a grammatically relevant difference between (i-a) and (i-b), though; if the context favours a [-human] interpretation (as is the case if, e.g., *Region* ('area') is replaced with *Scheune* ('barn')), speakers' preferences go in the opposite direction.

- (27) a. Von den Kindern mit dem gelben Gürtel wird schon
 by the children with the yellow belt PASS already
 perfekt umgefallen.
 perfectly fallen over
- b. Hier wird nur von Idioten gestolpert.
 here PASS only by idiots tripped

Next to hypotheses A, B, and C, there are of course other hypotheses that one could in principle come up with to account for the phenomenon in (1). However, for the time being, I would like to conclude that the available evidence supports the view that the passivization of an unaccusative verb in German requires the externalization of its internal argument. This externalization is a last resort operation that can only take place if forced by passivization, not in simple active clauses (cf. the illformedness of active clauses like those in (5b), (11a), and (12a)).

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On doubling unconditionals

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1 Introduction

Unconditionals are conditional-like structures expressing that the consequent holds independently of the particular value of the antecedent. The sentence in (1a), for instance, expresses that for all times t such that you wake up at t , it holds that you'll hear a robin sing. That is, if you get up at 5, you'll hear a robin; if you get up 6, you'll hear a robin, if you wake up at 7, you'll hear a robin; etc. The non-constant value of the antecedent is a constitutive property of unconditionals. The locus of variation is often represented by a *wh*-word—as in (1a) (*when* \rightsquigarrow variation in the **time** of waking up), (1d) (*what* \rightsquigarrow variation in the **contents** of speech reports), or (1e) (*where* \rightsquigarrow variation in the **place** of going), but not necessarily so—in (1c), variation is conveyed by the disjunction and (1b) entails variation in the hearer's opinion by embedding *your opinion* under *regardless of*. Antecedents can be “headed”, by expressions as *no matter* (1a) or *regardless of* (1b), or “headless”, as in (1c) through (1e). The *wh*-word in the antecedent can (but need not) “bind” a pronominal in the consequent. An example of this is the *where–there* couple in (1e).

- (1) a. No matter when you wake up, you'll hear a robin sing.
b. Regardless of your opinion, you won't discourage me from going to see the azure tit!
c. A nut or an earthworm, a crow will eat anything it comes across.

b. *German*

Komme wer da wolle, die Party wird
 come.SBJV.3SG who.NOM PRT want.SBJV.3SG the party will
 ein Erfolg werden.
 a success become

‘Whoever comes, the party will be a success.’

(Quer & Vicente 2009: 12,

via A. Kleemann-Krämer and G. Fanselow, p.c.)

c. *Czech*

Ať přijde kdo chce, oslava se bude konat.
 AT comes who wants party REFL will take.place

‘Whoever comes, the party will take place.’

This paper focuses on the type illustrated in (2), leaving a comparison between (2) and (3) for another occasion, and is based on evidence from selected Slavic and Romance languages in which doubling unconditionals are productive. I will argue that they can be brought in line with Rawlins’s (2013) analysis of unconditionals in the following way: Doubling unconditionals involve *wh*-in-situ, where the *wh*-in-situ element is not just a plain *wh*-phrase, but in a fact a full-blown free relative. This free relative—semantically a definite description—is focused and as such introduces entity-level alternatives, which propagate to the propositional level, giving rise to a set of propositions at the level of the (un)conditional. Each of these propositions then functions as a conditional antecedent. I will first sketch the analysis (§2) and then provide evidence in its favor (§3). I close by a tentative generalization of the proposed analysis to all “headless” *wh*-based unconditionals (§4).

2 Proposal

Consider the Czech example (4) and the associated tree in (5).¹ The proposal is that the WH-STRUCTURE *co zazpívá* ‘what sings.PFV’ is a **free relative** and as such it denotes a definite description (Jacobson 1995, Šimík 2016). On top of that, it is **focused** and as such it generates alternative denotations—alternative things that the woodlark sings. The focus-semantic value of the free relative is provided under node DP_{Foc} in (5); assuming a particular contextual restriction, the value is the set {A, B, C}, each member of that set being a woodlark song.² The focus semantic denotation propagates in a standard pointwise fashion to the propositional level, such that the TP denotes a set of propositions of the form ‘the woodlark sings *x*’, *x* being a woodlark song.³ From this point, the account is no different from the one of Rawlins (2013). Each one of the propositions is used as a restrictor (in a pointwise fashion) of OP—a modal operator that generates the conditional semantics.⁴ After the consequent is fed into the second argument slot of OP, we arrive at a set of conditionals, which gets turned into a single proposition by the alternative-sensitive operator [\forall] (à la Kratzer & Shimoyama 2002). The resulting proposition is true iff each member of the set of conditionals is true.

1. For purposes of this paper, I am disregarding the clause-initial morpheme *at’*. It is homophonous with the morpheme used to form non-2nd person imperatives and a few broadly related functions. A very similar pattern obtains in Slovenian, which uses the functionally similar morpheme *naj*. Their role in (doubling) unconditionals is not clear at this point and awaits to be investigated.

2. I leave it open whether the expressions also have an ordinary semantic value or if only the focus semantic value is defined, similarly as in Beck’s (2006) account of wh-questions.

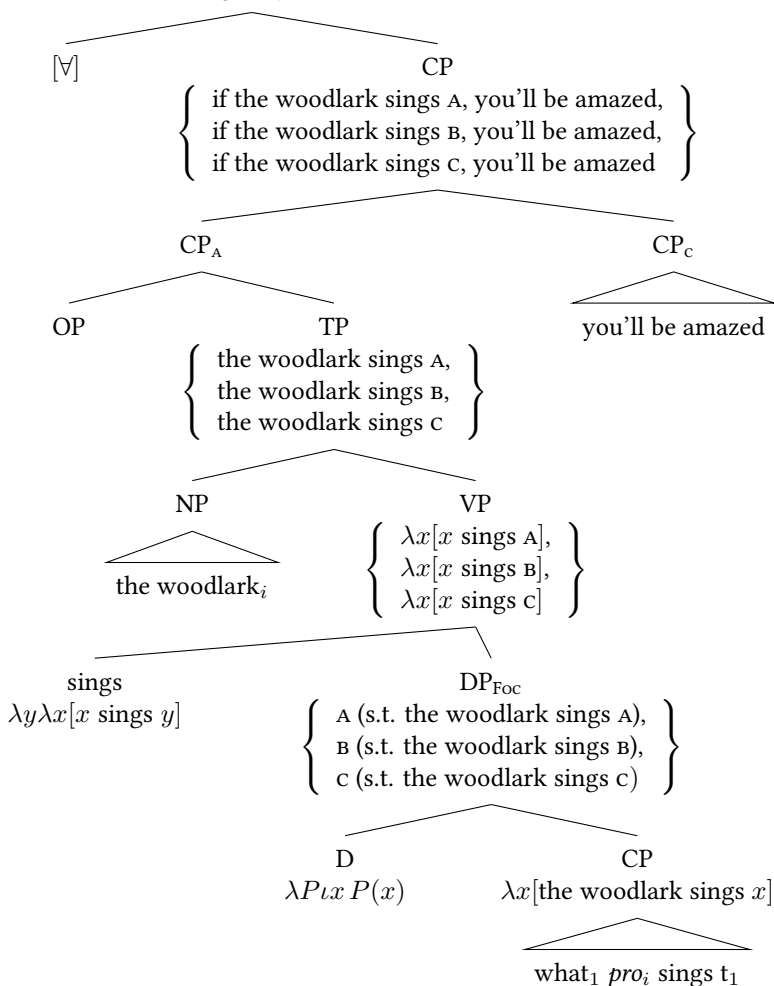
3. I’m implicitly assuming Hagstrom (1998: 142) FLEXIBLE FUNCTION APPLICATION, which allows composition of ordinary denotations with alternative denotations.

4. I leave the semantics of OP implicit for the sake of readability. However, the proposal implicitly builds on the classical account of Kratzer (1979, 2012). See Rawlins (2013) for an application to unconditionals compatible with the present proposal.

- (4) *Ať ten skřivan_i zazpívá [FR co *pro_i* zazpívá]_{FOC}, budeš
 AT the woodlark sings.PFV what sings.PFV will.2SG
 žasnout.
 marvel*

‘Whatever the woodlark sings, you’ll be amazed.’

- (5) CP
 If the woodlark sings A, you’ll be amazed &
 if the woodlark sings B, you’ll be amazed &
 if the woodlark sings C, you’ll be amazed.



3 Evidence

A number of kinds of evidence can be used to support the proposal. I will show that the *wh*-structure within the doubling unconditional (§3.1) is a free relative and that it is focused (§3.2).

3.1 The *wh*-structure is a free relative

It turns out that the *wh*-structure does not just contain a (doubled) verb, it contains a whole clause. If the unconditional involves a (di)transitive predication, as in (6b) and (6c), all obligatory arguments must be present in the *wh*-structure, albeit preferably in pronominal form. Likewise, obligatory elements such as auxiliary verbs (cf. *jsi* ‘be.AUX.2SG’ in 6b) also must be present.⁵ The fact that we deal with a full and finite clause supports the idea that the *wh*-structure is a free relative rather than just a *wh*-phrase.

(6) *Czech*

a. INTRANSITIVE

Ať **usnul** kdo **usnul**, musíme ho vzbudit.
 AT fell.asleep who fell.asleep must.1PL him wake.up
 ‘Whoever fell asleep, we must wake him up.’

b. TRANSITIVE

Ať **jsi** ten telefon našel kde *(**jsi**)
 AT be.AUX.2SG the phone.ACC found where be.AUX.2SG
 *(**ho** / **ten telefon**) **našel**, je můj.
 it.ACC the phone.ACC found is mine
 ‘Wherever you found the phone, it’s mine.’

5. It is possible though that there is some speaker variation. František Kratochvíl (p.c.) reports that he does not find pure verb doubling unacceptable.

c. DITRANSITIVE

At **ten telefon Marii dal** kdo *(jⁱ) *(ho)
 AT the phone.ACC Marie.DAT gave who her.DAT it.ACC
dal, má problém.
 gave has problem
 ‘Whoever gave the phone to Mary, s/he has a problem.’

Full clause doubling happens also in Spanish, as illustrated in (7a). And strikingly, Spanish even allows headed relatives in doubling unconditionals, see (7b). The fact that the head is definite further supports the free relative analysis of the *wh*-structure (free relatives are definites).

(7) *Spanish*

- a. **Se lo des** [FR cuando **se lo des**], lo
 him it give.SBJV.2SG when him it give.SBJV.2SG it
 perderá.
 lose.FUT.3SG
 ‘Whenever you give it to him, he will lose it.’
 (Josep Quer, p.c.)
- b. **Compres** [DP el libro [CP que **compres**]], estaré
 buy.SBJV.2SG the book COMP buy.SBJV.2SG be.FUT.1SG
 contento.
 happy
 ‘Whatever book you buy, I’ll be happy.’

Further evidence comes from *wh*-morphology. A language with two sets of *wh*-words—interrogative and relative—will use the relative kind in doubling unconditionals. In the examples below, Catalan uses *el que* ‘what.REL’ (lit. ‘the what/that’) rather than *què* ‘what.INTER’, (8a), and Slovenian uses *kjer* ‘where.REL’ rather than *kje* ‘where.INTER’. This is predicted by the free relative analysis.

(8) a. *Catalan*

Diguin [FR **el que** diguin], continuarem amb
 say.SBJV.3SG the that say.SBJV.3PL go.on.FUT.1PL with
 la nostra protesta.
 the our protest

‘Whatever they say, we will go on with our protest.’

(Quer 1998: 237)

b. *Slovenian*

Naj živi [FR **kjer** živi], ne bom ga obiskal.
 NAJ lives where.REL lives, NEG will.1SG him visit

‘Wherever he lives, I won’t visit him.’ (Adrian Stegovec, p.c.)

The last piece of evidence I offer is that the *wh*-word in doubling conditionals can be modified by the *ever*-morpheme typical of so called *ever free relatives*. The result is felt to be semantically redundant but grammatical, an intuition expressed in Quer & Vicente (2009) for Spanish and one that I can confirm for Czech, see (9).

(9) a. *Spanish*

Entre [FR **quien (-quiera que)** entre],
 enter.SBJV.3SG who -EVER that enter.SBJV.3SG
 sigue trabajando.
 keep.IMP working

‘Whoever comes in, I’ll attack him.’

(Quer 1998: 243)

b. *Czech*

Ať viděl [FR **co (-koliv)** viděl], nesmí to nikomu
 AT saw what -EVER saw NEG.may it nobody.NCI
 říct.
 tell

‘Whatever he saw, he can’t tell it anybody.’

3.2 The *wh*-structure is focused

As it turns out, the *wh*-structure is not just in-situ, it must be focused. This follows from the proposal, where focussing the free relative is necessary to generate the required alternative denotations. In a language like Czech, focused phrases are typically placed in the clause-final position and, just like in German (Lenerz 1977), really hate to be scrambled (see Šimík & Wierzba 2017 for related experimental evidence). Therefore, the fact that the *wh*-structure in Czech doubling unconditionals must occupy the clause-final position, illustrated by the contrast in (10), supports the idea that it is focused.

(10) a. *Czech*

Ať dali **tu knížku** [_{FR} **komu ji dali**],
 AT gave.PL the book.ACC who.DAT it.ACC gave.PL
 ztratila se.
 lost RFL

‘Whoever they gave the book to, it got lost.’

b. *Ať dali [_{FR} **komu (ji) dali**] **tu knížku**,
 AT gave.PL who.DAT it.ACC gave.PL the
 ztratila se.
 book.ACC lost

Intended: ‘Whoever they gave the book to, it got lost.’

Prosodic evidence further corroborates the analysis: sentence stress within the unconditional obligatorily falls on the *wh*-word, as illustrated in (11). Provided that the whole free relative is focused (and not just the *wh*-word), the attested stress pattern follows from the ban on stressing given constituents in Czech (see Šimík & Wierzba 2015, 2017) and since the *wh*-word is the only non-given expression in the free relative, it is the only one to be able to realize the focus-related stress on the free relative.

(11) *Czech*

Ať to dal [FR **KOMU to dal**], ztratilo se to.
 AT it gave.SG.M who.DAT it gave.SG.M lost RFL it
 ‘Whoever he gave it to, it got lost.’

The situation in Spanish, albeit different, also supports the analysis. Sentence stress in Spanish doubling unconditionals is placed on the predicate in the *wh*-structure, as illustrated in (12). It is, therefore, placed within the free relative, supporting its focused nature. The reason why there is no stress shift to the *wh*-word is that given material in Spanish, in contrast to Czech, does not get de-accented; see Cruttenden (1993).

(12) *Spanish*

Venga [FR **quien VENGA**], estaré contento.
 come.SBJV.3SG who come.SBJV.3SG be.FUT.1SG satisfied
 ‘Whoever comes, I’ll be happy.’ (Josep Quer, p.c.)

4 Generalizing the analysis

There are reasons to believe that doubling unconditionals are simply overt exponents of what happens covertly in all headless *wh*-based unconditionals. There are two parameters to consider: (i) whether the *wh*-structure is *in-situ* or *ex-situ* and (ii) whether there is sluicing in the free relative or not. This generates the four types headless *wh*-based unconditionals schematized in (13).

- (13) a. I give him [FR what(ever)₁ I give him t₁], ... IN-SITU, DOUBLING
 b. I give him [FR whatever₁ I give him t₁], ... IN-SITU, SLUICING
 c. [FR what(ever)₁ I give him t₁]₂ I give him t₂, ... EX-SITU, DOUBLING
 d. [FR whatever₁ I give him t₁]₂ I give him t₂, ... EX-SITU, SLUICING

Type (13a) is the doubling unconditional discussed in this paper. Type (13b) exists in Czech and Slovenian, alongside type (13a), and is illus-

trated in (25). The Slovenian example (14b) exhibits two phenomena that can be considered arguments in favor of the sluicing-based analysis: the wh-word *kdorkoli* ‘whoever’ contains the morpheme *-r*, which is used to derive relative wh-words from interrogative ones (see the discussion above). This morpheme arguably spells out a relative complementizer (see Rudin 2014 and Franks & Rudin 2015 for that kind of analysis of the same kind of morpheme in Bulgarian and Macedonian), suggesting that even in the absence of a full-blown relative clause, the wh-word occupies the left periphery of one. The optional morpheme *že* not only can occur in a doubling unconditional but it is also one that can “survive” sluicing; for independent evidence from Slovenian wh-questions, see Marušič et al. (2018).

(14) a. *Czech*

Ať přijde kdokoli, budu spokojený.
 AT come.3SG who.EVER will.be.1SG satisfied
 ‘Whoever comes, I’ll be happy.’

b. *Slovenian*

Naj pride kdorkoli (že), bom zadovoljen.
 NAJ come.3SG who.REL.EVER already will.be.1SG
 ‘Whoever comes, I’ll be happy.’ (Adrian Stegovec, p.c.)

Type (13d) is the type found in English and is arguably most common crosslinguistically. How about the remaining type (13c)? Gulli (2003) (here via Quer & Vicente 2009) reports data from Calabrian and Standard Italian showing the predicted pattern, i.e., what appears to be a free relative fronted to the left periphery. Given the productivity of focus fronting in Italian (dialects), it does not come as a surprise that the wh-structure in Italian doubling unconditionals gets fronted.

(15) a. *Calabrian*

[_{FR} **Aundi vaju**]₁ **vaju** t₁, u viju.
 where goes goes him see

‘Wherever he goes, I see him.’

(Quer & Vicente 2009: 3; my analysis)

b. *Standard Italian*

[_{FR} **Come la giri**]₁ **giri** t₁, è sempre la stessa
 how it turn.2SG turn.2SG is always the same
 cosa.
 thing

‘However you look at it, it’s always the same.’

(Quer & Vicente 2009: 3; my analysis)

One suspect thing about the proposed generalization is that the *wh*-phrase in non-doubling unconditionals should be a sluicing remnant. Is it not a solid generalization that there is no sluicing in relative clauses, be it headed or free (see e.g. Lobeck 1995)? That certainly is a concern, but there is one intriguing piece of evidence that the analysis could be on the right track. Lipták (2015) shows that relative pronouns can be sluicing remnants in Hungarian. Consider example (16), where the relative pronoun *akivel* ‘REL.who.with’ is a sluicing remnant. There are at least two important facts about this construction in Hungarian that can be understood as arguments in favor of the sluicing-based analysis of *wh*-phrases in unconditionals. First, Hungarian relative sluicing occurs in light-headed relatives, free relatives, or comparatives—all of which fall into one broad class of relative clauses (cf. Pancheva Izvorski 2000). Second, the sluicing seems conditioned by the matrix clause containing the sluiced material—just as in unconditionals.⁶

6. This might not be immediately clear from (16), and many other examples in Lipták (2015), because the matrix clause itself involves ellipsis. But the English translation makes it clear: ‘he met whoever ~~he met~~’.

(16) a. *Hungarian*

Ismerőssel egyyel találkozott, mulatságosnak
 acquaintance.with one.with met.3SG funny.DAT
 találta, hogy éppen azzal, [RC akivel
 found.3SG that just that.with REL.who.with
 találkozott].
 met.3SG

‘Acquaintances, he met only one, and he found it funny that
 he met whoever he did.’ (Lipták 2015: 189)

It is an open question why relative sluicing should be conditioned in just the way it appears to be. My hope is, however, that unconditionals could contribute to our understanding of this apparently rare phenomenon.

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Wie und wo Ambiguität Ungrammatikalität vortäuscht

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1 Anekdotische Vorbemerkung

Der erste Vortrag von Gisbert, den ich gehört habe (Anfang–Mitte der 90er Jahre), war nicht nur lehrreich – das ist wohl der Normalfall – sondern auch unterhaltsam. Gisbert begann ihn mit einem Abriss der Grammatikalitäts-Beurteilung folgender Sätze in der damals verfügbaren Literatur:

- (1) i. dass alle [dieses Buch]_i [_{CP}ohne e_i zu lesen] t_i ins Regal gestellt haben
- ii. dass alle [_{CP} ohne e_i zu lesen] [dieses Buch]_i ins Regal gestellt haben

Nach dem Urteil einer Arbeit (a) waren beide Sätze ungrammatisch (*, *), nach einer weiteren Beurteilung in einer anderen Arbeit (b) war der erste Satz gut, der zweite schlecht (ok, *) und nach einer dritten Einschätzung (c) waren beide Sätze grammatisch korrekt (ok, ok). Ein Großteil des Publikums im Vortrag war sicher nicht erstaunt und schrieb diese Konfusion der ziemlich komplizierten Konstruktion zu; auch damals hatten die meisten schon die Erfahrung gemacht, dass verschiedene Autoren bisweilen unterschiedliche Urteile abgeben. Dann kam aber die Überraschung: Die Beurteilung (a) stammte aus Fanselow (1990)¹, die (b) aus

1. F,G (1990). Scrambling as NP-movement. In: Scrambling and barriers, Hg. G. Grewendorf & W. Sternefeld, 113–140. Amsterdam, The Netherlands/Philadelphia, PA: John Benjamins.

Fanselow (1991)² und die (c) aus Fanselow (1992)³. Nun hätte Sternefeld (1998)⁴ mit seiner Kritik nicht ganz unrecht, dass man daran doch sehen könne, was für Blüten die theoriegeleitete und somit verblende In-trospektion einiger Generativisten so alles zu treiben imstande sei. Allerdings: Liest man bei Gisbert nicht nur die Beispielsätze, sondern den Text drumherum, klärt sich die scheinbare Grammatikalitäts-Schizophrenie auf. Da kann man lesen, was wie gemeint ist und der scheinbare Widerspruch löst sich auf. Manche Grammatikalität ist einfach so versteckt, dass die entsprechende Struktur wie eine ungrammatische daherkommt. Der spezialisierte Linguist oder die durchblickende Grammatikerin erkennen aber die Zusammenhänge. Etwas Vergleichbares versucht nun die vorliegende Einlassung.

2 Inhaltliche Vorbemerkung

Bisweilen werden immer noch Theorien aufgestellt, die sprachliche Daten nicht nur erfassen, sondern am besten sogar erklären sollen, deren empirische Basis mehr als fraglich ist. Zu oft wurden und werden immer noch Urteile über die Grammatikalität oder Akzeptabilität sprachlicher Strukturen gefällt, die nicht stichhaltig sind. In diesem Aufsatz werden ein paar Strukturen vorgestellt, die es den Forschenden schwer machen, die richtigen Schlüsse zu ziehen – ganz einfach, weil die fraglichen Ausdrücke nicht intensiv genug angeschaut wurden. Vorschnelle Sch(l)üsse führen dann zu Trugschlüssen und bringen im ungünstigsten Fall unsere Disziplin (wieder) in Verruf. In bestimmten Situationen sind sprachliche Ausdrücke ambig, allerdings ist eine Lesart so dominant, dass es dazu veranlasst, die andere(n) “rezessive(n)” als ausgeschlossen, also nicht vorhanden zu deklarieren. Es wird in diesen Fällen behauptet, dass unter den und den Umständen eine bestimmte Lesart oder eine gewisse Struktur nicht existiere, und kurzerhand zur Erklärung übergegangen, warum das so sein soll. Die Antwort soll im Bauplan sprachlicher (kom-

2. F,G (1991) Deplazierte Argumente. Eine zweideutige Angelegenheit? Ms. Universität Passau.

3. F,G (1992) Deplazierte Argumente. Ms. Universität Stuttgart.

4. S,W (1998) Programm des Teilprojekts A3. SFB 441, Finanzierungsantrag 1999-2001. Universität Tübingen.

plexer) Ausdrücke liegen, also in der Universal- oder einzelsprachlichen Kerngrammatik verortet sein. Bei genauerem Hinsehen aber stellt sich heraus, dass die behaupteten strukturbildenden Prinzipien gar nicht so restriktiv sind und dass das generative System – wenn man so will – gar nicht so (strikt) an- und ausgelegt ist und das Wesen der Grammatik dann eben nicht so gestaltet ist, wie das manche Kolleginnen und Kollegen behaupten. Der kleine Beitrag will nicht mehr, als drei bzw. vier Beispiele benennen und aufzeigen, wo Sachen behauptet wurden, die so nicht sind. Letztendlich ist er ein Plädoyer nicht nur für mehr Empirie, sondern eben auch für mehr Einsatz linguistischen Sachverstandes bei der Beurteilung sprachlicher Strukturen. Experimente sind wichtig, Korpusrecherche nötig, aber linguistischer Sachverstand, grammatiktheoretisches Wissen und sprachtheoretische Erfahrung sind in dieser Zeit des Empirie-Fetischismus’ nicht weniger unerlässlich.

3 Verschiedene scheinbar unambigie Strukturen

3.1 Erst “Gapping”, dann Personennamen unter Rechtsversetzung

Die erste Konstruktion ist eine englische, die im Deutschen jedoch ziemlich ähnlich funktioniert. Sie wurde vor allem von Hankamer (1973) propagiert:

- (2) Jack wants Mike to wash himself, and Arnie to shave himself.
- (3) a. ~ and ^{ok}Jack wants Arnie to shave himself.
 b. ~ and *Arnie wants Mike to shave himself.

Es geht hierbei um die Interpretation des zweiten Konjunks in der Koordinationsstruktur: *Arnie to shave himself*. Diese Wort-Kette ist offensichtlich eine Ellipse; es “fehlt” etwas. Hier liegt sogenanntes Gapping vor: In einer Koordinationsstruktur wird im zweiten Konjunkt anzunehmendes Material gelöscht, das heißt, es bleibt unausgesprochen. Die Beurteilung der Tilgungsmöglichkeiten geht auf Hankamer zurück. Die beiden entsprechenden Nicht-Ellipsen in (3) wären theoretisch mögli-

che Ausbuchstabierungen der reduzierten Variante in (2). In einem Fall wird der linke Rand einer Tilgungsstruktur gelöscht (*Jack wants*); im anderen Fall wird "gapping-typisch" innerhalb der Konjunktkonstituente getilgt (*wants Mike*). In der Tat ist die gesternte Variante scheinbar ausgeschlossen. Und so formuliert Hankamer No-ambiguity-Regeln wie:

- (4) a. Strukturelle Ambiguität, die von Tilgung herrührt, wird strikt vermieden.⁵
- b. Falls ein Gapping zu einer Sequenz führt, die eine alternative syntaktische Analyse hat, bei der der Ort der Lücke näher am linken Rand wäre, dann ist dieses Gapping nicht möglich.⁶

Das Deutsche verhält sich wohl nicht grundsätzlich anders:

- (5) Jakob bat Hans sich zu waschen, und Alex, sich zu rasieren.
- (6) a. Jakob bat Hans, sich zu waschen, und Jakob bat Alex, sich zu rasieren.
- b. ??Jakob bat Hans, sich zu waschen, und Alex bat Hans, sich zu rasieren.

So nachvollziehbar Hankamers Urteil und auch sein Erklärungsversuch sind, die Realität ist eine andere. Vor allem Carlson u. a. (2005) haben in einer Reihe von Veröffentlichungen gezeigt, dass die Urteile eben nicht so glasklar sind. Ihr bekannter Beispielsatz ist (7), mit den beiden Lesarten für das zweite Konjunkt in (8a) und (8b).

- (7) Somehow, Robert insulted the guests during dinner and Samuel during the dance.

5. (4a, English) ["... structural ambiguity which might be expected from deletion is in fact always avoided..."].

6. (4b, English) No-Ambiguity Condition (NAC): Any application of Gapping which would yield an output structure identical to a structure derivable by Gapping from another source, but with the "gap" at the left extremity, is disallowed. (deutsche Übersetzung und Anregungen durch und bei R. Vogel, verfügbar unter: <http://www.homes.uni-bielefeld.de/rvogel/ws0708/synfolien/hankamer.pdf>.)

- (8) a. Samuel insulted the guests during the dance. (“Subj.-Lesart”)
 b. Robert insulted Samuel during the dance. (“Obj.-Lesart”)

In Experimenten haben Carlson und Kollegen (sogar) eine Präferenz für die von Hankamer ausgeschlossene Lesart (=a) festgestellt, wenn eine bestimmte prosodische Realisierungsoption gewählt wurde, nämlich L+H* auf dem Subjekt (Robert) and flache (deakzentuierte) Aussprache des direkten Objektes (bei sonst gleicher Kontur)⁷. Unterm Strich muss man festhalten: Diese Sätze sind ambig. Es existiert keine grammatische oder sprachlich fundierte Regel, die eine Tilgungsoption ausschließt. Eine Lesart ist aber meist derart prominent, dass die ebenfalls angelegte(n) andere(n) Option(en) nicht realisiert – im Sinne von “wahrgenommen” – werden.

Die nächste und vermutlich ähnlich geartete Konstruktion ist von der Hankamer’schen Gapping-Struktur gar nicht so weit entfernt. Es handelt sich um Rechtsversetzungen wie:

- (9) Ich hab sie_i erst gestern gesehen, unsere neue Nachbarin_i / die Katharin_i.

Für manche Linguisten scheint nun eine Regel in der Grammatik Rechtsversetzung artikelloser Ausdrücke, vor allem artikelloser Personennamen, auszuschließen. Zum Beispiel Truckenbrodt (2016) formuliert eine Regel (“condition”, siehe Fußnote unten⁸) und urteilt:

- (10) *Ich habe sie_i gesehen, Maria_i.

Die “Bedingung” besagt also, dass rechtsversetzte Personenamen nicht ohne Artikel realisiert werden dürfen. Aber, ist das wirklich so? In

7. Hankamers Regel in ihrer generellen Lesart und bei unkritischer An- und Übernahme versagt vollends bei Komparativsätzen wie *Hans kennt Ute besser als Igor*, wenn man diese Strukturen eben auch als Ellipsen versteht. Solche Sätze sind für die meisten Muttersprachler offensichtlich ambig.

8. There is a poorly understood condition on dislocated DPs that disallows names without articles (**Ich habe sie gesehen, Maria, *I have seen her, Maria*), [...] In German, names are also acceptable with an article, and can be dislocated when they stand with the article.

Meinunger (2015) habe ich die oben eingeführte Hankamer'sche Regel großzügig auf diese Art von Datum übertragen: In Übereinstimmung mit Linguisten wie Ott & de Vries (2014) oder eben auch Truckenbrodt (2016) habe ich die Analyse übernommen, bei der Rechtsversetzung durch Tilgung erzeugt wird.

(11) Ich habe sie gesehen, ~~ich habe~~ Maria gesehen.

(12) Ich habe sie gesehen, ~~ich habe~~ die Maria gesehen.

Die scheinbare Ungrammatikalität oder Unmöglichkeit von (10) wird dann so erklärt, dass die Tilgung in (11) eine Ambiguität erzeugt – die artikelhaltige Version in (12) nicht. (11) ist nämlich ambig mit der Ansprechlesart: Es wird nicht über eine Maria gesprochen, sondern mit einer Maria. Auch der Phonetik/Phonologie-Experte der Duden-grammatik (2009; Peters, J. § 149) macht keinen prosodischen Unterschied zwischen echter Rechtsversetzung und Akzentsetzung beim Direkt-Ansprechen (Vokativ). Unter der Annahme, dass Tilgung keine Ambiguitäten produzieren kann und darf, lässt sich ableiten, dass die Rechtsversetzungslesart (Direktes-Objekt-Interpretation) ausgeschlossen ist, weil sie durch die vorhandene Vokativ-Interpretation blockiert bzw. überschrieben wird. Auf den "ersten Blick" scheint das Artikelverbot bei der Rechtsversetzung zu stimmen: Der Kontrast zwischen (11) und (12) ist sehr deutlich. Allerdings stellt sich die Frage, ob hier ein Grammatikalitäts- oder ein Verarbeitungsproblem vorliegt. Ist die Rechtsversetzungslesart wirklich durch das grammatische System ausgeschlossen oder kommt sie theoretisch oder sogar praktisch vor, nur dass sie wiederum so unscheinbar ist, dass die andere Lesart sie dermaßen überschattet, dass sie "untergeht"? Genau so aber scheint es zu sein. In Korpussuchen konnten lediglich zwei Gegenbeispiele – oder eben Belege – gefunden werden, die beide nicht ganz "glücklich" sind:

(13) Anatolij, er war es, nur ihn wollte sie haben, Anatolij.⁹

9. Biller, Maxim, Cilly, in: ders. *Wenn ich einmal reich und tot bin*, Köln: Kiepenheuer und Witsch 1990: 157

- (14) Sie kennen ihn sicher, Harald Martenstein.
(<http://sz-magazin.sueddeutsche.de/texte/anzeigen/39039>)

Ich bin sicher, dass bei zukünftigen Abfragen in Korpora, die gesprochene Sprache einfangen, viel mehr solcher Belege zutage kommen, wie ich sie immer öfter in der Realität wahrnehme:

- (15) Und die hat seit vorgestern nichts gefressen, Isolde?
(16) Noch nie hat der Schlager gehört, Stefan. (beides Hörbelege)

Interessant bei dieser Konstruktion ist Folgendes. Meine damalige Korpusrecherche ergab Hunderte von Treffern bei rechtsversetzten Namen, die quasi ausnahmslos mit Artikel realisiert wurden. Kurioserweise stammten 90% aus der schöngeistigen Literatur, aus Werken also, bei denen man nicht vermutet, dass eine Struktur verwendet wird, die normative Grammatiken ablehnen. Ich vermute, der Grund ist der, dass Schriftsteller glauben, genauer sein zu müssen, als es möglicherweise nötig ist. In der Sprachrealität ist in der mündlichen Kommunikation der Kontext so viel klarer als im Roman (konzeptuelle Schriftlichkeit – maximale Distanz), dass die Verwechslungsgefahr ziemlich gering ist. Außerdem scheint eine extreme Deakzentuierung des Namens die Versetzungslesart zu unterstützen. Diese nuancierte Differenzierungsoption ist schriftlich nicht möglich und insofern kommen Sätze wie in (15) und (16) wohl häufiger in der nachlässigen gesprochenen Sprache vor.

3.2 W-Wörter im deutschen Vorfeld

Der nächste Fall ist ein strukturell ganz anders gelagerter; gleich ist aber das Übersehen einer Ambiguität und die daraus gezogenen grammatiktheoretischen Konsequenzen. Haider (2010: 105f., neben vielen anderen Arbeiten) argumentiert für eine Art “kontextuelle Satzmodus-Typisierung”. Die Logik hinter dem Ansatz gestaltet sich folgendermaßen: Befindet sich im Spezifizierer eines Satzes ein w-Ausdruck, so ist der Satz eine Frage (17); gibt es eine andere Konstituente, so liegt ein Aussagesatz vor (18):

- (17) Wer ist gestern gekommen?
 (18) Er/Einer/Jemand ist gestern gekommen.

Haider erklärt damit die Verteilung und Interpretation bei w-Pronomina im Deutschen: *wer, wen, was, wo* etc. können als Frageausdrücke, aber auch als indefinite Pronomen gebraucht werden. Am Satzanfang (Spec,CP) agieren sie als Interrogativpronomen (17), im Satzinneren, in ihrer Basisposition, sind sie – bei unbetonter Realisierung – Indefinitausdrücke (19), (20):

- (19) Gestern ist wer gekommen.
 (20) Dort haben wir wen angetroffen.

In der Tat ist *wer* in (17) schwerlich als Indefinitpronomen zu lesen. Haider schließt diese Lesart kategorisch aus. (Auch Satztyp-Analysten wie Altmann (1987) oder Lohnstein (2000) würden wohl für eine reine Fragebedeutung für (17) plädieren und eine Aussage-Interpretation ausschließen.) Dennoch sprechen bestimmte Daten dafür, dass zumindest theoretisch eine Deklarativlesart vorhanden ist. Möglicherweise ist die Frage-Interpretation nur wieder so stark, dass man die Deklarativ-Lesart nicht erkennt. Dass es aber so sein kann, legen Daten nahe, wie sie zum Beispiel Reis (1991) oder Haida (2007) besprechen, Fälle also, wo das Pronomen attributiv erweitert ist.

- (21) Wen Nettos haben wir hier noch nie gesehen.
 (22) Wer anders würde das geschickter machen.
 (23) Wen aus Hamburg soll sie geheiratet haben.

Außerdem ist eine indefinite Lesart auch möglich, wenn der w-Ausdruck rattenfängerhaft eingebettet ist:

- (24) [Was zu tun,] hast du deiner Frau versprochen _

Bei Betonung des Fragepronomens *was* entsteht eine Frage-Bedeutung, bei Deakzentuierung die Indefinit-Interpretation. Die Argumentation

bei Haida (schon angedacht in Reis) ist, dass die Indefinit-Lesart nur dann möglich ist, wenn der Fokusakzent auf ein Element fällt, das eben nicht das *w*-Pronomen ist, sondern ein anderes fokussierbares und dann letztendlich im konkreten Fall auch akzentuiertes Element. Genau dies ist auch zu erwarten, wenn man sich vergegenwärtigt, dass Indefinitpronomen inhärent unbetonbar sind.

- (25) WER (anders) würde das geschickter machen
** im Sinne von: Jemand anders würde das geschickter machen*

Diese Betonung geht nur in der Fragebedeutung. Dennoch ist es mitunter möglich, dass ein Akzent im Nachbarfeld, also entweder im Vorvorfeld oder in der linken Satzklammer ausreicht, um das *w*-Pronomen unbetont zu lassen und so die Indefinitbedeutung "erzeugt" werden kann. (26) und (27) sind eigene Hörbelege:

- (26) Kunde: Das müsste jetzt reichen.
 Kassiererin: NaJA, was fehlt noch!
- (27) A (besorgt): Und wenn ich ganz allein da bin?
 B (beruhigend): ACH(,) wer wird schon da sein.

Hier scheinen eventuell Elemente aus dem Vor-vorfeld (linkes Außenfeld) die geforderte Akzentuierung auf sich nehmen zu können. Die *w*-Ausdrücke sind unbetont möglich. Ähnliches scheint mir bei einem von Pasch (1991) angeführtem Hörbeleg der Fall zu sein:

- (28) (Dann geben Sie mir das da!)
 Was MUSS ich ja haben.

Pasch selbst reportiert (auch) ein anderes Intonationsmuster. Ich lese den Satz innerlich aber mit einem deakzentuierten *Was* und einer Fokussierung des Modalverbs in der Zweitposition (linke Klammer). In jedem Fall ist der Satz aber keine Frage. Das betont Pasch und es ist auch allein dadurch klar, dass die Modalpartikel *ja* auftaucht, die mit Interrogativ-Modus inkompatibel ist (wiederum Thurmair 1989: 49) Der Kontext erzwingt hier auch eine Lesart, die auf alles andere als eine Er-

gänzungsfrage hinweist. Insofern gilt: Haiders Behauptung, dass eine *w*-Konstituente am Satzanfang – also in Spec,CP – notwendigerweise zu Interrogativ-Interpretation führt, kann nicht aufrecht erhalten werden. *W*-Pronomen mit indefiniter Lesart sind als Satzglieder (oder als wesentliche Teile von unmittelbaren Satzgliedern) im deutschen Vorfeld möglich. Es gibt also eine Ambiguität – nur ist es so, dass in gewissen Fällen die eine Lesart die andere so überschattet, dass diese abwesend scheint.

3.3 Das Vorfeld beim Imperativ

Der vorerst letzte von einigen weiteren Fällen ist die Interpretation bestimmter V2-Sätze als entweder Deklarativ- oder Imperativsätze. Anknüpfungspunkt ist die Behauptung von Fries (1992), dass der Satz in (29) kein Imperativsatz sein kann.

(29) Sie gehen _

Nun ist es hier wohl ähnlich schwierig, diesen Zweiwortsatz als imperativisch zu verstehen, wie es bei (17) quasi unmöglich war, eine Deklarativinterpretation zu bekommen. In diesem Satz kommt viel zusammen, was die Sache so unzugänglich macht. Erstens sind kanonische Imperativsätze verbinitial:

(30) Komm her!

(31) Schreit nicht so laut! (... Ihr verscheucht sonst die Vögel ...)

Allerdings ist an vielen Stellen gezeigt worden, dass (kontrastive) Topiks durchaus satzinitial im Vorfeld stehen können.

(32) Den Koffer stell dorthin!

(33) Jetzt greift schon mal zu!

Allein zu dieser Möglichkeit findet man in den großen Grammatiken nichts oder nicht viel mehr als die Erwähnung der Option (etwas mehr und Lesenswertes dann doch bei Engel 1988: 314). Und zweitens haben wir in (29) einen Fall von Höflichkeits- oder Distanz-Imperativ,

der in den meisten traditionellen Grammatiken oder auch in wissenschaftlichen Grammatiken als nicht einschlägig gilt. Dann wird dort von Konjunktiv-Ersatz gesprochen, das heißt, es wird behauptet, hier liege kein echter Imperativ (mit seiner eigenen Morphologie) vor, sondern aus Gründen von "Lücken im Flexions-Paradigma" ein Konjunktiv (Wrátil 2005: p.M.). Rosengren (1993) schließt ähnlich ganz generell ein overtes Subjekt in Imperativsätzen aus und behandelt *Sie*-Imperative somit ähnlich wie viele traditionelle Grammatiken als verkappte oder "manipulativ" eingesetzte andere Verb(ersatz)formen. Ich denke, Fries hat vollkommen recht, wenn er andere Kriterien heranzieht, um zu zeigen, dass bei *Sie*-Imperativen eben doch ein Imperativsatz vorliegt. Allerdings geht er den Weg seiner eigenen Argumentation nicht weit genug. Es ist eigentlich, und heute noch mehr als damals, ein alter Hut, dass Modalpartikeln Illokutionsanzeiger sind. Bestimmte Partikeln oder höhere Adverbiale sind nur in bestimmten Satzarten zulässig (für Modalpartikeln wiederum u.a. Thurmair (1989): *bloß*, betontes *JA*, *ruhig* und nicht-fokussierendes *nur* und ggf. noch weitere.).

(34) Gehen Sie bloß nicht / JA da hin! (... Da sind unsere Vögel ...)

Ein normaler Deklarativsatz, der diese Elemente enthält, ist ausgeschlossen. Es gibt allerdings "unnormale" Fälle: Das sind Sätze mit deontischem Modalverb und vermittelt direkter Interpretation:

(35) Er soll bloß nicht / JA seine weißen Schuhe anziehen.

Ohne Modalverb und instruktive Pragmatik können diese Elemente mit der Modalbedeutung niemals in einem Aussage- bzw. Deklarativsatz erscheinen. Insofern müssen (34) Imperativsätze sein. Knackpunkt bei der ganzen Sache, also bei (29), ist die dritte Verkomplizierung innerhalb der Konstruktion: das Subjektpronomen im Vorfeld. Fries schließt *Sie* beim Höflichkeits-Imperativ satzinitial aus, das betonte *DU* nicht. (Dieser Unterschied ist dann essentiell in seinem Modell.) Nun klingt das angesichts des Kontrastes in (36) und (37) erst einmal nachvollziehbar.

(36) Du komm her! (Nicht als: Du, _ komm her!)

(37) Sie kommen her! (- bei Fries gesternt)

So ein prinzipieller Unterschied scheint mir fragwürdig. Soll die Option, einen Satz als (Aussage,) Frage oder Aufforderung zu verstehen, an das grammatische Personen-Merkmal des Subjektes gekoppelt sein und es einen Unterschied machen, ob dieses Subjekt formal singularisch oder pluralisch ist bzw. freundschaftlich oder respektvoll angeredet wird? Immerhin gibt Sätze wie (38) oder (39):

(38) Sie gehen JA heute Abend zu dem Treffen!

(39) Sie kommen bloß nicht noch einmal vorbei!

Diese Sätze sind nun aber genau von dem "Strickmuster", das Fries deziert ausschließt. Wenn sich auch noch (40) als akzeptabel herausstellen sollte, was ich für sehr gut möglich halte, wäre der letzte Beweis erbracht. Fries' Behauptung, dass (29) nicht imperativisch geht, wird letztendlich damit begründet, dass der Satz nur deklarativ interpretiert werden könne. (29) sei also eben nicht ambig (, weil ein Sie im Vorfeld eines Imperativsatzes ausgeschlossen sein soll). Nun gibt es ein einziges deutsches Verb, wo Imperativ (und auch Konjunktiv 1) und Indikativ nicht synkretisch sind, nämlich *sein*. Ist der Konjunktiv bei diesem Verb in einem Satz möglich, wäre zweifellos klar, dass kein Deklarativsatz vorliegt.

(40) ?SIE seien jetzt bloß mal still!

Es ist zugegebenermaßen schwer, das Subjektpronomen an den Satzanzug vorzuziehen. Es muss nicht (wie Fries behauptet) lediglich ein Topik sein, es muss ein kontrastives Topik sein (- was er eigentlich auch so sieht, p.M.). Kontrast verlangt potentielle plausible Alternativen. Im Normalfall ist jedoch klar, an wen eine Aufforderung geht. Dass es mehrere Kandidaten gibt, die durch den Sprechakt verpflichtet werden könnten, aber nur einer oder eine Gruppe davon explizit ausgezeichnet werden muss, ist sehr selten.

4 Fazit

Manche Konstruktionen verstecken ihre Mehrdeutigkeit. Weil sie auf den ersten und auch auf den zweiten Blick eindeutig zu sein scheinen, wird ihnen eine Lesart abgesprochen, die aber auf den dritten oder vierten Blick doch da ist. Das kann zu falschen Theorien führen.

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A note on apparent sluicing in Malagasy

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1 Introduction

Since the early days of generative grammar there has been a tension between two approaches as to how the missing material in elliptical structures is to be interpreted: At one extreme is the assumption that there is full syntactic structure which is not pronounced, but interpreted in LF. On the other extreme is the assumption that “empty” means empty and there is nothing at all there; the interpretation is done entirely by (discourse) semantics. In his influential (2001) book and subsequent work, Jason Merchant takes the position that there is abstract syntactic structure which accounts for various empirical observations—for example, that English VP ellipsis is insensitive to the active-passive distinction, whereas in sluicing¹ a mismatch produces ungrammaticality (see discussion below). Apparent mismatches are handled in various ways, as discussed in Merchant (2001) and subsequent work.² The ellipsis itself (deletion or non-pronouncing), however, is *licensed* by semantic equivalence.³

1. *Sluicing*: elision of a clause, stranding a [+WH] element: “Gisbert saw something, but I don’t know what_i < ~~Gisbert saw e_i~~ >”. Hypothesized but unpronounced structure is indicated by angled brackets and strike-through. Gratuliere zum Geburtstag, Gisbert!

2. Cf. especially Merchant (2013), written in 2007 and published in 2013.

3. I.e., mutual entailment under \exists -type shifting closure. See Merchant (2001) for original definition; repeated in both Potsdam (2007) and Chung (2013), the articles discussed here.

In an important and somewhat startling article, Potsdam (2007) [henceforth: P] points out that in Malagasy sluices, the antecedent clause *must* be an indefinite-in-situ construction, whereas the WH-phrase and sluice *must* be a pseudo-cleft, hence there would seem to be no syntactic identity at all; only the semantic mutual entailment counts (as he demonstrates). This is rather surprising in light of the role the unpronounced syntactic structure seems to play in other languages, and one wonders if the Malagasy data can be reconciled with a Merchant-type approach. A similar analysis is presented in Paul & Potsdam (2012) [henceforth: P&P].

Chung (2013) [henceforth: Ch] has argued for a revision of Merchant's hypothesis on the basis of Chamorro data (among others) that would seem to allow the Malagasy mismatches, and in fact hints at this in her footnote 19. This short note is an attempt to flesh out her suggestion for Malagasy, and show how this might offer evidence about the much contested status of the mysterious clause-final constituent in Malagasy (variously referred to as the "trigger"/"pivot"/"topic"/"subject").

2 Structure of Malagasy

The basic clause structure of Malagasy is predicate initial (i.e., a tensed verb, predicate adjective, or predicate nominal) followed by series of arguments interspersed with PPs and adverbials, and ended by a "designated" DP, dependent on the voice of the verb. To avoid prolixity and prejudicing the analysis, I use the term *pivot* for the designated element, although this is far from standard. For example, Pearson (2005), Schachter (2015, for Tagalog) i.a. use "trigger"; Paul (2002), Keenen (2008), i.a. use "subject".⁴ The following examples have the same basic meaning with different emphasis:

4. Pearson (2001) originally used "pivot" (PivP) for a different projection; colleague Norbert Corver (p.c.) suggested "pivot", as "trigger" could be confusing for non-Austronesian linguists. The abbreviations AT, TT, CT for "Actor Topic Voice" etc. are adopted from Pearson's later papers. In the glosses I've placed them before the verb, following Pearson, but they can be prefixal, circum-verbal, suffixal or even suppletive; the voice affixes are preceded by tense, if it's non-null.

(1) a. *Actor pivot (AT)*

Mitazana iboria amin'ny masolavitra androany
 AT.observe lark with.the telecope today

Rafansilao.

Mr.Fanselow

‘Mr. Fanselow is watching a lark today with a/the telescope.’⁵

b. *Theme pivot (TT)*⁶

Tazanin’- dRafansilao amin'ny masolavitra androany ny
 TT.observe Mr.Fanselow with.the telecope today the

iboria.

lark

c. *Other (“Circumstantial”) pivot (CT)*

Itazanan’- dRafansilao (ny) iboria androany ny
 CT.observe Mr.Fanselow (the) lark today the

masolavitra.

telecope

The final element, which can be followed by various “extraposed” adverbials and CPs, has been variously analysed as a subject (Guilfoyle et al. 1992 [henceforth: GHT], Paul 2000, i.a.), and as an A-bar position similar to the Vorfeld/Voorveld in German and Dutch (Pearson 2001, i.a.). A widely accepted “consensus” position for Malagasy and other similar Austronesian languages is that some verbal position is fronted, stranding the final XP (and the “extraposed” elements).⁷ The resulting structure for (1b), for example, would be some variant of the following:

5. Many typical Malagasy names require an article of respect, sometimes written separately *i Ketaka*, sometimes together with the name *Raso*a = ra+Soa. “I Gisbert” would be more natural, but then one can’t see the interaction with the verb (consonant permutation) in passive and circumstantial voice.

6. Note that TT-voice, often referred to as “passive”, doesn’t behave like passive in European languages: the actor is still present, receiving genitive case.

7. For arguments supporting the predicate fronting analysis see Pearson (2001), P, i.a.; Sabel (2002) and GHT assumed a right-branching IP; but see Erlewine (2018) for Toba Batak for an alternative analysis.

- (2) [CP? [TP T⁰ [_{vP} V YP XP ZP]]_i [_{FP} XP e_i]]

A typical structure, from P and, in various incarnations, common to many recent articles, fronts the pivot, and then fronts some verbal projection, here PredP⁸:

- (3) [_{FP} [_{PredP} ... e_i ...]_j [_{F'} F [_{IP} XP_i [_{I'} I e_j]]]] [after his (3) & (4)]

The discussion, however, about whether the pivot is in an A-bar position, as in (2) or an A position as in (3) continues. Empirically it would seem that the fronted predicate phrase has to include a T projection as in Pearson (2001), since morphological tense appears as a prefix on the left side of the fronted verb (see examples; but cf. P&P's comment in footnote 8).

Questions can either be WH-in-situ as in (4), or with the WH-constituent "fronted" in the *no*-construction⁹: with the exception of certain adverbials, the "fronted" WH-constituent must be what would have been the pivot in the clause following *no*:

- (4) *WH-in-situ*:

Namangy iza ny mpianatra?
 PST.AT.visit whom the student
 'Who did the student visit?'

8. NB: Potsdam (2006) still sticks to the right-branching GHT structure for the clause. But his sluicing paper of 2007 and new work with Edmiston, such as (EdmistonPotsdam2018), has Pearson-type fronting as in (3). Paul (2002) has no tree structure except one labeled bracketing, which doesn't match surface output. P&P have a fronting analysis near the end, so apparently Paul here accepts fronting, although the pivot is still in Spec,IP/TP. In a footnote, P&P note that they disagree as to the exact structure; the tense problem mentioned in this paragraph is solved by "lexicalist" morphology. In Edmiston & Potsdam (2018), i.a., the projection is simply referred to as YP rather than IP or TP, but the pivot is still referred to as SU[bject]. A full survey is of course beyond the scope of this paper.

9. There is considerable disagreement as to what *no*, pronounced [nu], actually is.

(5) *No*-cleft questions:

a. *Actor pivot (AT)*

Iza no mitazana iboria amin'ny masolavitra androany?
 who NU AT.observe lark with.the telecope today
 'Who is watching the lark today with a/the telescope?'

b. *Theme pivot (TT)*

Inona no tazanin'- dRafansilao amin'ny masolavitra
 what NU TT.observe Mr.Fanselow with.the telecope
 androany?
 today
 'What is Mr. Fanselow looking at with the telescope today?'

c. *Other ("Circumstantial") pivot (CT)*

Taiza no nitazanan'- dRafansilao (ny) iboria omaly?
 where NU CT.observe Mr.Fanselow the lark yesterday
 'Where did Mr. Fanselow see the lark yesterday?'¹⁰

The *no*-construction can also be used to front, i.e. focus, non-WH constituents, e.g. corresponding the question in (5b) we have:

(6) Ny ibora no tazanin'- dRafansilao amin'ny masolavitra
 the lark NU TT.observe Mr.Fanselow with.the telecope
 androany.
 today

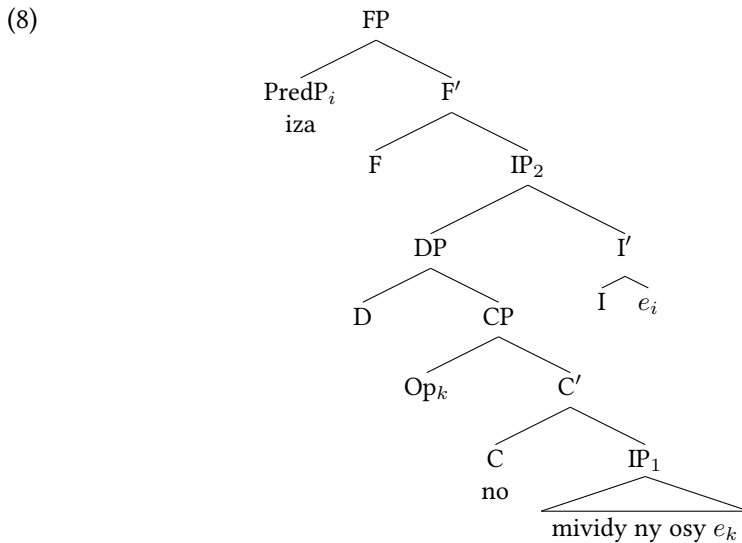
'It's the lark that Mr. Fanselow is watching with the telescope today.'
 or '(What) Mr. Fanselow is watching with the telescope today is the lark.'

Since Malagasy is a predicate initial language, it has been widely argued that the WH-constituent (or non-WH topic) is a predicate and the construction is really a cleft, intuitively, for (5a): "the one watching the lark is who?"—see also the second free translation in (6). There is extensive

10. I've put (5c) in past tense, as the present sounds odd to me.

literature on this; the analysis of the *no*-construction as a pseudo-cleft goes back to Paul (2000, 2001). See some arguments in P and references therein; several variants of cleft-like analyses have been proposed, see for example discussion in Law (2007)¹¹, who presents a similar but alternative analysis. A typical structure is P's (12b):

- (7) Iza no mividy ny osy?
 who NO PRES.AT.buy the goat



(NB: Here pivot CP is in a DP which is a “subject” (pivot) of IP₂.)

3 Merchant (2001, 2013)

Merchant’s approach relies on the combination of matching syntactic structure and mutual semantic implicature. What is the motivation for having (so much) syntactic structure in the ellipsis site? The answer is, empirical phenomena: for example the judgments of active/passive mismatches: allowed with VP-ellipsis, ungrammatical in sluicing. If it were

11. As noted in footnote 7, Erlewine has a different analysis for Toba Batak, but the facts seem to be different for that language.

only a matter of semantics, one might expect both to be acceptable or both to be out. But with elided (unpronounced) structure in the ellipsis site, there is a difference (examples from Merchant 2013); the feature \boxed{E} triggers deletion of its complement:

(9) VP Ellipsis:

- a. The janitor must remove the trash whenever it is apparent that it should be < ~~removed~~ >
- b. Deleted structure matches vP of antecedent:

$$[\text{TP } it_i \text{ [should [be [VoiceP Voice}_{[\text{pass}]}] \boxed{E} < \text{[vP } e_i \text{ [vP remove } e_i \text{]}] >]]]]$$

(10) Sluicing¹²:

- a. *Someone murdered Joe but we don't know by whom < ~~Jøe was murdered~~ e_i >
- b. Deleted structure includes VoiceP_{Pass} and doesn't match VoiceP_{Act} in the antecedent:

$$[\text{CP by whom } C^0 \boxed{E} < \text{[TP } Jøe_i \text{ [was [VoiceP Voice}_{[\text{pass}]}] \text{ [vP } e_i \text{ [vP remove } e_i \text{]]]}] >]$$

As one can see, in “VP ellipsis” only the vP is elided, which matches the VP in the active antecedent; in the case of sluicing, the TP containing VoiceP_{Pass} is elided, which doesn't match VoiceP_{Act} in the antecedent.¹³

Importantly, note that the *content* of the presumed syntactic structure in the ellipsis site need not be literally identical. For example, to avoid Condition C violations, “Vehicle Change”, suggested independently for VP ellipsis by Fiengo & May (1994), is invoked: the elided material is not literally a full noun phrase, but a bundle of pronominal features:

12. Note that the non-sluiced version is OK, with stress on *by whom*.

13. Note that sluicing ameliorates island violations, but English VP ellipsis doesn't; Merchant (2001) argues that certain violations are PF violations, but for others the material sluiced is only the local clause and doesn't include the island; VP on the other hand *contains* the island, and hence is ungrammatical. See sections 5–7.

- (11) The boss fired Fred_i, although he_i didn't know why < ~~the boss fired Fred_t~~ > → < ~~the boss fired him_t~~ >

Here a pronominal is assumed in the ellipsis to avoid the Condition C violation. This differs from the active/passive mismatch: here the pronominal features are assumed to be a subset of the full DP; in the former case, active and passive presumably contradict one another.¹⁴

4 Potsdam 2007; Paul & Potsdam 2012

P discusses a Malagasy construction which looks like sluicing¹⁵:

- (12) Nandoko zavatra i Bao fa hadinoko hoe inona.
 PST.AT.paint thing the Bao but TT.forget.1SG COMP what
 'Bao painted something but I forget what.' [P (18a)]

- (13) Nangalarin' ny olona ny fiarako fa tsy fantatry ny
 PST.TT.steal the person the car.1SG but NEG know the
 polisy hoe iza.
 police COMP who
 'My car was stolen by someone but the police don't know who.'
 [P (18c)]

P refers to it as sluicing, arguing that it differs from Japanese pseudo-sluicing (where the sluice is “what/who_i < ~~it was e_t~~ >”), but explaining that it differs from “true” sluicing in that it doesn't involve WH-movement of the stranded WH element. P&P (2012) simply refer to it as a “Sluicing Like Construction” to emphasize the difference.

Importantly, the pivot can never be an indefinite (for single-argument verbs with indefinite subjects, speakers circumvent this problem by using an existential construction; see below). This means that in a sluicing construction, the antecedent, which needs to have an indefinite XP

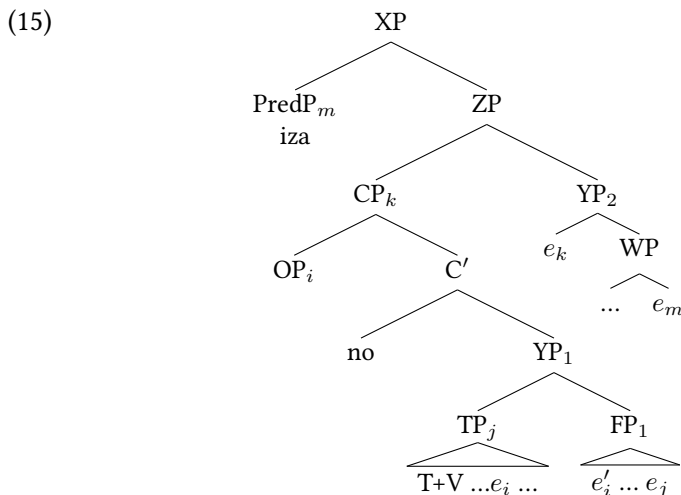
14. Note the problem of non-identical morphology in Malagasy: different voice and the presence of *no* in the sluice. Note Austronesian voice is not two-way, but three or more. See later discussion.

15. I've adapted the glosses to conform with the previous examples.

correlate¹⁶ of the stranded WH-constituent, will necessarily have the indefinite XP located in the “middlefield” between the predicate and the pivot:

- (14) Structure of (13):
 [V ... indef_i ... Pivot], “but” [matrix clause [WH_i < ... ?? >]]

What structure, if any, is in the elided part < ... > ? Unless we want to countenance (distributed) deletion¹⁷ on both sides of the WH-phrase, it would seem that the deleted/unpronounced part must be a *no*-construction. Common to all the various analyses, the *no* and everything that follows it is a constituent. A possible structure for the right-hand clause is then (15).¹⁸



16. Merchant calls the element corresponding to the stranded WH the *correlate*. Note that it may or may not be present in the antecedent clause: e.g., “Gisbert is reading, but I don’t know what”.

17. *Pace* Gisbert (Fanselow & Ćavar 2002). Distributed Deletion is, as far as I know, an as yet unexplored option for Potsdam’s problem.

18. The reader may wonder why CP_k moves from Spec,YP₂ to Spec,ZP; the tree has been simplified, and the projections with post-sentential adverbs mentioned in the text would appear between YP₂ and ZP.

where the OP_i corresponding to the XP_i is the pivot, but its correlate in the antecedent clause is not a pivot.

Note that here the verb morphology *must* be different, at least for argument sluices: the correlate cannot be the pivot, but the stranded WH must be, hence if the verb in the antecedent clause is Theme Topic (“passive”), then the elided verb must be Actor Topic (“active”) and vice versa.¹⁹ Hence if one views the pivot as a true “subject” and AT/TT as active/passive, the question arises as to why the Malagasy construction ignores this mismatch in structure as in English sluices described in the previous section. The answer in P and P&P is that only the semantics counts (mutual entailment), but this raises the question as to why syntactic structure allegedly plays a role in English and other European languages such as German and Greek, discussed in Merchant (2013), but not in Malagasy.

Ch proposes that matching argument structure is crucial for eliding otherwise differing material; we will claim below that this argues for regarding the pivot as an A-bar position, and the argument structure on both sides is then identical, following Ch’s proposal.

5 Chung (2013)

In Chamorro, another Austronesian language, Ch finds, as in Malagasy, another sluicing mismatch, prompting her to revise the (syntactic) criteria for matching. Chamorro has a rather different voicing system from Phillipine-type languages like Malagasy. There are three: active, passive, and antipassive. Active and passive behave much like Malagasy AT-voice and TT-voice, but change the case-marking on the arguments rather than moving one to a “designated” position. Antipassive²⁰ (AntP), basically turns transitives into intransitives, with the direct object realized optionally as Oblique. Generating the appropriate morphological

19. Note that for certain classes of adverbials and PPs, they can be “fronted” via the *no*-construction even when the verb is not in the CT voice. Thus there is still an available pivot which can be “fronted” yielding the much-discussed “bodyguard” construction.

20. Not to be confused with traditional “antipassive” in ergative languages, which turns the structure DP^1 :Erg(Actor) DP^2 :Abs(Theme) into DP^1 :Abs(Actor) DP^2 :Oblique(Theme)—in Chamorro the Actor/subject stays the same.

form from the sort of DP and its Case is rather complex (see Ch's article for details), but here are some samples (UNM = unmarked, basic order VSO):

- (16) a. Ha bisita si Dolores si Antonio.
 AGR visit UNM Dolores UNM Antonio
 'Dolores visited Antonio.' [Ch (8a), active transitive]
- b. Binisita si Antonio (gi)as Dolores.
 AGR_{pass}.visit UNM Antonio OBL Dolores
 'Antonio was visited by Dolores.' [Ch (8b), passive]
- c. Man-bisita si Dolores as Antonio.
 AGR_{AntP}-visit UNM Dolores OBL Antonio
 'Dolores payed a visit to Antonio.'²¹ [Ch (8c), antipassive]

WH-moved DPs lose their case, but are accompanied by special agreement on the verb indicating their function (subject, direct object, adjunct); e.g.,

- (17) Hâyi *gumugu*'ut esti na pattida?
 who? WH_{sub}.support.PROG this L party
 'Who is supporting this party?'²² [Ch (12a)]

Importantly, the oblique objects of antipassive verbs cannot undergo WH-extraction:

- (18) *Hâfa man-li'i' si Juan?
 what? AGR_{AntP}-see UNM Juan
 ('What did Juan see?') [Ch (75c)]

An example of sluicing in Chamorro is as follows:

21. I've changed Ch's translation to convey her final analysis.

22. L = linker, a common element in Austronesian.

- (19) Man-anaitai gui', lao ti hu tungu' [hâfa ____]
 AGR_{AntP}-read.PROG he, but not AGR know what?
 'He's reading, but I don't know what.' [Ch (14b)]

Note that this will turn out to be a problematical example; the antecedent clause is in AntP-voice, but it's unclear what the voice of the sluiced clause is. We return to this later. Ch has examples of ordinary sluices, but most are taken from actually occurring sources and are rather complex for non-speakers of an Austronesian language; a typical example:

- (20) Ha hunguk atyu na bois tâotao i um-a'apatti,
 AGR hear that L voice.L person the WH_{sub}.AGR-divide.PROG
 ti ha tungu' [hâfa ____]
 not AGR know what
 'He heard these voices of people who were dividing (something)
 up, he didn't know what' [Ch (16c)]

This involves a one word relative clause *um-a'apatti*, a transitive verb with an implied object.²³ It is this relative clause that is sluiced: a transitive antecedent and a (presumably) transitive sluice.

Ch also notes that these are true sluices, and not pseudo-sluicing ("Hâyi (gui')" *lit.* who she/he: 'She is who?', like the Japanese "who < it-is >" cases mentioned above): speakers find elided copular sentences peculiar. In addition, there are indeed unacceptable mismatches, which would be unexplained if they just involved deleted copular sentences. Both of the below are grammatical in the unsluiced versions:

- (21) a. Mang-guaiya si Dolores, lao ti hu tungu' [hâyi
 AGR_{AntP}-love UNM Dolores but not AGR know who?
 ha guaiya].
 WH_{obj}-AGR love
 'Dolores is in love (with someone), but I don't know who she
 loves.'

23. The Det *i* presumably introduces the relative, similarly to a *ny+V* construction in Malagasy.

- b. Um-a'andi' si Juan, lao ti hu tungu' [hâyi
 AGR-flirt.PROG UNM Juan but not AGR know who?
 ha andidi'i].
 WH.Obj.AGR flirt.with.PROG
 'Juan is flirting (with someone), but I don't know who he is
 flirting with.' [Ch (21)]

However, the first can be sluiced and the second can't:

- (22) a. Mang-guaiya si Dolores, lao ti hu tungu' [hâyi ____].
 AGR_{AntP}-love UNM Dolores but not AGR know who?
 'Dolores is in love (with someone), but I don't know who.'
 b. *Um-a'andi' si Juan, lao ti hu tungu' [hâyi ____].
 AGR-flirt.PROG UNM Juan but not AGR know who?
 'Juan is flirting (with someone), but I don't know who.'
 [Ch (22)]

Note that in the (a) examples we have an *antipassive* (AntP-voice) with an *implicit* object matching a "sprouted" object of a normal transitive; in the (b) examples we have an *intransitive* verb (*andi*') with an implicit object and a *derived* transitive (*andi'i*). The contrast seems rather puzzling to speakers of European languages, since the "sprouting" of a direct object in English, as in footnote 16, repeated here, is unproblematical:

- (23) Gisbert is reading, but I don't know what.

A clue, which is at the heart of Ch's later argument, is that the English translation of the Chamorro sluice in (22b) without the implied argument given in parentheses is also ungrammatical: "* Juan is flirting, but I don't know who." The real mystery is why the sluice in (22a) is grammatical in Chamorro, since the English translation is just as ungrammatical: "* Dolores is in love, but I don't know who."

There are also passive/active mismatches under sluicing, as in English:

- (24) Esta mang-ginacha', lao ti in tingu' [hãyi gumacha'].
 already AGR-PASS.detect but not AGR know who? WH_{subj}.detect
 'They were caught, but we don't know who caught them.'
 [Ch (27a)]

- (25) *Esta mang-ginacha', lao ti in tingu' [hãyi ____].
 already AGR-PASS.detect but not AGR know who?
 (*They were caught, but we don't know who < caught them >)
 [Ch (28a)]

Unlike the English cases discussed in the previous section, it's hard to find a *syntactic* mismatch, since the passive is inflectional, rather than analytic as in English. They are *semantically* equivalent under Merchant's algorithm for mutual entailment. Ch takes this to mean they have different argument structure (however that is to be represented) and this is the reason for the mismatch.

The same reasoning applies to the forbidden mismatch between intransitives and their *-i*-derived transitive counterparts as in (22b). These intransitives take an optional PP for the other argument, and so one can't license sprouting a direct object DP as there is no match, as opposed to the English example in (23).

Similar remarks apply to Case licensing. Ch assumes that possessors in Chamorro need to be licensed by being "assigned abstract Case that is also responsible for the morphological marking on N (e.g., possessor-noun agreement)" [Ch p. 20]; e.g.:

- (26) i che'chu'-ñiha_i [i Español]_i
 the work-AGR the Spanish
 'the work of the Spaniards' [Ch (41a)]

In addition, possessors can be WH-moved, like their Slavic counterparts²⁴:

24. Note the first AGR belongs to the verb. Interestingly, although ungrammatical in standard English, the translation is attested certain British and Dutch dialects; see Meijer

- (27) Hâyi un fâhan karetâ-ña?
 who? AGR buy car-AGR
 ‘*Who_i did you buy e_i’s car?’ [Ch (42b)]

Note, as with other moved WH-words, the possessor has no inflection. This would seem to allow for sluices involving the possessor, but these are ungrammatical, like the English translation:

- (28) Ilek-ña na guaha ma-yamak karetâ, lao
 say-AGR COMP AGR.exist WH_{subj}.AGR.PASS-destroy car but
 ti hu tungu’ [hâyi ma-yamak karetâ-ña].
 not AGR know who? AGR.PASS-destroy car-AGR
 ‘He said that a car was smashed, but he didn’t tell me whose car
 was smashed’ [Ch (43c)]

- (29) *Ilek-ña na guaha ma-yamak karetâ, lao
 say-AGR COMP AGR.exist WH_{subj}.AGR.PASS-destroy car but
 ti hu tungu’ [hâyi _].
 not AGR know who?
 ‘*He said that a car was smashed, but he didn’t tell me who.’
 [Ch (44c)]

Ch’s explanation is that the Case licenser is lacking in the antecedent, so even though the extraction is valid (28), the sluice in (29) is not. As might be expected, adding an indefinite possessor *karetâ-n tâotao* = car+N someone (“someone’s car”), makes the sluice acceptable. Similar effects obtain with oblique objects, which Ch assumes are PPs; they can’t be “sprouted” unless there is an indefinite in the first clause, see the article for examples.

In the case of English “He said that a car was smashed, but he didn’t say whose”, the WH-word *whose* (really “who+’s”) the determiner *-’s* licenses the *who*. However, the same effect can be recreated in English with optional PPs, etc.; Ch has numerous English examples, which space considerations preclude us from discussing.

(2017). The Russian equivalent of 27, “Чей вы купили автомобиль” (“Chei vy kupili avtomobil?”, *lit.* whose you buy car), is different from Chamorro in that the inflection stays on the moved possessor.

Ch observes that the “matching” part of a sluice is quite local. In a sentence like

- (30) He said that he was annoyed by the fact that she was dating someone, but he refused to reveal who. [Ch (62)]

the matrix elision could be either of (a) or (b):

- (31) a. He said that he was annoyed by the fact that she was dating someone, but he refused to reveal who < ~~the fact that she was dating annoyed him~~ >.
 b. He said that he was annoyed by the fact that she was dating someone, but he refused to reveal who < ~~he was annoyed by the fact that she was dating~~ >.

(In fact the sluice could be just < ~~she was dating~~ e_i >, alleviating the island violation. Merchant (2001), Chap. 5, uses this to explain why sluices tolerate certain kinds of island violations, as noted in footnote 13.)

All of this leads Ch to conclude that there must be two licensing conditions on (the syntactic side of) sluicing (she retains mutual entailment) [Ch (64)]:

- (32) Limited syntactic identity in sluicing (specifics):
- a. Argument structure condition: If the interrogative phrase is the argument of a predicate in the ellipsis site, that predicate must have an argument structure identical to that of the corresponding predicate in the antecedent clause.
 - b. Case condition: If the interrogative phrase is a DP, it must be Case-licensed in the ellipsis site by a head identical to the corresponding head in the antecedent clause.

This brings us back to the problematic example (19) that we started with, repeated here as (33):

- (35) Mpianatra i Ketaka.
 student the [name]
 ‘Ketaka is a student.’ Malagasy, Paul (2001), (17b)

Hence the Case Licensing part of condition (32) will be obeyed vacuously in Malagasy.

What about the argument structure? Consider the typical clause structure of a *no* phrase [(5b), repeated here]:

- (36) a. Inona no tazanin'- dRafansilao amin'ny masolavitra
 what NU TT.observe Mr.Fanselow with.the telecope
 androany?
 today
 ‘What is Mr. Fanselow looking at with the telescope today?’
 b. Inona [_{ZP} OP_i *no* [_{XP} V ... e_i ...]_j [_{YP} e'_i [_{WP} e_j]]]
 (cf. the tree in (15))

We need to ask what the values of XP, etc., really are. There have been several different proposals over the years; for example, is the *no* a C⁰, meaning the OP_i should be on its left, or is it something else, which takes a CP complement? Paul (2001) views ZP, the “subject” of the WH-phrase, as a DP containing the CP as a sort of honorary relative clause, and assumes the *no* is the determiner (her (11a)), but warns that this is a matter of convenience (p. 712):

For clarity, I will gloss *no* as a determiner, leaving for future research to determine which of the above structures are correct for Malagasy.

Kalin (2009) adopts the predicate fronting analysis, but the pivot is in Spec,TP and it's the VP which fronts in (a); consistently, the same structure is used for the *no*-construction²⁶:

- (37) a. [_{FP} [_{VP} ... e_k ...]_i [_{TP} DP_k [_{T'} ...e_i]]]
 b. [_{FP} [_{VP} BE DP_{Top}]_i [_{TP} *no* CP/IP [_{T'} ...e_i]]]

26. Although she is more interested in the semantics of *no*-constructions than its syntax.

Pearson (2001) has a rather intricate structure which space considerations don't allow us to reproduce here, but basically, the WH-phrase, being a predicate, is not generated *in situ*; rather, for consistency, it is a fronted remnant predicate (his PivotP) and the *no*-phrase is a WhP (like CP) of which the *no* is presumably the head and the OP is on its left.²⁷ He continues this approach in Pearson (2005); he doesn't discuss predicate fronting or the *no*-construction at length here, and the pivot is generated *in situ* in Spec,TopP, but it is linked to its base position via an $OP_i e_i$ chain with the OP in Spec,WhP.

In any case, what most of the various analyses have in common is some version of the structure in (2) or (3). The question is how to interpret it; cf. discussion in footnote 8. As noted, if the pivot is interpreted as a "subject", then one could argue that the voice of the verb has indeed changed the argument structure. However, the pivot behaves in many senses like an A-bar position²⁸; and as noted in footnote 6, a "demoted" pivot doesn't disappear (as does the subject in standard passives), it simply appears in what is presumed to be its base position. It has been argued that the voice on the verb simply marks the A-bar movement, as in languages like Chamorro²⁹, so the basic argument structure, TP/vP in (2) or PredP in (3), remains unchanged, fulfilling Ch's criterion.

As mentioned above on p. 192, single-argument verbs are a special case, and speakers circumvent the "definite-pivot" restriction by using an existential construction [P&P (36a)]:

- (38) Nisy olona nihomehy ka nanontany ianao hoe iza
 existed person PST-laugh so PST-ask you C⁰ who
 < Θ_{p_i} no nihomehy t_i >
 NU PST-laugh
 'There was someone who laughed and so you asked who < laugh-
 ed >'

27. One has to be careful with his complex trees since he uses past tense for naturalness, hence there are two *no* morphemes floating around, the other being the past tense on the verb, e.g. *novakinao* = no+vakin+ao "you were reading".

28. There is much controversy about this, beyond the scope of this short article!

29. Although see den Dikken (2017) for a different view.

There is an existential first clause vs. an elided cleft.³⁰ But this is actually less of a problem, since there argument structure doesn't change in the elided material, in fact P&P use this example and don't discuss the "active-passive" mismatch with transitive verbs.

Note, by the way, that the above observations apply vacuously to sluices sprouting adverbials as in P's (75d):

- (39) Nividy gazety ny mpiasa fa tsy fantatro hoe
 PST.buy magazine the worker but NEG know.1SG COMP
 taiza.
 PST.where
 'The worker bought a magazine, but I don't know where.'

Here of course the argument structure is unchanged under any approach.

What about English passives? As is clear, their behavior is quite different: unlike Malagasy, they are analytic constructions, arguably involving two projections, so Merchant's account can remain unchanged.

This approach suggests some tests for future research. One possible test for this approach would be to test for the (un-)grammaticality of Malagasy sluices involving elements which need to be licensed, like possessives. My guess is that they would be sharply ungrammatical (like Ch's Chamorro and English examples), but improve remarkably if there is an indefinite correlate in the antecedent.³¹

Another possible test for this would be PP sluices, cf. P&P's (44)–(45)³²:

30. Cf. English "There was a car in the driveway, but I don't know what kind ~~of car~~ ~~was in the driveway~~ >." The non-matching structure of the DP is beyond the scope of this article; see Merchant (2001).

31. I'm assuming that sluicing would be from sentences with a raised possessor, which could then take part in a *no*-cleft: [marary] ny zanan-dRabe (sick the child of Rabe) → [marary zanaka] Rabe.

32. P&P gloss the tense of *namonoan* as Pass, but note in a footnote that it is actually CT voice. See discussion in text.

- (40) Tamin' inona no namonoan -dRasoan ny akoho?
 PST.with what NU PST.CT.kill -Rasoan the chicken
 'What did Rasoan kill the chicken with?'
- (41) Namono ny akoho tamin-javatra maranitra Rasoan fa
 PST.AT.kill the chicken PST.with-thing sharp Rasoan but
 tsy fantatro hoe tamin' inona.
 not know-1sg COMP PST.with what
 'Rasoan killed the chicken with something sharp but I don't know
 with what.'

We need to note that normally preposition is omitted if the verb is in CT voice (42) and optional in the *no* construction (43):

- (42) Amonoan'ny mpamboly akoho ny antsy.
 CT.kill.DET farmer chicken DET knife
 'The knife is being used by the farmer to kill chickens.'
- (43) (Amin') ity antsy ity amonoan'ny mpamboly akoho.
 (with) this knife this CT.kill.DET farmer chicken
 'This knife, the farmer is killing chickens (with it).'

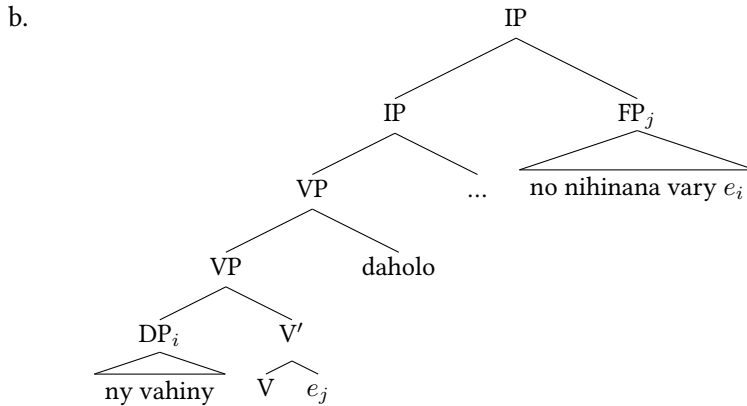
The test would be to see if one could have *inona* in (41) alone without (*t*)*amina* in a sluice both with and without a correlate in the antecedent: without a correlate it should be hopelessly ungrammatical, or nonsensical if *inona* were to be interpreted as one of the arguments in the antecedent; I assume it would be good if the Prep was sprouted on *inona* "what", as in Merchant's examples. The question is whether the ungrammatical sentence with naked *inona* and no correlate would be improved by adding the PP to the first clause. We hope to check this with informants in the near future.

7 Some potential problems

It should be noted that there have been many mutations of the basic structure of the *no*-construction over the years, and Law (2007) argues

that the WH-phrase is not a predicate, but the *subject* of a (silent) copula and the *no*-phrase is the predicate, which, being a full clause, is extra-posed; cf. the tree in (44b):

- (44) a. (*Daholo) ny vahiny (daholo) no nihinana vary (*daholo).
 all the guest all NU ate.ACT rice all
 ‘It is (all) the guests who ate rice.’



One piece of evidence that suggests the focused XP is not a predicate is that DPs with a determiner may not appear in predicate position, but they are fine in the *no*-construction:

- (45) a. *Ny mpianatra i Ketaka.
 ‘K is the student’, wrong meaning; cf. (35) above.
- b. Ny mpianatra no mamaky teny.
 the students NU AT.read word
 ‘It’s the students who are reading’ cf. (44a)

The argumentation in Law’s long article is complex, but if the challenge holds, one needs to reassess the above argumentation.

Another problem which deserves mention is raised by Pearson’s (2001) original approach to voice, where the voices were represented by separate projections (remember, there are at least three), albeit all under TP. Nevertheless under Pearson’s approach, it is the TP which fronts,

hence the same argument presumably holds: one of the arguments is an A-bar trace.

Finally a somewhat problematic aspect is the (hypothesized) appearance of a normally overtly realized functional projection head in the ellipsis site, namely *no*, without correlate in the antecedent clause. Of course, this has no effect on the mutual entailment, nor on the argument structure; its only apparent effect in a normal simple *no*-construction sentence is to allow the entire clause to itself be a pivot (under the cleft approaches).

8 Conclusion

Hence, while there are some wrinkles to be ironed out, it seems that the variant of Merchant's approach proposed in Ch and building on and P&P is a promising avenue to approach the problem of the sluicing(-like) construction in Malagasy.

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Part III

**Information-structural
branch**

Verum focus and negation¹

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1 Introduction

Fanselow (2013) discusses at length several morphological mismatches between parts of discontinuous nominal phrases. For instance, when the quantifier *kein* ‘no’ directly precedes the noun, as in (1a), it is weakly inflected, but in the discontinuous construction, the same quantifier has a strong form, as in (1b).

- (1) a. Ich habe kein-Ø Geld.
I have no.WEAK-ACC money
‘I have no money.’
- b. Geld habe ich keines.
money have I no.STRONG.ACC

In this Festschrift contribution, we take this sentence as the basis of our investigation, but the phenomenon we discuss is a different one: we are interested in the nuclear accent location in (2b), thus the accent on the finite verb, when the sentence is set in the context of (2a).

1. We have written this short contribution for Gisbert Fanselow, a true friend and the best colleague one can dream of. We have consulted some of his numerous friends who have helped us with data of their own languages. All of them are mentioned as informants in the paper.

- (2) a. Ich soll GELD ausgeben?
 I should money spend
 ‘I should spend money?’
- b. Geld HABE ich keines.
 money have I no.WEAK.ACC
 ‘I don’t have money.’
- c. #Geld habe ich KEINES (aber Kinder habe ich
 money have I no.WEAK.ACC but children have I
 viele).
 many
 ‘I don’t have money, but I have many children.’

In (2a), the nuclear accent is placed on the argument of the verb, thus *Geld* ‘money’, as expected by focus projection and default accent placement rules. In (2b), the most natural continuation of (2a) is to put the nuclear accent on the finite verb. In this sentence, *Geld* may be prominent as well, but then it is an aboutness topic. A nuclear accent on *keines* as in (2c) is also possible, but then the reading calls for a contrastive topic on *Geld* and a focus on *keines*. The contrastive topic raises the expectation that *Geld* is contrasted with something else, with *children* ‘Kinder’ for instance, and then the focus on *keines* is also contrastive.

The puzzle we want to address here is how the accent in (2b) ends up on the finite verb, when the sentence is uttered in the context of (2a). It is a puzzle because *ich* and *Geld* are given in (2b) by virtue of being mentioned in (2a), and *habe* is presupposed, since in order to be able to spend money, it is necessary to have some. As a result, all three words should be unstressed. The only new part of the sentence is the negation *keines*. In this case, all focus projection rules we are aware of predict that the negation should be accented.²

A similar sentence in English comes from Ladd (1980) who analyzed the accent placement on *read* in (3) as a consequence of the fact that *book*

2. Note that accentuation is not dependent on the use of a discontinuous nominal phrase, but remains on the verb also in a version with a continuous noun phrase in the same context, i.e. *Ich HABE kein Geld* vs. *#Ich habe KEIN Geld*.

is given because Slaughterhouse-Five is a book. The evident problem is that *read* is given as well, so that there is no compulsory reason to accent this word. Again, the negation is the only new part of the sentence, but in fact, an answer in which the negated part of the sentence is accented, as in (3C), is not well-formed. Here, it is the infinitive verb that is accented, rather than the finite.

(3) A.: Has John read Slaughterhouse-Five?

B.: No, he doesn't READ books.

C.: #No, he DOESN'T/does NOT read books.

An accent on the finite part of a verb, as in (2b), elicits a so-called *verum focus*, so named by Höhle (1988, 1992) who developed the first syntactic and semantic analysis of the phenomenon.³ The next section reviews approaches to verum focus, especially Höhle's groundbreaking proposal. Section 3 discusses the related distinction between *counter-presuppositional* and *counter-assertive* verum focus. Section 4 pinpoints the role of the negation and proposes an account for its unaccented status. In Section 5, a short typological review is proposed where the languages that leave the negation unaccented are compared to those where the negation is accented. Section 6 contains a conclusion.

3. We are not concerned with highlighting of the lexical content of accented verbs, nor any aspect of their conjugational form (such as tense), as exemplified in (i):

(i) A: Rena hat ein Buch geschrieben. 'Rena wrote a book.'

B: Nein, Rena SCHREIBT ein Buch.
 no Rena writes a book
 'No, Rena is writing a book.'

While accents on finite verbs can express both, the difference becomes clear in particle verbs, where contrastive focus on the verbal meaning is expressed by accenting the particle (ii), and when the verb is part of a non-compositional idiom (iii).

(ii) Morgen höre ich mit dem Rauchen AUF.
 tomorrow stop.STEM I with the smoking stop.PARTICLE
 'Tomorrow, I'll stop smoking.'

(iii) Aber ja, sie macht ihm den GARAUS.
 but yes she makes him the GARAUS
 'Indeed, she is killing him.' (Lit: She is making him the *garaus*).

2 Approaches to *verum focus*

The very name ‘*verum focus*’ points to Höhle’s (1988, 1992) emphasis on the expression of truth of a proposition. Höhle relates this expression of truth to a linguistic object *verum* (or *VERUM focus* or *F-verum*) occurring in the syntactic structure of clauses, namely in the left periphery in main clauses, but also in embedded clauses. The function of the accent on the finite verb is to reflect this linguistic object.⁴ Beside the syntactic location of *verum focus*, Höhle insists on its semantic interpretation: “Es handelt sich um einen semantischen Fokus” (Höhle 1992: 113). An example from Höhle appears in (4).

- (4) A.: Ich habe Hanna gefragt, was Karl grade macht und sie hat die alberne Behauptung aufgestellt, dass er ein Drehbuch schreibt.
 ‘I asked Hanna what Karl is doing these days and she made the silly claim that he is writing a screenplay.’
- B.: Das stimmt. Karl SCHREIBT ein Drehbuch.
 ‘It is true. Karl is writing a screenplay.’

Importantly, an expression with *verum focus* needs a context, and cannot be uttered out of the blue. It emphasizes the truth of a proposition or its negative counterpart. Crucially, *verum focus* only appears in contexts in which the proposition can be true or false. Höhle and several authors after him showed that *verum focus* appears in declarative sentences, but also in questions, in imperatives and in embedded clauses, so that an analysis in terms of illocutionary operators is not possible. For reasons of space we do not illustrate this here.

Verum focus has been given particular importance in the research on different polar question forms and their role in expressing bias for a positive vs. negative answer (e.g. compare *Is Moira here?*, *Is Moira not here?*,

4. Höhle’s definition (1992: 144): “In allen diesen Fällen kann man den Effekt, den die Betonung des Verbs hat, einigermaßen plausibel umschreiben, indem man ein Prädikat ‘wahr’ (oder ein Synonym) einführt und als inhaltlich hervorgehoben betrachtet. Ich nenne diesen hervorgehobenen Bedeutungsanteil VERUM und bezeichne solche Fälle als Verum-Fokus.”

Isn't Moira here?, Is Moira here?). Based on Höhle's suggestion, Romero & Han (2002, 2004) formally define an epistemic operator *VERUM*, the use of which in a polar question can be paraphrased as asking the addressee 'Are you sure you want the proposition checked in this question (e.g. *Moira is (not) here*) to be added to the common ground?' (also see e.g. Gutzmann & Castroviejo-Miró 2011; Repp 2013). In this short paper, we ignore the issue of question bias that we consider orthogonal to the polarity issue.

In new dissertations, Samko (2016) and Goodhue (2018) assume that *verum focus* is simply focus in the Roothian tradition (Rooth 1992) and that auxiliary focus represents its clearest case. We follow this tradition here, which is also close to Höhle's original idea. A sentence with *verum focus* consists of a focused part and a given part like any other sentence. Specifically, *verum focus* is F-marking on the polarity head of the sentence and the polarity head is always present. Samko (2016) proposes that *verum focus* emphasizes the truth of the propositional content of a sentence: The alternative to a given affirmative declarative with *verum focus* is the corresponding negative declarative, and vice versa.

3 Counter-presuppositional and counter-assertive focus

As pointed out by Gussenhoven (2007: 92), the dialog in (3) minimally contrasts with (5). In (5), where the nuclear accent is on the negation, the speaker contradicts an immediately preceding assertion, i.e. tries to prevent the addressee from adding this assertion to the common ground. By contrast, the speaker in (3), where accentuation of the verb is preferred, tries to 'de-bug' the common ground by contradicting a presupposition on the part of the addressee (i.e. asking whether John read a certain book presupposes that John reads books in general). Gussenhoven (1983) referred to this difference as counter-assertive (5) vs. counter-presuppositional (3) focus on the polarity of the sentence.⁵

5. Lyn Frazier (p.c.) confirms this difference between the two types of contexts, albeit with other examples. Also see Samko (2016) and Goodhue (2018).

- (5) A.: I'm telling you: John reads books!
 B.: #No, he doesn't READ books.
 C.: No, he DOESN'T/does NOT read books.

Using this terminology, (2) includes counter-presuppositional focus, since, as pointed out above, spending money presupposes that one has it. Interestingly, German differs from English and (2) remains appropriate also in a counter-assertive context, cf. (6c); see Goodhue (2018) for infelicity of (6c) in English. However, we interpret this accent placement as counter-presuppositional.⁶ A simple denial (counter-assertive) is achieved with an accent on *kein*, as in (6b). Moreover, a discontinuous nominal phrase (6d) seems less acceptable in this context regardless of accentuation, showing a further contrast with the counter-presuppositional context in (2).

- (6) a. Aber du hast doch Geld!
 'But you have money!'
 b. Nein, ich habe KEIN Geld.
 'No, I don't have money.'
 c. Nein, ich HABE kein Geld.
 d. #Nein, Geld HABE ich keines / Geld habe ich KEINES.

A further very common example illustrating that counter-presuppositional focus is expressed with a verum focus, i.e. accent on the finite verb, is illustrated by the following sentence. If Gisbert is offering me his telescope in a situation where I can use my own one, I can answer (in a slightly rough way) with *Brauche ich nicht*. 'I don't need it.' With this answer and an accented verb, I cancel Gisbert's presupposition that I need a telescope.

6. That is, this accentuation indicates that the speaker suspects that the addressee is not asking a neutral question, but already assumes the presupposition that the speaker has money to be true. To counter this inferred assumption, the speaker uses accentuation marking counter-presuppositional focus to achieve a 'de-bugging' of the common ground. Intuitions on the distinction between counter-presuppositional and counter-assertive focus can therefore be quite subtle, which may explain Bolinger's (1989: 365–379) assertion that they simply convey a different strength of denial.

Finally, while the distinction between counter-assertive and counter-presuppositional focus narrows down the meaning and function of these sentences, the original puzzle of the accent landing on the verb instead of on the negation remains. In the next section, we propose an element of answer, following Frank Richter's (1993) proposal.

4 Negation

The last components of (2b) in need of attention are the negation and its scope, and, most of all for the purpose of this short paper, absence of accenting of the negation even though it is the only new element of the sentence.

Höhle proposed that a verum focus is felicitous when the only focused part of the sentence is the verum focus itself. In other words, the remainder of the sentence has to be given. As soon as some part of the sentence is new, verum focus is not possible anymore (modulo bridging contexts or weak adverbs). Richter (1993) relates this fact to the scope of the verum focus: everything in its scope must be given. This is the reason why (7B) is a good answer to (7A), but (7C) is not. In (7C), the negation is in the scope of the verum focus, but it is not given (not in the context sentence). In (7B), by contrast, the negation is higher than the verum, as seen in the English paraphrase, and it does not matter whether it is given or not.⁷

(7) A.: Ich hoffe, Anna schreibt endlich ein Buch.

I hope Anna writes finally a book

'I hope that Anna finally writes a book.'

B.: Aber Karl sagte mir, sie SCHREIBT nicht an einem Buch.

but Karl told me she writes not at a book

'But Karl told me that it is not the case that she writes a book.'

7. According to Richter, the difference in interpretation between V2 stress or COMP stress and the negation facts speak for a difference in the syntactic structure of V2 and COMP, COMP needs to be higher in the tree.

C.: #Aber Karl sagte mir, DASS sie nicht an einem Buch
 but Karl told me that she not at a book
 schreibt.
 writes

‘But Karl told me that it the case that she doesn’t write a book.’

In (8), the context contains the negation, rendering it given in the answers B and C. This is why both (8B) and (8C) are good.

(8) A.: Ich hoffe, Anna schreibt nicht etwa ein Buch.
 I hope Anna writes not perhaps a book
 ‘I hope Anna doesn’t write a book.’

B.: (Keine Sorge,) Karl sagte mir, sie SCHREIBT nicht an
 no worries Karl told me she writes not at
 einem Buch.
 a book
 ‘(Don’t worry,) Karl told me that it is the case that she doesn’t
 write a book.’

C.: (Keine Sorge,) Karl sagte mir, DASS sie nicht an einem
 no worries Karl told me that she not at a
 Buch schreibt.
 book writes
 ‘(Don’t worry,) Karl told me that it is the case that she doesn’t
 write a book.’

Notice that (7C) and (8C) are identical in German. There is no need to stress the negation in order to realize a verum focus (here counter-assertive), independently of whether it confirms or denies a positive or a negative sentence: the polarity focus supersedes the simple negation. Not only is there no need to accent the negation in (2), (3) and (7), but accenting it is even wrong, because then the polarity focus may be cancelled, as illustrated in (2c).

To sum up so far, we have made a distinction between two kinds of verum focus: a counter-assertive one, in the spirit of Höhle’s original proposal, where it is the expression of the truth of a proposition that is

focused, and a counter-presuppositional one, where the accent on a verb cancels a presupposition. This distinction was already made by Gussenhoven (1983) to which we add a new component, namely the unaccented status of a new negation. In many cases, it is difficult to tear apart the counter-assertive and the counter-presuppositional functions of a nuclear accent, but in other cases, they can be distinguished. A good test for disentangling both readings is to use negated sentences. The counter-presuppositional focus overwrites the negation: the accent on the verb outranks the newness of the negation which ends up being deaccented. By contrast, the counter-assertive reading assigns an accent to the negation if it is new. However, the counter-assertive reading often contains a counter-presuppositional part, as discussed for (6).

5 Typological comparison

In this section, we explore verum focus including a ‘new’ negation in several languages. The facts summed up in this section are preliminary and need to be extensively researched.

In the counter-presuppositional reading, the Germanic languages Swedish (9), Norwegian (10), Dutch (11) and Danish (12) place the nuclear accent on the verb as seen above for English (3) and German (2); note that a discontinuous nominal phrase splitting up the NP ‘no money’ is not possible in Norwegian, Danish and Dutch in this context. The counter-assertive reading displaces the main accent, that is now preferably on the negation, at least in German, English, Swedish, Dutch and Danish. Norwegian does not change the position of the accent which remains on the verb. In Swedish and in German, a discontinuous NP is not possible anymore.

(9) a. Counter-presuppositional

Pengar HAR jag inga. / Jag HAR inga pengar.
 money.PL have I no I have no money.PL
 ‘I have no money.’

b. Counter-assertive

Jag har INTE mycket pengar. / Jag HAR inte mycket
 I have not much money I have not much
 pengar. / *Pengar har jag inga.
 money money have I no

'I don't have much money.' Swedish (Sara Myrberg)

(10) Jeg HAR ikke / HAKke noen penger.

I have not have.not any money.PL

'I don't have any money.' Norwegian (Kjell Johan Sæbø)

(11) a. Counter-presuppositional

Geld HEB ik niet.

money have I not

'I have no money.'

b. Counter-assertive

Ik heb (juist) GEEN geld

I have (at.the.moment) no money

'(Right now,) I have no money.'

Dutch (Beata Moskal, Paul Dekker)

(12) a. Counter-presuppositional

Jeg HAR ingen penge.

I have no money

'I have no money.'

b. Counter-assertive

Jeg har INGEN penge.

Danish (Cathrine Fabricius-Hansen)

As for Slavic languages, our informants for Polish (13) and Czech (14), but not for Russian (15), agree that the accent is on the verb.⁸ However, since the negation is cliticized to the verb and the stress is penultimate in Polish and initial in Czech, the negation seems to be accented by ac-

8. None of them finds a different accent placement in the counter-assertive context.

cident. In Polish, it is the case when the verb is monosyllabic. As soon as the verb is disyllabic, stress is on the verb.

- (13) Ale ja przecież NIE MAM (żadnych) pieniędzy.
 but I after.all not have.1SG no.PL.GEN money.PL.GEN
 ‘But really I do not have any money.’
 Polish (Joanna Błaszczak)

- (14) Já žádné peníze NEMÁM. / Já NEMÁM žádné
 I no.NCI money NEG.have.1SG I NEG.have.1SG no.NCI
 peníze.
 money
 ‘I don’t have any money.’
 Czech (Radek Šimik)

- (15) У меня нет денег.
 at I.GEN no money.GEN
 ‘I don’t have any money.’
 Russian (Dina Voloshina)

According to the judgments we have obtained so far, the Uralic languages Estonian (16) and Finnish (17) do make a distinction between counter-assertive and counter-presuppositional, though the main prominence does not land on the negation in either case. Interestingly, while a discontinuous nominal phrase is possible in Estonian in the counter-presuppositional context (16b), it is not appropriate in Finnish (17b), but would require a context where other forms of compensation are possible, i.e. *rahaa* ‘money’ is a contrastive topic in (17b), similar to (2c) above. Also note that the Estonian non-inflecting particle *üldse* ‘at all’ attracts stress when it is present, also in the continuous NP (16b). In a counter-assertive context, the discontinuous NP is less appropriate in Estonian as well (16c), like for German and Swedish.

- (16) a. Counter-presuppositional
 RAHA mu-l ei OLE.
 money.PART 1SG-ADE NEG be.CONNEG
 ‘I don’t have money. / I have no money.’

- b. Counter-presuppositional
 Mu-l ei ole üLDSE raha. / Raha
 1SG-ADE NEG be.CONNEG at.all money.PART money.PART
 mu-l üLDSE ei ole.
 1SG-ADE at.all NEG be.CONNEG
 ‘I don’t have any money at all.’
- c. Counter-assertive
 Mu-l ei OLE raha. / Ei OLE
 1SG-ADE NEG be.CONNEG money.PART NEG be.CONNEG
 raha mul. / ?Raha mu-l üLDSE ei
 money.PART 1SG-ADE money.PART 1SG-ADE at.all NEG
 ole.
 be.CONNEG
 ‘I don’t have any money.’ Estonian (Nele Ots)

- (17) a. Mutta mu-lla ei oo raha-a.
 but 1SG-ADE NEG.3SG be.CONNEG money-PART
 ‘But I don’t have money. / But I have no money.’
- b. #Raha-a mu-lla ei oo yhtään.
 money-PART 1SG-ADE NEG.3SG be.CONNEG at.all
 ‘I don’t have any money.’ Finnish (Juhani Järvikivi)

Hindi also makes a distinction between counter-presuppositional (18) and counter-assertive (19) readings. In (18), the default order *nahiiN hai* is also possible. There is definitely some prominence on *hai* in both orders. But in (19), the auxiliary is either unaccented or absent.

- (18) lekin mere paas paisaa HAI hii nahiiN.
 SBJV.1SG me.GEN near money is only not
 ‘But I have no money.’
- (19) mere paas bilkul paisaa nahiiN hai/∅.
 me.GEN near absolutely money not is
 ‘I have absolutely no money!’ Hindi (Rajesh Bhatt)

Turning now to the Romance languages, let us illustrate Italian and French. In both languages, right-dislocation is preferred in such negations implying a verum focus. This is visible because of the clitic doubling *ne* in Italian (20), *en* in French (21). In Italian, both the counter-presuppositional and the counter-assertive reading elicit an accent on the verb.⁹ By contrast, lexical stresses are absent in French (21) and pitch accents on particular words do not have the same role as in languages with lexical stresses and pitch accents. The final word of the prosodic phrase is more prominent by virtue of being final in its phrase. It happens to be the negation in both contexts in (21).

(20) a. Counter-presuppositional

Io non **ne** HO, di soldi. / Io non HO soldi.
 I not of-it have, of money I not have money
 'I have no money.'

b. Counter-assertive

Non HO (molto) denaro. / Non HO acqua.
 not have (much) money not have water
 'I don't have (much) money / water.'

Italian (Vieri Samek-Lodovici)

9. It seems to be quite difficult to find contexts in which the negation can be accented in Italian. Vieri Samek-Lodovici would marginally accept accent on *non* in the second variant of (20b), but find it 'punctillious'. He volunteers the following dialogue which is clearly counter-assertive:

(i) A.: Like all crocodiles, Nile crocodiles keep their eggs in their mouths.

B.: I coccodrilli del Nilo **NON** tengono / non **TENGONO** le loro uova nella bocca. Sono gli unici a non farlo.

'Nile crocodiles do not keep their eggs in their mouth. They are the only ones to not do so.'

- (21) a. Counter-presuppositional
 Moi, dépenser de l'argent? Mais je n'en ai
 me spend PART ART.money but I NEG.PART have
 pas, d'argent.
 no PART.money
 'I should spend money? But I have no money.'
- b. Counter-assertive
 J'en ai pas, de l'argent. / J'ai pas d'argent.
 I.PART have no, PART ART.money / I.have no PART.money
 'I have no money.'

In Japanese (22), the verb and the negative particle form a single phonological word, which receives the main prominence of the sentence, making the classification ambiguous.

- (22) Kane-na'nte (zenzen) MOTTE-NA'I yo.
 money-such.a.thing.like (at.all) have-NEG PRT
 'I don't have any money / I don't have anything like money (I'm telling you).'
 Japanese (Shin Ishihara)

Finally, our two Greek informants disagreed on whether a nuclear accent on the verb is possible, (23a) vs. (24), and whether *lefta* 'money' can be fronted without a salient contrast between money and other things, see (23b) vs. (24). However, both accept a nuclear accent on *katholu* 'not at all' in the counter-assertive reading and agree that stress on the negation is not possible.

- (23) a. Dhen EHO lefta.
 NEG have.1SG money
 'I have no money.'
- b. Dhen eho KATHOLU lefta.
 NEG have.1SG not.at.all money
 'I don't have any money at all.' Greek (Artemis Alexiadou)

- (24) Lefta den exo KATHOLU. / #Lefta den EXO katholu.
 money NEG have not.at.all money NEG have not.at.all
 ‘Money, I have not at all.’ Greek (Stavros Skopeteas)

The strangest expression of a counter-presuppositional verum focus that we found documented in the literature comes from Irish, (25) (Bennett et al. forthcoming).

- (25) A.: Cuir síos é.
 send down it
 ‘Drive it down.’
 B.: Ní rachaidh sé síos.
 NEG-FIN go.FUT it down
 ‘It won’t go down.’

It is a given pronoun that carries the pitch accent of the verum focus. This simple pronoun has been incorporated into the verbal complex, so that they form a prosodic word together, and the default place of the main accent in the prosodic word is the last syllable, and thus on the pronoun. The authors explain the unexpected position of the verum focus accent with “the satisfaction of purely phonological desiderata related to the expression of focus prosody.”

6 Conclusion

We started this short study with a puzzle that we found in a sentence analyzed extensively by Fanselow (2013), see (2b). Besides a discontinuous nominal phrase, this sentence contains a counter-presuppositional focus on the negative polarity of the sentence. The puzzle concerns the nuclear accent that appears on the verb, even though the verb is given and presupposed, and not on the negation which is the only new element of the sentence: The negation remains unaccented. Following the tradition introduced by Höhle (1988, 1992) and others, an accent on the verb denotes a verum focus that can be counter-presuppositional or counter-assertive (Gussenhoven 1983). The sentence (2b) has an unambiguously counter-

presuppositional reading. We propose that the grammatical means to cancel an erroneous presupposition from the common ground are to accent the verb (either an auxiliary or the lexical content of the verb). In such a case, everything that is in the scope of the verum focus must be given, but the negation can survive outside of the scope of the verum focus, without being prominent (Richter 1993). The counter-assertive reading of the same sentence allows the negation to be accented, but this is not possible in the counter-presuppositional reading.

An informal typological survey showed that the same pattern is not only prevalent in Germanic languages, but also appears to some degree in Hindi and outside the Indo-European language family, as for example in Estonian and Finnish. It seems to be impossible in French, a language without lexical stress, and we expect that other languages without lexical stress also use other grammatical means to express counter-presuppositional readings, see Gutzmann et al. (2017) for some examples. We also showed that, in some languages, the phonology can be decisive for the position of the accent and even supersede the semantic needs. Further research is needed to confirm these findings.

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On uninterpretable features

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The image shows a musical score for Olivier Messiaen's 'Petites Esquisses d'Oiseaux'. It consists of two staves, treble and bass clef, in 3/8 time. The score is divided into three sections with different tempo markings: 'lentissimo (♩ = 40)', 'allegretto (♩ = 120) Rouge gorge', and 'moderato (♩ = 88)'. The first section is marked 'p' (piano). The second and third sections are marked 'mf' (mezzo-forte). The score includes various musical notations such as notes, rests, and dynamic markings.

Olivier Messiaen, *Petites Esquisses d'Oiseaux*

One of my favorite topics over the last decade has been the functioning of Discourse Particles (DiPs) in grammar. According to a leading observation, DiPs are root phenomena. Why? The answer is as simple as it might be partially wrong: DiPs modify speech acts rather than propositions. And since speech acts are utterances that involve a speaker, an addressee, a communicative intention on the side of the speaker, and a common ground with the addressee as assumed by the speaker, the root clause has a privilege. This can be seen in question-dependent DiPs like German *denn* (lit. ‘then’) as in

- (1) Wo nistet **denn** der Steinschmätzer?
where nests DENN the northern wheatear
‘Where does the northern wheatear nest after all?’

- (2) *Wer kam nicht auf den Ausflug mit, obwohl der
 who came not on the excursion along although the
 Trompetergimpel **denn** in Hermannswerder nistet?
 Eurasian bullfinch DENN in Hermannswerder nests?
- (3) *Wer weiß, wo die Knäkente **denn** nistet?
 who knows where the garganey DENN nests

(1) is a question. In this question, the speaker asks the addressee where the northern wheatear nests with reference to some common ground between speaker and addressee that must have been established in previous discourse or can be assumed anyway. As indicated by the addition of *after all*, the particle *denn* is in a sense anaphoric to established relevant circumstances under which the question is asked. The adverbial clause in (2) clearly does not count as a question. If anything it may be an assertion which the speaker smuggles in by way of using the proposition that the Eurasian bullfinch nests in Hermannswerder. The clause is embedded in a question, but this fact does not act as a cure. The DiP is in an adjunct island from which there is no escape.¹

The clause in which *denn* occurs in (3) isn't a question either. Formally, it looks like a question because it is initiated by a *wh*-word, but it isn't a question. The matrix predicate *know* determines that the complement is a factive clause for which the matrix clause subject's referent guarantees he/she can supply the list of places which make the open proposition $[\lambda x] x$ a place, the garganey nests in x true. Things change when the matrix predicate is a predicate that signals that there is a desire of the subject's referent to obtain knowledge from the addressee as to how the variable should be filled.

- (4) Gisbert fragte, wo die Knäkente **denn** nistet.
 Gisbert asked where the garganey DENN nests

1. The DiP cannot be moved out of its clause. We can be close to sure that it can never move. According to Bayer (2012) and following work, it is a functional head and as such part of the clause's functional skeleton. As such, it is not a mobile part of speech and cannot be moved anywhere.

- (5) Gisbert möchte wissen, wo die Knäkente **denn** nistet.
 Gisbert wants know where the garganey DENN nests

As a shorthand, we can say that the embedded clause in (4) and (5) is semantically like an embedded speech act.²

So far so good. We start with a central observation that goes back to Bayer & Obenauer (2016), Bayer (2012) and Bayer et al. (2016). The observation is that embedded clauses which by no means count as questions, can nevertheless host Q-sensitive DiPs under the condition that a *wh*-element has been extracted from them. Consider (6) in contrast to (7).³

- (6) Wo glaubt Gisbert, dass der Trompetergimpel **denn**
 where believes Gisbert that the Eurasian bullfinch DENN
 nistet?
 nests

‘Where does Gisbert believe that the Eurasian bullfinch nests after all?’

- (7) *Welcher Ornithologe glaubt, dass der Trompetergimpel
 which ornithologist believes the the Eurasian bullfinch
denn in Hermannswerder nistet?
 DENN in Hermannswerder nests

Syntactic theory has a convincing answer for this contrast: (7) is bad because the DiP is contained in an embedded clause that does not count as a question. In fact, it should be on a par with (2). However, (6) should be good and in fact is good because *wo* originates in the embedded CP and moves to its ultimate position in the root clause only via an intermediate position in SpecCP.

2. See Krifka (2014) and relevant references to previous work.

3. The deviation in (7) may strike some readers to be subtle but Bayer et al. (2016) have shown that it rests on empirically solid ground. Grammaticality judgments get sharper when *denn* is replaced by the clitic element *'n* as it arises in spoken language, s. Bayer (2017). Rather clear evidence also comes from the ambiguity of *schon* between its reading as a temporal adverb and a Q-dependent DiP that is typical in rhetorical questions, s. Bayer (2018).

(8) Wo glaubt Gisbert

[_{CP} wø dass der Trompetergimpel **denn** wø nistet]?

How does this contrast come about? In (8), the Q-dependent DiP *denn* appears to be licensed by the abstract intermediate occurrence of the *wh*-element and not by its matrix appearance. If the matrix appearance were relevant, (7) should be equally well-formed. In (7), the root clause hosts a *wh*-phrase by which it is interpreted as a question. But this does not suffice. The *wh*-phrase originates in the matrix clause and has no touch with the embedded CP, i.e. the minimal domain in which the Q-dependent DiP can potentially reach an interpretation.

(9) *Welcher Ornithologe glaubt ~~welcher Ornithologe~~

[_{CP} dass der Trompetergimpel denn in Hermannswerder nistet]?⁴

Alright. The problem is, however, in which sense the CP in (6)/(8) should be an interrogative licenser. Its embedding verb is strictly incompatible with interrogativity as seen in the ill-formedness of **glauben wo der Steinschmätzer nistet* ('to believe where the northern wheatear nests'), **glauben ob der Wachtelkönig in Hermannswerder nistet* ('to believe whether the corn crake nests in Hermannswerder'). Nevertheless, precisely this seems to be required for a local license of the Q-DiP.

At first blush, the constellation looks paradoxical: On the one hand, the embedded CP in (6)/(8) must be an interrogative in order to license the DiP locally. On the other hand, due to the semantic properties of the matrix verb *believe* it cannot be an interrogative.

For syntacticians, it is intuitively rather clear where the solution to this paradoxical constellation must be searched for. The embedded CP in (6)/(8) is derivationally speaking an interrogative clause only in the step of *wh*-movement to SpecCP. After that, the interrogative interpretation vanishes and is transferred to the root-CP. The root's interpretation as an interrogative is crucial. Example (10) shows that without the *wh*-operator in the root clause, the DiP cannot be interpreted and the derivation breaks down.⁵

4. See footnote 3 on the subtlety of this deviation.

5. The basis of (10) cannot be an embedded *wh*-CP with a somehow deleted *wh*-operator,

- (10) *Gisbert glaubt [CP dass der Trompetergimpel **denn** in
 Gisbert believes that the Eurasian bullfinch DENN in
 Hermannswerder nistet].
 Hermannswerder nests

The paradoxon, I would like to argue, should be resolved with the concept of *uninterpretable feature*. Uninterpretable features were suggested in the Minimalist Program (s. Chomsky 2000: 123), as the driving force that makes a linguistic target of movement “active”. The target uF is “deactivated” and ultimately deleted by entering an agreement relation with an interpretable counterpart iF . Agreement is achieved either by visible movement (pre-spellout) or by invisible movement (post-spellout) which can also be seen as agreement without movement, so-called *probe-goal* agreement.⁶ Adopting the feature sharing version of this theory as proposed by Pesetsky & Torrego (2007), feature interpretability and feature valuation/agreement are independent of each other. An interpretable (i) feature can be unvalued, signaled by empty square brackets [], and an uninterpretable (u) feature can be valued, signaled by some arbitrary number in square brackets, e.g. [7]. Assume now that the dependency of the Q-DiP *denn* on interrogative force is an agreement relation between a force-probe and a particle-goal. Intuitively, it is clear that the particle itself is not interrogative but rather modifies a certain interrogative meaning. Then, (1) works as shown in (11).

- (11) a. [FORCEP WO_{iQ}[] [nistet . . . [P_{RTP} **denn**_{uQ}[]
 [v_P der Steinschmätzer]]]]
 ⇒ AGREE ⇒
 b. [FORCEP WO_{iQ}[7] [nistet . . . [P_{RTP} **denn**_{#Q}[7]
 [v_P der Steinschmätzer . . .]]]]]

for example the element *warum* (‘why’). The deletion would not be recoverable, and therefore the structure would not cease to violate semantic selection by the *believe* predicate.

6. As Koenenman & Zeijlstra (2017: 116) put it, “any clause in which some element carries an uninterpretable feature [uF] requires the presence of a matching interpretable feature [F]; otherwise the clause is ungrammatical”.

Assuming the long-distance dependency in (8), the embedded CP provides the locally accessible probe for the Q-dependent DiP. Beyond this, however, the relevant fact is that the Q-force in CP must be uninterpretable. If it were interpretable, the CP would be a *+wh* CP, and this would disqualify it as a target of semantic selection by the *believe*-predicate *glauben*. Thus, the DiP's relevant probe must be Force \mathbf{wo}_{uQ} []. After agreement with the goal, the output is (12).

- (12) [_{FORCEP} \mathbf{wo}_{uQ} [7] dass [der Trompetergimpel [_{PRTP} \mathbf{denn}_{uQ} [7] [_{VP} . . . nistet]]]]

This CP, alias ForceP, is a proper semantic target for the attitude verb *glauben*. At first sight, this may look irritating, but it should not be irritating. Although the CP is typed as a *wh*-clause, this label does not do any harm to the semantics. Why not? The label lacks a Q-interpretation. The uninterpretable feature uQ [7] in the specifier of ForceP cannot simply be deleted. It is needed for the local licensing of the DiP, and it must be accessible for continued probe-goal agreement in the next cycle.⁷ We can assume that the ABSENCE of such an interpretation is simply compatible with whatever label qualifies for semantic selection by the verb *glauben*.⁸ As (8) shows, the derivation continues in such a way that the element \mathbf{wo}_{uQ} [7] is only an intermediate link in a larger A-bar chain

- (13) \mathbf{Wo}_{uQ} [7] glaubt Gisbert [_{FORCEP} \mathbf{wo}_{uQ} [7] dass [der Trompetergimpel [_{PRTP} \mathbf{denn}_{uQ} [7] [_{VP} . . . nistet]]]]

By virtue of the intermediate licenser, the Q-DiP can enter into a quasi local relation to the highest operator that has a proper illocutionary Q-interpretation. It is important that the Q-DiP is ultimately linked to a real Q-operator. As (3) shows, the pure presence of a *wh*-licenser is

7. When the *vP*-cycle is reached, the edge of the CP-cycle must still be available. The timing of deletion is a complicated issue which I cannot touch here.

8. The usual answer is it must be assertive/declarative. I think this would be at best confusing. These labels are categories from the realm of speech acts. But the CP in question is not a speech act. As such, we can well say that the absence of an interpretable Q-feature yields a propositional default type which does not do any harm to semantic selection by *glauben*.

not sufficient. The *wh*-licenser must ultimately have interrogative force. Munsat (1986) argues that this is not the case in complements of *know*. According to Munsat, there are two complementizers, *Wh-Q* and *wh-that*. *Wh-Q* combines with an information-seeking predicate like *ask*, *wonder*, *want to know* etc. Examples (4) and (5) support this. The factive verb *know* combines with *wh-that* this does not suffice to license a Q-dependent DiP.⁹ In Munsat's proposal, *believe* never embeds an interrogative complement and is therefore automatically $-Q$. Given what we have seen about the licensing of an embedded Q-DiP, we may be inclined to expand his feature system along the lines of *Wh-Q* versus *wh-that*. The complementizer of a *believe* verb can well be $+wh$ as long as it is guaranteed that it is uninterpretable. To build on Munsat's proposal, we can suggest the following remodeling:¹⁰

- (14) a. *ask* $+Q, +wh$
 b. *know* $-Q, \pm wh$
 c. *believe* $-Q, \pm wh$, if *wh* is uninterpretable

Examples like (8)/(13), in which the complement of *believe* hosts a Q-dependent DiP suggest that such a complement must – in some sense – be a *wh*-clause after all.

Syntactic skeptics may deny the existence of intermediate traces altogether. Others may be inclined to deny the relevance of the CP-cycle in long movement for theory-internal reasons.¹¹ If so, my proposal would

9. Munsat does not write about German DiPs, but a relevant observation by him is that *wh-that* does not license NPIs either. One of his examples is **I know why anybody bothers to listen to him* in comparison with the Q-force based *Why does anybody bothers to listen to him?* NPIs and DiPs are both dependents, and their grammars overlap to some extent. It is a relevant research question how to predict their differences. Speaking of “verbs” and their selection may be misleading because selection may change if the verb enters semantic composition. Munsat (1986: 192) points this out with the verb *know* in combination with negation and interrogativity.

10. The feature *wh* must be understood as embracing the operator of polar and alternative questions etc. The distinction does not play a role in Munsat's system.

11. Den Dikken (2009) argues that *wh*-movement to SpecCP is always terminal and cannot be transient. Assuming that *vP* is a phase, den Dikken's proposal is that the *wh*-phrase passes through the *vP*-phase but not through the CP-phase. With this proposal, the licensing of a Q-dependent DiP would need a completely new explanation. The

certainly benefit from independent support in favor of (14c). Fortunately, there is such support. It comes from WH COPY MOVEMENT. In this construction, a word-size copy of the *wh*-element to be moved is visibly retained in SpecCP.¹²

- (15) a. Wo glaubt Gisbert, wo der Wachtelkönig nistet?
 where believes Gisbert where the corn crake nests
 ‘Where does Gisbert believe that the corncrake nests?’
 b. Wo glaubt Gisbert, wo die Ornithologen meinen,
 where believes Gisbert where the ornithologists think
 wo der Wachtelkönig nistet?
 where the corn crake nests

Here, it can hardly be denied that the complement of the verbs *glauben* and *meinen* is formally a *wh*-CP. It is, of course, equally undeniable that in this case the *wh*-complement escapes semantic interpretation of *wh*. The semantic selection requirement of the *believe* predicate remains, of course, what it is. As before, *believe* rejects a semantically interpreted +*wh* CP. This is captured by (14c). Nevertheless, we are not surprised to see that the *wh* copy construction licenses an embedded Q-dependent DiP in exactly the same way as in the long movement construction.¹³

- (16) a. Wo glaubt Gisbert, wo der Wachtelkönig **denn**
 where believes Gisbert where the corn crake DENN
 nistet?
 nests

reason is that DiPs rely on Force, and Force is located in C-projection and not in the *v*-projection.

12. So-called *partial movement* is superficially similar. I leave it aside not only for reasons of space but also because it has given rise to rather controversial analyses (see Fanselow 2006, 2017, Fanselow & Mahajan 2000). For differences between partial movement and copy movement, see Schippers (2010) and Pankau (2013). Copy movement resembles conventional cyclic movement more than partial movement does. Thanks to Andreas Pankau (p.c.) for some clarification with respect to copy movement.

13. A tiny but nevertheless interesting difference is that the overt complementizer *dass* prefers to be missing here. There is an explanation, but for reasons of space, I have to refer the interested readers to Bayer & Brandner (2008), Bayer (2014) and Bayer (2015).

- b. Wo glaubt Gisbert, wo die Ornithologen meinen,
 where believes Gisbert where the ornithologists think
 wo der Wachtekönig **denn** nistet?
 where the corn crane DENN nests
- c. Wo glaubt Gisbert, wo die Ornithologen **denn**
 where believes Gisbert where the ornithologists DENN
 meinen, wo der Wachtekönig nistet?
 think where the corn crane nests

The examples show that the Q-DiP can be licensed anywhere along the copy path. Although, the embedded CP is formally a *wh*-clause and can locally license the Q-DiP via probe-goal agreement, it can do this only on the basis of the uninterpretable *wh*-feature, a formal features that does no harm to the CP's semantic interpretation.

Beyond the observations about uninterpretable features above and agreement in a narrow sense, let me add that grammar is full of stuff that is uninterpretable in systematic ways. In my view, this points to a primacy of form over meaning, see Koster (1988) and Bayer (2017). Mainstream minimalism assumes that uninterpretable material is deleted on the way to the CI-interface. Occasionally it is unclear what that means exactly. A slightly different view may see uninterpretable material as staying because it does not do any harm.

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Accusative Unaccusatives

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This chapter argues, contra Lavine & Freidin (2002), that the so-called accusative unaccusative constructions, found in Slavic languages such as Russian and Ukrainian, do not belong to the category of unaccusatives but are in fact monotransitive structures with the instrumental case assigned to the external argument for interpretive reasons. The claim is based on the argument structure of the predicates used in these constructions and the thematic interpretation of the instrumental argument. It is further demonstrated, contra Lavine & Freidin (2002), that the order of arguments in such constructions is not free but regulated by the Argument Prominence Hierarchy (Titov 2017).

1 Introduction

The so-called *accusative unaccusative constructions* (AUCs), as in (1) and (2), have received some attention in the linguistic literature due to the observation that neither argument in such constructions surfaces in the nominative form, resulting in the default third person singular agreement on the verb (see (1) and (2)). Absence of a nominative argument has led researchers to believe that predicates found in such constructions fail to assign an external θ -role. Thus, Lavine & Freidin (2002) analyse constructions as in (1) and (2) as unaccusative in the sense that they belong to “a class of constructions in which a nominal expression that functions as a complement of a predicate shows up in PF in canonical subject position (i.e. Spec-TP)”.

- (1) a. Vetrom i doždjami sbilo
 wind.INSTR and rains.INSTR knocked-down.3SG.NEUT
 seti.
 nets.ACC
 ‘(The) wind and (the) rain knocked down some/the nets.’
- b. Volnoj oprokinulo lodku.
 wave.INSTR overturned.3SG.NEUT boat.ACC
 ‘A/the wave overturned a/the boat.’
 (Kovtunova 1980: 354, as in Lavine & Freidin (2002: 258))
- (2) a. Soldata ranilo pulej.
 soldier.ACC wounded.3SG.NEUT bullet.INSTR
 ‘A/the soldier was wounded by a/the bullet.’
- b. Podvaly zatopilo livnem.
 basements.ACC flooded.3SG.NEUT downpour.INSTR
 ‘The basements were flooded by a downpour.’
- c. Ženščinu zadavilo kovrom samolëtom v
 woman.ACC crushed.3SG.NEUT carpet airplane.INSTR in
 parke Gor’kogo.
 park.PREP Gorky.GEN
 ‘A/the woman was crushed by a/the flying carpet [attraction]
 in Gorky Park.’ (Московский Комсомолец 9/13/99,
 as in Lavine & Freidin (2002: 258))

The authors claim that AUCs contain no thematic external argument and that discourse-neutral word order is established in them by locating either the instrumental or the accusative complement of the predicate in a preverbal position, as in (1) and (2), respectively. Since neither type of complement has to be discourse linked when preverbal, Lavine & Freidin (2002) conclude that the argument order in AUCs is free, i.e., not regulated by any interpretive demands.

In what follows, I argue that the sentences in (1) and (2) are monotransitive constructions in which the external argument with the Cause thematic interpretation optionally surfaces in the instrumental form to sig-

nal that no controller of the action expressed by the predicate is conceivable. The order of arguments in the resulting SVO and OVS constructions is not free but regulated by the Argument Prominence Hierarchy (APH) (Titov 2012, 2013, 2017).

2 Predicates and their argument structure

By definition, unaccusative constructions contain unaccusative predicates, that is, predicates that are incapable of taking an external argument. If the constructions in (1) and (2) were indeed unaccusative, we would expect both arguments to receive thematic interpretations assigned to internal arguments. Assuming that the accusative argument in (1) and (2) is a Patient, the instrumental argument must be an Instrument, as no other thematic interpretation is conceivable for this argument on the assumption that it is internal. However, a sentence containing an Instrument, as in (3a), presupposes a controller of the action expressed by the predicate, as in (3b), but in an AUC, as in (4), no controller of the action is conceivable (see (4b)).

- (3) a. Ključ otkryl dver'.
 key.NOM opened.3SG.MASC door.ACC
 'The key opened the door.'
- b. Ivan otkryl dver' ključom.
 Ivan opened.3SG.MASC door.ACC key.INSTR
 'Ivan opened the door with a key.'
- (4) a. Vetrom otkrylo dver'.
 wind.INSTR opened.3SG.NEUT door.ACC
 'The wind opened the door.'
- b. *Ivan otkryl dver' vetrom.
 Ivan opened.3SG.MASC door.ACC wind.INSTR
 'Ivan opened the door with the wind.'

In fact, none of the sentences in (1) and (2) can be construed as having an implicit controller of the action expressed by the predicate, making the analysis of the instrumental argument as an Instrument implausible. Thus, in (1) and (2b), the relevant arguments are represented by natural forces, such as ‘wind’, ‘rain’, ‘wave’ and ‘downpour’. In (2a), the argument *pulej* ‘bullet.INSTR’ cannot be analysed as an Instrument because the sentence cannot be construed as meaning that someone wounded the soldier with a bullet. The bullet here is interpreted as a force that is not controlled by any sentient being from the point it has left the gun. Similarly, in (2c), the unlucky woman was crushed by the flying carpet attraction that had gone out of control. That is, the sentence cannot be construed as meaning that someone crushed the woman with the attraction.

Moreover, true Instruments fail to occur in AUCs (see (5)), strongly suggesting that the instrumental argument in these constructions is not an Instrument but a Cause. Crucially, unlike Instrument arguments, Cause arguments can never be internal (compare (3b) and (4b)).

- (5) *Ključom otkrylo dver’.
 key.INSTR opened.3SG.NEUT door.ACC

Hence, an analysis of the instrumental arguments in (1) and (2) as internal is based on nothing but the unusual case they carry. Strikingly, the same arguments can surface in a nominative form, as in (6) and (7), in which case the predicates in (1) and (2) agree with them.

- (6) a. Veter i doždi sbili seti.
 wind.NOM and rains.NOM knocked-down.3.PL nets.ACC
 ‘(The) wind and (the) rain knocked down some nets.’
- b. Volna oprokinula lodku.
 wave.NOM overturned.3SG.FEM boat.ACC
 ‘The/a wave overturned a boat.’

- (7) a. Soldata ranila pulja.
 soldier.ACC wounded.3SG.FEM bullet.NOM
 ‘The soldier was wounded by a bullet.’
- b. Podvaly zatopil liven’.
 basements.ACC flooded.3SG.MASC downpour.NOM
 ‘Basements were flooded by the downpour.’
- c. Ženščinu zadavil kovčer samolët v
 woman.ACC crushed.3SG.MASC carpet.NOM airplane.NOM in
 parke Gor’kogo.
 park.PREP Gorky.GEN
 ‘A woman was crushed by the flying carpet [attraction] in
 Gorky Park.’

Even more strikingly, all of these predicates can take an Agent argument, as in (8) and (9).¹

- (8) a. Deti namerenno sbili seti.
 children.NOM intentionally knocked-down.3.PL nets.ACC
 ‘(The) children have deliberately knocked down some nets.’
- b. Marija namerenno oprokinula tarelku.
 Mary.NOM intentionally overturned.3SG.FEM plate.ACC
 ‘Mary deliberately overturned a/the plate.’
- (9) a. Soldata namerenno ranila medsestra.
 soldier.ACC intentionally wounded.3SG.FEM nurse.NOM
 ‘The soldier was deliberately wounded by a nurse.’
- b. Podvaly special’no zatopil sosed.
 basements.ACC deliberately flooded.3SG.MASC neighbour.NOM
 ‘The basements were deliberately flooded by a neighbour.’

1. The adverbs ‘intentionally’, ‘deliberately’ and ‘accidentally’ in (8) and (9) are used to ensure that the nominative argument is an Agent.

- c. Ženščinu slučajno zadržal voditel'
 woman.ACC accidentally crushed.3SG.MASC driver.NOM
 gruzovika.
 lorry.GEN
 'The/a woman was accidentally crushed by the lorry driver.'

The above observations strongly suggest that we are not dealing with unaccusative predicates. Unaccusative predicates cannot take a nominative argument with the Cause/Agent thematic interpretation together with an accusative argument with the Patient thematic interpretation (see (6)–(9)). Hence, the predicates in (1) and (2) must be transitive. In line with that, all of the predicates in (1) and (2) can be passivized with the Cause/Agent argument occurring in the instrumental 'by-phrase', as in (10) and (11).

- (10) a. Vetrom/doždjami/det'mi byli sbity seti.
 wind/rains/children.INSTR were.3.PL knocked-down nets
 'The nets were knocked down by the wind/by the rain/by children.'
- b. Volnoj/Mariej byla oprokinuta lodka.
 wave/Mary.INSTR was.3SG.FEM overturned boat
 'The boat was overturned by the wave/by Mary.'
- (11) a. Soldat byl ranen pulej/medsestroj.
 soldier was.3.sg.MASC wounded bullet/nurse.INSTR
 'The soldier was wounded by the bullet/by the nurse.'
- b. Podvaly byli zatopleny livnem/sosedom.
 basements were.3.PL flooded downpour/neighbour.INSTR
 'The basements were flooded by the downpour/by the neighbour.'

- c. *Žeňščina byla zadavlena kovrom*
 woman was.3SG.FEM crushed carpet.INSTR
 samolëtom/voditelem gruzovika.
 airplane/driver.INSTR lorry.GEN
 ‘The/a woman was crushed by the flying carpet/by the lorry driver.’

Passivization is only available for transitive predicates that assign an external θ -role, strongly suggesting that the structures in (1) and (2) are transitive and the Cause arguments receiving the instrumental case are external arguments of the predicates. If so, Cause arguments in Russian have the option of occurring either in the nominative or the instrumental case. It follows, then, that morphological case cannot be analysed as merely a morphological reflex of abstract case, at least not in the matter of instrumental case. Instead, instrumental case must be performing some additional function in the sentence.

3 The role of instrumental case

Economy considerations dictate that the nominative/instrumental alternation that is available for Russian Cause arguments is motivated. The position that the present chapter takes is that it is motivated interpretively. That is, the instrumental case is used to signal that no controller of the action expressed by the predicate is conceivable. We have seen that an argument with the Instrument thematic interpretation fails to occur in an AUC and receive instrumental case (see (5)). This is unsurprising, given that such arguments require either an implicit or an explicit controller of the action expressed by the predicate (see (3a) and (3b), respectively). If so, arguments with the Agent thematic interpretation are also expected to fail to occur in AUCs and bear instrumental case. This prediction is indeed borne out (see (12)–(13)).²

2. The sentence in (12a) is marginally acceptable on the construal that some force threw the children onto the nets.

- (12) a. *Det'mi sbilo seti.
children.INSTR knocked-down.3SG.NEUT nets.ACC
- b. *Mariej oprokinulo tarelku.
Mary.INSTR overturned.3SG.NEUT plate.ACC
- (13) a. *Soldata ranilo medsestroj.
soldier.ACC wounded.3SG.NEUT nurse.INSTR
- b. *Podvaly zatopilo sosedom.
basements.ACC flooded.3SG.NEUT neighbour.INSTR
- c. *Ženščinu zadavilo voditelem gruzovika.
woman.ACC crushed.3SG.NEUT driver.INSTR lorry.GEN

Our analysis entails that predicates that occur in AUCs are exclusively predicates that take either an Agent or a Cause argument, with the instrumental case used to disambiguate the construal of the sentence by depriving it of the interpretation involving a controller of the action expressed by the predicate. If so, absolutely any predicate that takes a Cause/Agent argument should be able to occur in these constructions. This prediction also appears to be borne out (see (14)).

- (14) a. Žuravlja zakrylo tučej.
crane.ACC hid.3SG.NEUT raincloud.INSTR
'The crane was covered by a raincloud.'
- b. Čajku zaxlestnulo volnoj.
seagull.ACC swept.3SG.NEUT wave.INSTR
'The seagull was swept by a wave.'
- c. Tsaplju skrylo kamyšami.
heron.ACC concealed.3SG.NEUT reeds.INSTR
'The heron was concealed by the reeds.'
- d. Snegirja priporošilo snegom.
bullfinch.ACC powdered.3SG.NEUT snow.INSTR
'The bullfinch was powdered by the snow.'

hypothesis that I would like to put forward is that the availability of nominative case marking for Russian Cause arguments is due to purely grammatical reasons. To be precise, a Cause argument may occur in structures where instrumental case marking results in ungrammaticality, as in (16b). As can be seen from (16a), the predicate that surfaces in the second conjunct in (16b) can occur in an AUC and take exactly the same arguments. Yet, in (16b), the presence in the first conjunct of an intransitive verb that must agree with a nominative subject renders the sentence with a default agreement on the verb in the second conjunct ungrammatical regardless of the case carried by the subject. This is because an instrumental subject clashes with the requirement of the predicate in the first conjunct to agree with its subject, whereas a nominative subject conflicts with the requirement of the predicate in the second conjunct not to agree with its subject. Given that the requirement for agreement cannot be dropped for predicates like the one that surfaces in the first conjunct in (16b), the grammar of Russian must allow for Cause NPs to enter into an agreement relation with the predicate and thus surface in the nominative form. As expected, a sentence with a nominative subject and an agreeing verb in both conjuncts is grammatical (see (16c)).

- (16) a. Vetrom raspaxnulo okno.
 wind.INSTR threw-open.3SG.NEUT window.ACC
 ‘The wind threw open the window.’
- b. *Veter/Vetrom vorvalsja v komnatu i raspaxnulo okno.
 wind.NOM/INSTR rushed.3.sg.MASC in room.ACC and
 flung.3SG.NEUT window.ACC
- c. Veter vorvalsja v komnatu i raspaxnul okno.
 wind.NOM rushed.3SG.MASC in room.ACC and flung.3SG.MASC
 window.ACC
 ‘The wind rushed into the room and threw open the window.’

4 The Argument Prominence Hierarchy

As can be seen from the data in the previous sections, the order of arguments in AUCs can be either SVO, as in (1), or OVS, as in (2). As mentioned in the introduction, Lavine & Freidin (2002) analyse both orders as neutral and claim that neither order achieves an interpretive effect that is unavailable for the other. In Titov (2012, 2013, 2017), on the other hand, I analyse argument order alternations as regulated by the so-called *Argument Prominence Hierarchy* (APH). On the latter analysis, syntax produces all and only grammatical representations that are filtered out at the post-grammatical level of discourse (Reinhart 1995, 2006). The filtering is regulated by the interface economy, whereby a syntactically marked OVS construction is chosen by the interface system iff it captures an interpretive effect that an unmarked SVO structure with the same numeration and truth-conditional interpretation fails to express.³ The relevant effect has to do with the relative interpretive prominence of arguments. By hypothesis, the interpretive component contains a well-formedness constraint given in (17). That is, there is a requirement for interpretively prominent material to precede interpretively non-prominent material. At the interface between the syntactic and the interpretive component a mapping rule operates that demands transparent mapping of syntactic structures onto the template in (17).

(17) [+prominent] \gg [-prominent]

The syntactically simplest SVO construction must be able to capture the majority of possible configurations related to the relative interpretive prominence of objects (see (18)). After all, this is the unmarked structure that is chosen by the interface economy over the marked structure for its simplicity. It does, however, fail to capture one specific interpretation (see (18d)), in which case interface economy allows for the cheapest unmarked structure to be replaced with a costlier marked construction, as

3. In Titov (2012, 2013), I account for syntactic markedness of OVS constructions by adopting the idea developed in Neeleman & van de Koot (2002, 2012) that scrambled structures are marked with respect to canonical constructions because they involve an inverse order of θ -role assignment, which makes them syntactically costly.

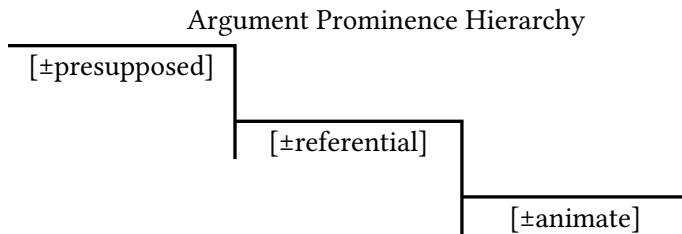
long as the latter captures exactly the interpretation that the unmarked construction fails to express, as in (19).

- (18) a. $S_{[+prominent]} \vee O_{[-prominent]}$
 b. $S_{[+prominent]} \vee O_{[+prominent]}$
 c. $S_{[-prominent]} \vee O_{[-prominent]}$
 d. $*S_{[-prominent]} \vee O_{[+prominent]}$

- (19) $O_{[+prominent]} \vee S_{[-prominent]}$

In Titov (2012, 2013, 2017), I argue that the relative interpretive prominence of arguments is established on the basis of the interpretations on the APH in (20). These interpretations are ranked with respect to each other, with the lowest-ranked [\pm animate] interpretation regulating the order of arguments iff all the higher-ranked interpretations are inoperative, i.e., both arguments carry the same value (either positive or negative) with regard the relevant features, resulting in the configurations in (18b) and (18c).

- (20)



Now that we have outlined the mechanism regulating the mapping from syntax onto discourse, let us apply it to the AUCs in (1) and (2) and see whether the order in them is indeed free or, as predicted by the analysis presented here, regulated by the APH. Since no data in this chapter contain any contextual licensing, the [\pm presupposed] feature that regulates the relative order of focused and backgrounded arguments is inoperative in all of the examples used here. If so, the order of arguments in (1) and (2) can only be regulated by the [\pm referential] or the [\pm animate]

feature. In (1), (2a), and (2c), both arguments can be construed either as referential or as non-referential (see the translations), suggesting that the feature [\pm referential] is also inoperative in these examples, i.e., the structures correspond to the configurations in (18b) and (18c) within the referentiality domain. Whenever these arguments have an equal value as regards the [\pm animate] feature, as in (1), rendering this feature equally inoperative, the unmarked SVO order surfaces because the construal of the arguments is neutralised with respect to all of the interpretations on the APH. Conversely, the OVS order in (2a) and (2c) results from the configuration in (19) within the animacy domain, as the accusative object here is animate and the instrumental subject is inanimate.

The above analysis predicts that the OVS sentence in (2b) that hosts two inanimate arguments is licensed by the feature [\pm referential], as neither [\pm presupposed] nor [\pm animate] are operative here. Indeed, as can be seen from the translation in (2b), the accusative object is interpreted as referential, while the instrumental subject as non-referential. As expected, in the SVO version of this sentence both objects can be interpreted either as referential or as non-referential (see (21)).⁴

- (21) Livnem zatopilo podvaly.
 basements.ACC flooded.3SG.NEUT downpour.INSTR
 ‘A/the downpour flooded (the) basements.’

5 Conclusion

In this chapter I hope to have demonstrated that AUCs are not unaccusative constructions with two internal arguments but monotransitive constructions in which the subject with the Cause thematic interpretation optionally surfaces in the instrumental form to signal that no controller of the action expressed by the predicate is conceivable. The order of arguments in the resulting SVO and OVS constructions is not free but regulated by the APH.

4. There is a tendency for inanimate Cause arguments to be interpreted as non-referential, which results in an apparent link between instrumental case assignment in AUCs and the non-referential interpretation (Titov 2012).

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Beware of ‘discourse markers’

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1 Introduction

The architecture of the human language, in its generative conception (Chomsky 1957), is an exciting, but also a controversial research program. One of the controversies concerns the manner in which information structure (IS) concepts interact with syntax. There are two main opposing views: on the one side, there is the view that “syntax interacts with phonology (and semantics), but not with information structure” (Fanselow 2006: 2). On the other end of the spectrum, the attempt to disassociate IS notions from syntax is seen as tantamount to “radically impoverishing” the latter, see in particular Rizzi (2013).

It is said that someone from the Awing community would be scared to death if she or he ever happened to see an owl; on the other hand, we are told that some citizens of Italy nest rescued owls. If the generative program was just (literary) fiction, one could live a happy life with these opposing ideas with the consolation that one man’s meat is another man’s poison. Unfortunately, this is not the case: we are compelled to be objective and dig deep; and not to rely, say, on the myths that have made the Awing person to believe that owls are omens of death, while the Italians enjoy petting them. The aim of these short notes is therefore to try to encourage linguists, especially those working on languages that have so-called topic and focus markers, to always look deeper and not rely on such IS labels prematurely.

Pollock’s (1989) split IP was an influential proposal concerning functional heads within the IP domain of the clause. In the same vein, Rizzi

(1997) argued that the CP domain does not only indicate the illocutionary force of the clause but involves scope-discourse categories like focus and topic projections. Nonetheless, (many) European languages seem to lack overt scope-discourse morphological elements and when in particular African languages (e.g., Gungbe: Aboh 2004) were described as having overt IS morphological markers, it was like the songbird foreseeing a nest in Africa, and before winter was around, it was already on its way to Africa. According to Rizzi (2013: 201), the “structural view of the expression of scope-discourse semantics is immediately supported by the existence of languages in which the criterial heads are overtly expressed, with overt Q, Top, Foc markers”. But does it actually suffice to see a word which occurs with an IS notion to conclude that they are, say, topic or focus markers? Consider the following examples in Awing:

- (1) a. Alombah ló, Aghetse a pe' ŋ-kə m-fɛ ŋgəsánjə mbo
 Alombah PRT Aghetse SM P1 N-also N-give maize to
 yə.
 him
 Lit.: ‘How about Alombah, did Aghetse also give him maize?’
- b. Ló mbo Alombah pa'a Aghetse a pe' m-fɛ ŋgəsánjə.
 PRT to Alombah REL Aghetse SM P1 N-give maize
 ‘It is to Alombah that Aghetse gave maize.’

We know that syntactic elements have inherent features that determine their lexical specifications. Morphological (strong) features (e.g. a *wh*-feature in languages like English) can determine/enforce the movement of elements within a lower (IP/vP) domain. Proponents of the Cartographic view maintain that topicalized and focalized elements in the C-domain operate within this realm. Taking this view into consideration, we may say that there is a specific feature in (1a) and (1b) that triggers movement of *Alombah* to sentence-initial position, and this can only be the *ló* morpheme. Hence, should we assume that the *ló* morpheme contains both a focus and a topic feature? Descriptively, it is not an issue labeling the *ló* morpheme as topic and/or focus marker—that is, with the sentence-initial topic and focalized element in (1a) and (1b), respec-

tively. However, such tags often obscure core syntactic notions as they presuppose that the focused or topicalized elements are attracted to such positions by the so-called topic or focus markers. If we were to keep aside the (crucial) question as to whether topic and focus markers only show up in the CP domain (to trigger movement of the focused and topicalized phrases)¹, one still wonders how the same morpheme in a given language can perform both roles, as the Awing data seem to suggest. In our opinion, such labels can make researchers ignore another important question, namely whether a morpheme labeled as focus or topic marker in a given language occurs *only* with such scope-discourse categories. The data in (1) already warns us to beware of such words. In the following pages, basing on data like (1) above in Awing and Vietnamese, we will show that so-called ‘discourse markers’—elements that co-occur with IS notions like focus and topic—may not always be directly linked to them.

2 The Vietnamese case

It is well established in the literature on Vietnamese linguistics that the particle *thì* is a topic particle that marks the constituent following it as a topic (Cao 1998; Duffield 2007; Tran 2009; Michaud & Brunelle 2016). Formal analyses couched in the Cartographic view (Rizzi 1997, and consequent work) by Duffield (2007) and Tran (2009) take the particle as the overt head of the Topic Phrase that triggers the movement of the topic constituent from its TP-internal position to the Specifier of the Topic Phrase. An illustrative example is given in (2).

- (2) [TopP Nam_i thì [TP t_i thích bóng đá nhất]].
 Nam TOP like football best
 ‘Nam likes football best.’

1. A lot of languages, including Awing, structurally have such morphemes in the lower domain of the clause (IP/vP). A good example is Aghem, where Aboh (2007) assumes that the lower ‘focus marker’ spells out a lower focus phrase in the spirit of Belletti (2004).

One problem with this analysis is the fact that the topic can stay in situ, as shown in (3). The object NP ‘this fruit’ is construed as topic since, according to Cao, (3) is uttered when the interlocutors are talking about ‘this fruit’ or are looking at it. It is not clear why the topic does not move to the Spec,TopP if Vietnamese projects a Topic Phrase.

- (3) Sóc bay rất thích ăn quả này.
 squirrel fly very like eat fruit this
 ‘Flying squirrels like eating this fruit.’
 (Cao 1991: 95) [gloss and translation mine]

Another problem is that *thì* is not always associated with topic, as demonstrated by the exchange in (4), where the particle follows the *wh*-phrase *ai* ‘who’, and the focus constituent *Nam*, elements known to be highly inadequate for topichood. The question in (4a) is non-canonical in that the object *wh*-phrase *ai* ‘who’ is dislocated from the base position (the post-verbal position). Vietnamese is a *wh*-in-situ language, but licenses *wh*-ex-situ under certain semantic-pragmatic conditions. Essentially, while it is normal to start an exchange with a canonical *wh*-in-situ question, a *wh*-ex-situ question like (4a) cannot be used at the beginning of a conversation, and is felicitous only when it is preceded by a denial or a series of denials of a propositional content of the form ‘you help X’.

- (4) a. Ai_i thì anh giúp t_i ?
 who PRT you help
 ‘Who will you help?’

- (5) a. Nam_i thì tôi giúp t_i .
 Nam PRT I help
 ‘I will help Nam.’

It is equally infelicitous to answer a non-canonical *wh*-question with a canonical word order sentence. As a reply to the question in (5a), it is preferable to use a non-canonical sentence in (5b), where the fronted object NP *Nam*, followed by the particle, is a focus. Interestingly, (5b) can also serve as a natural continuation of a mini-discourse such as ‘As

for generosity, it is not my nature to help anyone, yet...’ A topic-marking particle would not be expected to be felicitous in these contexts.

Furthermore, if this particle were to mark topic, it would be difficult to explain why the particle chooses to accompany a *wh*-phrase, not a topic, in cases where both are left-dislocated, as shown in the following example. Consider a bargaining context in which the seller asks the buyer how much he/she is happy to pay for the merchandise after the customer’s rejections of the price offers given by the seller. This context ascertains that the shirt is the topic. It would be more natural if the topic is dropped in (6b).

- (6) a. Cái áo này_i bao nhiêu_j thì anh mua t_i t_j?
 CL shirt this how much PRT you buy
 ‘How much will you buy/pay for this shirt?’
- b. Bao nhiêu_j thì anh mua cái áo này t_j?
 how much PRT you buy CL shirt this
 ‘How much will you buy/pay for this shirt?’
- c. *Cái áo này_i thì bao nhiêu_j anh mua t_i t_j?
 CL shirt this PRT how much you buy
 ‘How much will you buy/pay for this shirt?’

If *thì* were a topic marker, we would expect (6a, b) to be ungrammatical, and (6c) to be grammatical, contrary to fact. It is therefore plausible to reject the assumption that the particle in question is a topic marker, and propose, following Neeleman & van de Koot (2008), as a first approximation, that it is a discourse template marker. Its function is not to mark topic or focus, but to license their dislocation. This analysis is indirectly supported by the fact that *thì* is not allowed contexts in which the whole sentence is in focus; hence, no dislocation. Cao (1991: 135) observes that *thì* cannot be used with sentences used to respond to questions that trigger all-new focus such as ‘What happened?’ and ‘What’s wrong?’ It turns out, as demonstrated in what follows, that the left dislocation of the information structural categories topic and focus associated with the particle *thì* is licensed by contrast, with contrast being quantificational in the sense of Neeleman & Vermeulen (2012). Consider the case of con-

trastive focus first. Suppose that Nam is required to read five books, and that the conversation is built around the question of which book Nam read. In (7), A informs B of the book that Nam has read. B confirms the information provided by A by uttering either (8a) or (8b), and then adds more information about Nam's reading by using one of the continuations. Adhering to the notational format in Neeleman & Vermeulen (2012), in the examples below, focus elements are in small capitals.

(7) Question (by speaker A):

Nam đã đọc QUÊ NGƯỜI.
 Nam ASP read Que nguoi
 'Nam has read Que nguoi.'

(8) a. First response variant (by speaker B):

Anh biết. QUÊ NGƯỜI_i thì Nam đã đọc t_i.
 I know Que nguoi PRT Nam ASP read
 'I know. Nam has read Que nguoi.'

b. Second response variant (by speaker B):

Anh biết. Nam đã đọc QUÊ NGƯỜI.
 I know Nam ASP read Que nguoi
 'I know. Nam has read Que nguoi.'

(9) a. First continuation variant (by speaker B):

nhưng O CHUỘT_i thì Nam chưa đọc t_i.
 but O chuoat PRT Nam not-yet read
 '...but Nam has not read O chuoat yet.'

b. Second continuation variant (by speaker B):

và thật ra, Nam đã đọc hết năm quyển sách theo
 and in fact Nam ASP read finish five CL book follow
 yêu cầu.
 requirement
 '...and in fact, Nam has read all the five books as required.'

In this context, (9b) is odd as a continuation of (8a), where the focus is left-dislocated, but is felicitous as a continuation of (8b), where the focus is in situ. This is because the contrast component, licensed by left dislocation, in (8a) provides a negative statement that there is at least one alternative to *Quê Người* that does not belong to the set of things that Nam has read. This statement is in conflict with (9b), where the assertion is made that Nam has read all the books required. With the focus in situ, (8b) does not convey any negative statement regarding Nam’s reading, hence the felicity of (9b) as a continuation of (8b). Along the same lines, the felicity of sentence (9a) as a continuation of (8a, b) is obvious. The negative component of (9a) states that there is at least one alternative to *O Chuột* such that this alternative is not contained in the set of things that Nam has not read. This statement is in agreement with both (8a) and (8b).

Consider next another contrastive focus context.

- (10) A tells B about Nam’s shopping habit: what he buys and does not buy.
- a. Nam does not buy pens, Nam does not buy notebooks, but...
 - b. Nam buys cookies, Nam buys chocolate, and...
- (11) a. SÁCH_i thì Nam mua t_i.
book PRT Nam buy
‘Nam buys books.’
- b. Nam mua SÁCH.
Nam buy book
‘Nam buys books.’

The non-canonical word order sentence in (11a), with the focus being left dislocated, is felicitous as a continuation of (10a), where negative statements about the alternative (pens, notebooks...) are provided. Negative statements like this are not present in (10b); hence, the infelicity of (11a) as its continuation. By contrast, the canonical word order sentence in (11b), where the focused object ‘books’ stays in situ, is felicitous as a continuation of (10b), not of (10a).

Now let us look at the case of contrastive topic (CT). Consider the exchanges in (12) a context that triggers CT. For ease of exposition, the focus is written in small capitals, and the CT is underlined>.

- (12) A: Tell me who will help whom. For instance, who will help Mai?
 B: I don't know who will help Mai, but...
- a. BA sẽ giúp Nam.
 Ba FUT help Nam
 'Ba will help Nam.'
- b. Nam_i thì BA sẽ giúp t_i.
 Nam PRT Ba FUT help
 'Ba will help Nam.'

The two sentences in (12a,b) convey the same propositional content, namely that a help-relation holds between the two arguments, represented by two proper names, Nam and Ba, where Ba is the helper and Nam is the helpee. It is obvious from the context in (12) that B is not able to make an assertion about Mai, an alternative to Nam. In this context, (12a), where the CT object stays in the base position, is not felicitous, while (12b), where the CT object undergoes left dislocation, is. It is plausible to assume that similar to the case of contrastive focus, it is the contrast component in CTs that licenses left dislocation. However, unlike contrastive focus, the contrast component in a CT indicates that the speaker for some reason cannot make a claim about alternative topics.

In conclusion, the particle *thì*, characterized in the literature on Vietnamese linguistics as a topic marker, is in fact a contrast marker that triggers the dislocation of the element it associates with, be it topic or focus. Vietnamese as such endorses the Pure Syntax hypothesis, advanced by Fanselow (2006, and consequent work), in that it disproves a direct link between focus/topic and syntax.

3 Back to Awing

In the previous section, it was concluded that the *thì* morpheme in Vietnamese is neither a topic nor a focus marker. In Fominyam (2012), the

lá morpheme is considered a focus marker in Awing. Due to its position, that is preceding the focalized element, it was argued then that the focus phrase in Awing is a two-layered projection (in the sense of Koopman 1997). However, there was no hint about the type of focus: plain, exclusive/contrastive or exhaustive. Now consider example (13). First, note that while it is fine to focalize both the subject and post-verbal elements in their canonical positions in Awing, the usage of the *lá* morpheme in an answer like (13b) is considered inappropriate, that is, when the *lá* morpheme is omitted in the question, as it is the case in (13a). Fominyam (in preparation) argues that *lá* is used with focus only when the focus alternatives are explicit in the context. Hence, if the *lá* morpheme was used with the *wh*-object in (13a), its presence in (13b) will be optional; using *lá* as in (13b) implies that the substitution of the focused element with another alternative will result in a false proposition (Neeleman & Vermeulen 2012). As shown in Fominyam & Šimík (2017), the *lá* morpheme does not mark focus in Awing but rather functions as an exhaustive focus operator in contexts like (13b).

- (13) a. Alombah a ɲaɲnə ká?
 Alombah SM cook what
 ‘What has Alombah cooked?’
- b. A ɲaɲnə (#lá) məkwúnə.
 SM cook PRT rice
 ‘He has cooked rice.’

Taking into consideration the data in (1) and (13) and the conclusion reached in the previous section, there seems to be common features that characterize the use of the Vietnamese *thì* and the Awing *lá* morpheme, namely that they both function, as already mentioned for the Vietnamese case, as a ‘discourse template marker’ and a contrastive operator.

Let us first address the notion of ‘template discourse marker’ with the Awing data. Fominyam (in preparation) argues that although the *lá* morpheme shows up in copular clauses with no overt tense marker as

the copula, the *lɔ́* morpheme is not the copula in Awing.²

In this regard, Fominyam (in preparation) shows that unlike verbs and inflectional categories like tense and aspects, the *lɔ́* morpheme cannot be inflected; for instance, it cannot be prefixed with the homorganic nasal prefix which attaches to inflectional categories and verbs. Moreover, while the *lɔ́* morpheme is relatively mobile in copular clauses, the verb and other inflectional categories have a fixed order.³

It is further shown that the *lɔ́* morpheme in copular clauses associates with both the pre-copula and the post-copula nouns. For example, morpho-syntactically, the *lɔ́* morpheme restricts the kind of elements that can occur to it left. (14b) below shows that when *lɔ́* structurally precedes the tense marker, no personal pronouns (i.e., I, we, they etc.) can immediately precede it.

2. At face value, the *lɔ́* morpheme appears to be the actual copula in example (ia). However, when tense markers are used, the actual copula *pə* 'be' shows up. Notice that a homorganic nasal is prefixed to the copula when it is preceded by the past tense marker, resulting in *mbə*.

- (i) a. Alombah *lɔ́* zé'kə-ŋwa'ró.
Alombah PRT teach-book
'Alombah is a teacher.'
- b. Alombah *yó* *pə* *lɔ́* zé'kə-ŋwa'ró.
Alombah F2 be PRT teach-book
'Alombah will be a teacher.'
- c. Alombah *nə* *m-bə* *lɔ́* zé'kə-ŋwa'ró.
Alombah P2 N-be PRT teacher
'Alombah was a teacher.'

3. The following examples illustrate this:

- (i) a. Alombah *nə* *m-bə* *lɔ́* zé'kə-ŋwa'ró
Alombah P2 N-be PRT teach-book
'Alombah was a teacher.'
- b. Alombah *lɔ́* *nə* *m-bə* zé'kə-ŋwa'ró
Alombah PRT P2 N-be teach-book
'Alombah was a teacher.'

- (14) a. Maŋ nə m-bə ló ndzərə.
 I P2 N-be PRT thief
 ‘I was a thief.’
- b. *Maŋ ló nə m-bə ndzərə.
 I PRT P2 N-be thief
 Intended: ‘I was a thief.’

Another interesting issue with copular clauses in most Bantu languages is the fact that either the pre-copula or the post-copular noun is read as focus (see Zerbian 2006). Awing is no exception to this, as the post-copula noun is always construed as focus in Awing. However, crucially, the position of the *ló* morpheme in (15a) below changes the status of the pre-copula element from a ‘mare subject’, as in (15b), to ‘topic-hood’ status, as in (15a); this mimics the function of a contrastive topic exemplified in (1a).

- (15) a. Ndzə ló nə m-bə maŋ.
 thief PRT P2 N-be me
 ‘The thief was me.’
- b. Ndzə nə m-bə ló maŋ.
 thief P2 N-be PRT me
 ‘The thief was me.’

The discussion on copular clauses in Awing here can be summed up by indicating that not only does the *ló* morpheme associate with the post-copula elements, its presence in copular clauses also conditions, morpho-syntactically and semantically, the pre-copula noun. Other than this function in copular clauses, the *ló* morpheme is also used to form what Fominyam (in preparation) terms ‘information passive’. In such constructions, as shown in (16), the object occurs in a position preceding *ló*, and the subject occurs immediately after the verb (OVS). The object ‘beans’ is construed as topic and the subject ‘Alombah’ as (exhaustive) focus. Fominyam (in preparation) therefore concludes that the *ló* morpheme in constructions like (16) and in copular clauses functions as an ‘information copula’ in the sense that it partitions such clauses into a topic-comment structure.

- (16) Ndzô ló pe' η-kɔ' Alombah.
beans PRT P1 N-eat Alombah

'The beans were eaten by Alombah (...not Hans).'

We have argued thus far that unlike previous proposals, according to which *thi* was considered a topic marker in Vietnamese and *lɔ́* the focus marker in Awing, none of these information structure notions can be linked directly to these elements. Section 2 concluded that *thi* is a contrastive marker. Contrast seems to be a feature that is also present in the contexts in which the *lɔ́* morpheme is used. We already mentioned that *lɔ́* functions as an exhaustive operator in non-copular clauses like (1b); it is no gospel that exhaustiveness is an extreme case of contrast. However, the *lɔ́* morpheme is used in contexts other than the ones presented here, e.g., as an adversative conjunction. Discussing all of them is beyond the scope of this paper, and thus, the position that the *lɔ́* morpheme can be subsumed under the umbrella of a contrastive marker cannot be fully developed here. Nonetheless, to give a taste of the argument, reconsider the example in (1a). (1a) cannot be a statement out of the blue: the topic 'Alombah' is pragmatically opposed or contrasted to an explicit set. To illustrate how this works, (1a) is repeated as (17) below with the appropriate context.

- (17) Context: Aghetse gave maize to her children.

Alombah ló Aghetse a pe' η-kɔ́ m-fɛ ηgəsájó mbo
Alombah PRT Aghetse SM P1 N-also N-give maize to
yə.
him

Lit: 'How about Alombah, did Aghetse also give him maize?'

The presupposition in (17) could be that Alombah (not being one of Aghetse's kids) was present when Aghetse was sharing maize with her kids and the questioner wants to know whether Aghetse also gave maize to Alombah. It could also be that Alombah is one of Aghetse's kids, but he (i.e., Alombah), say, did something wrong and was not expected to have the maize, too. In both scenarios, there is a set of individuals and Alombah is by default excluded from, not necessarily the set, but, a uni-

fying feature within the set. To broaden the picture, further consider example (18).

(18) Context: Aghetse has traveled to all nations on earth.

America *lǎ*, Aghetse a *kǎ* *ŋ-ghɛn* *ǎwǎ*?

America PRT Aghetse SM also N-go there

Lit: ‘How about America, has Aghetse also gone there?’

Given that (18b) is a logical follow-up to the provided context, and that ‘nation’ is quantified by ‘all’, America is naturally included within such a set. However, the topic in (18b), namely America, is considered, say, too ‘prestigious’ for Aghetse to have been there. In other words, contrast here is characterized by isolating an element which is believed to have a distinctive feature within a set. Note that as far as Awing is concerned, we are not claiming that it is the *lǎ* morpheme that licenses the dislocation of the topic to sentence-initial position. It suffices to note here that sentence-initial topic ‘associates’ with *lǎ* and is read as contrastive; just as focus ‘associates’ with *lǎ* and is read as exhaustive—an extreme case of contrast.

4 Conclusion

Our paper is an inconvenient warning regarding the cross-linguistic analysis of discourse markers such as *thi* in Vietnamese and *lǎ* in Awing as topic or focus markers, a descriptive and theoretical content so well established that researchers interested in the issue would find it difficult to view it differently. For instance, in the case of Vietnamese, the supposed topic marker *thi* fits the language typology proposed by Li & Thompson (1976): Vietnamese is a topic prominent language, with the sentence-initial element being marked as the topic. It is therefore natural to embrace the Cartographic view in the study of Vietnamese syntax. However, as evidenced in our paper, information structure is independent of syntax: the dislocation of topic and focus is not triggered by the discourse related feature [topic] or [focus], but by [contrast], a semantic feature with quantificational force. That said, we must note

that there are a few obvious questions that could not be fully addressed here. For example, in Awing, it has been claimed that copular clauses contain a focused element but it has not been shown if the focus in copular clauses is the same as that in non-copular constructions. Moreover, although we mentioned that *lá* in an example like (15a) can change the status of the pre-copula noun to topic-hood, we left out details regarding whether the contrastive feature with the *lá* morpheme associates with the pre-copula noun (the topic) or the post-copula noun (the focus), or both of them. Actually, the notion of ‘association’ has been used in a vague way here (see Fominyam & Šimík 2017 on how *lá* associates with focus in Awing). As mentioned from the onset, our purpose was to create the awareness not to rush into labeling elements that co-occur with information-structural categories as heads of such categories; and with respect to that aim, we believe, the Vietnamese and Awing examples have adequately proven us to beware of ‘discourse markers’.

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Part IV

Empirical branch

Is it a bird? Is it a mammal? Perspectives on the learnability / trainability of new grammatical constructions

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1 Introduction: strange animals, strange constructions – an observer’s perspective

When the second governor of the colony of New South Wales, Captain John Hunter, sent drawings and a skin of a platypus to England in 1797, they caused quite a stir among European naturalists (Hall 1999). The unusual features of the animal – a duck-like beak combined with a body resembling that of a mole, and hence a mammal – defied classification within the biological taxonomies of the late 18th and early 19th centuries. Its combination of characteristics appeared so paradoxical even before the discovery that the platypus also lays eggs and suckles its young, that some believed it to be a hoax: a fabricated specimen with a duck’s bill sewn onto the body of a mole.¹

The story of the European discovery of the platypus is a potent example of how difficult it can be to understand and accept exemplars that fall

1. For a humorous account of this and other occurrences in Australian history, see Hunt (2013).

outside the entrenched expectations of one's normal classificatory system. It illustrates a phenomenon with which we are also confronted in linguistics and which has been a continuing research interest of Gisbert Fanselow's: the question of how speakers deal with constructions outside of their own grammatical inventory and the conditions under which they are able to learn and integrate these into that existing inventory.

In an initial foray into this area, Fanselow et al. (2008) observed something quite extraordinary (though, arguably, not as extraordinary as the platypus must have appeared to late 18th century European naturalists). By simply exposing Northern German speakers to sentence constructions that are unavailable in their native dialectal variety but that are possible, for example, in some Southern German (e.g. Bavarian) varieties, Fanselow and colleagues were able to (implicitly) train them to use these constructions within a matter of 6 to 8 weeks. Strikingly, learning of the complex constructions in question (long-distance *wh*-extractions out of *that* clauses) took place via only two sessions of exposure and resulted in indistinguishable usage patterns to a Bavarian control group as measured via a sentence completion questionnaire.

The authors' proposed explanation for this increasing acceptance of "non-native" constructions and the concomitant increase in their usage was that exposure-based training is possible for structures that are compatible with one's overall grammatical system. In other words: *wh*-extraction out of *that*-clauses is assumed to be possible as part of the grammatical system underlying all German varieties, with regional variation in the scope of extractability being due to extragrammatical factors.

The ease of trainability for *wh*-extractions contrasts with another phenomenon that, in the intuition of the current authors, is considerably more difficult to train: dialectal variation in auxiliary selection in German (for empirical data, see Keller & Sorace 2003). Intransitive "position" verbs combine with *haben* ('to have') in Northern German varieties, but with *sein* ('to be') in Southern German varieties (e.g. *Der Kakapo hat/ist vor der Kamera gesessen*; word-by-word translation: 'The kakapo has/was in-front-of the camera sat'; 'The kakapo sat in front of the camera'). While speakers of both Northern and Southern German varieties are regularly exposed to both variants through the media and literature,

it seems to us that this does not influence usage patterns. This phenomenon clearly differs from the *wh*-extractions discussed above in that it involves regional alternatives to express similar meanings, while an extended scope for *wh*-extractions enriches the construction inventory for Northern German speakers.

Nevertheless, the contrast between the two phenomena raises a number of questions. Where are the boundaries of trainability? What is the best definition of a “grammatical system” and under which conditions is a system or are parts of a system susceptible to training effects? Do acceptance of a construction and its usage differ as a function of exposure or do they always go hand in hand?

In this chapter we will touch upon these questions, which we believe are also still highly pertinent to Gisbert Fanselow’s current research interests. Moreso, however, we would like to discuss three observations from our own work that may be of interest in the context of this line of research. The first two – involving word order and case marking, respectively – stem from language learning studies and touch upon the question of how readily speakers are able to learn constructions that differ in the degree of similarity to their first language (L1). The third, by contrast, returns to the question of how the acceptability of a construction outside of one’s native variety or language is influenced by the conditions under which it is encountered, including the social characteristics of the speaker.

2 Phenomenon one: word order

Word order phenomena are the bread and butter not only of syntacticians, but also of language typologists, and psycholinguists/neurolinguists interested in sentence comprehension and/or language acquisition. As such, they appear ideally suited to addressing questions of learnability and trainability and how these relate to grammatical systems. In a recent study in our laboratory (Cross et al. in preparation), we examined how L1 English speakers learn new word order regularities by exposing them to a modified miniature version of Mandarin Chinese. We chose Mandarin because it has constructions that are (superficially)

highly similar to English (NP–Verb–NP), as well as others that are quite different in requiring a verb-final word order (NP–coverb–NP–Verb). In addition, the overall system introduces (some) flexibility in the relative order of Actor/Subject and Undergoer/Object arguments² that is largely unavailable in English:

- NP–V–NP orders can be either Actor–V–Undergoer or Undergoer–V–Actor
- V-final orders containing coverbs have a fixed argument order that depends on the coverb: Actor–*ba*–Undergoer–V and Undergoer–*bei*–Actor–V. Reversal of Actor and Undergoer is not allowed within these constructions.

Participants (monolingually raised, native speakers of Australian English) first learned the vocabulary of the miniature language via a take-home booklet. They then implicitly learned possible constructions in the lab via pictures depicting transitive events that were accompanied by matching sentences. Following an initial learning session comprising 128 sentences, participants performed a baseline grammaticality judgement task (without pictures), in which they judged whether 288 novel sentences were possible sentences in the miniature language or not. Following a delay period of approximately 9 hours, participants completed a second (delayed) grammaticality judgement task, in order to examine consolidation of the new grammatical knowledge.

For constructions without coverbs, participants showed a reasonably high (~ 70%) accuracy in judging both types of verb-medial sentences as acceptable, and this did not differ between the baseline and delayed sessions. However, accuracy increased in rejecting verb-final orders without coverbs from baseline to delayed testing (to a mean of approximately 75% at delayed testing for both Actor–Undergoer–V and Undergoer–Actor–V). We take this to suggest that interference with participants' L1 impedes consolidation beyond the baseline level. (There also seems

2. Note that we equate Actor and Subject and Undergoer and Object here to make clear that our experiment did not employ constructions suited to differentiating between the two. We do not mean to suggest that the two sets of terms are equivalent.

to be an additional influence of whether participants slept during the delay period or not, which is beyond the scope of this chapter.)

For constructions with coverbs, participants readily learned (again, at a mean level of approximately 70% accuracy) that the basic word order should be verb final, i.e. that the presence of a coverb requires a verb-final order. By contrast, they did not learn the requirements for Actor-Undergoer order for each coverb and thus tended to accept all orders which adhered to the basic NP-coverb-NP-V schema.

In summary, native speakers of English can learn new constraints on verb position quite readily, but have difficulty in learning constructions that don't conform to the strongest (most valid) relational interpretive cue in their L1, namely Actor-before-Undergoer (cf. MacWhinney et al. 1984). Importantly, this experiment revealed an additional dimension of inter-individual differences: statistical learning ability (cf. Daltrozzo et al. 2017) predicted judgement accuracy for grammatical constructions, thus demonstrating that linguistic characteristics are only one influencing factor in regard to the learnability/trainability of new grammatical constructions.

3 Phenomenon two: case marking

A second phenomenon that we would like to discuss in this regard is case marking. In spite of a wealth of research on different case marking systems, very little is currently known about how L1 speakers of one system (e.g. nominative-accusative) learn another (e.g. ergative-absolute, let alone differential case marking systems based on animacy distinctions). With another miniature language learning study (Wang et al. in preparation), we thus aimed to examine whether speakers of a case-marking language (here: L1 German) are able to transfer their relational knowledge about case to a system based on different features.

To this end, we constructed two miniature languages (LG1, LG2) based on Hindi, but manipulated the case marking rules to be dependent on animacy. Both languages followed a *distinguishability*-based strategy to mark U arguments (e.g. Comrie 1989), i.e. animate undergoers are marked in order to distinguish them from actor arguments. This is a

common differential case marking pattern found in a range of languages including Hindi and Spanish (Aissen 2003, von Heusinger 2008, Mohanan 1994). For actor arguments, by contrast, the marking strategies differed between the two miniature languages: LG1 employed an *identification* strategy, i.e. mark prominent, animate actors (de Hoop & Malchukov 2008), while LG2 again used a distinguishability strategy, i.e. mark atypical, inanimate actors. An identification-based actor-marking strategy is attested, for example, in Manipuri (Bhat & Ningomba 1997), while Fore is an example of a language that employs a distinguishability-based strategy (Scott 1978).

The learning and testing paradigm employed was very similar to that utilised by Cross et al. (in preparation), with the exception that there was a slightly longer delay interval (up to three days) between the first and second sessions and that the second testing session was also preceded by a second training session. Furthermore, since training was spread across two sessions, participants were only exposed to 60 (grammatical) sentence–picture pairs per session; with testing sessions involving 120 grammatical and ungrammatical sentences. Participants were monolingually raised native speakers of German.

Results revealed two main observations: (a) judgement accuracy improved from session one (mean accuracy: 85.7%) to session two (mean accuracy: 93.2%); and (b) accuracy was generally higher for LG1 (mean across both sessions: 94.8%) versus LG2 (mean: 84.1%). The increase in accuracy from session 1 to session 2 was comparable across both languages and reaction times (RTs) mirrored the accuracy pattern (i.e. faster RTs for the second session and for LG1). Finally, accuracy values showed higher inter-individual variability for LG2 learners (standard deviation for grammaticality judgements across both sessions was 36.6%, as opposed to 22.1% for LG1).

We interpret these findings as follows. Language 1 offers a relatively easy general learning strategy, namely to mark all animate arguments. (Note, however, that participants still needed to learn the correct markers for actors and undergoers and that this involved correct role identification given that the languages both allowed for argument order variability.) Matters are more complex for LG2, in that participants needed to learn to mark deviations from prototypical transitive constructions in

the sense of Comrie (1989), i.e. from constructions with an animate actor and an inanimate undergoer. Given the complexity of this task and the comparably small number of training sentences, it is quite striking, in our view, that participants were nevertheless able to attain a very respectable level of accuracy for LG2. All in all, then, native speakers of German appear to be able to pick up a new case marking pattern relatively easily, possibly due to the fact that the animacy-based marking system employed here was sufficiently distinct from the German case system.

These observations lead us to several new hypotheses: (a) this case-system learning task should be more difficult for speakers of non-case-marking languages (a hypothesis currently being tested by Luming Wang and colleagues); (b) the task may have been harder for German L1 speakers had a “plain” ergative pattern been employed rather than a differential case marking pattern based entirely on animacy. The reasoning for (b) is that learning an ergative system requires speakers with an accusative L1 to switch alignment patterns from S/A versus P to S/P versus A, which should result in a higher degree of interference from the L1 than the animacy-based case-marking rules employed here. Initial evidence for this claim stems from a previous study of ours on the processing of case marking and aspect in Hindi Choudhary et al. (2009), in which we observed an unexpected acceptability asymmetry for aspect-case mismatches. Specifically, while grammatical descriptions of Hindi (e.g. Mohanan 1994) state that A arguments should be marked with ergative in perfective constructions but remain unmarked (i.e. absolute/nominative) in imperfective constructions, mean acceptability ratings for sentences containing ungrammatical nominative marking in a perfective context yielded a mean acceptability of 31%, compared to just 8% for ungrammatical ergative marking in an imperfective context. We speculated that this asymmetry may reflect the exposure of native Hindi speakers to speakers with other (non-ergative) language backgrounds. As (at least some of) these speakers have difficulty with ergative case marking, they tend to use nominative where ergative is required, thus rendering nominative-A in a perfective context an attested construction, while speakers virtually never encounter ergative-A in an imperfective context. In the next section, we elaborate on the potential

consequences of this finding for the training conditions under which individuals most readily learn new grammatical constructions.

4 Optimal training conditions?

Choudhary et al. (2009)'s observation of a higher acceptability for supposedly ungrammatical constructions in Hindi which are used by non-native speakers without an ergative language background is in line with results by Hanulíková et al. (2012). These authors found qualitatively different electrophysiological brain responses in native speakers of Dutch for ungrammatical Dutch sentences that were recorded by a speaker with a foreign accent (in comparison to a native speaker). Results such as these attest to a hearer's ability to adapt their grammatical expectations to their assumptions about the speaker's language background. This suggests that the acceptability of structures that are normally deemed unacceptable within a linguistic in-group should increase when they are produced by speakers who can clearly be attributed to the region/language background that is congruent with the construction in question.

With this, we return to the regional variation in auxiliary selection that was discussed at the beginning of this chapter. To examine whether the acceptability of *haben/sein* selection would vary depending on the provenance of the person uttering the sentence in question, we asked participants from Northern versus Southern Germany to listen to sentences that were recorded by a Northern and a Southern speaker, respectively (Philipp et al. in preparation). In order to emphasise the regional background of the speakers, the experiment commenced with a short (fictional) recording, in which each speaker introduced themselves and where they were from. For the regionally varying position verbs (see above), we observed an intriguing – and unexpected – pattern. Firstly, there was a general difference between participants from Northern and Southern Germany, which resembles the results from Keller & Sorace (2003): while Northern participants showed a clear preference for *haben* versus *sein*, Southern participants judged both variants to be equally, but only modestly acceptable (mean acceptability ratings between 63% and 73%). Secondly – and this was the unexpected result – neither group

showed an influence of speaker provenance on their acceptability ratings. Thus, while participants' own linguistic experience and thus their exposure to these constructions clearly influenced their acceptability judgements, they appeared to "ignore" their explicit knowledge about the distribution of the two auxiliaries in relation to a speaker's regional origin.

This could reflect a number of different influences, which we can't disentangle on the basis of the current results. It is, of course, entirely possible that the preference for *sein* in Southern listeners is weaker than the preference for *haben* in Northern listeners, as already suggested by Keller & Sorace (2003)'s results. However, to demonstrate this, one would need to examine whether there is an equivalent asymmetry in production – which we doubt, though this has not, to the best of our knowledge, been investigated in conjunction with acceptability ratings to date. Stipulating, then, that Southern German speakers have a preference for the production of *sein* but no strong preference in their acceptability judgements (in contrast to Northern German speakers), this suggests a political influence of perceived language prestige, with Northern dialects typically (and, of course, arbitrarily from a linguistic perspective) referred to as "standard" or "high" German. A similar conclusion might be drawn for Choudhary et al. (2009)'s results on Hindi.

All in all, these results highlight the multiplicity of influences on potential training scenarios. On the one hand, there is evidence to suggest that speaker identity plays a role in determining the acceptability of (normally) unacceptable structures (Hanulíková et al. 2012). On the other, our results on auxiliary selection in German indicate that potential speaker-based influences cannot be examined independently of the socio-linguistic circumstances in which the grammatical variability in question occurs.

5 Final remarks

Fanselow et al. (2008)'s suggestion that we may be able to push the boundaries of a grammatical system via exposure to new constructions remains extremely intriguing. Inspired by this proposition, we have

examined some of the potential complexities involved in testing out these boundaries. From our perspective, the ability for exposure and training to increase acceptability appears to transcend varieties of the same language system and, in certain circumstances, even be hindered by interference from one's current grammatical system (cf. the notion of "transfer" in L2 learning, e.g. MacWhinney 1992). However, this of course concerns the learning of a new language and is thus not fully comparable to the situation examined by Fanselow et al. (2008). Nevertheless, we have also observed certain tendencies towards rigidity within one language system, as attested to by the auxiliary selection data from German. In combination with approaches to inter-individual variability (recall the results by Cross et al. and correlations with statistical learning ability), these types of studies open up an entirely new field.

We suggest that learning and training paradigms present a fruitful approach to understanding the capacity of language systems – and their various subcomponents – to be modulated by exposure. Structured exposure to different groups with different language usage patterns could be an interesting new addition to this type of learning paradigm, allowing it to be adapted to study training effects within an individual's L1 as opposed to the learning of a completely new system. This type of approach could be extended to examining language change, by allowing us to observe language systems *in statu nascendi*. While we will not be able to explain in this way how innovation arises, such paradigms may be able to provide insights into the conditions under which innovations spread and thrive.

We would like to conclude by thanking our mentor, Gisbert Fanselow, for inspiring us to work on fascinating topics such as these, for always being open to new ideas and approaches and for his selfless support. Happy birthday, Gisbert, and all the very best for many happy and productive years to come!

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Im Korpus gibt's keine Vögel nicht: A corpus study on Negative Concord in Eastern German dialects

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1 Introduction: Negative Concord in German dialects?

Standard German is typically classified as a language without negative concord (NC) (Haspelmath 2013). This is illustrated in (1a), which standardly only allows for the double negation reading. This classification does not extend to all German dialects and regional (sub) varieties of German, though. Weiß (1998) shows, for instance, that Bavarian sentences with more than one negative expression only have a single negation (= NC) reading, and Zimmermann (2007) reports that NC-readings with two n-words are also attested (under emphasis) in the North Saxon variety of Low German. Accordingly, (1b) has an NC-interpretation with simple negation.

- (1) a. **Niemand** hat **nichts** gekauft.
nobody has nothing bought
'Nobody bought nothing.' = 'Everybody bought something.'
[Standard German]

- b. NÜMS/keenEEN hefft NIX köfft.
 nobody has nothing bought
 ‘Nobody bought anything.’ [Low German, North Saxon]

In this squib, we will approach the phenomenon of dialectal variation in the availability of NC from the perspective of language contact, following ideas in Fleischer (2015). Based on an evaluation of Wenker sentence 12, Fleischer (2015: 203f.) demonstrates a possible contact phenomenon concerning the possibility of prodropping the 2nd SG subject *du* ‘you’ in *wh*-interrogatives: In contrast to other dialects, the Southern and Eastern German dialects readily allow for such prodrop, thereby patterning like neighboring languages from Central and Southern Europe (Czech, Romanian, Lithuanian, ...), for which prodrop is characteristic. A plausible hypothesis is that prodrop is an areal feature of Central and Eastern Europe, which spread under prolonged language contact in the times of the multi-ethnic Prussian and Habsburg empires.

The question raised in this article is whether the same can be said for NC. That is, do the more eastern varieties of German exhibit NC on a regular basis? If so, NC in Eastern Central Europe may also be an areal feature that has spread under language contact from neighboring Slavic languages, all of which are consistent NC-languages. NC is illustrated for Polish and Czech in (2a) and (2b), respectively. According to Błaszczak (2005) and Dočekal (2015), the morphologically negative constituents in (2) are indefinite expressions in need of licensing by sentential negation; see also Zeijlstra (2004) for related discussion.

- (2) a. Eva nie pokazała nikomu tego artykułu.
 Eva NEG showed.3SG.F nobody this article.GEN
 ‘Eva didn’t show this article to anyone.’
 [Polish] (Błaszczak 2005:182)
- b. Žádný strach, ten pták ti nic neudělá.
 no fear the bird you.DAT nothing NEG.do.PFV
 ‘No worries, the bird won’t do anything to you.’
 [Czech] (Radek Šímík, p.c.)

- c. Nenašel jsem žádně ptáky.
 NEG.found.PTCP be.1SG no.ACC.PL birds.ACC
 ‘I didn’t find any birds.’ [Czech] (Radek Šímík, p.c.)

The empirical focus of this squib is on the dialects spoken in the eastern parts of the German language area before 1945, mainly Low Prussian (Eastern Low German) and Silesian (Eastern Middle German). In addition, we will also consider the dialect from the Sudeten mountains in Northern Bohemia (East Franconian) and island dialects from Central Eastern Europe, such as formerly spoken in the Baltic states, Czechoslovakia, Romania and the former Soviet Union.

Section 2 presents the results of a preliminary corpus study on the DGD-subcorpus *OS: Deutsche Mundarten: ehemalige deutsche Ostgebiete* (section 2.1) and on an IDS-based corpus of Russian German dialects (section 2.2). It will be shown that the Eastern dialects do indeed differ from Standard German by exhibiting NC-phenomena on a regular basis. However, they also differ from their Slavic neighbors, possibly under pressure of the German standard, in that NC is not obligatory. In section 2.3, we will discuss two possible reasons for the emergence of NC in Eastern German dialects, and tentatively argue for an explanation in terms of language contact. In section 3.1, we will then compare the corpus results from section 2 with the findings of a small survey of Wenker sentence 39 at various randomly sampled data points in East and West Prussia and Silesia. In contrast to the free production data from section 2, the elicited Wenker sentences provide almost no evidence for NC in the Eastern dialects. Possible reasons for the non-convergence of the data will be discussed in section 3.2. Section 4 concludes.

2 NC in Eastern German dialects: A pilot corpus study

This section presents qualitative and quantitative findings on the emergence of NC from two corpora of Eastern German dialects. The corpora consist of transcribed recordings of free interviews in natural spontaneous language with native dialect speakers. The interviews consist of

conversations on a variety of topics, such as personal and family history, everyday life, customs and holidays. The corpora are available online and can be electronically queried to some degree.

2.1 The DGD-subcorpus OS: Qualitative findings on the availability of NC

In this section, we present some qualitative findings from the corpus *OS: Deutsche Mundarten: ehemalige deutsche Ostgebiete*, available in the DGD-database at <https://dgd.ids-mannheim.de>. Drawing on representative examples, it will be shown that NC is readily attested in the Eastern Low German variety of Low Prussian, in Silesian, as well as in other Eastern varieties.

The corpus contains 981 audio recordings from between 1962 and 1965 with 987 elderly native dialect speakers that were resettled to West Germany after WWII (total duration: 462 hours and 5 minutes). The corpus thereby provides representative data from the (South)Eastern German dialects from before 1945. The approximate numbers of speakers from each dialect area are as follows: Eastern Low German: 203, among which 119 speakers of Low Prussian; Silesian: 267; East Franconian (Sudeten): 7; Saxonian: 1; other (e.g. language islands): 503. The OS-corpus is searchable for tokens and token strings, and a query language allows for searching for co-occurrences of words within a given distance, and with a given ordering. It is also possible to search for non-co-occurrences, but this feature is somewhat hampered—same as the distance search—by the fact that the search is over entire documents, i.e. mostly longer texts, and by the fact that the co-occurrence search lists all individual words as hits. A proper quantitative analysis is therefore beyond the scope of this paper. It was also difficult to search for negative words, such as *nemand* ‘nobody’, *nichts* ‘nothing’, *kein* ‘no’, when these do not co-occur with the sentential negation marker *nicht* ‘not’, as simple negation was found in all of the documents.

Still, the search for strings of the form *n-word nicht* as well as more complex queries for co-occurrences of the negative determiner *kein(e/en/em)* ‘no’ and negation marker at a distance (e.g. *NEAR((kein,nicht),4,true)*) delivered many instances of NC in Low Prussian, Silesian, as well

as in various island varieties. Representative findings for the different dialects are shown below.

The query for *niemand nicht* ‘nobody not’, *NEAR((niemand,nicht),4,true)*, and *keiner nicht* yielded a total of 12 finds, illustrated in (3) and (4) (transcriptions in Standard German!):

- (3) a. es war ja finster gewesen, es [hat] uns **niemand nicht** gesehen.
 ‘It had been dark, you know, nobody saw us.’
 [Kuhländchen, OS-E_00084]
- b. am Heiligen Tag durften wir **niemand nichts nicht** machen
 ‘On Christmas Day, we were not allowed to do anything.’
 [Silesian, OS-E_00238]
- c. denn **niemand** kann **nicht** zeigen
 ‘since nobody can show.’ [Silesian, OS-E_00231]
- (4) a. Gesehen hat ihn **keiner nicht**.
 ‘Nobody has seen him.’ [Low Prussian, OS-E_00248]
- b. es war aber auch **keiner nicht** geizig
 ‘But nobody was tight-fisted.’ [Sudeten OS-E_00179]
- c. bei uns Tanz war **keiner nicht** bei uns
 ‘There was no dance at our village.’ [Silesian, OS-E_00055]
- d. wo sie **keiner nicht** sah
 ‘where nobody saw her’ [Baltic?, OS-E_00604]

(3b) shows that more than one n-word can be licensed by the sentential negation *nicht*. (3c) shows that there can be intervening material between n-word and negation.

The query for *nichts nicht* ‘nothing not’ and *keins nicht* ‘no(thing) not’ yielded a total of 17 finds, some of which are shown in (5). Notice in passing that Low Prussian (5b) allows for prodrop with 3SG subject pronominal, in line with the considerations in Fleischer (2015).

- (5) a. haben aber **nichts nicht** gesehen
 ‘but we didn’t see anything’ [Silesian, OS-E_00045]
- b. Und für die Schafe gab ja **nichts nicht**
 ‘And there was nothing for the sheep.’
 [Low Prussian, OS-E_00251]
- c. es gab auf der Welt gar **nichts nicht**, was die nicht
 wußten
 ‘there was nothing at all in the world that they didn’t know’
 [Bielitzer Sprachinsel, OS-E_00183]
- d. Rausgetraut hat sich von uns **keins nicht**.
 ‘Nobody among us dared to go out.’ [Silesian, OS-E_00045]

The most frequent NC-pattern is attested with combinations of the form *negative determiner kein(e/en/em/er) + NP + [...] + not*. The corpus contains many instances of this pattern, as illustrated in (6ab) for Silesian, and in (6c) for Low Prussian (with an elided object NP):

- (6) a. **kein** Schiff fuhr **nicht**, **keine** Bahn fuhr **nicht**.
 ‘There was no ship and there was no train.’
 [Silesian, OS-E_00221]
- b. ich hatte **keine** große Passion **nicht** dran am
 Schlittenfahren
 ‘I didn’t get a great kick out of sledding.’
 [Silesian (Debau), OS-E_00011]
- c. und wenn **keine nicht** waren, [...], dann konnte **keiner**
nicht fangen
 ‘and when there were none [...], then nobody could catch (any).’
 [Low Prussian, OS-E_004919]

We conclude the qualitative survey with finds for the strings *nirgends nicht* ‘nowhere not’ (4, including *nirgends nichts* ‘nowhere nothing’, cf. also (11)), and *niemals nicht* ‘never not’ (1 find).

- (7) a. wir konnten sie **nirgends nicht** finden
 ‘we couldn’t find them anywhere’
 [island Moravia/Ostrau, OS-E_00084]
- b. wir sind **nie**, haben **nie nicht** schorfig gewesen
 ‘we have never been scabby’ [Low Prussian, OS-E_00270]

Turning to structural generalizations and the syntax of the construction involved, the linear order is n-constituent \prec NEG (*nicht*) in the vast majority of cases. There were no findings of the sequences *nicht niemand*, *nicht keiner* ‘not nobody’, *nicht nichts*, *nicht keins* ‘not nothing’, *nicht nirgends* ‘not nowhere’, or *nicht niemals* ‘not never’, and altogether only six hits for the sequence *nicht kein(e)* ‘not no’, as illustrated in (8).

- (8) Brauchten wir **nicht keine** Kohlen.
 ‘We didn’t need any coals.’ [Silesian, OS-E_00119]

Moreover, a superficial glance at the data suggests that in the majority of cases the n-constituent is adjacent to the following negation. This would suggest movement of the n-constituent to the specifier of NegP for checking an uninterpretable NEG-feature (Zejlstra 2004). In this position, the negative cluster typically follows all given material and also discourse particles located at the left edge of the verbal projection cf. *ja* in (5b). From SpecNegP, n-word or no-DP can subsequently move on to the prefield in order to satisfy additional information-structural or prosodic requirements (e.g. Fanselow & Lenertová 2011), as seen, for instance, in (6a) with two contrastively topicalized no-DPs, and in (4c) with a split negative NP! The tentative structures for midfield and prefield occurrences of n-constituents are given in (9).

- (9) a. [TP ...[NegP n-DP_[uNEG] [nicht_[iNEG] [VP ...<n-DP> ...]]]]
 b. [CP n-DP C [TP ...[NegP <n-DP>_[uNEG] [nicht_[iNEG] [VP... <n-DP>...]]]]]

We conclude this section by pointing out that NC is optional in the Eastern German dialects, unlike in the contact languages Polish, Czech or

Russian. The overall number of finds is relatively small compared to the overall size of the corpus, and of course, there are many cases in which the n-constituent occurs alone, without sentential negation, such as (10):

- (10) macht zu, Luft kommt hinein, es darf **keine Luft**
hineinkommen
'Close it! There's air coming in. There must not be air coming in.'
[Silesian, OS-E_00406]

The optionality of NC can be modeled in a number of ways. Firstly, the lexical inventories of the Eastern dialects may contain two varieties of n-words, namely some with and some without interpretable NEG-features. Only the latter type would require a licensing NEG-head. Alternatively, all n-constituents may be inherently non-negative, and the difference would lie in whether the licensing head in (9ab) must be overt (the NC pattern), or not. On this view, NC would be obligatory, but not always explicitly marked in the linguistic signal. Evidence for this analysis might come from the existence of sentences expressing NC with two negative n-constituents in the absence of overt sentential negation, such as in (1b) above, and in the second clause of (11) (notice the single occurrence of *nichts* in the first clause!).

- (11) aber wir fanden **nichts**, war **nirgends nichts** zu finden
'but we found nothing, nothing was to be found anywhere'
[Silesian, OS-E_00790]

Thirdly, the optionality of NC may be accounted for in semantic terms. On this line of thinking, all n-expressions are semantically negative, same as sentential negation. If the clause only contains a single n-expression, the interpretation will be negative. If the clause contains more than one n-expression, including sentential negation, the negative force of the additional n-expressions may be (quantifier-)absorbed under local adjacency (de Swart & Sag 2002): Absorption turns two independent generalized quantifiers into a single dyadic quantifier over relations, as shown in (12) for *nirgends nichts* in (11):

$$(12) \quad \lambda P_{\langle et \rangle}. \neg \exists x [place(x) \wedge P(x)]; \lambda Q_{\langle et \rangle}. \neg \exists y [thing(y) \wedge Q(y)] \\ \Rightarrow_{\text{ABSORPTION}} \lambda R_{\langle eet \rangle}. \neg \exists x, y [place(x) \wedge thing(y) \wedge R(x, y)]$$

Notice that an NC-account in terms of absorption will entail treating sentential negation as a negative existential quantifier (over events) as well. We will leave it open what is the correct analysis of optional NC in the Eastern German dialects.

We will also leave it open whether NC-availability is subject to inter-speaker variability, and whether there is also intra-speaker variability. This being said, the dialect data in the OS-corpus clearly differ from Standard German regarding the availability of NC. For instance, a brief survey of the *König sub-corpus of Standard German* in the DGD-database (König 1989) compiled in 1975 yields zero finds for the strings *niemand nicht*, *keiner nicht*, *keine nicht*, *nirgends nicht*, and *nie(mals) nicht*, supporting the classification of Standard German as a non-NC language. We will come back to the question of whether NC is attested in other German dialects in section 2.3.

2.2 The corpus RuDiDat: quantitative findings on the availability of NC

This section extends the investigation to Russian German dialects spoken in language islands in Eastern Central Europe and Siberia. As shown below, NC is quite regularly found across all the dialects in the corpus, with some degree of cross-dialectal variability in the availability of NC. The IDS-hosted Russlanddeutsch corpus *RuDiDat* was compiled in the Soviet Union between the 1960s and the late 1980s (Jedig 2014). It contains data on dialects from seven different language islands, which have developed from different source dialects, and which can be accessed under <http://prowiki.ids-mannheim.de/bin/view/Russlanddeutsch/WebHome>. The data were recorded at the following times in these regions: Low German Mennonite (1959, Slawgorod, Altai); Northern Bavarian (1975–76, Altai, Berend 1978); Wolhynian German (late 1970s, Koktschetaw, Kasakhstan, Kiršner 1989); Swabian, South Franconian, Palatian, and Wolhynian German (1986/87, South Sibiria and Kasakhstan); Hessian (1988, Omsk).

In the following, we provide two examples from each dialect, illustrating for different types of n-words and n-constituents. The diacritic ‘*’ marks Russian loan words, such as e.g. *nikogda* ‘never’ in (16b) and (19b). Notice, too, that the forms *nimmi* and *nimme* ‘not anymore’ in (17a) and (18b) are analyzed as containing sentential negation. The reason for this is that these forms never co-occur with sentential negation in any of the Russian German dialects. Finally, (20) shows that NC is also attested with split negative NPs:

- (13) a. doi haud eewarhaupt **tjoin Interesse nich** tem Liire
 ‘He has no interest at all in learning’
 [Mennonite Low German]
- b. mät söy ne gröyte Nou kunne se mii **nuscht nich** haalpe
nich
 ‘with such a big scar they could not help me’
- (14) a. dass nu koi Kärnle **närgich et** s gwea ischt dass nu
 niamand niks et gsea hot sunscht
 ‘that there was no kernel of grain anywhere, that just nobody
 saw anything otherwise’ [Swabian]
- b. **koi ergera Fraid** kenntescht mir **et** ootau
 ‘you could give me no bigger pleasure’
- (15) a. und do brauch ich **kein *Aftobus nich** mehr
 ‘and then I no longer need the bus’ [Wolhynian]
- b. n unserem Dorf is **keiner nich** jechangen m *Klub
 ‘in our village nobody went to the club’
- (16) a. weil de konnde **niks net** schtecke **ka Katowwl net**
 ‘Because they couldn’t plant anything, no potatoes.’
 [Hessian]
- b. dä wäd ***nikogda net** irr ba uns im Dorf
 ‘He would never get lost in our village.’

- (17) a. me konnt sich **närchets** ga **nimmi** uffhalde
 ‘One couldn’t stay anywhere any longer.’
 [South Franconian]
- b. un dat wollte se m **kei Arbeit net** gewwe
 ‘and they didn’t want to give him work’
- (18) a. n ho me **ko oings Haus njet** ho me r a **ko Guertn njet**
 ‘and we had no house of our own, and we had no garden either’
 [Bavarian]
- b. dy hom **nyicheds nimme** hiigfunne
 ‘they didn’t get anywhere anymore’
- (19) a. do ha mir sellemoll noch **ke Kinnr nit** ghat
 ‘We still didn’t have children then.’ [Palatian]
- b. fo was hascht du me ***nikogda nit** eemoll was wezeelt
 hat er gsaat
 ‘Why did you never tell me anything, did he say?’
- (20) no wos hu me noch Hinggl Gäns no **Ende** hu mr dasjur
kaa net
 ‘Well, what do we have, chicken, geese, well, this year we don’t
 have ducks.’ [Hessian]

Table 20.1 shows the absolute number of NC-occurrences in comparison to the number of n-constituents. It was at times difficult to decide whether a particular configuration exhibits NC or not, but this should have no bearing on the overall picture. In the quantitative analysis, we adopted the following conventions: (i.) each n-constituent in its own VP was counted as one instance of NC; (ii.) conjoined n-constituents were counted but once; (iii.) n-constituents with positive *mehr* ‘any-more’ were not counted (as opposed to those with negative *nimmer* ‘not anymore’); (iv.) two n-constituents exhibiting NC in the absence of sentential negation were counted once. Notice that Table 20.1 sorts the structurally ambiguous n-constituents *keine(n/m)* in the middle column

by word form only, and not by syntactic status (pronoun vs determiner).

Table 20.1: NC-occurrences across dialects and n-constituents in absolute numbers

	<i>niemand</i>	<i>nichts</i>	<i>keiner/keins</i>	<i>keine(n/m)</i>	<i>kein</i>	<i>niemals</i>	<i>nirgends</i>	Σ
Low Germ.	–	7/8	2/3	3/4	3/4	–	–	15/19
Swabian	1/1	2/23	0/3	2/15	4/17	–	2/6	11/65
Wolhynian	–	2/12	4/4	3/6	1/3	0/1	–	10/26
Hessian	0/1	20/42	5/6	22/45	15/27	3/3	–	65/136
Franconian	–	0/38	0/5	10/40	2/25	–	2/2	14/110
Bavarian	–	7/50	0/4	16/43	17/34	3/3	2/2	45/136
Palatian	–	8/21	–	14/15	6/7	1/1	–	29/44

Table 20.1 shows that NC is attested in all seven Russian German dialects, although not obligatorily so. Despite the overall small numbers, the table shows that the frequency of NC varies across dialects, ranging from almost systematic Mennonite Low German (15/19) to Swabian (11/65) and Franconian (14/110) at the lower end, with Wolhynian, Hessian, Bavarian and Palatian somewhere in between. In the Hessian and Bavarian dialects, NC is most often attested in absolute numbers. Some of the dialects (Wolhynian, Franconian, Bavarian) appear to show an additional variability between n-expressions (though numbers are too small to warrant firm conclusions): Argumental n-pronouns (*niemand*, *keiner*, *keins*, *nichts*) appear to exhibit NC less often than n-constituents headed by the determiner *kein*, or the n-adjuncts *nirgends* and *niemals*. This tendency does not become clearer if the middle column is sorted into n-pronouns and n-determiners, respectively, with NC being optional with both types of expressions. The same holds for *kein*, which is clearly a determiner, but which does not show obligatory NC either. The putative higher frequency of NC with determiner *kein(e/en/em)* in Wolhynian, Bavarian, and Franconian may follow for various reasons. In Wolhynian, the absence of NC with *nichts* ‘nothing’ may be caused by haplology blocking the sequence *nichts nich*. In Franconian and Bavar-

ian, speakers may systematically analyze the n-pronouns *nichts* and *keiner* as negative generalized quantifiers of type <et,t>, which do not require licensing by sentential negation, whereas the same may not (always) be possible with arguments headed by negative determiners. This matter requires more systematic research, leaving open the possibility that the distributions in Table 20.1 exhibit a random variability, conditioned by the small absolute numbers.

2.3 Towards an explanation

In the preceding sections, it was shown that NC is robustly attested, though not obligatory, in the Eastern German dialects (formerly) spoken in East Prussia, Silesia, the Sudeten mountains, and German language islands in Siberia. This sets these dialects apart from Standard German, which does not exhibit NC. The difference may be accounted for in either of two ways.

Firstly, NC may be considered a general feature of all German dialects. As prototypical first order natural (N1) languages in the sense of Weiß (1998) and Weiß & Strobel (2018), dialects are acquired as first languages in an unguided acquisition process without systematic instruction, that is, without explicit positive or negative evidence. Unlike N2-languages, N1-languages are not subject to systematic instruction or normative pressure from social or other language-external considerations on the proper use of language, which come in at later stages of the acquisition process in schooling. Standard German is an N2-language in this sense, as it has been subject to various shaping procedures that are not based in the language faculty as such. So perhaps NC has been purged from Standard German by normative stylistic constraints under the influence of the non-NC language Latin, as tentatively suggested in Haspelmath (2013)? Support for this line of reasoning comes from the optional availability of NC in Low German (1b), and in Bavarian (Weiß 1998: 183ff.), as well as from the occasional occurrence of NC in colloquial Standard German, as in the famous *Ton Steine Scherben* song *Keine Macht für niemand!* ‘No power to anybody!’. This predicts that NC should also be found in other German dialects, including the Alemannic and Ripuarian dialects in the West, which have not been in close

contact with NC-languages of the Slavic type (except in the coal mining communities of Westphalia, perhaps).

Alternatively, NC may indeed be a special property of the Eastern varieties, with optional NC arising as a gradual and variable phenomenon under more or less intensive language contact over time (and possibly bilingualism) with the neighboring Slavic languages, all of which show systematic NC. This line of reasoning is supported by the observation that the Eastern dialects, and in particular the German island dialects in Russia, show other signs of systematic language contact. Examples are the systematic integration of Russian lexical items into the German dialect. This holds not only for content words, but also for the n-word (*nikogda*), cf. (16b), and for the sentential negation *njet* in Russian Bavarian (18a).

The two accounts are not incompatible. It may well be that NC is frowned upon in Standard German, and that NC phenomena are attested across dialects, but NC-phenomena may be still attested with a higher frequency in the Eastern contact zones with Slavic. This is confirmed by a preliminary survey of another dialect corpus in the DGD database, the *Korpus Deutsche Mundarten: Zwirner-Korpus* with transcriptions of spoken dialect data from West Germany and neighboring countries. A coarse token search for the strings *niemand nicht*, *keiner nicht* ‘nobody not’, *nichts nicht* ‘nothing not’, *nirgends nicht* ‘nowhere not’, and *niemals nicht* ‘never not’, yielded the following results (dialects in bold spoken in the Eastern regions of the language area, in contact with Slavic languages):

- (21) (i) *niemand nicht*: 1 find (**1 East Brandenburgian**)
- (ii) *keiner nicht*: 8 finds (**6 Low Prussian**, 1 Rhine-Franconian, 1 Low Alemannic)
- (iii) *nicht nicht*: 19 finds (**11 Silesian**, **3 Transpomeranian**, **1 Cispomeranian**, 3 Franconian, 1 Westphalian, 1 North Saxon)
- (iv) *nirgends nicht*: 1 find (**1 Low Prussian**)
- (v) *niemals nicht*: 2 finds (1 West Low German, 1 Northern Bavarian)

Although the overall number of findings is small, we can conclude that NC is not altogether ruled out in non-Eastern dialects, such as Franconian, North Saxon, West Low German and Low Alemannic. This is different in Standard German, for which there were no findings in the König corpus. At the same time, NC is found more frequently in the Eastern varieties with a ratio of 23:7. Our tentative conclusion is that NC is possible in principle in all dialects (as N1 languages), but that the actual instantiation of this grammatical pattern is boosted under language contact with systematic NC-languages, such as Polish, or Czech, or Russian.

3 Third corpus: Wenker Sentence 39

In this section, we compare the NC-findings from section 2 with data from another dialect corpus, which allows for accessing an older stage of the dialects spoken in the border territories of West Prussia/Posen, East Prussia and Silesia. Among the Wenker sentences sent out in the 1890s to all parts of the German Empire, there is one sentence with the potential of triggering NC: This is Wenker sentence 39, which contains the pronominal n-word *nichts* ‘nothing’.

(22) Wenker Sentence 39:

Geh nur, der braune Hund tut dir nichts!

‘Come on, just go, the brown dog won’t do anything to you!’

Given the findings from spontaneous speech in section 2, the question is whether translations of sentence 39 into different dialects will also exhibit NC. The findings from randomly sampled data points are presented in 3.1. Section 3.2 discusses reasons for the observable discrepancy between the findings from the two elicitation methods free production vs translation.

3.1 (Almost) no NC in Wenker Sentence 39

To corroborate the findings from section 2, we randomly sampled 16 Wenker dialect forms each from three Eastern border regions of the for-

mer German territories: (i.) Silesia; (ii.) West Prussia, with Kulmer Land and Posen; and (iii.) East Prussia. Being part of the multi-ethnic German Reich, all three regions were bi- or multilingual with speakers of German, Polish, and, in some parts, speakers of Czech, Kashubian or Lithuanian as well. In order to control for the validity of the method, we also sampled 16 Wenker forms from each region that were filled out in one of the contact languages with obligatory NC. In most cases, this was Polish, in some cases Czech, Kashubian, or Lithuanian. The prediction was that the translations of Wenker Sentence 39 into these languages should exhibit obligatory NC. This prediction was borne out, as shown in Table 20.2, which gives the frequencies of NC in translations into dialect and contact language, respectively.

Table 20.2: Frequency of NC in translations of Wenker Sentence 39 in absolute numbers

Region	# NC German dialect	# NC Slavic contact language
Silesia	Silesian: 2/16	15 Polish, 1 Czech: 16/16
West Prussia, Kulmer Land, Posen	Low Prussian, East Mark: 0/16	13 Polish, 3 Kashubian: 15/15, 1 n.a.
East Prussia & Memel	Low Prussian: 0/16	14 Polish, 2 Lithuanian: 15/16

NC is absent in only one out of 48 translations into one of the contact languages, namely in the Lithuanian Wenker form 00104 from Annus Simuneit. Overall, the translations into contact languages are remarkably uniform, barring some dialectal differences between the Silesian and Prussian varieties of Polish. In the majority of Polish translations, the NC was realized as *nic (...) nie zrobi* or, more rarely, in the opposite order *nie zrobi (...) nic*. The Czech and Kashubian translations are almost identical, namely *nic nezrobi* (Czech) and *nic niezrobi* (Kashubian). Some Polish speakers from the Posen area and East Prussia prefer the form *uczyni* ‘do, act’ over *zrobi* ‘do’. Finally, in the Polish Wenker form 53606

from Grzybno in West Prussia, the predicate ‘do nothing’ was replaced with *nie ugryzie* ‘not bite’ without n-word and without NC. Strikingly, though, NC is almost completely absent in the German dialect translations. The only two exceptions are found in Wenker forms from Silesia:

- (23) a. Geih ok, darr brunn Hund titt derr nischte nich.
 go also the brown dog does 2SG.DAT nothing not
 [Wenker 09842, Hammer-Suhlau]
- b. Hab ka Angst nie, da braune Hund tut da
 Have no fear not the brown dog does 2SG.DAT
 nix.
 nothing
 [Wenker 17560, Troppau]

The NC-configuration in (23a) is as expected: the n-word *nischte* ‘nothing’ is supported by the sentential negation *nich*. The interesting case is (23b), where the NC-configuration does not occur in the main assertion containing *nichts* ‘nothing’, but in the loose translation of the adhortative *Geh nur* ‘Come on, just go’ as *Hab keine Angst nicht* ‘Have no fear’. This finding provides a possible answer to the puzzle of why NC is so rarely attested in the Wenker dialect translations.

3.2 Methodological considerations

Investigations of NC in two types of corpora (spontaneous speech vs translations) yielded conflicting results: Whereas NC is robustly attested in spontaneous speech corpora, it was almost completely absent in translations. The reason for this discrepancy seems to lie in the elicitation methods. Fleischer (2015: 205) observes a general methodological problem with translation tasks from standard language into dialects (or indeed any kind of translation task), because they may result in a bias for the (stylistic) norm set by the standard over the dialectal form. Because of this, the observed parallelism between the Standard German input and its translations into the different dialects does not conclusively show that NC does not exist in these dialects. Instead, speakers may simply

model their translations on the Standard German input, in particular as the Wenker forms were distributed by, and often filled out in the presence of local teachers. As Standard German does not exhibit NC, the corresponding dialect translations will not feature NC either. A comparable discrepancy between different elicitation methods is reported in Fleischer et al. (2012: 28ff.) in an investigation of tense forms (past vs perfect) in Hessian dialects. Whereas one group of speakers regularly opted for the perfect (over the past) in a forced choice selection task, the same speakers would employ the past tense in translations of Standard German sentences into the dialect. This suggests that dialect translations may generally show a bias for the standard pattern instantiated by the standard input sentences.

4 Conclusion

A naïve survey of two corpora with spontaneous natural language revealed that German dialects formerly spoken in Eastern Central Europe and in language islands in the Soviet Union exhibit optional negative concord. It was also shown that the frequency of NC-phenomena is higher in these dialects than in more Western German dialects. It was hypothesized that the emergence of NC in the Eastern variants was conditioned, at least in part, by intensive language contact with neighboring languages (Polish, Kashubian, Czech, Russian, Lithuanian), in which negative concord is obligatory. Finally, it was shown that NC is extremely rare in dialect translations of Wenker sentence 39 with the n-constituent *nichts* ‘nothing’. This discrepancy with our findings from spontaneous language production was attributed to the different elicitation methods.

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Experimenting with *Lurchi*: V2 and agreement violations in poetic contexts

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1 Introduction

The present contribution resumes a project that Gisbert Fanselow initiated roughly ten years prior to the publication date of this paper. To the best of our knowledge, it was originally inspired by the adventures of the amphibian comic character *Lurchi*, told in simple rhymes such as (1), by a manufacturer of children's shoes for advertising purposes:

- | | |
|---------------------------|---------------------------------|
| (1) Sie singt mit Gefühl: | <i>She sings with feeling:</i> |
| Zum Fest bei der Mühl' | <i>To the party at the mill</i> |
| Lurchi Euch lädt. | <i>Lurchi you invites</i> |
| Kommt nicht zu spät | <i>Don't be late</i> |

Our paper is concerned with deviations from standard grammar in poetic contexts. In 2010 and under Gisbert's guidance, we conducted a pilot acceptability study investigating poetic licensing of different grammar violations, including the violation of the V2 constraint in German as exemplified in (1) (lines 2-3). This preliminary study suggested that V2

violations are ameliorated in poetic contexts, whereas agreement violations are not. On the occasion of this Festschrift, we ran a follow-up study that replicates the results of the first experiment and extends it to investigate the role of rhyme in poetic licensing. Below we provide some basic theoretical background on our study (section 2), we report our experimental setting and results (section 3) and then conclude (section 4).

2 Background: Poetry and grammar

Poetic language¹ is constructed according to specific rules and principles that do not necessarily coincide with the rules of standard grammar (see, e.g., Mukařovský 1964, Bierwisch 1965, 2008, Leech 1969). On the one hand, poetic language is subject to specific form-related constraints (regarding rhyme, meter and so on) that are absent in non-poetic language. Even modern poetry, which freed itself from several constraints on versification, still makes use of rhythm and other patterns and hence submits itself to restrictions. On the other hand, poetic language enjoys greater freedom than prose; marked structures are more frequent, deviations from the rules of standard grammar are acceptable. Deviations and violations can occur at all levels of language description: lexical innovations (neologisms), morphological deviations (mainly regarding word-formation), syntactic deviations (especially unusual word order), phonological deviations (elision, apocope etc.), graphological deviations (e.g., unusual spelling or punctuation and use of non-standard capitalization) as well as semantic deviations (logically inconsistent and often paradoxical meanings). Furthermore, poetic language may diverge from standard language by intermixing registers, areal varieties, dialects, as well as historical varieties (Leech 1969). The stanza in (1) involves a phonological deviation in its second line (*Mühle* occurs as *Mühl'* lacking the final schwa) and a syntactic deviation in the third line (the verb *lädt* occurs in clause final position violating the V2-constraint for main clauses). In both cases, the deviation seems to be motivated by rhyme.

1. Here we focus on poetic language in the narrow sense, i.e., opposing to prose and not comprising all literary language.

One might consider deviation for rhyming purposes a feature of more simple poems like (1), but deviations that ensure a rhyme scheme occur in more sophisticated poetry as well. The example in (2) is taken from Alexander Pope's *Essay on Criticism* (1711).

- (2) Our sons their fathers' failing language see
And such as Chaucer is, shall Dryden be.

The poetic effect of the word order deviation in (2) clearly goes beyond rhyming. It brings the moved element into the focus of attention ("foregrounding"). Leech (1969: 61) argues that deviations disrupt normal comprehension and leave a gap that can be filled by the reader/hearer. If so, the deviation gains significance, a special, poetic meaning. "A poem, like any piece of language, must of course put its words into grammatical order. Yet a poem has particular freedom in the way it constructs its grammar, related to the fact that a poem can give to grammar, as to everything it handles, a special meaning in the patterns and design of the poem." (Wolosky 2001: 4-5)

Bierwisch (1965: 52) provides the German examples in (3) to illustrate how poetic effect is achieved by violating different kinds of grammatical constraints, causing different grades of deviation from standard language.

- (3) a. Die nackten Stühle horchen sonderbar.
'The naked chairs listen strangely.' (Lichtenstein)
- b. Das am Telefon wollte der Schuldturn nicht sagen.
'That (thing) at the phone, the debtors' prison wouldn't tell it.'
(Johnson)
- c. Dort lint es Böck, dort beint es hohl, es waldet grün und witzt.
(Schwitters)

Deviations can be deemed as constitutive for poetic language (e.g., Shklovsky 1965, Mukařovský 1964, Levin 1965, Leech 1969, Baumgärtner 1965). However, not all kinds of ungrammaticality can be licensed by poetic context or cause poetic effects, some remain plainly ungrammat-

ical and unacceptable (Levin 1965, Bierwisch 1965). An example (again from Bierwisch 1965) is given in (4).

(4) *Es war an eines Sonntagvormittags in schönster Frühjahr.

Bierwisch (1965) provides a theoretical model of poetic text processing from the perspective of generative linguistics in which specific rules of poetic structuring operate on the well-formedness constraints of UG. He proposes an esthetic system *P* which ranks the output structures of the grammatical system *G* (whether grammatically well-formed or not) on a scale of *poeticity* (Poetizität) on the basis of a definable set of poetic structure rules. In this system, grammaticality violations in poetry appear to be systematic in the sense that, in Bierwisch's terms, deviant or even ungrammatical structures might be chosen in rather poetic contexts if the rules of *P* override the rules of *G*. The observation that nonetheless not all types of grammar violations are licensed by poetic context is a crucial premise for the present study.

More recently, this observation has been worked out in some detail by Bade & Beck (2017), who focus on the semantics and pragmatics of lyrical texts and the potential merit of poetry as a data source for linguistics. Based on exemplary analyses of different text segments (drawn from related earlier studies such as Bauer & Beck 2009 and Markus Bauer et al. 2010, Matthias Bauer et al. 2015), the authors argue that lyrical texts provide a valuable data source for linguistic theory as they help linguists to distinguish between inviolable core parts of the grammar and more flexible constraints. For instance, Bade & Beck (2017) illustrate that in poems certain context-dependent expressions such as pronouns are often used without appropriate salient antecedents (5), which usually leads to presupposition failure (and thus unacceptability), in normal discourse (6).

(5) He fumbles at your soul. (E. Dickinson)

(6) A: He sneezed.

B: What? I don't know who you mean by "he".

In contrast to permissible semantic/pragmatic violations of this kind, Bade & Beck (2017) argue, basic semantic mechanisms such as composition rules and restrictions on type shifting are inviolable also in poems. Their most central proposal is summarized by the authors as in (7).

- (7) Lyrical texts follow the rules of UG. They deviate from G in ways similar to certain language varieties. They do not allow for violations of universal rules, e.g. type shifting rules and rules of composition.

In the same spirit, the ‘Development Hypothesis’ as formulated by Fabb (2010) states that “Literary language is governed only by rules and constraints which are available to ordinary language, and which refer only to representations which are present (at some stage in a derivation) in ordinary language.” Fabb (2010: 1220). In Petzell & Hellberg (2014), this hypothesis is discussed and tested against data from a corpus of 19th century Swedish poetry, with a special focus on word order variation and violation of the V2 constraint in Swedish. In the study described below we pursue a similar goal with a different methodology, eliciting acceptability judgments on constructed materials in German.

3 Experiment

3.1 Goals

The first goal of our study is to test empirically whether there are grammatical rules that can be violated in poetry, but not in prose. Second, we aim to test whether there is indeed a distinction between rules that are inviolable even in poetic contexts, and rules that are violable. We compare violations of the (language-specific and sentence-type specific) V2 rule to violations of subject-verb agreement. Finally, the experiment is designed in such a way that it can help to distinguish between two possible explanations for a potential effect of poetic context. If we find an ameliorating effect on violations of a grammatical rule R, it is conceivable that R is inactive in certain text types. Alternatively, R might be active, but its violation could be cost-free if it helps to avoid the violation

of some higher-ranked, poetic/esthetic rule P. Bierwisch's (1965) model is an example of such a constraint-based system with two interacting sets of rules. If the latter account is correct, we would expect it to make a difference whether the violation of R is motivated by an esthetic consideration. In our experiment, we operationalized this by varying whether a rule violation contributed to creating a rhyme at the end of a line or not.

3.2 Design and materials

The following factors were manipulated in the experiment: (i) (type of) VIOLATION (levels: no violation, V2 violation, agreement violation), (ii) TEXT TYPE (levels: poem, prose), and MOTIVATION (only manipulated within the poetic conditions with a rule violation; levels: violation motivated by rhyme, violation unmotivated). An example item set is shown in (8) along with a translation. The V2 and agreement violations are marked in boldface (and roughly replicated in the English translation). The rhyming pattern is indicated by letters at the beginning of each line. We tried to keep the prose conditions as close as possible to the poetic ones, but we took care to avoid any rhymes.

(8) a. Poem – no violation:

A Das Ufer ist steil,	<i>The bank is steep</i>
B Es baden Studenten,	<i>There are students bathing</i>
C Ein Kater verschreckt	<i>A tomcat scares off</i>
B Durch Fauchen die Enten.	<i>By hissing the ducks.</i>

b. Poem – V2 violation – motivated by rhyme:

A Das Ufer ist steil	<i>The bank is steep</i>
B Und von Unkraut bedeckt,	<i>And covered with weeds</i>
C Ein Kater durch Fauchen	<i>A tomcat by hissing</i>
B Die Enten verschreckt .	<i>The ducks scares off</i>

c. Poem – V2 violation – unmotivated

A Das Ufer ist steil,	<i>The bank is steep</i>
B Es baden Studenten,	<i>There are students bathing</i>

C Ein Kater durch Fauchen	<i>A tomcat by hissing</i>
B Verschreckt die Enten.	<i>Scares off the ducks</i>

d. Poem – agreement violation – motivated by rhyme

A Am Ufer sind Hecken,	<i>At the bank are hedges</i>
B Es baden Studenten,	<i>There are students bathing</i>
A Ein Kater verschrecken	<i>A tomcat scare off</i>
B Durch Fauchen die Enten.	<i>By hissing the ducks</i>

e. Poem – agreement violation – unmotivated

A Das Ufer ist steil,	<i>The bank is steep</i>
B Es baden Studenten,	<i>There are students bathing</i>
C Ein Kater verschrecken	<i>A tomcat scare off</i>
B Durch Fauchen die Enten.	<i>By hissing the ducks</i>

f. Prose – no violation:

Am Ufer baden ein paar Schüler. In der Nähe verschreckt ein Kater fauchend die Enten.
'At the bank there are a few pupils bathing. Nearby, a tomcat, hissing, scares off the ducks.'

g. Prose – V2 violation:

Am Ufer baden ein paar Schüler. In der Nähe ein Kater fauchend die Enten **verschreckt**.
'At the bank there are a few pupils bathing. Nearby, a tomcat, hissing, the ducks scares off.'

h. Prose – agreement violation:

Am Ufer baden ein paar Schüler. In der Nähe **verschrecken** ein Kater fauchend die Enten.
'At the bank there are a few pupils bathing. Nearby, a tomcat, hissing, scare off the ducks.'

We constructed 32 items in 8 conditions. The items were distributed across 8 lists using a Latin Square Design.

3.3 Participants and procedure

32 native speakers of German, all recruited at the University of Potsdam, took part in the experiment. They received course credit for participation. The study was made available online using the questionnaire software L-Rex (Starschenko 2018). The experimental materials were pseudo-randomized, intermixed with fillers (item-filler ratio 1:2), and presented in two blocks. The first block contained only prose sentences, and the second block contained only poems, which were displayed with line breaks as shown in (8) above. Both blocks were preceded by the instruction to rate how acceptable each text is with respect to language (in German: *Wie akzeptabel ist der Text (sprachlich)?*) on a scale from 1 (unacceptable) to 7 (acceptable). Each stimulus was presented on a separate page. In sum, each participant rated 96 stimuli.

3.4 Results

The mean acceptability ratings are summarized in Tables 21.1 and 21.2 and illustrated in Figure 21.1.

For the inferential statistic analysis, we performed by-subjects and by-items ANOVAs and computed $minF'$ (Clark 1973) to get a highly conservative estimate of the reliability of the effects. We first computed the overall interaction of the factors (type of) VIOLATION and TEXT TYPE in order to address the question whether violations in poetry are judged differently from violations in prose. The interaction was significant, $minF'(2, 119) = 15.09, p < .001$. While the no violation and agreement violation condition showed no significant effect of genre, both $minF'$'s < 1 , the difference between poetry and prose for the V2 violations turned out to be significant, $minF'(1, 62) = 37.20, p < .001$: V2 violations were judged as much less acceptable when presented in prose than in poetry (2.21 vs. 4.69).

For the poetry conditions, we further checked for the effect of MOTIVATION on the violation types. To do so, we first again computed the overall interaction of MOTIVATION and VIOLATION; only cases with violations entered into this analysis, rendering this a 2×2 subdesign. The interaction turned out to be not reliable, $minF'(1, 61) < 1$, and there

was no effect of MOTIVATION, $\min F'(1, 61) < 1$.

Table 21.1: Mean acceptability ratings by TEXT TYPE and VIOLATION, standard deviation in parentheses

	no violation	V2 violation	agreement violation
poem	5.94 (1.49)	4.69 (1.74)	3.05 (1.98)
prose	5.70 (1.42)	2.21 (1.46)	2.94 (2.07)

Table 21.2: Mean acceptability ratings by MOTIVATION and VIOLATION (only for the subset of conditions in which motivation was manipulated), standard deviation in parentheses

	V2 violation		agreement violation	
	motivated	unmotivated	motivated	unmotivated
poem	4.84 (1.70)	4.55 (1.77)	3.07 (1.93)	3.04 (2.03)

4 Discussion

Our new experiment, this time with more systematically controlled materials, replicated the core result of the 2010 pilot study: some grammatical violations (here: violations of the V2 word order constraint in German main clauses) are ameliorated in poetic contexts, whereas others (here: violations of subject-verb agreement) consistently lead to an acceptability decrease irrespective of the prose/poetry manipulation.

This finding supports the claim that not all ungrammatical sequences are poetically licensed (Levin 1965, Bierwisch 1965). Moreover, the observed discrepancy in poetic licensing between the V2-violation and the agreement violation is in line with the example in (4) taken from Bierwisch (1965) and repeated here as (9a) (together with the grammatical version in (9b) which is the first sentence in Kafka's *The Judgement*).²

2. The example is taken from prose but the argument holds for poetic language in the narrow sense, i.e. poems, as well.

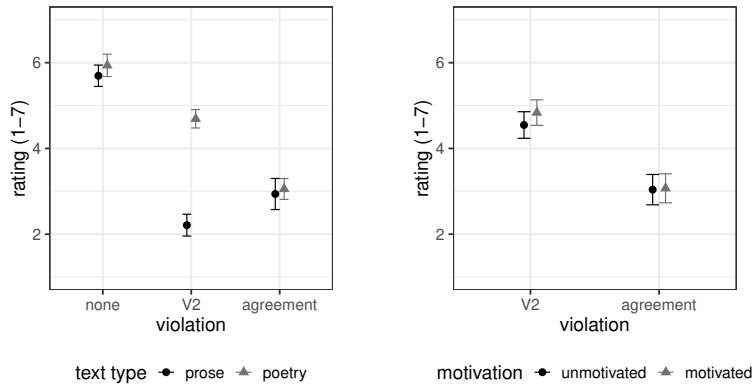


Figure 21.1: Left plot: mean acceptability ratings by TEXT TYPE and VIOLATION. Right plot: ratings by MOTIVATION and VIOLATION (only for the subset of conditions in which motivation was manipulated). Error bars correspond to \pm two standard errors.

- (9) a. *Es war an eines Sonntagvormittags in
 it was at a.MASC.GEN Sunday.morning.(MASC).GEN in
 schönster Frühjahr.
 nicest.FEM.DAT spring.(NEUT)
- b. Es war an einem Sonntagvormittag im
 it was at a.MASC.DAT Sunday.morning.(MASC).DAT in
 schönsten Frühjahr.
 nicest.NEUT.DAT spring.(NEUT)
- ‘It was on a Sunday morning at the most beautiful time of spring.’

The ungrammatical version in (9a) involves an agreement violation, in this case NP-internal gender agreement, in addition to violations of case. The word form *schönster* is ambiguous with respect to its morphosyntactic features, but no possible combination of case, gender and number fits the gender and number of the noun *Frühjahr*. Thus, the adjective does not agree with the noun. As Bierwisch (1965) pointed out, this violation cannot be licensed by a poetic context. The same holds for the

agreement violation in the experiment. Participants deemed agreement violations as degraded in poetic and prose contexts likewise. Apparently, deviation from word order constraints is more easily licensed in poetic contexts than other deviations from morphosyntactic constraints. Feature-related deviations seem to be rare if they occur at all. This bears an interesting resemblance to speech errors. Though many phonological errors can be analyzed either at the level of the segment or the feature (e.g., *pits and beeses* for *bits and pieces*, which could be an exchange of the features [+voiced] and [–voiced] or the segments /p/ and /b/), unambiguous feature errors are quite rare (Shattuck-Hufnagel & Klatt 1979). Admittedly, this generalization concerns phonological errors and cannot be directly compared with syntactic deviations as in our experiment. Agreement errors do occur in language production but mainly in configurations that involve interfering elements (so called agreement attraction). We consider it an interesting topic for future research to compare the distribution of speech error types (unintended deviations) to the distribution of deliberate deviations in poetic contexts. Perhaps a deviation is more effective in evoking surprise and creating attention if it is unlikely to be unintended.

Another difference between V2-violations and agreement violations that might be crucial here is that deviations from V2 are grammatical in other sentence types—e.g., embedded clauses are verb-final and yes/no-questions are verb-initial in German. Agreement violations, on the other hand, are not licensed in any sentence type or discourse context. It is conceivable that this difference underlies the observed difference in the acceptability of the violations in poetic contexts.

In addition to the factors VIOLATION and TEXT TYPE, we tested whether the amelioration in poems takes place only if the violation of the grammatical rule serves to satisfy an esthetic constraint. We found no support for this view: the V2 violation was accepted in both conditions (+motivated and –motivated) likewise. This null effect does not exclude, however, that poetic licensing is facilitated when motivated by some poetic constraint or effect. Perhaps, the motivating factor we manipulated in the experiment (rhyme) was not appropriate or not strong enough.

Putting the verb in (8b) at the end of the last line and thereby violating the V2 constraint creates an *ABCB* rhyme scheme. However, (8c) follows the same rhyme scheme. We created the material this way because we wanted to minimize the impact of any preference for a certain rhyme scheme.³ Given that every poem in our experiment involves only a single stanza, readers cannot know which rhyme scheme the authors of the poem aimed for and might be satisfied with any rhyme scheme. Judging by the result, both (8b) and (8c) fulfill a rhyme scheme. To see that the rhyme in (8b) is the result of the unusual position of the verb one would have to compare (8b) to a V2-obeying version of it. However, obeying the V2 constraint would result in rhyme schemes as well. This is shown in (10).

- (10) a. Version of (8b) obeying V2

A Das Ufer ist steil	<i>The bank is steep</i>
B Und von Unkraut bedeckt	<i>And covered with weeds</i>
B Ein Kater verschreckt	<i>A tomcat scares of</i>
C Durch Fauchen die Enten	<i>By hissing the ducks</i>

- b. Version of (8c) obeying V2

A Das Ufer ist steil,	<i>The bank is steep</i>
B Es baden Studenten,	<i>There are students bathing</i>
C Ein Kater verschreckt	<i>A tomcat scares of</i>
B Durch Fauchen die Enten.	<i>By hissing the ducks</i>

Putting the verb in its canonical clause-second position has no effect for the rhyme scheme in the [–motivated] condition—(10b) retains the *ABCB* scheme of (8c). In the [+motivated] condition, the original rhyme scheme is lost. The *ABCB* scheme of (8b) is converted into an *ABBC* scheme in (10a). Though this is not a common rhyme scheme, it involves at least a rhyme and it is the verb which rhymes with the preceding line.

3. An alternative would be to compare versification including some rhyme scheme to free verse. One would probably need to test both types of versification in all three levels of the factor VIOLATION in order to control for a general preference for rhyming poems.

Taken together, the benefit of the V2 violation in (8b) in order to ensure a certain rhyme scheme might be too small to be observable by comparing (8b) to (8c).⁴

In principle, it is conceivable that different types of violation require different motivations. Rhyme requirements might primarily license phonological deviations and lexical choices, everything that concerns the form of the element at the end of the line, but be less effective for licensing syntactic violations as in our case. We leave this issue for future research but note that rhyme seems to license at least some instances of word order deviations. The first stanza of Goethe's *Prometheus* shall serve as evidence. The ordering of the two verbs in line 7 deviates from their canonical order (which would be *stehen lassen*, the embedding verb in final position) but result in a rhyme with line 5.

- | | | |
|------|--|---|
| (11) | Bedecke deinen Himmel, Zeus,
Mit Wolkendunst!
Und übe, Knaben gleich,
Der Disteln köpft,
An Eichen dich und Bergeshöh'n!
Mußt mir meine Erde
Doch lassen steh'n,
Und meine Hütte,
Die du nicht gebaut,
Und meinen Herd,
Um dessen Glut
Du mich beneidest. | <i>Cover your heaven, Zeus
 With cloudy mist
 And exercise, like a boy
 Who beheads thistels
 With oaks and hills
 You must my earth to me
 Still let stay
 And my hut
 Which you didn't build
 And my hearth
 The fire of which
 You envy me</i> |
|------|--|---|

5 Conclusion

Most existing research on linguistic deviations in poetic language pursues a qualitative research approach. Many studies analyze poems from one or several authors and describe their linguistic peculiarities. The

4. Interestingly, meter seems to play a minor role. Although the metric pattern is less well-formed in (8c) compared to (8b), this did not result in a measurable penalty.

present study complements this qualitative research with a quantitative approach. Our study contributes experimental evidence showing that some syntactic violations are accepted in poetic contexts but not in prose. In line with the observation that certain types of deviation do not occur in poetic language, the experiment demonstrated a split between the two types of violations that were included: While V2 violations received higher acceptability ratings in poems compared to prose, agreement violations received virtually the same low ratings in both text types.

The experiment presents a piece of evidence for poetic licensing but leaves many questions open. In future research, it would be interesting to extend the empirical range to further violation types and languages. We are looking forward to potential follow-up studies in collaboration with the original initiator of the project!

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Noch kindlich oder schon jugendlich? Oder gar erwachsen?

Betrachtung von Komplexitätsmerkmalen altersspezifischer Texte¹

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1 Einführung

Dass Texte unterschiedlich schwierig sind, ist unter ganz unterschiedlichen Gesichtspunkten – vor allem in der Angewandten Linguistik – ausführlich untersucht worden. Dabei besteht Konsens darüber, dass “Schwierigkeit” jeweils in Bezug auf bestimmte Lese-Zielgruppen charakterisiert werden muss: Nicht-MuttersprachlerInnen empfinden andere Dinge als schwierig als es junge LeserInnen tun; der Bildungsstand ist eine andere Einflussgröße; ebenso können unterschiedliche kognitive Einschränkungen mit jeweils verschiedenen Bedürfnissen an die Einfachheit von Texten einhergehen. Schließlich sei auch auf die aktuellen

1. Vielen Dank (i) an Erik Haegert für die Unterstützung bei der Erstellung der Syntax-Parses und Berechnung der zugehörigen Werte in Abschnitt 3 sowie für die TF/IDF Rangfolgen in Abschnitt 4, und (ii) an Peter Bourgonje für seine Bestimmung der desambiguierten Konnektoren.

Diskussionen zu *einfacher* und *leichter* Sprache verwiesen, die uns im Folgenden allerdings nicht weiter beschäftigen werden.

Stattdessen greifen wir in diesem Beitrag exemplarisch die Dimension *Altersstufe* heraus und führen eine kleine Fallstudie durch, die versuchen soll, Phänomene der Schwierigkeit dingfest zu machen. Dazu stellen wir ein kleines Arbeitskorpus aus drei verschiedenen Enzyklopädien zusammen: eine "Standard" Enzyklopädie; eine, die sich an Jugendliche wendet, und eine speziell für Kinder entwickelte. Um auch lexikalische Aspekte vergleichen zu können, ist uns daran gelegen, dass die Texte thematisch möglichst gut übereinstimmen. Dieses Ziel erreichen wir durch eine Fokussierung auf Einträge aus dem Reich der Vögel, die jeweils in allen drei Quellen zu finden sind. Die Datenmengen fallen relativ klein aus, und deshalb ist unser Ziel hier nicht eine ausgefeilte statistische Analyse, sondern nurmehr eine exemplarische Fallstudie, die Hinweise darauf gewinnen soll, ob vergleichsweise einfache Methoden Unterschiede in den Texten zeigen können.

Nachdem wir die Erstellung der Datengrundlage erläutert haben, stellen wir vergleichende Untersuchungen zur Satzkomplexität, zum Wortschatz, und zu ausgewählten Diskursphänomenen an. Danach unterwerfen wir unsere Texte noch einigen gängigen und recht einfach berechenbaren Indizes aus der Leseforschung und schließen dann mit einem Fazit.

2 Daten

Die drei Textquellen für unsere Untersuchung sind das *klexikon*², eine online Enzyklopädie für Kinder, die Brockhaus Jugendenzyklopädie und die "große" Brockhaus Enzyklopädie.³ Von diesen ist das *klexikon* die mit Abstand kleinste Quelle. Da wir an einer inhaltlich gut vergleichbaren Datenmenge interessiert sind, haben wir zunächst aus dem *klexikon* alle der Vogelwelt zuzurechnenden Artikel extrahiert; dies waren 23 verschiedene. Sie beschreiben entweder eine einzelne Art (z.B. *Pfau* oder *Kranich*) oder Gruppen (z.B. *Spechte* oder *Möwen*); hinzu kommt der generische Artikel *Vögel*. Zu allen Artikeln fanden sich Pendants in den

2. <https://klexikon.zum.de>

3. Beide sind unter <https://www.brockhaus.de/ecs/> erreichbar.

Tabelle 22.1: Syntaktische Komplexitätsindikatoren (Durchschnittswerte) für die drei Textmengen

Textmenge	Satzlänge	Baumhöhe	NP/Satz	VP/Satz	S/Satz
K-Texte	10.8	4.4	1.4	0.3	1.4
J-Texte	15.4	5.6	2.1	0.4	1.5
E-Texte	18.9	6.4	3.3	0.7	1.9

anderen beiden Enzyklopädien, diese wurden also gleichfalls extrahiert.

Zur Illustration zeigt Abb. 22.1 den Artikel *Papageien* aus dem klexikon, sowie die gekürzten Pendants aus den beiden anderen Enzyklopädien.

Als vorverarbeitende Schritte wurden Bildunterschriften entfernt, sofern sie nicht in den Text integriert waren, auch wurden einige offenkundige Tippfehler korrigiert. Im Folgenden sprechen wir der Einfachheit halber von K-Texten, J-Texten und E-Texten. Eine etwas unerfreuliche erste Beobachtung besteht darin, dass die J-Texte erheblich kürzer sind als die anderen, was die Vergleichbarkeit bestimmter Maße natürlich etwas einschränkt, hier aber nicht zu ändern ist. Insgesamt umfassen (nach Vorverarbeitung) alle K-Texte 7354 Wörter, die J-Texte 1983 Wörter und die E-Texte 7563 Wörter. Alle Texte einer Zielgruppe werden jeweils in einer einzelnen Datei zusammengefasst, und die resultierenden drei Dateien bilden die Grundlage für die nachfolgend beschriebenen Berechnungen.

3 Satzkomplexität

Syntaktische Komplexität gilt als offenkundiger Faktor für die Textverständlichkeit, doch wie man sie gut “operationalisiert”, ist weniger klar. In der Computerlinguistik sind, spätestens seit der vielzitierten Studie von Schwarm & Ostendorf (2005), diese Merkmale als Repräsentanten gebräuchlich: durchschnittl. Satzlänge, durchschnittl. Höhe des Parse-Baumes, durchschnittl. Anzahl von NPs, VPs, und von subordinierten Sätzen je Satz. Wir haben für unsere Texte mit *Stanford CoreNLP*⁴ Konstituentenstrukturen erstellt und anhand derer die genannten Maße errech-

4. <https://stanfordnlp.github.io/CoreNLP/>

Klexikon:

Papageien sind Vögel. Es gibt davon über 300 Arten, aber nicht alle von ihnen können das, wofür Papageien bekannt sind: Sie können die Stimmen von Menschen nachmachen. Papageien haben ein ziemlich großes Gehirn, darum können sie gut lernen. Zu den Papageien gehören auch die Sittiche und Kakadus.

Der Körper des Vogels steht aufrecht und ist eher schwer. Papageien mögen Körner, Nüsse und Früchte, darum ist der Schnabel kräftig und gebogen. Die Federn haben bei manchen Arten viele verschiedene Farben, während andere Arten fast einfarbig sind.

Einige Menschen halten Papageien als Haustiere. Allerdings hält man in vielen Ländern Papageien für Schädlinge, weil sie die Früchte in der Landwirtschaft wegfressen. Es werden auch Papageien gejagt und dann als Haustiere gehalten. Manche Papageienarten sind auch darum vom Aussterben bedroht.

Papageien leben normalerweise in den warmen Gegenden der Welt: in Südamerika, Afrika, Australien und im Süden von Asien. Einige Hauspapageien sind ihren Besitzern weggeflogen, so dass es heute auch Papageien in nördlichen Ländern gibt.

Brockhaus Jugendzyklopädie:

Papageien (französisch), in den Tropen und Subtropen verbreitete Vogelfamilie. Papageien sind 9-100cm lange, meist bunte Tiere, die mithilfe ihres stark gebogenen, hakigen Schnabels und ihrer Greiffüße geschickt auf Bäumen klettern. Sie leben meist gesellig und brüten vorwiegend in Baumhöhlen. In Gefangenschaft erlernen viele Papageienarten die Nachahmung von Geräuschen und können mitunter einige Wörter behalten (vor allem der afrikanische Graupapagei) und diese sogar im passenden Augenblick gebrauchen, ohne jedoch den Inhalt der Worte zu verstehen.

Am bekanntesten sind die von Australien bis zu den Philippinen verbreiteten Kakadus, mit einer aufrichtbaren Federhaube am Kopf, die bunten, mittelgroßen Loris aus Südostasien und Australien, die sehr farbenprächtigen Aras Südamerikas mit langem Schwanz, die in den Wäldern Mittel- und Südamerikas beheimateten Amazonen und die in der australischen Steppe heimischen Sittiche.

Brockhaus Enzyklopädie:

Papageien (französisch papagai, wohl von arabisch babagā'), Psittaciformes, Ordnung der Vögel mit etwa 365 Arten in 86 Gattungen.

Körperbau: Papageien sind knapp 9 bis 100 cm groß und haben einen charakteristischen, kräftigen Beißschnabel mit stark gebogenem Oberkiefer und Wachshaut an der Basis, in der auch die Nasenlöcher liegen. Die zweite und dritte Fußzehe sind nach vorn, die erste und vierte nach hinten gerichtet und damit hervorragend zum Klettern geeignet. Das Gefieder ist meist auffallend bunt.

Verbreitung: Papageien besiedeln hauptsächlich die Tropen und die Südhalbkugel; Fossilien von Papageien beziehungsweise papageienähnlichen Vögeln aus dem Miozän belegen, dass sie ursprünglich auch in Europa vorkamen. So wurde 2008 in einem dänischen Steinbruch ein 55 Mio. Jahre alter fossiler Papageienknochen gefunden, vermutlich das älteste Papageienfossil überhaupt. Dieser Fund deutet also sogar darauf, dass sich Papageien in der nördlichen Hemisphäre entwickelten, bevor sie sich im Süden und später in den Tropen verbreiteten. Heutzutage beherbergen Südamerika und die australische Region die meisten Arten.

Lebensweise: (...)

Systematik: (...)

Artenschutz: (...)

Kulturgeschichte: (...)

Abbildung 22.1: Beispieltex te aus den drei Textquellen

net – mit dem Unterschied, dass wir nicht speziell subordinierte Sätze ermitteln, sondern lediglich die durchschnittliche Zahl der ‘S’ Knoten pro Satz. Dann ergeben sich die in Tabelle 22.1 gezeigten Ergebnisse. Die erkennbaren Reihungen Kind–Jugend–Erwachsen korrespondieren weitgehend mit einschlägigen Studien zum Englischen, wonach vor allem Satzlänge und Baumhöhe zuverlässige Indikatoren des Komplexitätsgrades sind. Pitler & Nenkova (2008) und Feng u. a. (2010) haben in ihren Daten (in denen die Zielgruppen allerdings nicht per Altersstufe definiert waren) gefunden, dass die Zahl der VPs pro Satz eine prädiktive Variable ist, die der eingebetteten Sätze jedoch nicht; in unserem Fall weisen die einfachen Zählungen hingegen für sämtliche Maße dieselbe Tendenz auf (was freilich noch nicht viel über ihren statistischen Wert aussagt).

4 Wortschatz

Für einfache Wortschatz-Untersuchungen gibt es verschiedene Online-Werkzeuge, recht verbreitet sind die *Voyant Tools*⁵. U.a. zählen sie Wortfrequenzen aus und übersetzen diese auch in illustrative *word clouds*. Abb. 22.2 zeigt diejenige für die K-Texte. Insgesamt geben die Voyant Tools für die drei Textmengen die folgenden “Top-10” Inhaltswörter und Frequenzen:

- K-Texte: eier (45); leben (35); weibchen (34); arten (29); vögel (29); fliegen (26); menschen (25); nester (24); fressen (23); europa (20)
- J-Texte: vögel (13); arten (12); schnabel (9); singvögel (8); familie (7); greifvögel (7); lange (7); leben (7); insekten (6); schwanz (6)
- E-Texte: arten (68); vögel (29); schnabel (22); adler (19); lebt (18); papageien (18); eier (17); schwarz (17); afrika (16); gefieder (15)

Diese Zahlen sind für einen Vergleich allerdings nur wenig aussagekräftig (nicht nur wegen der viel kürzeren J-Texte). Es empfiehlt sich vielmehr, mit Hilfe des *tf/idf* Maßes zu bestimmen, welche Wörter besonders

5. <https://voyant-tools.org/>

typisch für ihre Textmenge (K, J, E) in Relation zur Gesamtmenge aller Texte ($K \cup J \cup E$) sind. Dann ergeben sich andere Top-10:⁶

- K-Texte: dann / woche / nennen / jungtier / weil / feind / sechs / verbringen / schweiz / mögen
- J-Texte: nord- / heimisch / klettern / mitunter / mittelgroß / ver-
sehen / rabe / jährlich / suche / ergreifen
- E-Texte: schwarz / farbschlag / aquila / symbol / regel / überwie-
gend / früh / ägypten / rom / kulturgeschichte

Ein Effekt dieses Schrittes ist beispielsweise, dass ‘Vögel’, ‘Arten’ sowie ‘leben/lebt’ in der einfachen Zählung in den Top-10 aller drei Textmengen auftauchen, in den tf/idf Top-10 folgerichtig aber nicht mehr. Wir sehen weiterhin, dass die frequenten Wörter der K-Texte, wie sie in Abb. 22.2 aufbereitet sind, gar nicht typisch für die K-Texte sind (da sie in den J- und E-Texten ebenfalls häufig sind). Stellen wir einmal die tf/idf-gewichteten K- und E-Top-10 einander gegenüber, fällt auf, dass die tf/idf Top-10 der K-Texte kürzer sind als die der E-Texte. Gilt diese Beobachtung generell für die Texte? In der Tat, die durchschnittlichen Wortlängen sind: K-Texte 5.15 (1.6 Silben) / J-Texte 5.57 (1.7 Silben) / E-Texte 5.94 (1.8 Silben). Der letzte Punkt, auf den wir hier aufmerksam machen wollen: Die K- und J-Texte haben drei bzw. vier Verben unter den tf/idf Top-10, die E-Texte keines.

Als letztes Maß betrachten wir noch die *type-token ratio*, die gemeinhin einen Eindruck von der Komplexität des Wortschatzes vermitteln soll. Sie beträgt für die K-Texte 0.26, für die J-Texte 0.48 und für die E-Texte 0.37. Bekanntlich reagiert TTR sensibel auf die Textlänge, so dass wir den J-Wert hier nicht interpretieren sollten; der beobachtete Unterschied für die fast gleich langen K- und E-Texte wäre jedoch festzuhalten.

6. Die Berechnung erfolgte mit der python Bibliothek *textblob*.

demgegenüber haben Todirascu u. a. (2016) 65 verschiedene Koreferenzmerkmale mit automatischer Analyse getestet und dabei kaum messbare Effekte gefunden.

Für Konnektoren gibt es eine ermutigende Studie von Davoodi & Koseim (2016): Sie haben ein breites Spektrum von Syntax- und Diskursmerkmalen auf zwei Datensätzen zur Textlesbarkeitsbestimmung getestet, und Kombinationen aus Konnektor und Kohärenzrelation zählten zu den zuverlässigsten Merkmalen überhaupt. Für ein eigenes Experiment können wir hier auf den Konnektor-Desambiguator von Bourgonje & Stede (2018) zurückgreifen⁷ und den Anteil der Konnektoren an den Wörtern, sowie die Streuung der Konnektorenmenge (TTR) ermitteln. Dabei sollten wir aber die J-Texte wegen der geringen Textmenge außer acht lassen. Das Ergebnis ist für die K-Texte 4.2% mit TTR 0.23 und für die E-Texte 2.2% mit TTR 0.31. In den K-Texten finden sich also mehr Konnektoren, aber weniger verschiedene. Auffällig ist, dass in den K-Texten unter den Top-20 Konnektoren insgesamt 31 Instanzen von Kausalkonnektoren sind (*weil, deshalb, also, darum*), in den K-Texten hingegen Kausalität nur durch zwei Instanzen von *daher* vertreten ist. Dies dürfte aber ebenfalls kein Faktor der Textkomplexität *per se* sein, sondern ein Faktor der Abfassung von explikativen Texten bzw. der Textsorte *Lexikon*: Für Kinder wird erheblich mehr erklärt und begründet als für Erwachsene.

6 Lesbarkeitsindizes

Zum Schluss der Betrachtung von (potenziellen) Komplexitätsmerkmalen wollen wir uns mit den weit verbreiteten Lesbarkeitsindizes beschäftigen, wobei wir uns hier auf die Maße Flesch Reading Ease, Flesch/Kincaid grade level und LIX beschränken. Sie basieren auf der durchschnittlichen Satzlänge (DSL), der durchschnittlichen Wortlänge in Silben (DSW) und der Anzahl langer Wörter (ALW; mehr als 6 Buchstaben) bezogen auf die Anzahl der Wörter (AW). Hier sind die Definitionen:

7. So wie die Koreferenzresolution ist allerdings auch diese Aufgabe nicht fehlerfrei lösbar, daher ist ein wenig Vorsicht geboten.

- **Flesch Reading Ease (FRE):**

$$\text{FRE}_{\text{deutsch}} = 180 - \text{DSL} - (58,5 \times \text{DSW})$$

Je höher der Wert, desto verständlicher ist der Text; der mittlere Wert für die Zielgruppe 13-15-jähriger Schüler liegt im Bereich 60-70.⁸

- **Flesch/Kincaid grade level (FKGL):**

$$(0,39 \times \text{DSL}) + (11,8 \times \text{DSW}) - 15,59$$

Die resultierende Zahl soll die Anzahl der Schuljahre angeben, die junge Lesende absolviert haben sollen, damit sie den Text gut verstehen.⁹

- **LIX:**

$$\text{DSL} + ((\text{ALW} * 100) / \text{AW})$$

Diese heute sehr populäre Formel wurde 1968 von Björnsson vorgeschlagen. Ein Wert von 20 gilt als 'Jugendliteratur', 40 als 'Bellettristik' und 60 als 'Fachliteratur'.¹⁰

Die Berechnung erfolgt für FRE mit einem Online-Service¹¹, der die o.g. für Deutsch angepasste Formel verwendet. FKGL und LIX berechnen wir mit der Python Bibliothek *readability*, die für die drei Sprachen Englisch, Niederländisch und Deutsch nutzbar ist.¹² Eingabetexte müssen in Sätze aufgeteilt und tokenisiert sein; dafür verwenden wir den 'German Tokenizer'¹³ von Stefanie Dipper. Die Ergebnisse sind wie folgt:

- K-Texte: FRE 66 / Kincaid 7.02 / LIX 34.29
- J-Texte: FRE 56 / Kincaid 10.14 / LIX 46.54
- E-Texte: FRE 46 / Kincaid: 11.51 / LIX 50.54

8. <https://de.wikipedia.org/wiki/Lesbarkeitsindex>

9. <https://de.wikipedia.org/wiki/Lesbarkeitsindex>

10. <https://www.supertext.ch/tools/lix>

11. <https://fleschindex.de>

12. <https://pypi.org/project/readability/> Die FKGL Formel gilt eigentlich für englische Texte; es ist leider nicht klar, ob die Bibliothek eine für Deutsch angepasste Variante nutzt.

13. <https://www.linguistics.ruhr-uni-bochum.de/~dipper/resources/tokenizer.html>

Die absoluten Werte sind mit ein wenig Vorsicht zu nehmen, weil sie stark vom Vorgehen bei der Tokenisierung und der Güte der Berechnung von Silbenzahlen abhängen. Die ersichtlichen Unterschiede zwischen den drei Textmengen hingegen sollten zweifelsfrei sein.

7 Fazit

Die Vogelwelt wird Kindern, Jugendlichen und Erwachsenen unterschiedlich nahegebracht. Während für inhaltliche Auswertungen hier kein Platz blieb, haben wir für unser kleines Beispielkorpus eine Reihe quantitativer Indikatoren bestimmt, die auf unterschiedlichen sprachlichen Ebenen operieren: Lexikon, Syntax, Diskurs; wobei letzterer einstweilen für schlüssige Vorhersagen weniger ergiebig ist. In einer Bestandsaufnahme zur Textlesbarkeitsforschung aus primär computerlinguistischer Perspektive hatten Pitler & Nenkova (2008) festgestellt, dass trotz vieler Ergebnisse zu einzelnen Indikatoren wenig darüber bekannt ist, wie wichtig die einzelnen Faktoren sind und wie ihr Zusammenspiel modelliert werden sollte. Dies gilt bis heute, und ein wesentlicher Grund ist, dass (wie eingangs bemerkt) ‘Lesbarkeit’ keine textimmanente Eigenschaft ist, sondern zumindest zu einem Teil zielgruppenspezifisch beurteilt werden muss (Schriver 1989). Hinzu kommt, dass für das Deutsche – auf jeden Fall aus der Computerlinguistik – weniger Erkenntnisse vorliegen als zum Englischen. Unsere kleinen Experimente haben Hinweise darauf geliefert, dass explikative Texte, die für unterschiedliche Altersstufen geschrieben wurden, anhand der hier untersuchten Merkmale unterschieden werden können: Die ausprobierten Indikatoren von Syntax und Wortschatz haben dieselbe Reihung von K- über J- zu E-Texten angezeigt. Selbstverständlich müssten im nächsten Schritt diese initialen Hinweise nun statistisch sorgfältig untersucht werden, und ComputerlinguistInnen würden (auch für praktische Zwecke) einen automatischen Klassifikator trainieren und den *information gain* per Merkmal ausrechnen. Während all dies der “future work” vorbehalten bleibt, schließen wir mit der nicht ganz unerwarteten Frage: Wird es sich lohnen? Sind nicht die ganz einfachen, oberflächenbasierten Lesbarkeitsindizes völlig ausreichend? Oder, schlimmstenfalls, gar das Maß aller Dinge?

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Splits and Birds

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ὄρνις γενέσθαι βούλομαι λιγύφθογγος ἀηδών.
'As for a bird, I wish to become a tuneful nightingale.'
(Aristophanes, *Birds* 1380)

1 Abstract

Birds are a unique class of animals, splits are a special phenomenon in syntax. Birds and splits are certainly not a homogeneous pair, but two persons in the history of thought exploited the relations between them. The first one was an Ancient Greek poet, who wrote the famous Comedy *Birds*, performed at 414 BC during the City Dionysia in Athens. The second a contemporary writer, born 1959 in the City of Landshut, a historical town along the Isar in Bavaria. Aristophanes and Gisbert Fanselow, two persons who have hardly ever met, what do they share in common? After scrutinizing the various facets of the interplay between splits and birds, the present study concludes that this coincidence cannot be due to chance, it can only be traced back to properties that are hard-wired in Universal Grammar.

2 The puzzle

Split noun phrases are a syntactic phenomenon, birds a biological category. The reader may think that these two types of entity do not share anything in common – apart of the mere fact of inhabiting trees. A Greek poet of the 5 century BC, under the name of Aristophanes, wrote a comedy devoted to *Birds*, with the participation of *jays*, *crows*, *francolins*,

alcyons, gallinules, kestrels, dabchicks, buntings, bearded vultures, woodpeckers, blackbirds. This Comedy is 1964 verses long and contains 116 split noun phrases. Twenty-five centuries later, a German poet from Bavarian Landshut seeking for entities inhabiting trees, exploited the behavior of *buzzards* (Fanselow 1993: 61, 63; Fanselow & Ćavar 2002: 100), *owls* (Fanselow 1988: 92), *geese* (Fanselow 1988: 92), *curlews* (Fanselow 2016: 632), *eagles* (Fanselow 2016: 632), *nightingales* (Fanselow & Féry 2006: 10), *bee-eaters* (Fanselow 2016: 639), *chicken* (Fanselow & Lenerová 2011: 194), etc. There are not yet reliable statistics about the proportion of split noun phrases in the oeuvre of Gisbert Fanselow; yet some scholars believe that splits are even more frequent in Fanselow's articles than in Aristophanes' Comedies.

Since it is highly unlikely that a poet of 5th century Athens and a present-day German writer have ever met, this coincidence opens a promising puzzle. What do split noun phrases and birds have in common, such that they may link two quite different biographies across centuries, cultures, languages and literary traditions?

3 The facts

Birds play a major role in free topics. Examples such as (1) show that two semantically linked noun phrases may co-occur within the extended projection of the same verb, which offers a hint for the structural account of a part of the alleged discontinuous noun phrases. In a seminal study on split noun phrases, Fanselow & Féry (2006) report their insights from eliciting this example in the largest sample of world's languages that has been ever investigated in this respect.

(1) Korean

Say-nun ku-ka nightingale-man a-n-ta.
bird-TOP he-NOM nightingale-only know-PRS-DECL

'As for birds, he only knows nightingales.'

(Fanselow & Féry 2006: 10)

A crucial observation is the left-right asymmetry in (2). It seems that the denotation of the referential phrase in the argument position must

be a subset of the topic phrase and not vice versa. This asymmetry was established by further birds in Fanselow (1993) and Fanselow and Ćavar (2002):

- (2) a. Raubvögel gekannt hat er nur Bussarde.
 ‘As for birds of prey, he has only known buzzards.’
 (Fanselow & Ćavar 2002: 10)
- b. *Bussarde gesehen hatte er nur Raubvögel.
 (intended) ‘As for buzzards, he has only known birds of prey.’
 (Fanselow 1993: 61)

Although not at the same level of reflection, this discussion actually starts 2407 years earlier, in the year that Aristophanes manifested his vision of Cloudcuckootown, a wondrous town built on the clouds, inhabited by the Reign of Birds, which would rule the world of humans and gods. Interestingly, the poet confessed the well-formedness of free topics exactly with the same wording as Gisbert Fanselow; vgl. (1):

- (3) ὄρνις γενέσθαι βούλομαι λιγύφθογγος
 bird:NOM.MASC.SG become:INF want:1SG tuneful:NOM.FEM.SG
 ἀηδῶν.
 nightingale:NOM.FEM.SG
 ‘Bird, I wish to become a tuneful nightingale.’
 Aristophanes, *Birds* 1380

The left-right asymmetry in (2) is related to the asymmetry between simple splits and inverted splits that plays a central role in the reflection of Fanselow (1993), Fanselow & Ćavar (2002), Fanselow & Féry (2006). In German, it is possible to form splits with a nominal head in the prefield and a modifier in the middlefield, but not vice versa.

- (4) a. Bücher gelesen hat er noch keine.
 ‘As for books, he has read noone.’ (Fanselow 1993: 59)
- b. *keine gelesen hat er Bücher.
 (intended) ‘As for noone, he has read books.’
 (Fanselow 1993: 59)

However, Aristophanes speaks a different language. In his variety of the UG, it seems less costly to generate structures of the (4b) type, as illustrated in *Birds*. Birds were namely ‘born before the humans and the gods, and they were ruling and reigning humans during the Ancient Age’. This statement is followed by the sentence in (5):

- (5) πολλὰ ἐστὶ τεκμήρια τούτων.
 many:NOM.NEUT.PL be:3SG proof:NOM.NEUT.PL that:GEN.FEM.PL
 ‘There are many proofs of that.’ Aristophanes, *Birds* 481f.

The same structure also appears with numerals. There are various arguments why the birds should again reign in the New Age of the Cloud-cuckootown. They will help farmers: owls and kestrels will protect the vine-blossoms from locusts, thrushes will protect the figs from gnats and gallbugs. Second, they will help people to avoid several dangers in land and sea by predicting the future. Finally, they will offer age to humans from their own; birds like the cawing crow live five times as long as the humans. The precise amount of years that is promised to humans is given by the following passage:

- (6) τριακόσι' αὐτοῖς ἔτι προσθήσουσ'
 three_hundred:ACC.NEUT.PL 3:DAT.PL yet add:FUT:3PL
 ὄρνιθες ἔτη.
 bird:NOM.MASC.PL year:ACC.NEUT.PL
 ‘Yet the birds will add to them three hundred years.’
 Aristophanes, *Birds* 481f.

The simple splits in (5) and (6) illustrate the dominant pattern in Aristophanes’ *Birds*, as shown in Figure 1. Five out of total twenty eight quantified noun phrases are discontinuous (the remaining twenty three are continuous). All five discontinuous noun phrases are simple splits. In the continuous structures, the order is very flexible, but the quantifier precedes the noun most of the time (in thirteen out of total twenty three continuous noun phrases).

Hence, Aristophanes prefers exactly the opposite pattern than Gisbert Fanselow, which opens an array of possible accounts to test. Is

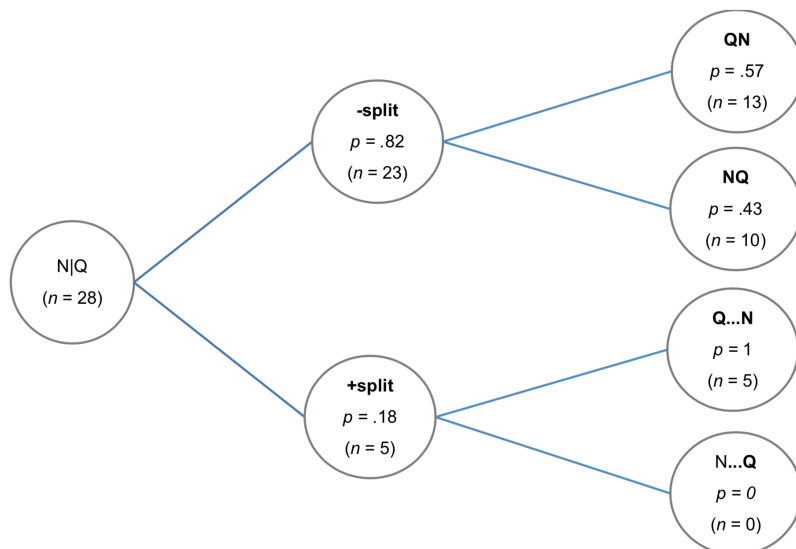


Figure 23.1: Linearization of quantified noun phrases in Aristophanes' Birds

Key:

N=nominal projection (without determiner),

Q = quantifier (existential quantifiers such as *πολύς* 'much', *ὀλίγος* 'few' and numerals such as *εἷς* 'one', *δύο* 'two', *μύριοι* 'ten thousand', etc.; not including universal quantifiers); numbers of tokens in parenthesis; *p*: conditional probability, calculated by dividing the number of tokens by the total in the mother node.

this difference a reflex of a difference in configurationality? This is certainly too simplistic, since flexibility in the Greek nominal projections is a meaningful choice, involving clear interpretable contrasts, such as the predicative interpretation of modifiers, as also shown for Warlpiri by Fanselow (1988: 107f.). Is it rather related to the fact that Attic Greek nominal structures do not have determiners and the emergent definite article does not yet lay down a fully articulated D-layer, which would constrain left branch extraction? Or does the preverbal position for narrow focus attracts quantifiers to the effect that the nominal head is stranded in the background domain following the verb? Or are both

types of split just universally available, and their acceptability in particular grammars is a sociolinguistic matter, i.e., it results from the evolution of constructions in a speech community, as argued by Fanselow (2017)? Finally, Aristophanes evidently accepts inverted splits, as documented elsewhere (cf. Aristophanes, *Acharnenses* 136) and Fanselow may accept simple splits in German at the end of a day reflecting on syntax, which would confirm his view about the manifold sources of variability.

But we should now turn to the research question of the present squib, which was not the difference between German and Greek. What do splits and birds share in common?

4 Towards an account

Aristophanes acknowledges the importance of trees as settlements of birds. They are the future temples in the Age of the Cloudcuckootown.

- (7) τοῖς δ' αἶ σεμνοῖς τῶν
 the:DAT.MASC.PL but again brave:DAT.MASC.PL the:GEN.MASC.PL
 ὀρνίθων δένδρον ἐλάας
 bird:GEN.MASC.PL tree:ACC.NEUT.SG olive:GEN.FEM.SG
 ὁ νεῶς ἔσται:
 the:NOM.MASC.SG temple:NOM.MASC.SG be:FUT:3SG

‘The temple of the brave birds will be the olive tree.’

Aristophanes, *Birds* 615-617

Trees are not only the temples of the Cloudcuckootown Age, but also the ultimate answer to the puzzle at issue. It becomes now clear what syntactic heads share in common with *buzzards*, *owls*, *geese*, *curlews*, *eagles*, *nightingales*, *bee-eaters* and *chicken* (see references in Section 1). In the words of the poet of Landshut:

- (8) Zwei Verben wohnen, ach in meinem Baum.

(Fanselow 1993: 57)

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Multistability in speech and other activities

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1 Introduction

All theories of language and speech agree on one basic working hypothesis: an infinite set of new forms or larger structures comprising chunks of speech such as syllables or whole sentences can be constructed out of a finite set of atoms, for us, consonants and vowels: “von endlichen Mitteln einen unendlichen Gebrauch machen” (von Humboldt 1836: 30) and later Chomsky’s (2000: 3) “discrete infinity”. Modern linguistic theory and all models of speech production have inherited a specific form of this hypothesis by assuming that the message is essentially a concatenation of speech gestures. We propose to explore an alternative hypothesis, which generalizes Humboldt’s “infinite use of finite means” insight. That alternative states that concatenation is just one way to combine units; there are other ways of composing or other functional organizations of what on the surface appear to be the same sequences of units. We refer to this as the non-uniqueness of functional organization hypothesis or simply the non-uniqueness hypothesis.

Consider the task of repeating a syllable, /ta ta ta .../, a rather simple utterance. One way—the standard way for theories of language and models of speech production—of describing this task is: make a /t/ (that is, configure the vocal tract to the state required for /t/), then make an /a/, then a /t/, then an /a/, and so on. The individual instructions in this sequence may be overlapped in time to some extent (‘coarticulation’) but the instructions are concatenated and the control regime for flesh-

ing out this utterance has as many instructions as there are phonemes in it. An alternative way to describe the organization is: cycle through /t/ and /a/. Now, the description length for the organization underlying the utterance is independent of the utterance's length. Specifically, the organization is not one of concatenative, sequential control. Rather, it is a so-called periodic attractor giving rise to persistent cyclicity in movement (other ways of composing units become possible when we expand the scope of mathematical models to be entertained in this proposal).

What appears on the surface in the aforementioned task is a monotony of reiterant /ta/s. What lies beneath is a so far unexplored thesis: there is no isomorphism between a spoken utterance and the control regime effecting it. The question of existence and typology of (additional to concatenation) control regimes is uncharted territory. New theoretical work along with attendant experiments are required to explore it. That concatenation may not be the only principle of composition may be of value to theoretical linguistics beyond phonology and phonetics. In syntax and semantics, there exist phenomena where composition with the regular interpretation of the individual lexical items does not add up to an appropriate meaning of the whole as in the so-called pluractionals, first introduced in Newman (1980) with verbal constructions where consonant duplication conveys iteration, and reduplicative numerals (Gil 1982, 2013). The nature of the compositional mechanisms implicated in these phenomena is an open problem (e.g., for pluractionals, as in 'she wrote book after book', see Beck & von Stechow 2007, Henderson 2013). Our view brings to the forefront the notion of composition also for phonology and phonetics. It does so by offering a formal foundation on which this notion can be elaborated on in the domain of speech. Finally, enriching the notion of composition in speech leads to a number of consequences. Here we highlight one with significant potential long-term benefits. Tasks involving syllable repetitions are widely used in diagnostic and research paradigms on speech. It is a topic of a major debate whether such tasks pertain to regular speech (with clinical implications of considerable socioeconomic weight; see Ballard et al. 2000 vs. Ziegler 2002, 2003a,b, Staiger et al. 2017). Our approach enables a formal expression of the above debate and opens up ways to resolve it. Specifically, it opens up the way for a characterization of speech

movements as separate from other movements which may be similar to speech but engage distinct organizations from speech.

2 Change in functional organization

We seek to develop a novel theoretical basis for speech movements using dynamical models (a basic tool of science based on ordinary differential equations, Thompson & Stewart 2002) which, crucially for our main thesis, admit distinct regimes. In these models, each regime corresponds to an equivalence class of movement patterns with potentially distinct spatio-temporal properties and two different regimes (two equivalence classes of movements) are mathematically incommensurate; one cannot be reduced to the other. Transitions between distinct regimes are known as bifurcations, formally, qualitative changes in the topology of the phase space—the space defined by the minimum set of dimensions needed to describe a system. An example of such topological space representations is in section 4. Mathematical models with these properties will be explored for the first time in speech.

Here we offer an example of our data. In preliminary work, we used a latest generation 3D electromagnetic articulometer (Carstens, Bovenden) to track sensors attached on the lips, jaw, tongue tip and tongue body at 1250 Hz. We registered speech movements at eight distinct speech rates, from a very slow 30 beats per minute (bpm) to a very fast 570 bpm (0.5 to 9.5 Hz). In each trial, the subject spoke a sequence, as in /ta ta .../ or /ta ka ta ka .../, at the rate indicated by an audible metronome. Fig. 24.1 shows some data. For /t/, the tongue tip raises to make contact with the alveolar ridge in a closing movement (blue-shaded rectangles in Fig. 24.1), followed by an opening movement for the vowel /a/ (brown-shaded rectangles in Fig. 24.1).

Analysis of our so registered data reveals a qualitative change of disappearing asymmetries in movement properties at a rate of approximately 210 bpm (3.5 Hz). This can be seen in different ways. Below 210 bpm, opening and closing movements differ substantially with respect to peak velocity and relative time to peak velocity (the time at which peak velocity occurs as a percentage of the movement duration).

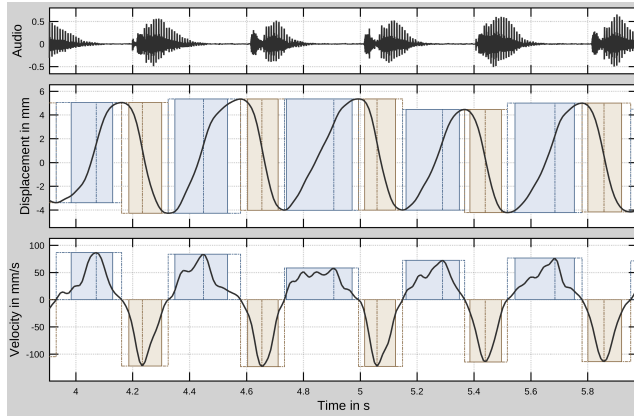


Figure 24.1: Audio (top), trajectory (displacement, on y-axis, as a function of time, on x-axis) of the tongue tip sensor during /ta ta ta .../ at 150 bpm (middle) and its velocity (bottom). Peak velocities for closing movement are lower than for opening movements (compare bottom, blue vs. brown rectangle heights). [Color image available in the online version of this article.]

At or above 210 bpm, a rate which in further experiments we expect to be speaker-specific, openings and closings converge to the same peak velocities; see Fig. 24.2, top. They also converge to the same relative time to peak velocity (0.5, that is, peak velocity is reached halfway within the opening or closing movement) of the undamped harmonic oscillator (Nelson 1983) indicating symmetrical velocity profiles; see Fig. 24.2, bottom. In other words, two movement classes change to one class: movements become cyclic at faster rates. As Schrödinger (1945) remarked, living systems are not statically stable—they are dynamically stable: the spatio-temporal order underlying what is macroscopically a /ta ta ta .../ flexibly changes as rate is increased. Both spatio-temporal orders are stable within their separate ranges of rates, a property known as multi-stability. The control regime at common speech rates (below 210 bpm) is a concatenation of discrete targeted movements: do a /t/, move to /a/, do another /t/ and so on. At higher rates, the mode of composition changes to a cyclic organization (see later for other modes under

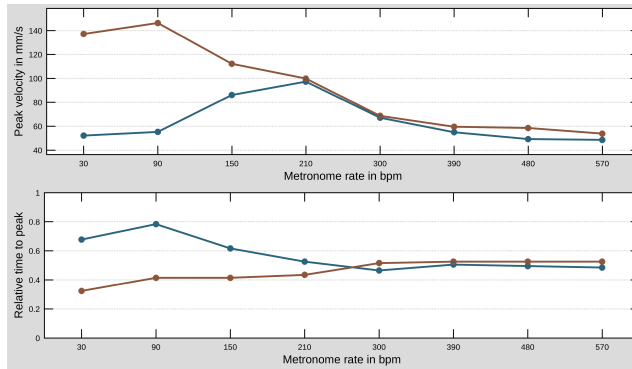


Figure 24.2: As rate increases, asymmetries in opening vs. closing movements in peak velocity (top) and relative time to peak velocity (bottom) change to symmetries: two different classes of movements converge to one class. [Color image available in the online version of this article.]

different mathematical models). Further investigation of kinematic parameters and trajectories will be performed to verify the nature of the distinct organizations. But the essential point is that there is no fixed control regime. There are different qualitative modes.

3 Informational constraints

In low speed quadruped locomotion, the limbs of the same girdle are half a period out of phase (one limb's motion is identical to that of the other limb if shifted by half of its period). But as speed increases, there is a transition from an asymmetric to a symmetric gait. Examples of such shifts in organization abound in nature (Winfree 1980). Even animals which one would not a priori think of as possessing gaits show them. For example, in flying birds, see Fig. 24.3, vortex patterns show a shift from concatenated vortex rings to a single continuous vortex ring as speed increases (the shift is seen at 7 m/s for Cockatiels and Ring Turtle-doves; Hedrick et al. 2002).

However, speech is different. Speech gestures are not mere physical instantiations of organs moving. They also carry meaning: they func-

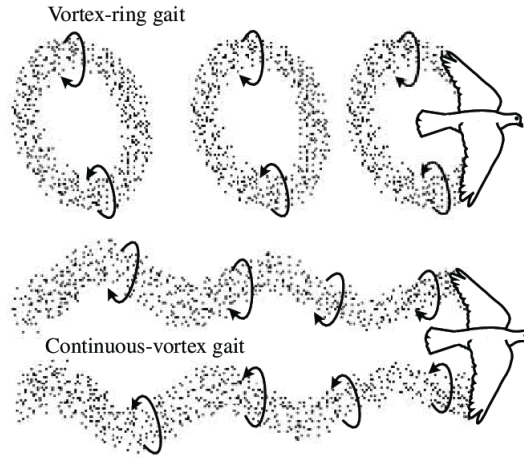


Figure 24.3: When birds fly, the vortices shed by their wings show qualitative shifts as speed of flight increases. Such reorganizations indicate that a multiplicity of qualitative modes and bifurcations among these characterize not just limbs and their kinematics properties (as in quadrupeds) but also parameters that refer to the animal-environment as a system. [Adapted with permission from Figure 1, panel A of Hedrick et al. 2002.]

tion as a message (Pattee 1969, 1972). How this communicative function shapes the movements of speech has remained a major open problem. Consider a task where participants repeat /ta ta .../ at fast rates. In a series of studies, Ziegler and colleagues (Ziegler 2002, 2003a,b, Staiger et al. 2017) have argued that such tasks, widely used in normal and disordered speech assessments, employ “distinct traits” in control, not characteristic of speech. A major debate has thus unfolded on whether such tasks pertain to speech (Ballard et al. 2000 vs. Ziegler 2003a,b). So far, neurological, clinical and experimental observations have served as the main basis of this debate.

Our research offers a theoretical foundation on which aspects of this debate can be expressed and potentially resolved. As shown in the ensuing, in models with more than one dynamical regime, the properties

of movements depend both on the model and on the regime underlying these movements. Thus, characterizing the nature of an observed movement is not possible without a parallel understanding of the control regime effecting it. In other words, Ziegler's thesis is entirely consistent with our main hypothesis. The former asks us to appreciate that organizational modes may differ across speech and non-speech orofacial movement tasks; the latter proposes to express the notion of organization by mathematical models admitting multiple regimes. However, one cannot a priori preclude a more nuanced view wherein speech and non-speech differ but may also share organizations under some parameter settings: see the next section. A major lesson from the biological world is that abstract organization in behavior is function-specific but not effector-specific (Schöner 1986: 258, Kelso 1995). In our domain, the same vocal tract organs may be governed by different dynamics in other functions (e.g., non-speech) and different organs may be governed by similar dynamics in the same function.

We will set up designs where participants utter sequences of different complexity. We will explore both meaningless and meaningful utterances, including modifying their prosody. We limit description here to one manipulation concerning vowels. In the lowest complexity utterances, participants will repeat identical syllables as in /ta ta .../ as fast as possible. In a next, higher complexity condition participants will repeat /ta tu .../ as fast as possible, then switch to /ta ta .../ as fast as possible and continue to alternate in this way. A vowel contrast is present in the latter but not in the former case. We will continue adding complexity in the form of a consonant contrast. Any qualitative differences in the movements along the complexity scale would be evidence that the introduction of complexity has consequences for the dynamics even within the space of repetition tasks which prior work argues may be in a separate class from speech altogether. There are indications that such differences do exist (e.g., see Staiger et al. 2017: 488 on their same vs. alternating consonants condition). We will also employ tasks which vary the segmental content and rhythmic structure of utterances as in Kelso et al. (1985) and Sevald & Dell (1994). We will depart from prior work in that we will register movements (not only acoustics, as Staiger et al. do for their syllable repetitions) and pursue among other methods analyses using phase space representations. An example follows.

4 Speech-like tongue movements

Do movements similar to those of speech but embedded in different biological or cultural settings abide by the same organization(s) as in speech? Work on orofacial movements has so far focused on externally accessible organs such as the jaw or the lips (mastication vs. speech: Max et al. 2003, Moore et al. 1988, Nelson et al. 1984, Ostry & Munhall 1994). For the tongue, arguably the most crucial organ for speech, some work looks into swallowing (Serrurier et al. 2012, Bennett et al. 2007). Oral movements in swallowing are partly voluntary (Green & Wang 2003), but control of tempo is infeasible. Changing tempo is crucial for us. In the perspective of our proposal, different modes in organization are revealed via continuous scaling of parameters (e.g., rate) which causes changes from one mode to another.

Music seems to offer a highly apt case. Wind-instrument players, when training, perform repetitive attacks as in /tata tata .../, called ‘single tonguing’, or /taka taka .../ with alternating /t/, /k/, called ‘double tonguing’. Trainees are explicitly told to form speech-like /t/, /k/. Thus, speech-like movements are implicated (Bertsch & Hoole 2014). Crucially, keeping on tempo is important to trainees in honing their skill.

To assess feasibility, a trumpeter was recorded double tonguing. Movies of the tongue body and tip can be found online.¹ Prior work seeks differences between speech and other orofacial action in individual parameter values (e.g., jaw acceleration in Nelson et al. 1984). Our hypothesis shifts focus to the qualitative topology of the underlying dynamical regimes. Portraits in phase space of tongue body movements in speech vs. double tonguing across different rates (indicated in bpm within each panel) are in Fig. 24.4. Speech-/taka/ (top row), at slower and normal rates (below 300 bpm), shows a double-periodicity. This pattern disappears at or above (\geq) 300 bpm. In trumpet-/taka/ (bottom row), phase portraits at slower rates show eight-figure-like shapes. These also disappear \geq 300 bpm. It is clear that the phase portraits of speech and speech-like movements are distinct below (what we expect to be a participant-specific rate of about) 300 bpm. Beyond that rate,

1. <http://www.ling.uni-potsdam.de/phonolab/trumpet/>

speech- and trumpet-/taka/ appear to converge to so-called limit cycle dynamics.

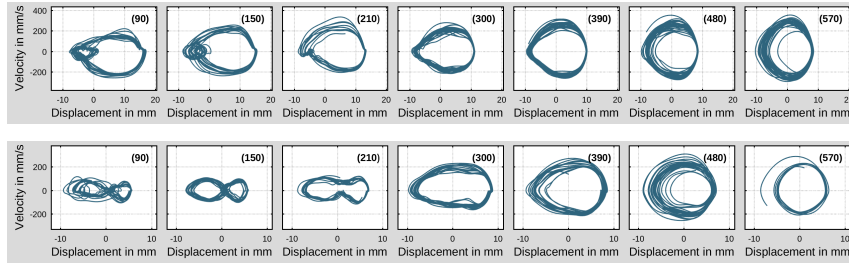


Figure 24.4: Phase portraits of /taka/ in speech (top) vs. in trumpet double tonguing (bottom). Speech and non-speech show different portraits at slower rates, but converge to a common pattern at higher rates.

Fig. 24.4 illustrates the novel viewpoint reached when the main question of this section and the debate in the previous section are expressed in topological terms. In conformity with non-uniqueness, at least three organizations seem to be involved, one for each task, speech-/taka/ and trumpet-/taka/, below a critical rate and at least one more above that rate; ‘at least one’ as further investigation of trajectories via analyses, as sketched later on, is needed to verify the precise nature of the dynamical regimes.

We return to the issue we were confronted with earlier. All speech involves vocal tract movement but not all vocal tract movement is speech: when is vocal tract movement not speech? A movement can serve as a message, that is, convey information, only in the context of the larger set of contrasts in which it operates. In the speech task, at rates ≥ 300 bpm, the vowel identity is obscured. It is not possible to discern at these rates whether the V in /tVkV/ was /a/ or /i/. The movements cannot convey contrast. This is crucial for information; Shannon (1948: 380) started his landmark paper on information theory by explaining that messages should be thought of as sequences of choices among a set of elements (for us, phonemes). It is thus not surprising that it is at these rates where the topology of what started as a speech task resembles that of the non-speech task. The movements are of course movements of the

same physical structures as in speech, but they cannot convey contrast. At normal rates, however, speech and non-speech show distinct topologies.

5 From the standard model to multistability

The standard model of the speech gesture is a special case of the linear second order system $\ddot{x} = -\omega^2(x - x_0) - 2\zeta\omega\dot{x}$ with natural frequency ω and damping ζ (Browman & Goldstein 1986, Fowler 1980, Fowler et al. 1980, Saltzman 1986). When $\zeta = 1$, this system is critically damped and approaches the so-called fixed point of the dynamics, the x_0 of the equation, but does not oscillate around it (as required for discrete movements). An appealing feature of the model is that it is intrinsically self-equilibrating: the ‘target’ of the system, the x_0 , is achieved regardless of initial conditions. Hence, in C-V-C, where C stands for any consonant and V for any vowel, going from the C to the V and then to the second C can be achieved regardless of where in the vocal tract the constrictions (for the C) or opening (for the V) are located. This is achieved by switching between the fixed points corresponding to the vocal tract targets of each segment in a C-V-C. The standard model is a single-regime model. See Sorensen & Gafos (2016) for its phase space topology and a review of other such models; see Gafos (1999, 2002) on how the model relates to theories of phonological grammar.

Mathematical models which admit more than a single regime (e.g., Schöner 1986, Jirsa & Kelso 2005) allow for qualitatively different stable spatio-temporal patterns (multistability). Such models are of particular interest due to our non-uniqueness hypothesis. We illustrate how such models offer an appropriate starting point in seeking formal expressions for our main hypothesis. We use the Jirsa & Kelso (2005) model, henceforth JK, but the point applies equally to the Schöner model. JK is described by the second order equation $\ddot{x} = (1 - x^2)\tau\dot{x} - x - b(\dot{x}/\tau - x + x^3/3) + \alpha$ and admits three regimes: for $a \in [0, 2]$, $b \in [1, 2]$, a monostable regime governed by a single fixed point and a bistable regime with two fixed points, both regimes generating discrete movements, and a limit cycle regime which generates rhythmic movements ($a = b = 0$).

For discrete movements, JK makes predictions similar but not identical to those of the standard model. To wit, let us compare predictions about how the three kinematic variables (amplitude, peak velocity and duration) relate to one another, so-called kinematic relation predictions. For the standard model, Fig. 24.5 (top), peak velocity over amplitude is proportional to the inverse of duration and relative time to peak velocity for the typically used $\zeta = 1$ is around 0.20 (which is too low; 0.38 ... 0.70 is the range seen in empirical studies as in Perkell et al. 2002). In preliminary work, JK's corresponding predictions are in Fig. 24.5 (bottom): the relation between peak velocity over amplitude and the inverse of duration is maintained but relative times to peak velocity now lift to 0.50. Furthermore, kinematic relations are regime-dependent. In the limit cycle regime (not shown in Fig. 24.5), JK predicts a nonlinear relation between peak velocity and amplitude, but a different one from that of its fixed point regime. Overall, then, kinematic relations depend on the model **and** on its dynamical regime.

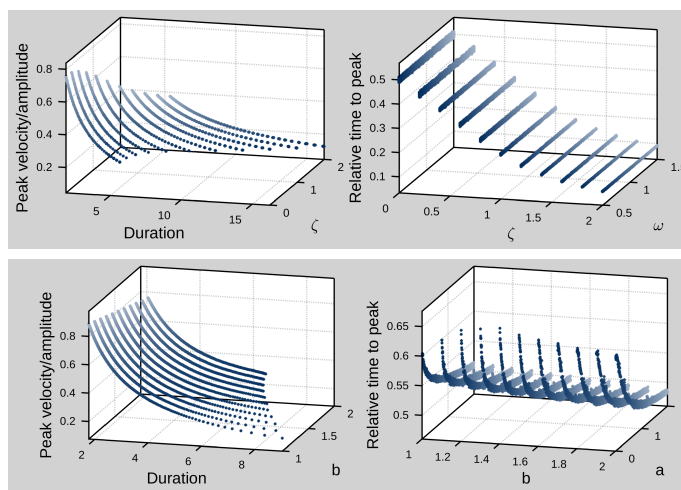


Figure 24.5: Similarities and differences in predicted kinematic relations between peak velocity, amplitude and duration of the standard (top) vs. the Jirsa & Kelso model (bottom), one of the multiple-regime models.

Consider now the ways of composing a simple utterance, a CV, in different models. In the standard model, a CV is a combination of two fixed point regimes. The same applies to JK (but as just shown JK's predicted kinematic relations are different from those of the standard model). In Schöner's (1986) model, a CV receives a very different analysis. Starting from the regime with one fixed point representing the C target, the dynamics is changed via a parameter adjustment in the model to the regime of the limit cycle; following this adjustment, the dynamics is restored to the fixed point regime now of the second V target, resulting in movement to the vowel. Kinematic relation predictions are to be worked out. The implication stated once again is: the regimes involved in effecting some sequence cannot be known *a priori*. Rigorous analyses of the different models is needed and constitutes an entirely new undertaking. In pursuing such analyses, we will use two approaches.

Such analysis can proceed in two ways. First, it is possible to make explicit the predicted kinematic relations, as exemplified in Fig. 24.5, from each candidate model by mathematical analysis, using methods from ordinary differential equations, and simulation. At this stage, no model appears to predict all the (known) kinematic relations at the same time. For example, the standard model describes well the observed kinematic relations between peak velocity and amplitude and the inverse proportionality between amplitude-normalized peak velocity and duration, but fails to offer reasonable relative times to peak velocity (Fig. 24.5, top, for $\zeta = 1$, relative time to peak is about 0.20 which is too low). There exists no prior comparative analysis of the different models.

Another way to assess models is to consider entire trajectories, that is, the time-series of position, velocity and acceleration, (x, \dot{x}, \ddot{x}) . Let the form of any model be $\ddot{x} = f(\dot{x}, x, a, b)$, where a, b are posited parameters for that candidate model; we use two here as the JK model, one of the multiple-regime models, uses two. Via bootstrapping methods, it is possible to estimate ranges for the a, b parameters. Once such ranges are obtained, a stability analysis can be done. Here, one can ask: does change in these parameters lead to a bifurcation, that is, to a qualitative shift in the topology of the phase space of the candidate model? The presence of bifurcations would offer analytical proof for the non-uniqueness hypothesis.

6 Open questions

Our main hypothesis forces us to rethink a most familiar, in theories of language, concept of concatenation and develop extensions using topological space notions of organization. We have seen evidence that doing so promises to expand our insights on the nature of the principles that underwrite speech units. It also raises a number of specific open questions, each with attendant linguistic phenomena awaiting further understanding. We mention a few examples. Are regimes sequence (in)dependent: does /tapa/ implicate the same regime(s) as /pata/? Are regimes dependent on phonemic content: does /kita/ implicate the same regime(s) as /kata/? Relevant to these two questions are observations about the kinds and frequencies of different phonological patterns. Thus, labial-coronal consonant sequences are more numerous than coronal-labial sequences across languages as well as in acquisition when the child shifts from babbling /ma ma .../ to more wordlike shapes (MacNeilage & Davis 2000). Parallel to this is the fact that studies on fast speech show evidence that /daba/ (coronal-labial) changes to /bada/ (labial-coronal) but not the inverse (Rochet-Capellan & Schwartz 2007). A notion of sequence stability seems involved. The approach promoted is highly pertinent here. A multiple-regime model has been used to express relative stability and changes in organization as a result of movement speed in other non-speech domains (Huys et al. 2008). Consider next prosody, encompassing phenomena “characteristic not so much of the individual segments as of their relations to each other” (Catford 1977: 172). A notion of organization among units is clearly involved. Here, we can ask: does /TAKa/, with stress on the first syllable as in German, engage the same organization(s) as /taKA/ with final stress as in French? In other words, are there language-specific regimes expressing foot structure and the within-foot distinction in stressed vs. unstressed syllables. Progress on the issue of how to express prominence or stress in extensions of the standard model is still at its early stages (Saltzman et al. 2008). A phase space topology approach has not been used heretofore. When topological information on phase spaces is combined with different models of the units partaking in these organizations, a new qualitative and quantitative understanding is to be expected. In sum, for each of these questions,

exact answers cannot be anticipated—when concatenation is, by axiom, the only way to combine units, these questions cannot be posed. But answers can in principle be sought—there exist, as seen earlier, methods to obtain high-quality data and mathematical tools from which to derive concrete predictions.

7 Conclusion

What is a speech gesture? In seeking answers to this seemingly simple question about language and speech, the standard approach has been to observe many examples of speech movements and aim to deduce a single model which accounts for all their essential properties. An implicit assumption in this endeavor has been that, if the sought-after model is a good model, it would be a trivial matter then to construct linguistic messages by concatenation of the so-characterized units. But why should all complexity in finding the ‘right’ model be packed at an autonomous level of the single unit? Why cannot some complexity inhere in the nature(s) of the units’ combinatorial composition mode(s)? Our thesis departs from that implicit assumption. Its driving hypothesis is that multiple functional organizations can underlie similar sequences of speech and speech-like movements. This is a new hypothesis both in theoretical investigations of speech science and in linguistics (phonetics-phonology). One of its implications is that understanding the nature of the fundamental units in question (that is, speech gestures) cannot proceed without a parallel understanding of the organization in terms of the compositional modes implicated or the contexts in which these units are embedded, precisely because that organization is not unique and, as we have seen, it is determinative of the actual realizational properties of these units; in other words, there is no single organization and thus no single context-free model of the speech gesture.

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Part V

Language branch

An anthropic principle in lieu of a “Universal Grammar”

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Among the many unanswered questions in grammar theory, the following figure prominently. *First*, what is it that enables children to successfully cope with the structural complexities of their mother tongue while professional grammarians tend to fail when modelling them? An innateness conjecture would merely beg the question. There is no compelling evidence for specific properties of linguistic expressions to be innate, that is, genetically coded somehow.

Second, what determines the narrow system corridor for human grammars? On the one hand, no two human languages share an identical rule system, but on the other hand, grammars demonstrably do *not* differ from each other “without limit and in unpredictable ways”.

Third, are the grammars of human languages the offspring of a single proto-grammar instantiating a “Universal Grammar” (monogenic) or are the shared traits of human grammars the result of *convergent changes* in the grammars of human languages of diverse ancestry (polygenic)?

An analogue of the cosmological Anthropic Principle in combination with the Darwinian theory of evolution applied to replicative cognitive programmes helps clarifying these issues. There is no urge for assuming a “Universal Grammar”, but nevertheless, languages will end up sharing fundamental grammatical properties as a result of the predictable *convergent* cognitive evolution of their grammars.

1 Anthropic grammar theory

The Anthropic Principle¹ in cosmology states that by our very existence as carbon-based creatures, we impose a sort of selection effect on a habitable universe. If, for example, just one of the numerous fundamental constants of nature were slightly changed – e.g. the strength of gravity – our life form would not be possible and no human brain could wonder why natural constants have precisely the values they have. The cosmological universe could be entirely different and human beings would not be part of it.

The Anthropic Principle turns the original question – *How come that the fundamental constants in the Universe have precisely the size they have, although their sizes could be different?* – upside down: Since we could not exist in a universe with different fundamental constants, we must not be surprised by the fact that the universe presents us exactly the constants that are necessary for the existence of biological life forms we are familiar with.

The analogue² epistemological issue in grammar theory is the question why grammars of natural languages occupy only a small region within the system space of discrete symbol manipulating systems, namely a sub-region of “mildly context-sensitive” languages (see Joshi 1985, Shieber 1985). The universe of grammars for an intelligent species could be entirely different, except that human language grammars arguably would not be part of it because our human processing resources would be either unable to put them to use efficiently or would persistently invite changes towards exploiting the available system potential more effectively. The grammar systems may make the most of the neural processing capacities of brains, but they cannot go beyond them.

Grammars and production systems below or above the threshold of

1. “Anthropic Principle (weak): The observed values of physical and cosmological quantities are not equally probable but they take on the values restricted by the requirement that there exist sites where carbon-based life can evolve and by the requirement that the Universe be old enough for it to have already done so.” (Barrow & Tipler 1986: 16)

2. I am very grateful to *Harald Uhlig* (Department of Economics, University of Chicago), who made me aware of the instructive parallel between the *Anthropic Principle* and what I had tried to outline him as an evolutionary alternative to an innateness-based UG (= universal grammar) conjecture (Bonn, June 26, 2018).

"context-sensitive" are known from many other fields, ranging from formal language theory to symbolic logic and complexity theory, but not from languages 'out of the wild'. Intriguingly, many if not all natural languages employ the computational power of context-sensitive languages³ although, for human communicative purposes, computationally much less powerful systems would suffice. If, for instance, our brain capacities would restrict grammars they are able to process to the format of "regular languages" (Partee et al. 1990: ch. 17), such language would nevertheless serve the communicative and cognitive functions of a human language and cover a potentially infinite set of utterances. We would not be aware of the possible existence of more complex grammars and of their potential but inaccessible advantages.

Human language grammars are but tiny islands in a sea of context-sensitive grammars which in turn is part of an unbounded ocean. Why do other types of grammars not exist in the realm of *human* languages? The cognitive analogue of the Anthropic Principle suggests a specific answering strategy, namely the 'anthropic' one. Natural languages have the properties they have because they reflect the properties which our language-learning and language-using human brain capacities can cope with. Systems beyond this capacity are thereby excluded. A grammar that is not effectively learnable will never become a grammar in use. On the other hand, grammars may develop into luxurious systems when adapting to the system potential of human brains. For instance, morpho-syntactically much more impoverished systems would suffice for the communicative (and also for the cognitive) functions of language, as Chinese and languages similar to Chinese exemplify.

The human language processing resources are recruited brain resources, whose history of evolution is non-verbal. Language processing is parasitic on available brain resources. Therefore, with respect to language processing, the properties of human grammars are contingent on a non-linguistic history of brain evolution. From the standpoint of grammar theory, the properties of human grammars are reflections of an acci-

3. The type of automaton required for its computation is at least a "linear bounded automaton" (LBA), that is, a subset of Turing Machines with specific storage limitations for the input (see Partee et al. 1990: ch. 20).

dental ensemble of processing resources. This, viz. the accidental quality of grammar constants, is parallel to the apparently accidental quality of nature constants.

The original non-anthropocentric and in fact stipulative answer to the first question by Chomsky (1975) – humans happen to be equipped with an innate “universal grammar” – has been highly improbable from the beginning. The inappropriateness of innateness claims has been re-emphasized in detail from the perspective of language acquisition research (Braine 1994), from a philosophy of science perspective (Lin 2016), as well as from neighbouring fields (Dąbrowska 2015). In the absence of compelling evidence for parallels between the human language capacity and innate information processing capacities of other species in terms of their hereditary and genetic properties, the UG conjecture is merely begging the question.⁴

Findings from studies of the honey bee dance language show that even ‘dialects’ (in linguistic terminology: cross-linguistic differences in grammar) are *genetically* differentiated (Johnson et al. 2011). So, it would be far from outrageous to insist on a genetic basis of differences between, let us say, indigenous users of PIE languages in comparison to indigenous users of topic-prominent East Asian languages, with a highly impoverished morphological system. No grammarian has ever published such results in the *Journal of Heredity*, and pertinent findings in human genetics are discouraging, as one would have suspected.

According to Chomsky’s original UG conjecture, human brains are *endowed* with a singular capacity for acquisition, implementation and use of highly specific rule systems of grammars. As it is a singularity, its properties must be taken for granted as a serendipitous quality of human brains. However, it is highly unlikely and in fact impossible that such

4. If a formally rich system such as the structures of a grammar of a human language were genetically determined in detail, genetic defects should affect circumscribable subparts analogous to brain lesions that knock out narrowly circumscribable language functions. The only evidence we have is that the Forkhead-Box-P2 gene, situated on the long arm of chromosome 7, seems to play a role in inherited SLI. However, this gene has been found to be crucial also in songbird brains (Teramitsu et al. 2004). Mutations may result in disorders of learning or using a given grammar, both in human and avian brains. But birds don’t use a human language grammar, so FOXP2, of course, cannot be regarded as the ‘grammar gene’ of homo sapiens.

a singularity, that is, an extremely complex innate disposition, could fulgurate in a single species. The evolution of a complex innate capacity would proceed step by step and its beginnings would show also in closely related species. The idea that humans are endowed with a richly structured, innate language capacity has served as a tentative solution to the *argument from the poverty of stimulus* in language acquisition, that is, the insight that the grammatical competence attained by a child in first language acquisition is underdetermined by the linguistic intake if learning were a matter of trial & error. Children could not know how to correctly interpret the absence of certain patterns. A given structure might be missing either because it is ungrammatical or because nobody happens to use it.

Here is an example. Multiple *wh*-constructions are infrequent, they cross-linguistically differ sharply, and nevertheless, L1-learners end up with a uniform grammar of these constructions. How can a monolingual child acquiring English arrive at the categorical insight that a particular class of structures is ill-formed without insourcing negative evidence in the form of trials and corrective feedback? But children do not test out rare syntactic variants. Nobody has ever observed a child checking out multiple *wh*-question patterns. Nevertheless, speakers of English uniformly end up with a steadfast refutation of *how* or *why* in (1a), in place of *therefore* or *completely* in (1b), even if they have never uttered such a question before.

German speakers, on the other hand, would not find fault with the semantically and syntactically corresponding items *weshalb* (‘why’) and *wie* (‘how’), as in (1c).⁵ Crucially, this is not a peculiarity of English versus German. It is a cross-linguistically valid phenomenon. English is representative of languages with strictly head-initial verb phrases and a subject position outside of the VP, a.k.a. ‘SVO’ languages. In other

5.

- (i) *Wer* hat *weshalb* begonnen, und *wer* reagierte *wie* auf die der Gegenseite
who has *why* begun and who reacted how on the the opposition
 unterstellte Provokation?
 alleged provocation

(Frankfurter Rundschau – 25.07.2017

<http://www.fr.de/politik/meinung/gastbeitraege/g20-krawalle-woher-kommt-die-gewalt-a-1319313> (accessed June 30, 2018)

words, the restriction behind the pattern (1a) is a property of genuine SVO languages. This restriction is neither found in SOV languages nor in languages with variable head-positioning, such as the Slavic languages (see Haider submitted(b), Haider & Szucsich submitted).

- (1) a. *Who has *why/how* objected? – *It is unclear who has *why/how* objected.
- b. Google has *therefore completely* denied all accusations.⁶
- c. Wer hat *weshalb/wie* protestiert? – Es ist unklar, wer who has *why/how* objected – it is unclear who *weshalb/wie* protestierte.
why/how objected
- d. *Who objected *why/how*? – **Why/How* did who object?

There are even cases of unavoidable clashes, as for instance (1d). Since *wh*-fronting in an SVO-type language must neither leave behind an interrogative subject nor a semantically higher-order *wh*-quantifier such as *how* or *why*, and since there is only a single *wh*-slot open for fronting, there is no well-formed ordering for (1d) available (Haider 2013: 138–142; Haider submitted(a), in press). German, Japanese or Russian,⁷ to name just three non-SVO languages, are not subject to such a constraint.

The grammatical source of the restriction underlying (1a) is epiphenomenal. It is implicated by a general restriction on head-initial phrases to be explicated below. Children are not misled by the fact that normally, in multiple questions, the second occurrence of an interrogative phrase is left in-situ, that is, in the exact position in which the non-interrogative phrase would occur. This would be the position of *therefore* and *strongly* in (1b). Hence, an obvious question is this. What prevents an English child from entering the German-Japanese-Russian route? The answer

6. <https://techengage.com/google-ceo-testimony-delayed/> (Dec. 5th, 2018)

7. In typological surveys, Slavic languages tend to be misclassified as SVO, simply because the linear order of subject-verb-object happens to be a frequent pattern in simple clauses in each of these languages. However, when a sufficiently large set of characteristic SVO properties is systematically scrutinized, it turns out that Slavic languages are not SVO. They are languages with variable head positioning (Haider & Szucsich submitted).

is identical with the answer to the question as to how such constraints have come into being in SVO languages, as will be argued below.

Chomsky (1975) contemplated this kind of decision problems for a learner, but his original solution – an innate language acquisition device resting on an innately preconfigured grammar that excludes constellations as in (1a,d) – has remained unfounded. Nobody has ever been able to produce immediate and compelling evidence in favour of the strong nativist hypothesis. Eventually, even its proponent (Chomsky 2011) prefers to abandon it.⁸ The original question was this. What enables children, given their feeble cognitive capacities, to acquire a complex and intricately structured system of symbol manipulation?

Here is the ‘anthropic’ answer: Grammars that children could not fully grasp would not come into existence, simply because no human brain would acquire and then use them. So, what makes a grammar learnable? The universal constants of the universe of human grammars are constants that characterize learnable grammars for human brains. Our grammar systems are the result of a process of cognitive evolution in which the human language processing resources are the selection environment. Languages are learnable since the grammars of human languages have been selected for learnability by the numerous generations of grammar acquiring brains and there is an enormous amount of grammar variants that did not pass the selection filters, but we are not aware of them.

Such an answer must be framed in terms of the insights we owe to Charles Darwin. Complex systems do not suddenly appear from nowhere. They are the result of evolutionary processes. Such processes shape any self-replicating system, be it genetically or cognitively represented. Cognitive evolution shapes the cognitive ‘software’ packages or ‘apps’ for languages, a.k.a. grammars of natural languages. These cognitive systems are subject to the very same principles of evolution that determine genetic evolution: variation + selection = adaptation.

8. “[...]the best answer would be that a sudden and very slight evolutionary event yielded Merge, and that the rest follows from natural law” (Chomsky 2011: 275)

2 The inevitable cognitive evolution of grammars

No zoologist ever had to insist on a “Universal Grammar” of sea-dwelling life, for instance. This does not clash with the fact that many species have independently developed fins, fin-like extremities or webbed feet. We may call them anatomical sea-life “parameters”. When mammals re-entered the sea, they developed into orcas, dolphins or seals, to name just a few species, and they developed fin-like arms and legs. In other words, there is no need for a universal grammar of sea-dwelling and surely not for an innate one in order to be able to explain why there are invariants across organisms in the same habitat. The theory of evolution is sufficient. Languages share a habitat, namely the same neuro-cognitive environment for acquisition and use. A language with grammar G can survive only if G happens to enter enough brains and this is why cognitive evolution leads to neuro-cognitive adaptation of grammars to brains. “Overall, language appears to have adapted to the human brain more so than the reverse” (Schoenemann 2012: 443).

Darwinian evolution is not substance-bound, that is, it is not restricted to the genome of biological systems. Evolution inevitably takes place whenever a *self-replicating* system is open for *variation* and is embedded in a context that constantly *sieves out* variants. On the level of cognitive structures, grammars are self-replicating in the same way as a virus⁹ is self-replicating on the level of cellular structures (Haider 2015). It needs a host and the host for grammars is our brain.

In the long run, only those variants will survive that are not sieved out. In other words, variants win that happen to turn out as ‘fitter’ within their selecting environment. Fitness means that more learners ingest and implement this particular variant than other, slightly different ones. The emergent result is better-adapted grammar systems.

9. According to Koonin (2012: 294), a virus is encoding information required for its reproduction and, hence, it possesses a degree of autonomy from the host (genetic) system. Grammar encodes the information for language production and reception by the host organism, *viz.* language users. This is necessary for reproduction of the ‘virus’ in language acquisition. A virus may be coded genetically or purely informationally (cf. computer virus).

Adaptation to an environment is a consequence of *random* variation of self-reproducing systems exposed to an environment with *constant* selection. The neuro-cognitive apparatus is the constant selector for grammars. Grammars are cognitive programmes. They are neuro-cognitive software packages, or in present day jargon, “apps” for language processing. Grammars manage the handling of particular symbol systems. Of course, languages are used for cognitive and communicative functions, but grammars determine these tools on the basis of the neuro-cognitive capacities that govern their acquisition and use.

A Grammar is – even literally – a cognitive virus programme. The cognitive virus corresponding to the grammar of our mother tongue governs our language production behaviour. At the same time, language usage is the reproduction device for the virus. Children acquire their grammar on the basis of being exposed to language productions and they put it to use. Afterwards, their productions become part of the input for the next generation’s acquisition of grammar, and so on.

Such a reproduction process is necessarily imperfect. An inevitable by-product of inaccurate acquisition is variation. Variation – as in the case of mutations in the biological instantiation of evolution – is enhanced by various other factors, including language contact or dialectal segregation. What this scenario amounts to is an instance of Darwinian evolution on the level of cognitive structures and their variants. Researchers interested in the “evolution of language” traditionally focus on the *biological* features and speculate about their *communicative* use.¹⁰ As a consequence, too little is known about the evolution of cognition in general and in particular about the evolution of linguistic capacities as a central part of our cognitive inventory, namely language processing.

Evolution inexorably results in adaptation to the selecting environment.¹¹ The selecting environment for grammars is the ensemble of cognitive capacities of our brains that has gotten recruited for language

10. “A look at the literature on evolution of language reveals that most of it scarcely even addresses the topic. Instead, it largely offers speculations about the evolution of communication, a very different matter.” (Chomsky 2011: 265)

11. This is a corollary of Fisher’s theorem: “Assuming that natural selection drives all evolution, the mean fitness of a population cannot decrease during evolution (if the population is to survive).” (Koonin 2012: 8)

processing. Their history of evolution is independent of language. In the evolution of humans, complex grammars of languages are too recent an achievement to be a result of *biological* selection on its own.¹²

Language processing has always been parasitic on already existing computation capacities of the human brain which have existed already before these brains started with language (Christiansen et al. 2009). This set of capacities is a selector in the ongoing adaptation of grammars to their neuro-cognitive processing environment. Grammar variants that can be more easily acquired or more efficiently put to use, will eventually ‘infect’ more brains than other variants in the long run. As a consequence, grammars will become optimized for learnability and on-line usability.

Here is an example of the recruiting of already available brain resources for language processing. Broca’s and Wernicke’s area in the language-dominant hemisphere are hotspots in the cortical language processing circuits. But they are no homo-sapiens innovations.

“Our findings support the conclusion that leftward asymmetry of Wernicke’s area originated prior to the appearance of modern human language and before our divergence from the last common ancestor.” (Spöcter et al. 2010: 2165) “Broca’s and Wernicke’s areas, and the arcuate fasciculus connecting them, were not specially evolved for language.” (Schoenemann 2012: 455)¹³

Let us return to the initial example. How can a child find out that (1a) is ill-formed, given that (s)he notices that (1b) and (2a) are in use? It cannot and it need not. It is the processing system that shies away from the kind of structure that (1a) would instantiate in a language with head-initial phrases. (1a) requires the very same structure that would be needed for (2b). Needless to re-emphasize that the counterparts of (2b,c) are fully acceptable in non-SVO languages (2d,e).

12. In comparison to songbirds (Brenowitz 2008), our brains are not *a priori* ‘hardwired’ for language processing. Each of the brain functions and brain regions recruited for language processing supports other functions, too, and moreover, they are already functioning in the brains of our nearest relatives, as for instance bonobos, who do not use complex grammars.

13. “Functional asymmetries in the brain were initially thought to be uniquely human, reflecting unique processing demands required to produce and comprehend language. Nonetheless, functional and structural asymmetries have been identified in nonhuman primates and many other species.” (Toga et al. 2010: 99 Toga & Thompson 2003)

- (2) a. *Why* did they object? – *How* did they object?
- b. *They have *more than twice/with great emphasis* objected.¹⁴
- c. It has *more recently* (*than we thought) gained popularity.
- d. Sie haben [viel öfter als wir] [mit großem
they have [much more-often than us] [with great
Nachdruck] widersprochen.
emphasis] objected
- e. Es hat sehr viel früher (als wir dachten)
It has very much-more recently (*than we thought)
Popularität erlangt.
popularity gained

(1a) is ruled out by the very same grammatical restriction that rules out (2b) or the bracketed extension in (2c). It is a restriction on left adjuncts of left-headed phrases (Haider in press). The acceptable versions, such as (2c), are phrases with an adjacent, semantically selecting head. *Wh*-items are non-selecting. They count as phrasal. Therefore, they are disqualified as pre-adjoined adjuncts of head-initial phrases.¹⁵

In head-final phrases, these items are within the directionality domain of the verb, whence the absence of the particular constraint in German. The overarching constraint is a directionality requirement of 'gluing' non-selected phrases to licensing heads. Left-hand adjuncts of head-initial phrases are outside of the licensing domain of the head of the host phrase, hence they must be 'glued' to the phrase, which amounts to a head-adjacency requirement (Haider in press).

14. The British National Corpus (BNC) of 100 million words contains 166 tokens of "has therefore", but not a single token of "has why" or "has more often than x" (with x as the target of comparison), although "has * often" (* as a word joker) is attested 64 times. The respective numbers for CocA (520 million) are: 113 – 0 – 0 – 111.
15. This is confirmed by left-hand attributes of head-initial NPs in otherwise OV-type languages such as German.

(i) ein viel schlechteres (*als dieses) Argument
a much worse (*than this) argument

3 Convergent evolution of grammars under cognitive selection

In biology, convergent evolution is described since the 19th century (Gould 1989, Pearce 2011, Weismann 1893). For the present purpose, Haeckel's biogenetic law of 1866 – *Ontogeny recapitulates phylogeny* – is a good starting point, even if it has been discredited in many details. Von Baer (1828) has been more accurate when claiming that the general characters of a taxonomic group show earlier in an embryo than the specialized characters do. Species diverge from one another as development progresses. He concluded that the stages an embryo passes through during ontogeny only represent *embryonic stages* of other species, not *adult* forms.

As for the evolution of grammars, the analogous situation is the following: The acquisition paths in first language acquisition recapitulate steps in the evolution of grammars in the history of mankind. Von Baer's linguistic version is this: In early stages of language acquisition – until leaving the two and three-word stage – children proceed independently of the patterns of their respective mother tongues. For instance, children may choose V-before-subject orders even in languages in which the subject would invariably precede the main verb (Deprez & Pierce 1994: 64–65). Their behaviour arguably resembles the “embryonic stages” of human languages in the evolutionary history. Another window into the ‘embryonic phase’ is the isolated emergence of new languages, as in the case of a Nicaraguan sign language (Senghas et al. 2004) or in experimental tasks (Goldin-Meadow et al. 2008). In each of these cases, an SOV word order is preferred for denoting transitive events.

When children enter grammar acquisition, they proceed from “*Me Tarzan*” and “*You Jane*” to end up after a couple of years in a steady state that governs complex utterances such as “*Whether 'tis nobler in the mind to suffer the slings and arrows of outrageous fortune, or to take arms against a sea of troubles, and by opposing end them.*”

It is an educated guess that our human ancestors, just like today's children, have started with two and three word utterances, with little to no restrictions that would deserve the denomination ‘grammar’. From

then on, cognitive selection has been working steadily and unavoidably and it rewarded and conserved variants that turned out to be more effective and more easy to process and acquire. Of course, the processes of selection were dependent on the existence of variation on the one hand, but on the other hand, selection is non-deterministic. Just as in biological evolution, it is unpredictable which specific step will happen and when. Evolution does not provoke changes. It merely channels changes in terms of sieving out variants. On the other hand, if a system is in a stable and undisturbed equilibrium, it may continue without changes for long periods of time.

Salish languages (Jelinek & Demers 1994) seem to have conserved what appears to be a design that antedates the design of the classical Indo-European languages. In Salish languages, lexical categories apparently do not exist. The arguments of a lexical item are differentiated by morphological markers, not by lexical category or by phrase structure. These markers serve as identifiers for the arguments in the argument-predicate relation.¹⁶

Lexical categorization is a precondition on the way to phrase structuring, with phrases differentiated by the head categories. First, the lexical categories of heads partition the morphological markers that are attached to them. This design of morphological identification is in turn a precursor of a design in which the *morphological* coding (3a) of grammatical relations got replaced by *structural* coding in terms of head-initial and thus strictly linearized phrase structures (3b) which allow for an efficient *procedural* identification of essential relations without much recourse to morphological marking. Cognitively, this amounts to a shift from declarative memory load to cognitively less costly procedural memory capacities. No language is known that has gone the reverse way, that is, starting with an English-like or Chinese-like grammar and ending up with a grammar like Sanskrit or Latin.

16. Cable (2008): "Salish languages are as close to 1st order predicate logic as natural languages get."

- (3) a. Gallia est omnis divisa in partes tres, quarum unam incolunt
Belgae [. . .] (Latin; Caesar, *De bello Gallico*)
- b. All Gaul is divided into three parts, one of which the Belgae
inhabit [. . .]

From a typological point of view, languages like English, that is, languages with strictly head-initial phrases and a structurally unique subject position preceding the verb are diachronically younger. It is a much more likely end point of diachronic changes than a starting point. In other words, many SVO languages have SOV ancestors, but hardly any SOV language has an SVO ancestor (see Gell-Mann & Ruhlen 2011). The later change is very rare and it is the result of a language contact situation with a dominating SOV language. It is not the result of a gradual change of a language guided by natural (positive) selection.

Let us turn briefly to monogenesis vs. polygenesis issue. Here, the evolutionary perspective invites a new perspective, too. Given the scarcely populated African and Eurasian continent during and after the “*Me Tarzan–You Jane*” millennia, polygenesis of grammars is much more probable than monogenesis. The cross-linguistic invariants of modern languages are the reflex of convergent cognitive evolution (Pearce 2011) by constant selection of grammar variants by the invariant neuro-cognitive processing resources that constitute the human language-processing facility.

Today, linguists are confronted with an apparently domain-specific language capacity. But this impression is merely a tunnel-view perspective on the problem. The specific ensemble of brain resources recruited for language processing may appear to be domain specific. However, its components are not domain-specific at all. They have been recruited from the already existing and therefore available cognitive processing resources of the primate brain. If viewed from this angle, there is no need for an innateness conjecture.

As a simple illustration of this idea, consider for instance your laptop. It is a domain-general device. One may type papers, send e-mails,

watch videos, listen to music, calculate statistics, and so on. A text editor is a specific combination of available computation resources of the laptop that amounts to a domain-specific application. The resources it combines are domain general, the specific combination of the resources amounts to a domain specific application. Grammars are cognitive apps for language usage. These apps have been shaped by cognitive evolution. Biological evolution has shaped brains that happen to provide the computational capacities for ‘running’ such cognitive apps.

Human acoustic decoding, for instance, capitalizes on categorial perception. This capacity of our brain is not species-specific. Chinchillas, monkeys, chicken or rats dispose of it (Kriengwatana et al. 2015). However, as it is an available and useful resource of human brains, too, it got recruited for language processing. The whole ensemble of human computation resources is the selecting background environment for the evolution of grammars. A grammar variant has a chance to occupy more brains if it is better adapted, that is, if it is rewarded by brains that reward structures that can be processed more easily and effectively.

Due to the lack of script in most languages, the historical depth of documented grammar changes is shallow. Nevertheless, what we know is already sufficient for realizing clear effects of ongoing cognitive evolution by variation & selection. Here is just one of the many insights produced by population genetics research that we linguists can readily insource and apply to our domain. Fisher (1930) formulated and proved a fundamental theorem of natural selection, commonly known as *Fisher’s theorem*: “The rate of increase in fitness of any organism at any time is equal to its genetic variance in fitness at that time.” In other words (Koonin 2012: 7), the *intensity of selection* and hence, the *rate of evolution* due to selection, is proportional to the magnitude of variation in an evolving population, which, in turn, is *proportional to the effective population size*.

This accounts immediately for the fact that Icelandic, Faroese, or Sardinian have changed less and have conserved more of the earlier traits than Swedish, Danish, and Italian, although they are offspring of the very same ancestor languages. A small population confined to a small region produces less variation and therefore less chance for change.

Summary

Darwinian evolution working on cognitive representations of linguistic structures processed by the human brain provides adequate answers to the three questions: Grammars are learnable since learnability is the prime factor of the selecting cognitive environment. Better learnable variants will occupy more brains and spread.

Second, human languages stay within a corridor delimited by originally non-verbal brain resources recruited for actual grammar usage. Third, there is no need for insisting on a ‘monogenetic’ origin of human grammars. Cognitive evolution accounts for the cross-linguistically convergent as well as divergent traits of human grammars.

Finally, ‘universal grammar’ turns out as a disposable conjecture. A theory of cognitive evolution provides a more rewarding approach. What is innate is not the grammar format. The brain capacities recruited for language processing are innate and these are the selectors in the permanent cognitive evolution of grammars that has formed our present day languages.

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Über naturnotwendige und kulturaffine Schritte in der Sprachentstehung und -entwicklung

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1 Abstrakt

Grob gesehen, unterscheide ich drei große Phasen der Menschheit, bezogen auf Sprachfähigkeit: Über den Schimpansen hinaus (die Vormenschen), die Entdecker der Sprachlaute (die Frühmenschen), und die nachsteinzeitliche Menschheit. Alle Stufen der Sprachgenese sind geprägt durch Wildwuchs; dabei entsteht erst Vielfalt, die anschließend reduziert wird. Dem entspricht ein methodisch-einschränkendes Prinzip der Sprachbeschreibung: Einzelsprachen bestehen nicht primär darin, neue Sprachinnovationen einzuführen, sondern die denkbare kategoriale Vielfalt in spezifischer Weise einzuschränken. Diese constraint-basierte Methodik bringt Chomskys ursprüngliches Programm in 'Syntactic Structures' wieder neu zur Geltung.

2 Phase I : Über den Schimpansen hinaus (die Vormenschen)

1. Es beginnt mit der *Fähigkeit des Zeigens* auf etwas; das ist sozusagen die Urgebärde. Sie ist nicht nur der phänotypische Anfang der Sprache,

sondern auch ihr genotypischer Anfang. Wenn ich richtig erinnere, hat Tomasello festgestellt, daß Schimpansen zwar nachahmensweise auf etwas zeigen können, diese Geste aber nicht kommunikativ verwenden: ein Schimpanse sieht nicht dahin, wohin ein Partner zeigt. Aber das muß geschehen, wenn Zeigen zum *referentiellen Akt* werden soll. Daß die Fähigkeit des Zeigens einen evolutionären Fortschritt darstellt, ist unmittelbar einsichtig; man hat Vorteile, wenn man jemandem Feinde oder Nahrungsquellen zeigen kann. Um auf das eigene Zeigen aufmerksam zu machen, kann man ansonsten unkoordinierte Laute ausstoßen; mit anderen Worten: es ist denkbar, daß Gebärden und Laute von Anfang an synchronisiert wurden.

2. Als zweites wird es *ikonische Akte* im Spektrum möglicher Gebärden geben. Ob Schimpansen diese Fähigkeit haben, weiß ich nicht; denkbar wäre es. Sie können vermutlich ihren Artgenossen drohen, ihnen schmeicheln, sie lieblosen, einen Gegenstand tragend ihren Stolz ausdrücken, o.ä. Hier fehlt mir die Kenntnis von Feldbeobachtungen. Es sind allesamt gebärdliche Äußerungen: eine drohende Geste ausführen heißt: dem Partner zu drohen. Es ist denkbar, daß all dies auch mit Lauten verbunden wird, weil mit den Gebärden auch emotionale Zustände ausgedrückt werden. Ikonische Akte können vielfach in Nachahmungen auftreten: etwas so tun, wie ein anderer es tut oder getan hat.

3. Es ist nicht evident, ob es zuerst referentielle oder ikonische Akte gab. Falls man ikonische Akte an Nachahmungen bindet, dürften sie noch vor den referentiellen Akten aufgetreten sein. Nachahmungen sind noch nicht automatisch kommunikative Akte, aber Zeigen ist kommunikativ. Insofern ist die Fähigkeit des Zeigens (zusammen mit der Fähigkeit, dahin zu blicken, wohin gezeigt wird) wirklich der Beginn der Sprache; und zwar einer gebärdlichen Sprache.

4. Um die gebärdliche Sprache zu vervollständigen, muß sie *ikonische Gebärden* (die z.B. zeigen, wie eine Tätigkeit oder ein Objekt aussieht) *mit referentiellen Gebärden* (die auf eine beteiligte Person oder auf ein beteiligtes Objekt zeigen) *verbinden*; damit läßt sich dann eine elementare Aussage realisieren. Dies ist der entscheidende Schritt, um Kombination zu etablieren. Solche Kombinationen hat es schon lange gegeben. Wenn ein Schimpanse, aggressive Laute ausstoßend, mit herumwirbelnden Armen auf einen Artgenossen zustürmt, so signalisiert er Angriff

auf diesen. Es ist denkbar, daß die Keimzelle der Ausdruckskombinatorik aus solchen Gleichzeitigkeiten entsteht. Moderne Gebärdensprache läßt erkennen, daß ikonisch zu deutende Handformen oft mit referentiell zu deutenden Handbewegungen verbunden werden. Zu sagen, daß die komplexe Handformbewegung ein Symbol darstellt, heißt, sie aus der Perspektive der Lautsprache zu betrachten, wo die Bestandteile bereits als Symbole gelten, die geeignet kombiniert werden müssen.

5. Ich halte den Erwerb der Kombinatorik nicht für das Hauptproblem in der Entstehung der Sprache, sondern die Etablierung der *Lautsprache*. Dazu waren zwei Dinge erforderlich. Erstens mußte es möglich sein, die Lautäußerungen willentlich zu steuern (was z.B. Schimpansen nicht können). Vielleicht haben Gruppen von Vormenschen angefangen, sich gemeinsam in Situationen zu bringen, in denen sie emotionale Laute hervorzubringen hatten, und konnten so den sozialen Zusammenhalt festigen. Rhythmische Muster der späteren Lautsprache mögen durch gemeinsames Singen und Tanzen entstanden sein (was in allen schriftlosen Kulturen eine große Rolle spielte).

6. Zweitens mußten Möglichkeiten gefunden werden, Lautäußerungen mit speziellen Bedeutungen zu versehen. Anders als Gebärden lassen Laute nicht schon von sich aus referentielle und ikonische Akte verstehen; sie müssen stattdessen in symbolische Zeichen verwandelt werden. Die Erfindung der Symbolik (Lautkette A steht für die Bedeutung B) ist die zentrale Leistung. Sie konnte nur stattfinden, weil gebärdensprachliche Bedeutungen auf häufig gleichzeitig stattfindende lautsprachliche Äußerungen übertragen wurden, und zwar in Kontexten, in denen Lautäußerungen mehr und mehr kontrollierbar wurden. Diese Fähigkeit entsprang vielleicht der als solche nachgewiesenen FOXP2-Mutation. Daß Lautsprache einen Fortschritt markiert, ist evident: Man muß sich nicht sehen können, um zu kommunizieren; und: Schon das ungeborene Kind kann sich vertraut machen mit der Muttersprache.

7. Daß moderne Gebärdensprachen inzwischen lautsprachliche Äußerungen ohne inhaltlichen Verlust wiedergeben können, beruht m.E. auf einer Rückgabe der lautsprachlichen Errungenschaften auf eine modernisierte Gebärdensprache.

8. Es gab eine Vielfalt verschiedener Vormenschentypen, nicht nur daß die biologische Entwicklung zu neuen Arten durch Anpassung

in klimaveränderten Weltgegenden führte, es gab auch eine Aufspaltung in verschiedene Entwicklungsstränge, wobei Lebewesen aus verschiedenen Strängen teilweise miteinander Nachfahren hatten. Paläontologische Untersuchungen zeigen, wie sich Merkmale der Hand, des aufrechten Ganges, der Zähne, des Gehirnwachstums, der Lebensweise, der Werkzeuge, der Wohnstätten fächerartig auf die verschiedenen Vormenschenarten ausbreiteten. Dabei waren einige Arten hochbeweglich, besiedelten neben Afrika auch große Teile Eurasiens, überwandern vermutlich auf Flößen die Lombokstraße, die biogeographisch Ozeanien von Asien trennt. Daß sie auch entwickelte Kommunikationssysteme besaßen, darf wohl angenommen werden. Möglicherweise sind sich moderner *homo sapiens* und der Neandertaler nicht nur gebärdensprachlich, sondern auch lautsprachlich begegnet. Warum schließlich alle anderen Vormenschenarten außer uns selbst ausgestorben sind, wissen wir nicht.

3 Phase II: Frühmenschen in kleinen Gruppen

1. Die symbolfähige *Lautsprache* hatte nicht mehr das Problem der Kombinatorik an sich zu lösen, sondern stattdessen eine Mannigfaltigkeit der elementaren Bedeutungselemente zu etablieren. Auf was man zeigen konnte, waren primär feste Gegenstände, was man ikonisch ausarbeiten konnte, waren primär Handlungen an solchen Objekten. So ließ sich ein stetig wachsendes Lexikon etablieren, daß über mindestens 2 Kategorien verfügte (die wir heute Nomen und Verb nennen).

2. Eine erste elementare Grammatik der Lautsprachen ergibt sich als *silbenmodifizierende Morphologie*. Die Silbe ist eine Grundeinheit der Lautsprache so wie die Handbewegung eine Grundeinheit der Gebärdensprache. Und so wie man zur bewegten Hand die Handform und evtl. auch Auge und Mund als modifizierende oder präzisierende Elemente hinzutut, so kann man zur Silbe Ton, Dehnungen, gehauchte oder gehobene Vokale, Konsonantenmutationen usw. hinzutun, um damit zu modifizieren oder zu präzisieren. Mit modifizierender Morphologie lassen sich Kategorien wie Person, Numerus, Possessor und Kasus, Tempus, Aspekt und Modus, epistemische Einstellungen, Optativ, Konjunktiv, Kausativ, Reflexiv, Passiv und vieles mehr realisieren. *Veni, vidi,*

vici ist ein Paradebeispiel für elementare Grammatik (“Nachdem ich gekommen war, das Schlachtfeld überblickte und gezielt meine Kräfte einsetzte, gewann ich.”)

3. Silbenmodifizierende Morphologie kann extrem kompliziert sein. In den kleinen umherschweifenden Menschengruppen, die vor mehr als 10.000 Jahren von Jagd, Sammeln, gelegentlichem Tauschhandel und Schaffung günstiger Umstände lebten, reichte diese Art von Grammatik aus, um miteinander zu kommunizieren. Hunderttausende Jahre lang umfaßten die Menschengruppen kaum mehr als 20 oder 30 Personen; erst mit dem, was man als “neolithische Revolution” bezeichnet, änderte sich die Größe der Gruppen und bald begann auch die Tendenz zum Ausbau einer komplexeren Syntax.

4 Alle Vielfalt stammt aus dem Chaos.

1. *Die chemischen Elemente.* Im Innern der Sonne besteht ein Protonen-Elektronen-Plasma bei Temperaturen von über 10 Millionen Grad. Protonen verschmelzen sukzessive zu schwerem Wasserstoff (^2H), leichtem und schwerem Helium (^3He bzw. ^4He), wobei die Energie der Sonnenstrahlung freigesetzt wird. Infolge kosmischer Strahlung entstehen ^4Be und ^5Bor . Alle höheren Elemente entstehen durch weitere kosmische Prozesse (Zerfall und Vereinigung von Sternen).

2. *Die organische Materie.* Es bilden sich Proteine: Molekülketten aus den 6 Elementen H, O, N, C, P und S und evtl. weiteren Einsprengeln. Daraus entstehen die einfachsten Lebewesen (Prokaryoten): Bakterien ohne Zellkern, aber mit DNS-Erbinformation und der Fähigkeit, sich komplett den äußeren Bedingungen anzupassen. Ebenfalls Viren, die sich aber nur innerhalb eines komplexeren Lebewesens vermehren können.

3. *Mehrzellige Lebewesen* (Pilze, Pflanzen, Tiere). Ausgewählte Prokaryoten verschmelzen zu sog. Eukaryoten. Sie haben eine charakteristische Zellstruktur. Jede Zelle enthält einen Zellkern mit DNS, die die Baupläne für Proteine liefert; sie werden durch RNS zu den Ribosomen transportiert, die entsprechende Proteine produzieren; Energieproduzent sind die Mitochondrien (die ihrerseits DNS enthalten).

4. *Alle diese Prozesse verliefen spontan und zufällig*; sie folgten keinem inhärenten Programm oder einem von außen vorgegebenem Regelwerk. Zu Anfang gab es extrem viele Alternativen - die meisten führten aber zu keinem innovativem Ergebnis. Das sieht man allein schon daran, daß zuerst Milliarden von Jahren, danach viele Millionen von Jahren, dann Tausende von Jahren und schließlich nur noch ein halbes Jahrhundert verging, bis sich die Welt geändert hatte. Mit anderen Worten: Mit der Zeit reduzierten sich die Alternativen, und zwar immer schneller. Die DNS eines Bakteriums ist nur effektiv, wenn sie besonders komplex ist: Bauanleitungen für alle möglichen Proteine besitzt, die benötigt werden, um sich der Umwelt anzupassen. Die DNS eines Maulwurfs ist weit weniger komplex, weil sie im wesentlichen nur noch solche Informationen enthält, die zu dem komplexen Leben des Maulwurfs passen. Zu den von einem Maulwurf generierten Nachfahren werden jedenfalls keine Ameisen, Quallen oder Bakterien gehören. Mit anderen Worten: Je mehr der Lebensweg eines Lebewesens vorgezeichnet ist, desto weniger Information wird gebraucht, um das Lebewesen an andere Umgebungen anzupassen - das wird in den meisten Fällen sowieso nicht gelingen. (Bakterien konnten ihren Stoffwechsel heißen Schwefelquellen anpassen. Keinem Säugetier könnte das gelingen, weil es von Genen dominiert wird, bei deren Fehlen das Tier vorher sterben würde. Gene, die nicht wirklich gebraucht werden, verschwinden mit der Zeit.)

5. *Die menschliche Sprache ist ein Naturphänomen*. Sie hat sich lange entwickelt, bevor jemand über sie nachdachte. Die Idee, sie sei zuerst extrem einfach gewesen und habe sich danach zu etwas sehr Komplexem entwickelt, beruht auf einem Irrtum. Wäre die menschliche Sprache eine Erfindung wie der Speer oder das Smartphone, hätte sie sich in der Tat von etwas sehr Einfachem zu etwas wesentlich Emanzipiertem entwickelt. Aber sie ist eben keine Erfindung. Jede Art von Lebewesen, die eusozial lebt, besitzt ein Kommunikationssystem, das den gemeinschaftlichen Erfolg der Gemeinschaft sichert; so etwas hat man schon für Bienen und Tintenfische festgestellt. Mit anderen Worten, im menschlichen Gen gibt es Informationen, die das fördern, was man die phänotypische Entwicklung des Kindes nennen könnte: schon das Kind interessiert sich für alle Informationen, die etwas mit der Außenbeziehung zu tun haben: akustisch, visuell, taktil - wie auch immer. Eine Sprache

existiert nur als Verhaltensanweisung in den Gehirnen der Menschen.

6. *Die hypothetische Situation einer Erstsprache in einer Menschengruppe.* Sprachen entstehen spontan, einige Leute (bevorzugt Kinder) müssen damit anfangen, im Spiel, oder in einer emotionalen Extremsituation, oder weil sie andere Leute beobachtet haben und es ihnen nachtun wollen. Zu Anfang sind alle Arten von Äußerungen möglich; je mehr in der Zeit sich einige Äußerungen zufällig ähneln, desto mehr werden solche Äußerungen in der Zukunft bevorzugt. In einem stochastischen Prozeß schält sich ein labiles Gleichgewicht heraus, das weiterhin größeren Schwankungen unterliegt. Sprachen könnten auch wiederholt neu gebildet worden sein, besonders dann, wenn Krisensituationen zu überwinden waren.

7. *Von einem sporadischen Kommunikationssystem zu einer Sprache. Eine Sprache beginnt erst mit den Kindern - ein Kind kann jede Sprache lernen.* Zu Beginn ist das Kind extrem anpassungsfähig; auf dem gerade erreichten neuronalen Entwicklungsniveau ist es in der Lage, die Laute, Silbenstrukturen und morphologisch-syntaktischen Konstruktionen der Menschen seines Kontaktbereichs aufzunehmen und nachzuahmen. Je mehr davon etabliert wird, desto mehr werden die Alternativen eingeschränkt. Was eine Dreijährige noch an Sprachenvielfalt spielend erlernen kann, ist bei einer Sechsjährigen schon sehr empfindlich eingeschränkt. Kinder können (auf der Basis eines 'geerbten' Kommunikationssystems) eine neue Sprache beginnen, sie können Innovationen in die Sprache einbauen, sie können auch eine Erbsprache zugunsten einer anderen Variante aufgeben.

8. *Die Vielfalt der Sprachen.* Wann immer eine Menschengruppe über Generationen hinweg ein eigenes Verhältnis zu ihrer Umwelt etablierte, entstand eine Menschensprache. Je länger die Umwelt stabil blieb, desto deutlicher konnte sich die Sprache von gleichzeitigen verwandten oder unverwandten Sprachen abheben. Der Bezug zur miteinander tätigen Menschengruppe ist wesentlich, dazu gehört dann meistens auch räumliche Nähe, aber Nähe allein ist nicht hinreichend.

9. *Die Vermischung der Sprachen.* Aufgrund der lokalen Vererbungsstruktur - man erwirbt die Sprache von Leuten, mit denen man zusammen aufwächst - entsteht kindliche Mehrsprachigkeit, die diverse Übertritte aus der einen Sprache in die andere erlaubt. Damit wird die

Vielfalt in den Sprachen erweitert. Denn obwohl Sprachen von den sie lernenden Kindern permanent systematisiert und vereinfacht werden, werden sie von mehrsprachigen Kindern zugleich auch bereichert. In jenen Teilen der Welt, in der Mehrsprachigkeit Normalzustand war (Australien, Neuguinea, Amazonas-Urwald, usw.), ist es schwer, die Sprachverwandtschaften genealogisch statt areal zu erfassen.

5 Phase III: poststeinzeitliche Sprachen

1. *Vergrößerung der Sprecherzahl.* Durch die Entstehung der Landwirtschaft werden Menschen nicht nur sesshaft, sondern können auch einen Mehrwert an Nahrung produzieren, was zu größeren Bevölkerungszahlen führt. Sesshaftigkeit ermöglicht auch den Zulauf oder das Einfangen wilder Tiere, die allmählich domestiziert und unabhängig von Landwirtschaft in Herden herumgeführt werden können. Die Domestizierung des Pferdes, zuerst wohl als Schlachttier verwendet, erlaubte zugleich, weit größere Strecken zurückzulegen und führte schließlich zu Völkerwanderungen von bis dahin unbekanntem Ausmaß; gleichwohl brauchten Pferde im Winter Heunahrung und setzten damit Landwirtschaft voraus. Größere Sprecherzahl bedeutete, daß man auch mit Leuten zu kommunizieren hatte, mit denen bisher kein persönlicher Kontakt bestand; man mußte transparenter und systematischer kommunizieren können. In dieser Phase wurde überall auf der Welt die freie Syntax ausgebaut und die gebundene Morphologie eher reduziert. Es ist statistisch belegt, daß größere Bevölkerungszahl mit reduzierter Verbmorphologie einhergeht.

2. *Effekte der Erwachsenen-Mehrsprachigkeit.* In kriegerischen Auseinandersetzungen wurden Sklaven eingefangen, um sie mit Hilfsarbeiten an komplexen Tätigkeiten zu beschäftigen; in den großen Völkerwanderungen kam es auch andernorts zu Bevölkerungsmischungen. Schließlich wanderten aus klimatischen Gründen oft große Teile der Bevölkerungen aus und ließen sich andernorts nieder. All diesen Ereignissen gemeinsam ist, daß erwachsene Sprecher eine neue Sprache zu lernen hatten. Dabei konzentrierten sie sich auf die wesentlichen Teile einer Botschaft und ignorierten vor allem die komplexe und idiosynkratische

Morphologie; im Ergebnis wurden die Sprachen von vieler ihrer identitätsstiftenden Idiosynkrasie befreit, kurz gesagt: sie wurden strukturell vereinfacht. Englisch, von der französisch sprechenden normannischen Oberschicht als Zweitsprache geprägt, ist ein sehr anschauliches Beispiel dafür.

3. *Erfindung der Schrift.* Global gesehen, ist das herausragendste Ereignis der Sprachengeschichte der Menschheit die schrittweise Einführung der Schrift. Was war da zu notieren? Die Botschaft, ihre inhaltlichen Teile (Besitzansprüche, Rechtsvorschriften, Handelsversprechen, Herrschererlasse, Untergebenheitsadressen, Liebesbriefe)? Oder der Wortlaut einer Mitteilung, in welcher Form: wortweise, silbenweise oder lautweise? Über kurz oder lang: Erst die Schrift gab sprachlichen Äußerungen eine fortwährende Qualität; und dafür mußten auch passende sprachliche Formate entwickelt werden. Schriften wie die des Alten Testaments oder der Sanskritgrammatik von Panini wurden jahrhundertlang mündlich tradiert und schließlich aufgeschrieben, um sie "auf Ewigkeit" festzuhalten - das passierte größtenteils erst vor weniger als 2.000 Jahren. Wie man an den genannten Beispielen sehen kann: Da wurden erst sprachliche Techniken der Memorisierung und der schrittweisen Untergliederung entwickelt, und danach die schriftlichen Figuren, um dies festzuhalten. Die Existenz einer Schrift konserviert Sprachen für längere Zeit; zusammen mit Schulprogrammen kann die Schriftsprache wesentlich vereinheitlicht werden - es entsteht eine Standardsprache.

4. *Entwicklung technischer Medien.* Zuerst konnten schriftliche Produkte, dann auch lautliche Äußerungen über weite Strecken quasi zeitgleich übermittelt werden (Telegrafie, Telefonie). Danach konnten lautsprachliche Äußerungen oder sprachliche Situationen als ganze aufgezeichnet und teils auch zeitgleich übermittelt werden (Tonband-Radio, Filmspule - Fernsehen). Inzwischen ist es möglich, daß quasi jeder Mensch mit jedem anderen Menschen auf der Welt (egal wo sie sich befinden) beinahe zeitgleich kommunizieren. Die Äußerungen/Situationen werden in kleine Datenpakete zerlegt, die - mit Ziel- und Absenderadresse versehen - quasi autonom ihren Weg durch das von vielen Rechnern gebildete Netzwerk finden. Wieweit dies auch eine neue Stufe der Sprachentwicklung anstößt, bleibt abzuwarten.

6 Eine linguistische Methode, um die fortlaufende Beschränkung des sprachlichen Wildwuchses zu erfassen

Sprachen beginnen mit dem Chaos. Aber innerhalb dessen finden wir charakteristische Verteilungen. Dazu benötigen wir die Annahme, daß Sprachen aufgrund ihrer semantischen Funktion und ihres prinzipiellen Aufbaus gewisse Kategorien gemeinsam aufweisen, jedoch unterschiedlich realisieren können.

Nehmen wir Subjekt, Objekt und Verb als die typischen Ingredienzen eines transitiven Satzes (*ich hasse dich*, SVO). Gemessen an der Häufigkeit der Stellungen, ist die Rangliste der Alternativen über alle Sprachen hinweg: SOV > SVO > VSO > VOS > OVS > OSV. Diese Verteilung ist etwas Beobachtbares; als Linguist können wir sie mittels gewisser Constraints rekonstruieren (Beschränkungen über die Mannigfaltigkeit der Sprachen). Z.B. läßt sich die obige Verteilung ableiten mittels der Rangfolge [S vor O] >> [V und O benachbart] >> [V am Rande]. In SOV ist keine Bedingung verletzt, aber in OSV sind die beiden oberen Bedingungen verletzt: darum ist SOV die beste, und OSV die schlechteste Stellungsalternative.

Sprachen unterscheiden sich darin, ob S oder O in besonderer Weise kasusmarkiert sind. Im Deutschen wird O im Akkusativ konstruiert ("Mach das Objekt sichtbar"), während im Baskischen S im Ergativ konstruiert wird ("Mach das Subjekt sichtbar"). Sagen wir, es gäbe für jedes Argument eines Verbs eine gewisse Grundannahme (semantisch sei es eher Subjekt oder eher Objekt), und wenn ein Subjekt markiert ist, nennen wir den Kasus Ergativ, wenn ein Objekt markiert ist, nennen wir den Kasus Akkusativ. Dann ist **Max(Akk) & *Erg** ("Markiere das Objekt, aber nicht das Subjekt") die für das Deutsche und **Max(Erg) & *Akk** ("Markiere das Subjekt, aber nicht das Objekt") die für das Baskische geltende Beschränkung. Max(X) heißt "realisiere X", während *Y heißt "vermeide Y". Die Realisiere-Operation verteilt eine bestimmte sprachliche Kennzeichnung auf die möglichen Optionen, während die Vermeide-Operation eine solche Kennzeichnung gerade ausschließt - das ist eine echte Einschränkung in der Menge der theoretisch denkbaren Alternativen.

tiven: das was sprachallgemein für alle Sprachen denkbar wäre, wird speziell in dieser Sprache ausgeschlossen.

Ich habe solche Constraints an verschiedenen Beispielen untersucht. Hier soll nur eines kurz betrachtet werden. Die indoarischen Sprachen Indiens unterscheiden sich zum einen darin, ob sie in transitiven Sätzen das Objekt mit Akkusativ oder das Subjekt mit Ergativ markieren (oder beides oder keins davon) und zum anderen darin, ob das Verb dann mit dem Subjekt oder dem Objekt oder gar nicht kongruiert (Was ist die Kongruenzpartner: das semantisch höchste oder das formal unmarkierte Nominativ-Argument?).

Die Nachfolgesprachen des Sanskrit (bzw. seiner volkssprachlichen Variante) durchliefen im Mittelalter eine Periode, in der fast alle Flexionsformen verloren gingen; einige wurden später durch Klitika ersetzt; so der Akkusativ als unveränderliches *-ko* und der Ergativ als *-ne*. Eine frühere periphrastische Passiv-Perfekt-Konstruktion wurde zu einer Aktiv-Konstruktion uminterpretiert, bei der der frühere Instrumental zu einem Ergativ uminterpretiert wurde. ("Die Fische wurden vom Vater gefangen" wurde zu "Vater-Erg hat Fische gefangen"; "Vater" wurde nun Subjekt und "die Fische" wurden Objekt.) Das bedeutete, daß "Fische" und "Vater" in ihrer grammatischen Rolle uminterpretiert wurden, und so die Aufgaben von Ergativ und Akkusativ und die Aufgaben der Kongruenz neu verteilt werden mußten. Das brachte in das bis dahin gemeinsame grammatische System eine Chaoskomponente hinein, die in den einzelnen Teilsprachen (bis hinein in einzelne ihrer Dialekte) zu 4 verschiedenen Kasus-Verteilungen und 4 verschiedenen Kongruenz-Optionen führte, die zusammen 9 verschiedene grammatische Systeme ergeben.

Hindi-Urdu repräsentiert eines dieser Systeme. Beim transitiven Verb kommt nur im Perfekt das Subjekt ergativ-markiert vor (im Imperfekt bleibt es unmarkiert, also Nominativ), und das Verb kongruiert mit dem höchsten Nominativ-Argument. Das Objekt erhält Akkusativ nur, wenn es menschlich oder belebt-definit ist; ich nenne das die höheren Aufmerksamkeitswerte (Salienz).

- (1) a. *Erg/-perf » Max(Erg)
 “Vermeide Ergativ im Imperfekt, aber sonst realisiere Ergativ.”
- b. *Acc/lowSalienz » Max (Acc)
 “Vermeide Akkusativ für wenig saliente Objekte, aber sonst realisiere Akkusativ.”
- c. *AGR(S)/+perf » AGR(S), und *AGR(O)/HighSal » AGR(O)
 “Vermeide Subjekt-Kongruenz im Perfekt, aber sonst kongruiere mit dem Subjekt; vermeide Kongruenz mit einem hochsalienten Objekt (im Akkusativ), aber sonst kongruiere mit dem Objekt”

Im Endeffekt gibt es allein bei der Kongruenz in Hindi-Urdu drei Möglichkeiten: Das Verb kongruiert mit den Subjekt oder dem Objekt oder gar nicht. Das ist eine typisch chaotische Situation, in der es für Hindi je nach Fall nur eine Lösung gibt (also ist diese Situation dann doch geregelt worden, aber eben anders als in den anderen benachbarten Sprachen).

Für die Exploration sprachlicher Gesetzmäßigkeiten ist es nützlich, sie als Auswege (Majoritätslösungen in chaotischen Situationen anzusehen). Wenn man das so akzeptiert hat, besteht die Identität einer Sprache letztlich darin, in den vielen (mit anderen getroffenen Entscheidungen verträglichen) Möglichkeiten eine auf Majoritätsbasis beruhende Lösung zu offerieren. Philosophisch gesehen unterstützt diese Betrachtung die demokratische Perspektive als die sprachinhärente, naturgegebene Lösung.

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Plato on nature (φύσις) and convention (συνθήκη)

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At the beginnings of the philosophy of language in the western hemisphere about 2400 years ago, there is Plato's dialogue Cratylus.

As can be expected of Plato, the dialogue anticipates important issues of the discipline: i.e. *Nature or universality versus convention or particularity, truth and meaning, speaking and naming as rational activities, meaning and etymology, semantics and epistemology.*

1 Two points of view

At the beginning of the dialogue, Hermogenes, a young Athenian nobleman, asks Socrates to take part in a controversy which he is having with a certain Cratylus. He reports that Cratylus claims that for every being there is by nature (φύσει) a correctness of name which is the same for Greeks and Barbarians, and hence is universally valid, irrespective of what some agree to call something by uttering a bit of their voice. Hermogenes explicates his own position on the correctness issue, stating that there is no basis of correctness other than convention and agreement and that everyone is an authority to bestow names at his will and change them at any time, like we do in the case of the names of our slaves.

Trying to understand and clarify what Hermogenes claims, Socrates recapitulates this position as follows: whatever one calls anything, that is for it its name. And concludes under the approval of Hermogenes that this remains true both if the names are given by a private citizen and if

imposed by a city. And so if what we now call ‘human’ (ἄνθρωπος), *I* refer to as ‘horse’ (ἵππος) and vice versa, then the same thing will be named ‘human’ publicly and ‘horse’ privately and conversely what will be named ‘horse’ publicly will be named ‘human’ privately. It has been suggested that this is to be interpreted as a *reductio ad absurdum* of Hermogenes’ subjective conventionalism of arbitrary name-giving, in that it implies as an absurdity the possibility of a private language denied by Wittgenstein. But it is clear that the private name-giving talked about here is dependent or even parasitic on a public language serving as a background, thus lacking the crucial vices incriminated by Wittgenstein in *Philosophical Investigations*.

2 Truth

Instead, the passage belongs to the following argument: Socrates and Hermogenes agree that there is something like speaking the truth and falsehood, hence that there are true and false sentences, and that a sentence which says of that which is, how it is, is true, and false, if it says of that which is, how it is not. Thus it is possible to say with the *logos* both what is and what is not. Now, in case of a true sentence not only the sentence as a whole is true, but also its parts are true. And that applies not only to its large parts but also to its small parts, and among them to its smallest parts, the names. So the name belonging to a true sentence is said, and it is said as true. Similarly the part of a false sentence is false. Therefore it is possible to say a true and a false name, if it is possible to say a true and false sentence.

Asked whether he still claims that what each person says is a name for something, *is* a name for each person, and further how many names one says belong to each thing, so many will belong to it precisely when he says so, Hermogenes answers yes.

The core of the truth-argument implies that truth is inherited from a *logos*, a sentence, by all of its parts, including the name. A lot of interpreters have taken offence at this conclusion, arguing that a name refers but doesn’t have a truth-value and that the argument for assigning one is a fallacy of division deriving properties of the parts from properties of

the whole. But the argument can be rescued observing that the truth of a sentence *can* be derived by a principle of compositionality from properties of its constituents: *Bucephalos is a horse is true*, if the animal denoted by ‘Bucephalos’ *satisfies* the predicate ‘is a horse’ or if the noun, ὄνομα, ‘horse’ is *true* of it, exploiting the ambiguity of ὄνομα which stands both for proper nouns and for common nouns. Thus the truth of sentences can be based on the *relative truth* of its predicative constituents (like in Tarski’s classical definition of truth in formalized languages (1936, 1956) where truth of closed formulae is reduced to satisfaction of open ones).

3 Conventionalism and truth

The question is why does Socrates talk here at all about truth or in other words: is the conventionalism of Hermogenes touched or impaired by the possibility that names can be true or false of something? There seems to be presupposed a kind of opposition between the fact-dependence of the truth of sentences or the relative truth of names (predicates) on the one hand and the conventional and stipulative character of names on the other: names are true or false of things depending on how things are and the latter is not a matter of stipulation or convention. But (in defense of Hermogenes one could say) assigning meaning by convention does not fix the truth-value of a sentence or the relative truth-value of a predicate or ὄνομα. Truth is not determined by meaning alone, but by meaning plus matters of fact, irrespective of how and by whom meaning is assigned and whether the originator was an individual. Of course that obtains only, if meaning or sense of names qua predicates and consequently of sentences is distinguished from their extension.

For identifying meaning with extension would imply that understanding or knowing the meaning of a sentence (qua knowing it on the basis of the extension of its parts) falls together with knowing its truth-value, thus nullifying communication by making it impossible to tell anybody anything he didn’t know already. So, strictly speaking there is no general problem connecting conventionalism and truth. A special problem, though, would ensue if the position of Hermogenes would presuppose that establishing and using a convention – in the sense of the

two meanings of ‘to name’, ὀνομάζειν – is not distinguished. And I think that Socrates biasedly interprets Hermogenes’ formulation of his claim in this manner. The conventionalist criterion of correctness of Hermogenes according to Socrates would then not be:

- (1) The name N serves in the idiolect of Hermogenes to denote objects of the kind K,

but:

- (2) The name N serves in the idiolect of Hermogenes to denote objects which Hermogenes is just denoting.

In this case there would not be a difference between true and correct, and since every occurrence of a name in the idiolect of the speaker would then be correct, no name could be false of anything. Thus the thesis of Hermogenes would be a kind of Humpty-Dumpty-position destroying any kind of communication. The integration of the truth-argument into the dialogue, though, remains a problem. Some scholars even assume that Plato revised the text, but did not finish his work.

In the following, Hermogenes tacitly corrects his formulation, expressly distinguishing between establishing (θέσθαι) and using (καλεῖν) a name, but he continues to firmly adhere to his thesis that convention and custom is the only source of correctness for names, whereas Socrates tries to reconstruct the natural correctness thesis.

4 Names as tools and their metaphysical foundation

After a refutation of the relativism of Protagoras (“Man is the measure of all things”), preparing the ground for the claim that there is an objective reality, Socrates concludes that actions too are a kind of objective being having standards of success which preclude that they can be performed arbitrarily at our will. Drawing on the art of weaving as a goal-directed activity, he uses the weaving-shuttle in an interesting manner as a paradigm of an instrument whose operations can serve as a model

for the operations which can be performed by a name: the operations (κερκίζειν) of a shuttle (κερκίς) serve to separate (διακρίνειν) the weft and the warp; analogously, what we do with a name (ὄνομα) in name-giving (ὀνομάζειν), is to separate or distinguish (διακρίνειν) the things and teach each other. Thus a name is an instrument for teaching and for separating being (διδασκαλικόν τί ἐστὶν ὄργανον καὶ διακριτικόν τῆς οὐσίας).

Obviously names are not natural instruments like some body-parts, but they are products of an art (τέχνη). Consequently, if they have natural correctness, then not because they have some natural origin. The contrast to nature is here not being an artefact, but arbitrariness in the sense of lack of reasons or absence of rationality. So names are natural because they have reasons. Consequently, there has to be a rational name-maker. Socrates calls him a nomothetes, lawgiver, surprisingly and dialectically using an expression, nomos, which Hermogenes used in the beginning of the dialogue, though in the sense of ‘custom’, to identify the basis of his convention. Like every artisan or craftsman, the nomothetes does not create *ex nihilo*, but looking at a paradigm which he has not made. So (entering Platonic metaphysics) there has to be something like an idea of name in general (what the name itself is, αὐτὸ ἐκεῖνο ὃ ἔστιν ὄνομα) and in addition for every particular name a special, but language-unspecific name-eidos; the instances participating in such a name-eidos would then be language-specific names having the same meaning.

The question is whether the idea of name and the special name-eide have any connection with the level of sounds. That would be in conflict with the diversity of languages and the emphasis Socrates has laid on the independence of the name-eidos from the sound-material. In order to somehow keep the distinction between name and referent also in the case of the name-eidos, one could use Frege’s concept of sense to grasp what is meant by a name-eidos, sense understood as the manner in which the referent of a name is given (Art des Gegebenseins). For by specifying the manner of giving objects for referential purposes, objects can be simultaneously distinguished and characterized in conformity with the discriminating and informing function of names as instruments (ὄργανον διακριτικόν).

This would not be an anachronistic move, since as we saw, an intuitive everyday-version of Frege's distinction was presupposed in the truth-argument above and is presupposed elsewhere in the dialogue. Of course we would have to make a distinction between e.g. the idea of shuttle and the name-eidos of the name 'shuttle', since the idea of shuttle has concrete shuttles as instances and the name-eidos 'shuttle' has shuttle-nouns from different languages as instances. To realize this distinction in the framework of Plato's theory of Ideas is not trivial. The natural correctness of a name would now entirely depend on whether it incorporates adequately the name-eidos 'looking at which' (πρὸς ὃ βλέπων) the name was made by a nomothetes, in other words on its semantics. Socrates thinks that this result shows that the original claim of Hermogenes that names are just the accidental result of arbitrarily distributing labels and that any such distribution is as good or correct as any other, is not true, especially since the realm of possible denotations is not simply given like slaves waiting for their names, but requires uncovering of essential properties and dissecting reality at its joints.

5 Etymology as an access to natural correctness

Hermogenes is not satisfied with this abstract outcome and asks Socrates to specify in a concrete manner what the correctness really consists in. Socrates agrees to work together with Hermogenes to reach that aim. So they enter the huge task of investigating a carefully selected portion of Greek vocabulary. This endeavor fills more than half of the dialogue and is an attempt to reconstruct the meaning of the chosen words by uncovering their etymology.

The range of the etymologies extends from correctly analysed compounds like 'asty-anax' 'Town-lord' or derivations like 'Hektor' 'holder (sc. of the town)' (from ἔχειν to hold, to possess) to complex and fanciful creations like the etymology for ἄνθρωπος 'man' 'human being', an ὄνομα which is according to Socrates formed out of what he interestingly calls a rhema – ῥῆμα: namely ἀναθρῶν ἃ ὄπωπε 'one who reflects on what he has seen' by, as Socrates remarks, deleting among others the second alpha and lowering the pitch on the omega. Thus the etymology

embodies what Plato considers a profound truth about the difference between humans and other animals, since – in the words of Socrates – the other creatures do not investigate or calculate or reflect on anything of what they see, whereas the human being has no sooner seen – ὄπωπε – than he reflects on and calculates what he has seen. In this manner the etymology uncovers the rhema – literally ‘what is said’ by the onoma.

6 The Heraclitean basis of the Greek lexicon

But the most important feature of the etymological section is that a vast majority of the etymologies exhibits a kind of biased world-view, namely a Heraclitean ontology. In other words Socrates maintains what looks like a Sapir-Whorf-style hypothesis, namely the claim that deeply entrenched in the semantics of Greek is the view that the essence of being is movement and change – cf. the traditional slogan πάντα ῥεῖ, ‘everything flows’. E.g.

- (3) a. φρόνησις ‘intelligence’ is analysed as φορᾶς(καὶ ῥοῦ) νόησις ‘thinking of motion and flux’
- b. νόησις ‘thinking’ as νέου ἕσις ‘pursuing the new’, where always being new means always becoming
- c. σωφροσύνη ‘soundness of mind’ as ‘saving one’s φρόνησις’, consequently as ‘saving that state of the mind which pursues the new, namely motion and flux’
- d. ἐπιστήμη ‘knowledge’ is following the things (ἔπεσθαι) as they change
- e. σύνεσις ‘understanding, comprehension’ is going together (συνιέναι) with the things as they move
- f. ἀγαθόν ‘good’ is contracted of ἀγαστο-θόον, i.e. ‘the admirable in what is swift’, elevating not everything that is swift (θόον) but only that part of it which is worthy of admiration (ἀγαστόν)
- g. αἰσχρόν ‘ugly’ is analysed as αἰεὶ ἴσχον τὸν ῥοῦν ‘always restraining the flux’ contracted to αἰσχορροῦν, (presupposing

that standstill or stagnation is bad)

- h. ὄν ‘being’ derives from ἴον (close to ionic ἔον) ‘going’

7 Primary names

But where does ἴον come from? Or more generally, what shall we do if we get to items – call them *primary names* (πρῶτα ὀνόματα) – for which there aren’t other names or rhemata to derive them from?

There has to be a limit of analysis, otherwise we are lost in infinity. So there are primary names. What about their correctness? Qua being names, primary names are not different from *secondary names* – how they are called now – which were etymologized before, hence their correctness should have the same basis. The correctness of secondary names was founded on their ability to show how things are, which in turn was based on the corresponding ability of their constituents. So primary names should also be able to show how things are, but lacking constituents they cannot do this in terms of constituents. Using the signs of deaf-mutes as exemplary, Socrates proposes that primary names show how things are by imitation (μίμησις), but imitation not by gestures but by sounds. So a name seems to be a means of imitation by voice, and we name whatever we imitate by voice. Interestingly, Socrates strongly protests: to imitate the cries of animals is not to name them. In order to name by imitation we don’t have to imitate the sounds or other properties of things like their colors, but their being (οὐσία). So onomato-poiia is not a good name-building procedure.

8 A picture theory of meaning as an homomorphism

Leaping somehow abruptly to articulate speech, Socrates claims that whoever is able to imitate the being of something by ‘letters’ (i.e. sound-elements) and syllables, makes manifest what each thing is – i.e. its essence. In the process of specifying what he means by this kind of imitation, the concept of imitation gradually gets more and more abstract,

differing in the end hardly from mere representation. Socrates sketches a program for semantics which is rather astonishing and which has been compared to Wittgenstein's picture theory of meaning in the *Tractatus*: First he proposes to establish a phonological system of sounds suggesting a classification by distinguishing e.g. vowels from mutes and intermediates and further subclasses, aiming to get to the elements (στοιχεῖα) (first occurrence of the term). Then he proposes to analyse the realm of being, i.e. possible denotations, down to the elements and their classes, in order to recognize their interdependence. In a third step the first system is to be mapped on the second one by a kind of homomorphism, correlating elements with elements one to one (ἐάντε ἓν ἐνὶ δέμη ἐπιφέρειν) or groups of elements with elements many to one (ἐάντε συγκεραννύντα πολλὰ ἐνὶ) and continuing to build bigger groups (onomata and rhemata, sentences) and correlating them.

9 Mapping movement by movement

He gives an illustration of the first steps of what he means, not without conceding that it could appear to be ridiculous to represent things by imitating them by letters and syllables, but he says that we don't have anything better, if we don't want to have recourse to some *deus ex machina* as originator of the primary words. I think that the main idea behind the illustration is as follows: The aim is to imitate or represent the being of things. Now, as the etymologies have shown the essence of being is change and movement. So an adequate representation of being qua movement is itself by movement, more exactly by movement of the articulatory organs. That is why he emphasizes the important role of the *rho* with its strongly vibrating movement of the tongue, calling it the organon (par excellence) of every kind of movement (and of brittleness). Therefore the name-maker has used it e.g. for ῥεῖν *to flow*, ῥοῆι *stream*, τρέχειν *to run*, κρούειν *to strike*, θραύειν *to fracture*, ἐρείκειν *to rend*, θρύπτειν *to break*, κερματίζειν *to crumble*, ῥύμβειν *to whirl*. Noticing that the tongue glides most while pronouncing the *lambda*, he used it for λείον *smooth*, λισθάνειν *to glide*, λιπαρόν *oily*, κολλῶδες *gluey* etc., mixing into every name what seemed most similar to what-

ever was named. This ends the reconstruction of the natural correctness position by Socrates.

10 The defeat of Cratylus

For the rest of the dialogue Cratylus, who has been silent until now, is the sole interlocutor of Socrates. Cratylus wholeheartedly accepts the reconstruction of Socrates but then the two get into a deep controversy over the question whether names can be more or less good imitations or pictures, which has not received a satisfying interpretation. Cratylus stubbornly maintains that either a name is correct or isn't a name at all but simply a noise, like the name of the other interlocutor Hermogenes who, being financially unsuccessful, isn't what the name 'Hermogenes' means, i.e. "an offspring of Hermes", the god of economic success. So Cratylus seems to combine a definite description theory of proper names with an Anti-Russellian concept of descriptions. To address someone with an incorrect name isn't saying anything, but is like striking pointlessly a copper vessel. The suspicion of Socrates that Cratylus like many other philosophers denies also the possibility of falsehood, is emphatically confirmed, since, as Cratylus says, to speak falsely would be saying *what is not* by saying *something* and that is impossible. This being too highbrowed for him, Socrates tries to push through the claim that it is possible to apply names to subjects in the same manner as assigning portraits to persons and to do this both correctly and incorrectly, and in the case of names truly and falsely. In addition to being able to be applied truly and falsely, names qua images can never be perfect copies, for, as Socrates argues, otherwise an image would be another instance – a double – of the original: Cratylus and his image would be two Cratyluses. Thus, in the case of names not all sound-elements have to be faithful representatives of features of the thing named. E.g. in the noun σκληρότης and more so in its Eritrean variant σκληροτήρ 'hardness', or 'brittleness', the *rho* nicely imitates the named property, but the soft and gliding character of the lambda in σκληρότης is similar to the contrary property. But don't we understand what we mean by the word? Socrates asks. 'Of course we do, because of habit, my dear friend', Cratylus in-

advertently and patronizingly replies and is caught as presupposing the conventionalist position opposite to his own.

Bridging the gap of dissimilarity between name and nomen, habit (ἔθος), although not the same as convention (συνθήκη), is an ingredient of convention. So due to the poor attraction of similarity, convention – this vulgar means, as Socrates remarks – has also to be used for the correctness of names and anything but triumphantly he adds that he would prefer if names would be similar to their denotations as far as possible. Why does Socrates depreciate convention as vulgar? One reason could be, that the arbitrariness connected with convention weakens the cognitive force of language, since conventional names – at least the simplicia – show the nature of things only to those who knew this nature already before they became part of the convention and that might be considered as degrading the informational potential of names.

But what about the Sapir-Whorfian bias of Greek to Heracliteism, suggested by the etymologies? Despite his defeat in matters of nature vs. convention, Cratylus still claims that only knowledge of names guarantees knowledge of things and that acquiring knowledge of names is necessary and sufficient for acquiring knowledge of things. – S(ocrates): But showing how things are by relying on names, amounts to relying on what the maker of names believed how things are; what if he was mistaken? – C(ratylus): That he was not mistaken, is shown by the coherence of the Heraclitean worldview behind the etymologies. – S: But coherence alone does not guarantee the truth of the premises of this worldview and may be an artefact due to the method of etymological analysis. And that that is indeed the case, can be seen by recognizing that there is an alternative to analysing e.g. ἐπιστήμη ‘knowledge’ in terms of ‘following the things (ἔπεσθαι) as they change’, namely analysing it instead plausibly as ‘arresting (ἵστησι) our soul at the objects’ which presupposes the Non-Heraclitean Eleatic worldview that the essence of being is not change but constancy. In the same manner an Eleatic analysis can be given for a lot of words. – C: But the vast majority remains Heraclitean.- S: Shall we then decide by counting votes. And above all, if the name maker, as seems natural, has made the names knowing how things are, but knowledge of things can, according to you, only be acquired by acquiring knowledge of names, where did he get his knowl-

edge from, before any names were coined. – C: Obviously he was a superhuman power. – S: But which one was his version, the Eleatic or the Heraclitean one, for being a god he surely didn't contradict himself? – C: (Silence). – Conclusion of Socrates: Even if the names did not fight against each other about the correct worldview, it is more reasonable, to find out the truth about being by investigating – instead of the names – the original, i.e. the things on basis of their mutual kinship.

11 The refutation of Heracliteism (πάντα ῥεῖ)

The dialogue closes with an argument showing that Heracliteism or the universal flux doctrine, i.e. according to our interpretation, the Sapir-Whorf style background of the etymologies, though deep-rooted in the Greek vocabulary, is untenable as a universal ontological doctrine. In order to do this, Socrates introduces in an extremely shortened form elements of what we would call Plato's Theory of Ideas. Avoiding to take full responsibility of this theory, Socrates treats features of the doctrine as something which he often dreams of, namely that there is a beautiful itself, a good itself and analogously for every being. The entity referred to as the beautiful itself (τὸ καλὸν αὐτό) is contrasted by Socrates with something like a beautiful face, the point being that a beautiful face is a thing which *inter alia* is also beautiful whereas the beautiful itself is nothing but beautiful and is beautiful by its nature. We could render 'the beautiful itself' by 'beauty', 'the just itself' by 'justice', if we would accept that beauty is beautiful, justice is just etc. in the sense that *beauty* (and *justice*) instantiates itself or is self-predicating – which normally we would not do in cases of entities denoted by abstract nouns. The question Socrates now tries to answer is whether entities like the beautiful itself (the idea of beauty in our interpreter's jargon) falls under the Heraclitean doctrine of universal flux, i.e. whether the beautiful itself is always changing too. In a side remark Socrates explicitly leaves it open whether things like beautiful faces, i.e. sensible particulars in contrast to the beautiful itself, underlie Heraclitean flux.

Now, if the beautiful itself would be changing too, then, Socrates argues, it would be impossible to correctly speak of it, first to say of it, that

it is *that*, and then that it is *such*. In other words it would be impossible to state the self-predicating proposition ‘The Beautiful itself (*that*) is beautiful (*such*)’ the truth of which Socrates presupposes as self-supporting. (cf. Sedley (2003: 169)). Why would it be impossible? Because it is inevitable for it, while we are speaking, to become immediately something different and slip away and no longer be the way it was. The point is that two time-consuming events – i.e. the movement or change on the denotational level and the process of reference and predication on the linguistic level – can not be properly coordinated, since before reference and predication have been accomplished, things and their properties have changed already. Socrates adds a second argument: If everything, including an idea like the beautiful itself, always changes, how could that which is never in the same state be something? In other words that which is never in the same state can not be anything at all, – the reason being that being anything implies to be at least during that time in the same state. In other words, radical change amounts to nonexistence, since not being anything at all amounts to lacking every determination, and so to non-being.

In a third argument, Socrates turns after predication and being to knowability: If everything, including eidetic entities, always changes, then it couldn’t be known by anybody; the reason is like in the first argument a kind of epistemological time-lag, i.e. at the very time the person who was going to know it was approaching it, it would be becoming a different thing (ἄλλο) and of a different kind (ἄλλοῖον), so it would not be known what kind of thing it was (ὅποῖόν γέ τί ἐστιν) or what state (πῶς ἔχον) it was in. And there is no knowledge that knows what it knows if that thing is in no such state.

Socrates adds a fourth argument which radicalizes the knowability-problem. If literally everything changes and nothing remains, then knowledge itself has to be included among the changing things. But then there cannot be such a thing as knowledge, because it would constantly be changing into something else, namely non-knowledge.

The final move of Socrates is a rejection of the flux theory: the four arguments have shown that the assumption of universal flux has consequences which contradict essential truths. The central truth is the existence of objects which are what they are by themselves like the beautiful

itself etc., or in the terminology from outside the Cratylus: the existence of ideas. The second argument directly shows that universal flux is incompatible with the existence of ideas. The first argument shows that universal flux is incompatible with the self-supporting truth of self-predicational propositions about ideas. And the last arguments show that universal flux is untenable in view of the knowability of eidetic beings.

Socrates does not claim to have definitely refuted flux but he does claim (440c1-d2) at the very least to have shown how unwise it would be to believe in it merely following the original name-makers.

12 Concluding remarks

At the end of the dialogue, the position of Socrates on the controversy between conventionalism and naturalism seems to be as follows: at least some names are conventional, (see the σκληρότης-argument above, in principle all simplicia could be conventional). Furthermore a considerable number of names goes back to namegivers who were holding an ontology of universal flux, i.e. the view that the essence of being is movement and change. That he really believed that this position was held by namegivers of the past, Socrates emphasizes (439c3f.) at the beginning of the anti-Heraclitean arguments rendered above. So he believed that the descriptive content of a vast number of ὀνόματα was wrong, at least he believed that of the etymologically uncovered contents of the numerous names which presuppose the πάντα ῥεῖ-ontology. The question is of course whether Socrates made a difference between etymology and 'ordinary' descriptive content or sense of an ὄνομα. But it is clear that he – consciously or unconsciously – appreciates the quality of most etymologies on the basis of the normal meaning of the nouns concerned.

Furthermore it could be asked how he imagined that people seemingly successfully communicated on the basis of a wrong ontology. Considering the average people's view of everyday life, Socrates (Plato) presumably would say that it is possible in a seemingly large degree to cope with the changing world of sensible things without caring about true being, i.e. subscribing instead to flux-theory. Thus, in his concluding

words he sarcastically characterizes those who wrongly generalize from the changing sensible world surrounding us to the world as a whole as people who are afflicted with catarrh and project their state to everything else.

Coming back to the contrast between nature and convention, it was suggested above that the transition to the nomothetes or name-giver who creates ὀνόματα looking at the paradigm of name-ideas, showed that naturalistic in contrast to conventional name-giving has to be understood as a rational activity in the sense that ‘natural’ names are names for which reasons can be given deriving from the nature of the nominata. Thus imitation and etymology was introduced as a rational kind of mapping the essence of things by means of ‘letters and syllables’ on the basis of similarity between names and things. But it turned out that this was utopian, so convention – this ‘vulgar’ means – had to be resorted to instead. And that in its turn meant according to the interlocutors to give in to arbitrariness and the accidental (434a).

But it seems that in the case of conventional signs to locate *l'arbitraire du signe* on the side of the irrational because of lack of reasons, is based on a fallacy. The fact that the form of conventional signs is not determined by their content does not mean that the relation between the two is arbitrary also on the level of choice of the individuals who use the signs. According to the classical analysis of the concept of convention given by David Lewis (Lewis (1969: 78), and: Lewis (1983: 165)) a regularity *R* in the behaviour of members of a population *P* when they are agents in a recurrent situation *S* is a *convention* if it is true and common knowledge in *P* that (1) everyone conforms to *R*, (2) everyone expects everyone else to conform to *R*, (3) the expectation that the others conform gives everyone a good reason to conform to *R* himself, (4) there is a general preference to general conformity to *R* rather than slightly-less-than-general conformity (so nobody has an advantage of isolated nonconformity), (5) everyone would conform to an alternative regularity *R'* which satisfies (2) (3) and (4) and is such that there is no way of conforming to *R* and *R'* both (a regularity without an alternative isn't a convention). According to this concept, it is rational to conform to a conventional regularity *R* even in cases in which the specific form of *R* is not determined by a common aim. (A simple case in point is driving

on the right (or left) side, where the aim of avoiding collisions does not determine which side to use).

For Socrates (Plato) the basic unit regulated by linguistic convention is the name (ὄνομα), for modern approaches like that of Lewis it is the sentence. The basic action performed by using the respective units is in both approaches very similar or at least comparable, it is informing (διδάσκειν) in the case of Socrates (Plato) and asserting in the indicative mood-variant of Lewis. Since the basic units are truth-bearers in both cases (i.e. names for Socrates (Plato) (cf. 385c12-17) and sentences for Lewis), the divergence so far is not so great as it might appear. For Socrates habit – ἔθος – connected with linguistic convention – συνθήκη – enables the hearer to recognize what the speaker thinks while uttering something. According to Lewis a linguistic convention is not an habit, but a regularity in action and belief of using a possible language which thereby becomes the actual language of a population.

In complete abstraction from human affairs, a possible language \mathcal{L} , in the sense of Lewis, can be specified as a function from strings of sounds or of marks σ ('sentences') to meanings, $\mathcal{L}(\sigma)=\mu$, where a sentence-meaning μ is something which when combined with factual information about any possible world w yields a truth value, and could therefore be a function from worlds to truth-values or simply a set of worlds. Now, Lewis completely rejects the idea that \mathcal{L} is used by P if and only if there prevails in P a convention to bestow upon each sentence σ of \mathcal{L} the meaning $\mathcal{L}(\sigma)$ that \mathcal{L} assigns to it. The reason is that there is no such thing as an action of bestowing a meaning, so conventions to perform such actions do not exist either. Instead, Lewis proposes that the convention whereby a population P uses a language \mathcal{L} is a convention of *truthfulness* and *trust* in \mathcal{L} . To be truthful in \mathcal{L} is to act in certain way: to try never to utter any sentence of \mathcal{L} that is not true in \mathcal{L} , i.e. to avoid uttering it unless one believes it to be true in \mathcal{L} , where a sentence σ is true in P at a world w if and only if it is true in some language \mathcal{L} , i.e. $w \in \mathcal{L}(\sigma)$, which is used in P . To be trusting in \mathcal{L} is to impute truthfulness in \mathcal{L} to others, and thus to tend to respond to another's utterance of any sentence of \mathcal{L} by coming to believe that the uttered sentence is true in \mathcal{L} . Thus a convention to use a language \mathcal{L} is a convention to say the truth in \mathcal{L} (instead of in some other language \mathcal{L}'). What is not a convention is to say the truth *simpliciter*. So

the difference between convention and obligation is preserved.

While arbitrariness according to Lewis is mitigated and rationalized by the complex web of commonly known expectations and preferences which constitute a convention of language, the same does not seem to hold in the case of Socrates' conception of nonnatural meaning. As said above, the gap between the 'letters and syllables' of an ὄνομα and its meaning is bridged by συνθήκη *convention*, ὁμολογία *agreement*, ἔθος *habit* and νόμος *law, custom* which either are metaphors or a circumscription of a dubious influence of the past like in the case of the flux-ontology of Heracliteism. Ultimately, though, it is dialectics which enables to circumvent the weaknesses of ὀνόματα (cf. 390d6) and to investigate the things by themselves on basis of their mutual kinship (438e5-8).

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Part VI

Memories

Erinnerungen an die Gründung des Instituts für Linguistik an der Universität Potsdam

Gisa Rauh

1 Einleitung

Das Institut für Linguistik an der Universität Potsdam ist hinsichtlich seiner Größe, seiner inhaltlichen Ausrichtung, seiner Forschungskapazität und der von ihm angebotenen Studiengänge einzigartig in Deutschland. Dies wirft die Frage auf, wie es zur Konzipierung und Etablierung dieses seit seiner Gründung überaus erfolgreichen Instituts gekommen ist. Ich möchte daher die Gelegenheit dieser Festschrift wahrnehmen, um als Mitglied des Gründungssenates und in dieser Funktion maßgeblich Verantwortliche für das Konzept des Instituts einen Einblick in dessen Entwicklung und nicht zuletzt in dessen Umsetzung zu geben. Letzteres ist mir ein besonderes Anliegen, da es Gisbert Fanselow war, dem als zuerst Berufenem und damit als Inhaber einer Eckprofessur am neu gegründeten Institut in hohem Maße die Aufgabe zufiel, das Konzept umzusetzen und mit Leben zu füllen. Vorrangig bedeutete dies anfangs, die Berufungskommissionen für die im Konzept vorgesehenen Professuren vorzuschlagen, zu leiten und deren Ergebnisse schriftlich zu begründen. Es kam aber auch eine Vielzahl weiterer Aufgaben hinzu. Für einen in jener Zeit noch sehr jungen Professor war dies eine ungemein verantwortungsvolle und zudem sehr zeitintensive Aufgabe, die er neben den mit seiner Professur verbundenen normalen Tätigkeiten nach allgemeiner Bewertung mit großem Erfolg bewältigt hat.

Meine Ausführungen in Abschnitt 2 befassen sich mit dem Gründungssenat und seinen Aufgaben im Allgemeinen und im Besonderen, wobei schließlich die Bereiche und Entscheidungen, die für die Gründung des Instituts für Linguistik mittelbar oder unmittelbar von Relevanz waren, fokussiert werden. Abschnitt 3 ist dann der Entwicklung des Konzeptes gewidmet. Ich lege hier zunächst die Gründe für meine eigenen Vorstellungen dar, berichte dann über deren Konkretisierung in Beratungen mit den Mitgliedern der zuständigen Strukturkommission sowie auch über den Beitrag des Gründungssenates. Abschnitt 4 stellt den Anteil Gisbert Fanselows an der Umsetzung des Konzeptes heraus, aber auch sein Engagement für die wissenschaftliche Entwicklung des Instituts auf hohem Niveau, nicht zuletzt durch Forschungsk Kooperationen innerhalb der Universität, mit Berliner Universitäten sowie darüber hinaus auch national und international. Die Schlussbemerkungen in Abschnitt 5 beenden meine Darstellungen. Um terminologische Missverständnisse zu vermeiden, sei darauf hingewiesen, dass die Bezeichnung „Linguistik“ erst relativ spät die im Kontext des Gründungssenates verwendete Bezeichnung „Allgemeine Sprachwissenschaft“ ersetzte, was ich im Folgenden berücksichtige.

2 Die Rolle des Gründungssenates

Grundsätzlich ist der Gründungssenat einer Universität verantwortlich für die Gestaltung aller wissenschaftlichen und nicht-wissenschaftlichen Einrichtungen an einer Universität und gegebenenfalls auch für die Gestaltung von Kooperationen mit außeruniversitären Einrichtungen. Neben Vorgaben für die Verwaltung geht es also um Antworten auf Fragen danach, wie viele und welche Fakultäten eine Universität haben soll, wie viele und welche Fächer diese jeweils umfassen sollen und wie deren personelle und sachliche Ausstattung aussehen soll. Des Weiteren sind Fragen bezüglich zentraler Einrichtungen wie Universitätsbibliothek, Rechenzentrum oder Sprachenzentrum einschließlich ihrer Ausstattung zu klären sowie Fragen nach der Etablierung von interdisziplinären Forschungszentren. Einem Gründungssenat obliegt neben der planerischen Tätigkeit in all diesen Fällen auch die Verantwortung für

die Ausstattung der geplanten Einrichtungen, wobei die personelle Ausstattung im Hinblick auf die Qualität einer Universität besonders wichtig ist. Insbesondere der Besetzung der vorgesehenen Professuren kommt dabei eine herausragende Bedeutung zu, so dass die Entscheidung über Berufungsvorschläge eine der verantwortungsvollsten Aufgaben eines Gründungssenates ist, zumal sie Maßstäbe für spätere Berufungen setzt und damit Einfluss nimmt nicht nur auf die unmittelbare, sondern auch auf die zukünftige wissenschaftliche Qualität einer Universität.

Der Gründungssenat der Universität Potsdam wurde mit der Berufung der Mitglieder durch einen Erlass des Ministers für Wissenschaft, Forschung und Kultur des Landes Brandenburg, Hinrich Enderlein, vom 17. Juli 1991 bestellt. Dem vorausgegangen war in meinem Fall im April 1991 ein Anruf seitens des Ministeriums für Wissenschaft und Forschung des Landes Nordrhein-Westfalen, dem Partnerland Brandenburgs für die Integration dieses neuen Bundeslandes in die Bundesrepublik Deutschland, mit der Anfrage, ob ich willens sei, als Mitglied im Gründungsausschuss der Universität Potsdam tätig zu werden. Kenner vergleichbarer Gründungen sagten mir voraus, dass es wohl nicht bei einem „Ausschuss“ bleiben werde und dass daraus wohl ein „Senat“ mit einer Tätigkeit von mehreren Jahren werden würde. So kam es auch. Nach meiner Berufung als Mitglied des Gründungs„ausschusses“ durch einen Erlass des Ministers Hinrich Enderlein vom 22. Mai 1991 wurde dieser Ausschuss mit seinem Erlass vom 17. Juli 1991 in den Gründungs„senat“ der Universität überführt. In den Gründungssenat berufen wurden acht Professoren aus den alten Bundesländern, davon vier aus Nordrhein-Westfalen, sowie eine Vertreterin des Ministeriums für Wissenschaft und Forschung aus Nordrhein-Westfalen und außerdem drei Professoren sowie zwei wissenschaftliche Mitarbeiter und drei Studenten aus Potsdam. Alle mit gleichem Stimmrecht. Ständige Gäste der Sitzungen des Senates waren Jens Prüß, der Kanzler der Universität, sowie Vertreter des Ministeriums für Wissenschaft, Forschung und Kultur des Landes Brandenburg. Vom Minister dieses Ministeriums wurde der Gründungsrektor als Vorsitzender des Gründungssenates, Professor Dr. Rolf Mitzner aus Potsdam, bestellt. Als seine Stellvertreter wurden später Professor Dr. Rolf Grawert (Bochum), Professor Dr. Gerhard Kempter (Potsdam) und ich vom Gründungssenat gewählt. Die Arbeit

des Gründungssenates endete am 21. Januar 1994.

Dem Gründungssenat oblagen fortan die oben im Allgemeinen angeführten Aufgaben. Zu berücksichtigen war allerdings die besondere Situation der Universität Potsdam, aus der sich Vorgaben für die Vorgehensweise des Gründungssenates ergaben. Drei Fakten spielten hier vor allem eine Rolle: Erstens der Umstand, dass es sich bei der Gründung der Universität Potsdam nicht um eine vollständige Neugründung handelte, zweitens, dass im Land Brandenburg eine weitere Universität sowie eine Fachhochschule gegründet wurden, und drittens die Nähe zu Berlin mit seinen drei Universitäten, der Freien Universität, der Technischen Universität und der im Ostteil Berlins angesiedelten Humboldt Universität. Zum ersten Punkt ist zu erläutern, dass es zu Zeiten der DDR in Potsdam drei Hochschulen gab, die als Vorgängereinrichtungen betrachtet werden können, nämlich die Pädagogische Hochschule (später Brandenburgische Hochschule), die Akademie für Recht und Verwaltung (später Landeshochschule für Recht und Verwaltung) und die dem Ministerium für Staatssicherheit unterstellte Juristische Hochschule. Der Gründungssenat wurde darüber in Kenntnis gesetzt, dass vor seiner Installation die Juristische Hochschule vollständig und die Landeshochschule für Recht und Verwaltung teilweise abgewickelt worden waren. Im Gegensatz dazu sollte die Brandenburgische Landeshochschule, also die ehemalige Pädagogische Hochschule, in die Universität Potsdam überführt werden und, auch unter Berücksichtigung nicht abgewickelter Teile der Landeshochschule für Recht und Verwaltung, deren Kern bilden. Punkt zwei war für den Gründungssenat insofern von Relevanz, als die in Frankfurt an der Oder gegründete Universität und die Fachhochschule in Cottbus jeweils spezifische Aufgaben erfüllen sollten, so dass die Universität Potsdam als Hauptuniversität des Landes Brandenburg unter anderem für dessen akademische Grundversorgung zuständig sein sollte. Punkt drei, die Nähe zu Berlin, machte es notwendig, unnötige Doppelungen im wissenschaftlichen Angebot und in der Ausstattung zu vermeiden und sich darüber hinaus in Profildbereichen von den Berliner Universitäten abzugrenzen. Im Übrigen sollte die „Neugründung“ der Universität von der Möglichkeit Gebrauch machen, innovative Forschung und Lehre, letztere realisiert durch innovative Studiengänge, zu etablieren.

Unter diesen Vorgaben plante der Gründungssenat für den wissenschaftlichen Bereich zunächst die Fakultäten als organisatorische Grundeinheiten für Forschung und Lehre, wobei auf Grund des Angebots an den Berliner Universitäten auf eine medizinische und eine theologische Fakultät verzichtet wurde. Das Ergebnis ausführlicher Diskussionen war eine Entscheidung für fünf Fakultäten, die in engem Zusammenhang mit der akademischen Grundversorgung des Landes Brandenburg standen, nämlich eine Juristische Fakultät, eine Wirtschafts- und Sozialwissenschaftliche Fakultät, eine Mathematisch- Naturwissenschaftliche Fakultät sowie zwei Philosophische Fakultäten. Letztere ergaben sich aus der Überlegung, dass die Fächer einer Fakultät möglichst in einem fachsystematischen Zusammenhang stehen sollten und dass eine Fakultät unter dem Gesichtspunkt der Verwaltbarkeit nicht allzu groß sein sollte. Dem Gesichtspunkt der Verwaltbarkeit wurde durch die Zweiteilung Rechnung getragen, und ein fachsystematischer Zusammenhang konnte immerhin in einer der beiden Philosophischen Fakultäten weitgehend geltend gemacht werden, in der die sprachbezogenen Philologien wie die Anglistik, die Romanistik, die Slawistik und die Germanistik angesiedelt wurden sowie die Philosophie, die Geschichte und die Kunstgeschichte. Für die zweite Philosophische Fakultät blieben dann Fächer, die wie diejenigen in der ersten als Fachwissenschaften für die Lehrerbildung notwendig waren, wie zum Beispiel Sportwissenschaft oder Musik, sowie solche, die grundlegend oder peripher für die Lehrerbildung von Relevanz waren, wie die Pädagogik in mehreren spezifischen Ausrichtungen oder die Psychologie.

Über den Fächerkanon der einzelnen Fakultäten wurde im Gründungssenat diskutiert, wobei die Vorstellungen und Vorschläge der jeweils fachnahen Kollegen Beachtung fanden, so zum Beispiel die des Juristen für die Juristische Fakultät oder die des Wirtschaftswissenschaftlers für die Wirtschafts- und Sozialwissenschaftliche Fakultät. Aufgrund meines anglistischen und sprachwissenschaftlichen Hintergrundes fiel mir im Rahmen dieser Diskussion die Beratung für die sprachbezogenen Fächer zu – ausgenommen die Germanistik, für die ein Kollege der Germanistik zuständig war. Dabei konnte ich den Gründungssenat davon überzeugen, dass neben den traditionellen sprachbezogenen Philologien die Einrichtung eines neuen Faches, in meiner damaligen Terminologie

des Faches „Allgemeine Sprachwissenschaft“, als innovatives Element im Fächerkanon der Philosophischen Fakultäten ein wenn auch kleiner, so doch sichtbarer Baustein für den innovativen Charakter der Gründung der Universität Potsdam sein würde. Meine Argumentation stützte sich unter anderem auf die Tatsache, dass die Sprachwissenschaft in den letzten dreißig Jahren eine radikale inhaltliche Veränderung erfahren hatte, die in dem an wenigen deutschen Universitäten überhaupt etablierten Fach Allgemeine Sprachwissenschaft fast keine Berücksichtigung gefunden hatte. Eine Neugründung, so mein Plädoyer, böte daher die Chance, diesem Defizit entgegen zu wirken und der Universität Potsdam mit einem zugleich auf differenzierte Forschungskompetenz und auf innovative anwendungsbezogene Studiengänge ausgerichteten Konzept ein Alleinstellungsmerkmal zu verleihen. Auch würde damit der wachsenden Bedeutung der „modernen“ Sprachwissenschaft für diverse wissenschaftlich theoretische sowie auch anwendungsbezogene Bereiche Rechnung getragen.

Für die Sicherung der Qualität der einzelnen Fächer der Fakultäten beschloss der Gründungssenat, dass seine fachnahen Mitglieder zunächst Vorschläge für die Binnenstruktur der Fächer sowie danach Vorschläge für die Berufung von Professorinnen und Professoren erarbeiten lassen und dem Gründungssenat zur Entscheidung vorlegen sollten. Letzteres, die Verantwortung für die Erarbeitung von Vorschlägen für die Berufung von Professorinnen und Professoren sollte später in den Fällen, wo bereits eine Eckprofessur verlässlich besetzt war, an deren Inhaberin oder Inhaber übergehen, zumal der Gründungssenat in nicht allzu ferner Zukunft durch einen gewählten Senat ersetzt werden sollte. Die Strukturkonzepte sollten von Strukturkommissionen, Vorschläge für die Besetzung von Professuren von Berufungskommissionen erarbeitet werden. Vorschläge für die personelle Besetzung der Kommissionen sollten von den jeweils verantwortlichen Mitgliedern des Gründungssenates diesem zur Entscheidung vorgelegt werden, beziehungsweise im Falle von Berufungskommissionen später von der Inhaberin oder dem Inhaber einer Eckprofessur.

Aufgrund meines eigenen wissenschaftlichen Hintergrundes wurde mir die Verantwortung für die Fächer Anglistik, Romanistik und Allgemeine Sprachwissenschaft übertragen sowie auch für die zentrale Ein-

richtung Sprachenzentrum, die neben anderen nicht-wissenschaftlichen Einrichtungen an der Universität Potsdam gegründet wurde.

Was die wissenschaftlichen Einrichtungen betraf, so sollte zu einem späteren Zeitpunkt, dann wenn die Binnenstrukturen der einzelnen Fächer festgelegt wären, über Querstrukturen zu den Fakultäten nachgedacht werden. Als Ergebnis sollten interdisziplinäre Forschungszentren eingerichtet werden, in denen Vertreter unterschiedlicher Fächer gemeinsame Forschungsziele verfolgen und gegebenenfalls interdisziplinäre Studiengänge entwerfen und anbieten sollten. Die besondere Stellung der Universität Potsdam, nicht zuletzt in Abgrenzung zu den Berliner Universitäten, sollte schließlich in offiziell deklarierten wissenschaftlichen Profildbereichen erkennbar gemacht werden, über die der Gründungssenat auf der Grundlage der Konzeption der Fakultäten und ihrer Fächer und nach der Entscheidung über zentrale Einrichtungen befinden wollte.

3 Die Entwicklung des Konzeptes für das Fach Allgemeine Sprachwissenschaft, das spätere „Institut für Linguistik“

Von der mir übertragenen Verantwortung für die Entwicklung von Konzepten für die Fächer Anglistik, Romanistik und Allgemeine Sprachwissenschaft sowie für das Sprachenzentrum war meine Aufgabe für die Allgemeine Sprachwissenschaft die bedeutungsvollste und zugleich reizvollste. Einer der Gründe war, dass es in den anderen Fällen jeweils Vorgängereinrichtungen gab, so dass es hier neben der Möglichkeit, Neues ergänzend zu schaffen, in hohem Maße um die Überführung alter in neue Strukturen mit entsprechender Überleitung des vorhandenen Personals ging. Demgegenüber handelte es sich bei der Allgemeinen Sprachwissenschaft um eine echte Neugründung, womit mir die Gelegenheit gegeben war, in das zu entwickelnde Konzept Überlegungen zu einer universitären Repräsentation der Sprachwissenschaft einfließen zu lassen, die mich aufgrund meiner Erfahrungen an und mit mehreren Universitäten seit langem beschäftigten. Im Wesentlichen ging es dabei um das Folgende.

Noch während meiner Zeit als Studentin hatte ich in den Jahren 1970 und 1971 an der Universität Göttingen die erste Etablierung der „modernen“ Sprachwissenschaft erlebt, also der Sprachwissenschaft, die vom Strukturalismus und vor allem von den frühen Arbeiten Noam Chomskys und deren nachhaltiger Auswirkung auf weite Bereiche der Sprachwissenschaft geprägt war. Die Etablierung erfolgte in den philologischen Fächern Anglistik, Germanistik und Romanistik, indem neben einer bereits vorhandenen Professur für die jeweilige Sprachgeschichte und neben mehreren Professuren für Literaturwissenschaft jeweils eine Professur für moderne Sprachwissenschaft eingerichtet wurde. Im Übrigen gab es an der Universität Göttingen bereits ein separates sprachwissenschaftliches Fach, allerdings sehr klein, repräsentiert durch eine einzige Professur, die der Indogermanistik gewidmet war und sich traditionell mit Sprachgeschichte und Sprachvergleich befasste. Bei meinem Wechsel als Hochschulassistentin an die Freie Universität Berlin im Jahr 1981 fand ich eine vergleichbare Situation vor, ebenso bei meinem Wechsel als Professorin an die Universität Wuppertal im Jahr 1985, allerdings mit dem Unterschied, dass es in Wuppertal kein separates Fach Sprachwissenschaft gab. Bei engen Kontakten mit den Universitäten von Köln und Düsseldorf im Rahmen eines gemeinsamen Sonderforschungsbereichs, der seine Arbeit im Jahr 1991 aufnahm, konnte ich schließlich erfahren, dass die Gegebenheiten dort ähnlich waren wie in Göttingen und Berlin, zugleich aber gewisse Unterschiede aufwiesen. Zwar waren „moderne“ Sprachwissenschaftler wie an diesen Universitäten in den Philologien vertreten. Die jeweils separaten sprachwissenschaftlichen Fächer waren jedoch bei vergleichbar geringer personeller Ausstattung vor allem inhaltlich anders. So hatte sich in Düsseldorf im Fach Sprachwissenschaft die „moderne“ Richtung durchgesetzt, während die Orientierung im entsprechenden Fach in Köln auf eher traditioneller Grundlage über das Indogermanische hinaus historisch und vergleichend war.

Als Ergebnis dieser meiner persönlichen Erfahrungen an diversen deutschen Universitäten stellte sich mir die Situation so dar, dass die moderne Sprachwissenschaft in der Regel jeweils durch eine Professur innerhalb eines philologischen Faches repräsentiert wurde und die traditionelle Sprachwissenschaft in der Regel durch eine Professur in einem separaten Fach Sprachwissenschaft. Im krassen Gegensatz dazu

hatte ich die Situation in den USA erlebt, vor allem während meines Masterstudiums und der Vorbereitung meiner Dissertation am Department of Linguistics der University of California in Berkeley im Studienjahr 1972/73. Zu jener Zeit lehrten und forschten mehr als zehn Professoren an diesem Department, jeder neben einer allgemeinen Lehrverpflichtung ausgewiesen durch ein spezifisches Forschungsgebiet, teils in Bereichen der modernen Sprachwissenschaft, teils eher traditionell orientiert. Zu ihnen gehörten auch über Berkeley hinaus bekannte Sprachwissenschaftler wie Charles J. Fillmore (Kasusgrammatik, Deixis), George Lakoff (Generative Semantik), Wallace Chafe (Semantik, Indigene Sprachen Nordamerikas), John J. Ohala (Phonetik/Phonologie), Karl Zimmer (Semantik, Phonologie, Morphologie), William S.-Y. Wang (Phonetik/Phonologie, Ostasiatische Sprachen), John J. Gumperz (Soziolinguistik, Diskursstrategien), Robin Lakoff (Sprache und Gender), Paul Kay (Ethnologie und Sprache, Vergleichende Semantik), James A. Matisoff (Historische Sprachwissenschaft, Südostasiatische Sprachen) und Mary Haas (Indigene Sprachen Nordamerikas). Was mich besonders beeindruckte, war etwas, das nach meiner Erfahrung für deutsche Verhältnisse undenkbar war, nämlich die Zusammenarbeit der Kollegen, die sich darin zeigte, dass man gegenseitig die angebotenen Lehrveranstaltungen besuchte und sich an den dort geführten Diskussionen beteiligte. Diese Zusammenarbeit erfolgte auch über Departmentgrenzen hinweg. So besuchten beispielsweise der Philosoph John R. Searle (Sprachphilosophie, Sprechakttheorie) und die Psychologin Susan Ervin-Tripp (Sprachpsychologie, Spracherwerb) nicht selten die Veranstaltungen von Charles Fillmore und der Philosoph Paul Grice (Sprachphilosophie, Konversationsmaximen) die Veranstaltungen von George Lakoff. Generell spiegelte dieses Verhalten die Auffassung wider, dass man voneinander lernen konnte oder zumindest einander zuhören wollte, auch wenn man im Extremfall dezidiert anderer Auffassung war.

Gerade der Vergleich der Situationen der Sprachwissenschaft an deutschen und amerikanischen Universitäten hatte in mir eine Vorstellung davon reifen lassen, wie die Chance einer Neugründung für ein zukunftsorientiertes und wissenschaftlich effektives Fach Allgemeine Sprachwissenschaft an der Universität Potsdam genutzt werden konnte. So war leicht erkennbar, dass bei der äußerst geringen Ausstattung mit sprach-

wissenschaftlichen Professuren an deutschen Universitäten die Möglichkeit zu tiefgreifender und auch international Maßstäbe setzender Forschung äußerst begrenzt war. Entsprechend sollte das neue Fach an der Universität Potsdam personell entschieden umfangreicher ausgestattet werden. Berücksichtigt werden sollten Spezialisierungen in Teilbereichen, die aufeinander abgestimmt eine sinnvolle Breite der Sprachwissenschaft abdeckten. Damit sollte den letztlich berufenen Professoren einerseits die Möglichkeit zu effektiver Forschung in ihren Spezialgebieten gegeben werden, andererseits aber auch die Möglichkeit zur Kooperation mit Kollegen jeweils unterschiedlicher Spezialgebiete. Zudem war es mein Wunsch, innerhalb des Faches moderne Sprachwissenschaft mit traditioneller historischer und vergleichender Sprachwissenschaft zu vereinen, was meiner Auffassung entsprach, dass kollegialer Wissensaustausch über diese Grenze hinweg durchaus zu fruchtbaren Ergebnissen führen könnte.

Auch was die Lokalisierung der Sprachwissenschaft anging, hatte ich konkrete Vorstellungen. So begleitete mich seit längerem bei meiner eigenen Tätigkeit innerhalb der Anglistik das Gefühl, dass ich mit meiner kognitiv orientierten Lehre der Sprachwissenschaft in diesem Fach nicht bestens aufgehoben war, zumal die Kollegen der Literaturwissenschaft, stets in der Überzahl, es von ihren sprachhistorischen Kollegen gewohnt waren, dass Sprachwissenschaftler für die Literaturwissenschaft Dienstleistungen erbrachten. In letzterem Fall beispielsweise dadurch, dass sie Studierende in die Lage versetzten, altenglische Texte wie „Beowulf“ lesen und verstehen zu können. Nicht zuletzt dadurch hatte sich bei mir im Laufe der Zeit die Überzeugung entwickelt, dass es eigentlich zwei Arten von Sprachwissenschaft gibt, nämlich eine, in deren Zentrum das Produkt Sprache als Text steht, und eine, in deren Zentrum der Produzent von Sprache, der Sprecher mit seiner Sprachfähigkeit steht. In ersterem Fall ist der Platz der Sprachwissenschaft innerhalb der Philologien angemessen, wobei es hier um Fragen bezüglich Textanalysen, Sprachstilen, Übersetzungen oder auch Dialekten und Ähnlichem geht. Im zweiten Fall hat die Sprachwissenschaft zunächst von ihrer Methode her eher einen naturwissenschaftlichen – keinen philologischen – Charakter, wie Leonard Bloomfield bereits in den 20er und 30er Jahren des vorigen Jahrhunderts betonte, und entwickelte, beginnend mit

den Arbeiten von Noam Chomsky in den 60er Jahren mit der zunehmenden Relevanz von Spracherwerb und mentaler Repräsentation für die grammatische Analyse, eine Affinität zur Psychologie. Aufgrund dieser Entwicklung und aufgrund seiner intendierten Ausrichtung war für mich der angemessene Platz des neu zu gründenden Faches Allgemeine Sprachwissenschaft in derjenigen der beiden Philosophischen Fakultäten, in der auch die Psychologie angesiedelt werden sollte und nicht bei den Philologien.

Wie in Abschnitt 2 dargelegt, waren Strukturkommissionen für die Entwicklung von Vorschlägen für die Binnenstrukturen von Fächern zuständig, wobei dem Gründungssenat Vorschläge für die Besetzung der Strukturkommissionen durch die jeweils für ein Fach Verantwortlichen zur Entscheidung vorgelegt werden sollten. Entsprechend habe ich mich darum bemüht, Kolleginnen und Kollegen aus den alten und den neuen Bundesländern zu gewinnen, die gemeinsam mit mir einen konkreten Vorschlag für das Fach Allgemeine Sprachwissenschaft erarbeiten wollten. Der zuständigen, vom Gründungssenat bestätigten Kommission gehörten dann neben mir die folgenden Mitglieder an: Sascha Felix (Universität Passau), Hubert Haider (Universität Stuttgart), Karl Erich Heidolph (Zentralinstitut für Sprachwissenschaft Berlin), Anita Steube (Universität Leipzig) und Peter Suchsland (Universität Jena). Als vom Gründungssenat bestimmte Vorsitzende der Kommission lud ich die weiteren Kommissionsmitglieder zu mir nach Wuppertal ein, wo wir in langen und fruchtbaren Diskussionen unser Konzept erarbeiteten. Nicht unerwartet waren die Kollegin und die Kollegen zunächst sehr überrascht von meinen eigenen, ihnen vorgestellten Überlegungen, an deren mögliche Realisierung sie angesichts der üblichen Situation an deutschen Universitäten kaum glauben mochten. Zugleich aber waren sie sehr angetan davon, auch unter Einbringung ihrer persönlichen Vorschläge ein homogenes Konzept für ein effektives Fach Sprachwissenschaft entwerfen zu können, das nach unserer gemeinsamen Überzeugung der Entwicklung dieser Wissenschaft Rechnung trug und nicht durch mehr oder weniger willkürliche Ergänzungen alter Strukturen entstand. So kamen wir darin überein, dass der Bereich der Grammatiktheorie, dem für andere, auch anwendungsbezogene Bereiche eine fundamentale Bedeutung zukommt, unter jeweils separater Berücksichtigung seiner Teilbereiche mit entsprechend spezialisierten Professuren

stark vertreten sein sollte. Ziel dieses Teils des Konzepts war nicht nur, Ergebnisse hervorragender Grundlagenforschung für die anderen Bereiche bereit zu stellen, sondern vor allem auch, die Potsdamer Sprachwissenschaft durch die Etablierung von spezialisierter Forschungs-kompetenz und -bündelung international konkurrenzfähig zu machen. Neben diesem zentralen theoretischen Bereich sah unser Konzept einen empirischen Bereich vor, der sich mit Sprachvariation und Sprachgeschichte befassen sollte. Schließlich entschieden wir uns für einen dritten Bereich, Psycho- und Neurolinguistik, der die mit der „kognitiven Wende“ der Sprachwissenschaft im Einklang stehende Orientierung der Potsdamer Sprachwissenschaft untermauern und eine enge Zusammenarbeit mit der Grammatiktheorie etablieren sollte. Außerdem sollte aus diesem Bereich heraus ein innovativer, arbeitsmarktbezogener Studiengang entwickelt und angeboten werden.

Das Ergebnis unserer Diskussionen sah schließlich wie folgt aus: Das Fach Allgemeine Sprachwissenschaft sollte in drei große Bereiche untergliedert sein: Erstens, Grammatiktheorie, zweitens, Synchroner und diachroner Sprachvergleich und drittens, Psycho- und Neurolinguistik. Der Bereich Grammatiktheorie sollte seinerseits in drei Teilbereiche untergliedert sein, nämlich in Syntaxtheorie/Theoretische Morphologie, Semantische Theorie/Theorie des Lexikons und Phonetik/Phonologie. Der Bereich synchroner und diachroner Sprachvergleich sollte in die beiden Teilbereiche Sprachtypologie und Historisch-vergleichende Sprachwissenschaft untergliedert sein und der Bereich Psycho- und Neurolinguistik in die Teilbereiche Spracherwerb, Sprachverarbeitung und Patholinguistik. Jeder dieser Teilbereiche sollte durch eine Professur vertreten werden. Das ergab eine Anzahl von acht Professuren, von denen nach unserem Vorschlag vier C4-Professuren sein sollten und vier C3-Professuren. Bezogen auf Studiengänge schlugen wir solche vor, die die Grammatiktheorie im Allgemeinen als Grundlage hatten und die darüber hinaus mit unterschiedlichen Schwerpunkten studiert werden konnten, die die Ebenen der Sprachbeschreibung betrafen oder auch empirische Bereiche. Vor allem aber lag uns an einem innovativen Studiengang der Patholinguistik. Dieser sollte ähnlich der außeruniversitären Logopädie, jedoch grammatiktheoretisch sowie psycho- und neurolinguistisch fundiert Studierende im klinischen und allgemeinen The-

rapiebereich mit der Behandlung und der Anleitung von Behandlung von Sprachstörungen vertraut machen und ihnen so erfolversprechende Berufsperspektiven eröffnen.

Das von der Strukturkommission erarbeitete Konzept legte ich dem Gründungssenat zur Entscheidung vor. Dabei war mir sehr wohl bewusst, dass es sich hier um ein sehr ehrgeiziges und mutiges Konzept handelte, das aller Wahrscheinlichkeit nach aus Kostengründen gekürzt werden würde. Zu meiner großen Freude geschah dies jedoch nicht. Der Gründungssenat ließ sich davon überzeugen, dass das vorgelegte Konzept gut durchdacht war und der Universität Potsdam auf dem Gebiet der Sprachwissenschaft deutschlandweit eine Sonderstellung und damit ein markantes Profil geben würde. Ganz im Gegenteil zu einer Kürzung merkte der Kollege Professor Dr. Wolfgang Edelstein vom Max-Planck-Institut für Bildungsforschung Berlin an, dass in dem Konzept ein wichtiger zukunftsorientierter Bereich, nämlich Computerlinguistik, fehle. Es wurde daher beschlossen, diesen Bereich zusätzlich aufzunehmen und mit zwei Professuren auszustatten, die für die Teilbereiche Formale Sprachen (C4) und Maschinelle Sprachverarbeitung (C3) zuständig sein sollten. Erwartet wurde dabei, dass Studierende des Bereichs Computerlinguistik, aufbauend auf vertiefte Kenntnisse aus dem Bereich Grammatiktheorie, in Theorie und Praxis mit maschineller Sprachverarbeitung und automatischer Übersetzung vertraut gemacht würden und so gute Aussichten auf dem Arbeitsmarkt hätten.

In die Diskussion des Gründungssenates um die Ausstattung des Faches Allgemeine Sprachwissenschaft flossen auch Überlegungen zu möglichen Kooperationen mit Vertretern anderer Fächer ein. Dazu gehörte die Kooperation mit Fachvertretern der Einzelphilologien im Hinblick auf einen Studiengang Angewandte Sprachwissenschaft. Vorrangig wurden jedoch Möglichkeiten der Kooperation mit den Disziplinen Psychologie, Sonderpädagogik und Informatik gesehen, für die interdisziplinäre Studiengänge zu entwickeln waren und für deren gemeinsame Forschungstätigkeit ein interdisziplinäres Zentrum für Kognitive Studien gegründet werden sollte. Hinsichtlich der Studiengänge war den Mitgliedern des Gründungssenates bewusst, dass die Anzahl der vorgesehenen Professuren nicht mit der zu erwartenden Anzahl von Studierenden begründet werden konnte. In den Vordergrund gerückt

wurde daher die in ihrem Ausmaß und ihrer inhaltlichen Ausrichtung für Deutschland einzigartige Etablierung von Forschungskompetenz, die nach außen dadurch sichtbar gemacht werden sollte, dass die Allgemeine Sprachwissenschaft an der Universität Potsdam den Status von einem von vier Profildbereichen erhielt. Die anderen drei Profildbereiche waren das Potsdamer Modell der Lehrerbildung, die Geschichtswissenschaften und die Naturwissenschaften.

Mit der Entscheidung des Gründungssenates für das Konzept des Faches Allgemeine Sprachwissenschaft war noch nicht gewährleistet, dass es auch in dieser Form realisiert werden würde, da natürlich der Kostenfaktor für das Land Brandenburg eine Rolle spielte. Mögliche Widerstände konnten einerseits von der Landesstrukturkommission kommen, die für die Abstimmung der Strukturierungen der wissenschaftlichen Einrichtungen des Landes Brandenburg zuständig war, was tatsächlich auch geschah, und andererseits vom Ministerium für Wissenschaft, Forschung und Kultur des Landes Brandenburg, das für die Finanzierung sorgen musste. Ich habe mir daher zunächst einen Termin beim zuständigen Minister, Hinrich Enderlein, geben lassen, ihm das Konzept und dessen Vorteile erläutert und ihn schließlich so davon überzeugen können, dass es seine Zustimmung fand. Ich habe außerdem mehrere Telefonate mit Vertretern der Landesstrukturkommission geführt, unter anderen mit dem Kollegen Professor Dr. Hans N. Weiler, dem ersten Rektor der Universität Frankfurt/Oder, und anfängliche Bedenken beseitigen können, so dass es schließlich keinerlei Einwände mehr gegen die Gründung des Faches in seiner vorgestellten Form gab.

4 Die Umsetzung des Konzeptes

Die Umsetzung des Konzeptes bedeutete zunächst, dass für jede einzelne der insgesamt zehn Professuren Ausschreibungstexte entworfen, Berufungskommissionen eingesetzt, Bewerber eingeladen und angehört, Berufungsvorschläge erarbeitet, schriftlich begründet und schließlich dem Gründungssenat beziehungsweise nach dessen Auflösung dem Senat zur Entscheidung vorgelegt werden mussten: insgesamt eine sehr verantwortungsvolle und zeitintensive Arbeit. Eine Art Stufenplan sah vor,

dass zuerst die Berufungsverfahren für die C4-Professuren durchgeführt werden sollten, so dass diese die Funktion von Eckprofessuren erhielten und die darauf Berufenen die Verantwortung für Vorschläge für die Besetzung der weiteren Professuren mit übernehmen konnten.

Die erste ausgeschriebene Professur war die C4-Professur für Grammatiktheorie: Syntaxtheorie/Theoretische Morphologie. Die zuständige Berufungskommission, in der ich den Vorsitz hatte, war sich schnell über einen Wunschkandidaten einig. So sprach man seit einiger Zeit innerhalb der *linguistic community* davon, dass es in Deutschland einen herausragend qualifizierten, sehr jungen Nachwuchssprachwissenschaftler gäbe, der bereits vor Abschluss seines Magisterstudiums an der Universität Konstanz ein Buch veröffentlicht hatte („Zur Syntax und Semantik der Nominalkomposita. Ein Versuch praktischer Anwendung der Montague-Grammatik auf die Wortbildung im Deutschen“, 1981), im Alter von 26 Jahren an der Universität Passau promoviert worden war und sich bereits mit 30 Jahren ebendort habilitiert hatte. Sein Name: Gisbert Fanselow, Jahrgang 1959. Zu der Zeit, als die Berufungskommission tagte, das war im Juli 1992, hatte Gisbert außer seinem Erstlingswerk bereits seine Dissertation und seine Habilitationsschrift veröffentlicht sowie das zusammen mit Sascha Felix verfasste zweibändige Werk „Sprachtheorie. Eine Einführung in die generative Grammatik“, das vermutlich im Regal jedes Studenten und Lehrenden der modernen Sprachwissenschaft stand. Außerdem hatte er zwei Sammelbände herausgegeben, einen zusammen mit Sascha Felix und einen mit Susan Olsen. Alle seiner Schriften betrafen die Grammatiktheorie sowohl unter Berücksichtigung der Morphologie als auch – vorrangig – der Syntax. Zudem vertrat Gisbert zu der Zeit eine Professur an der Universität Stuttgart. Er war also trotz seines noch jungen Alters von derzeit 33 Jahren in jeder Hinsicht für die ausgeschriebene Professur bestens qualifiziert. Wir schätzten uns daher glücklich, dass er auf der Grundlage unseres Berufungsvorschlags schließlich auch berufen wurde und im Jahr 1993 die Stelle annahm. Ich bin sicher, dass er damals nicht ermessen konnte, welche Arbeit damit auf ihn zukam und wie sehr diese Berufung mit ihrer Verpflichtung zu umfangreicher Lehre, Organisation und Verwaltung sein Leben als Forscher beeinträchtigen würde. Ich hoffe, er hat es trotzdem nicht bereut.

Nach der Besetzung der Eckprofessur für Grammatiktheorie wurden

die Eckprofessuren für die weiteren drei Bereiche ausgeschrieben: Psycholinguistik mit dem Schwerpunkt Spracherwerb (C4), Patholinguistik (C4), Synchroner und diachroner Sprachvergleich mit den Schwerpunkten Sprachtypologie und Sprachwandel (C4) sowie Computerlinguistik mit dem Schwerpunkt Formale Sprachen: Automatentheorie/Komplexitätstheorie (C4). Die Berufungskommission für die erste dieser Professuren wurde noch von mir geleitet. Auch war Gisbert nicht daran beteiligt. Die übrigen drei Kommissionen wurden dann aber bereits von ihm vorgeschlagen und geleitet. Ich selbst war noch in der Kommission für die Professur Computerlinguistik als Kommissionsmitglied und zugleich als Senatsberichterstatterin tätig, in den beiden weiteren, die ihren Berufungsvorschlag im Dezember 1993 vorlegten, nur noch als Senatsberichterstatterin. So ging recht bald die gesamte Arbeit im Zusammenhang mit den Berufungen auf Gisbert über, wobei mein Rückzug dadurch begründet war, dass die Zeit des Gründungssenates langsam zu Ende ging (im Januar 1994). Auch war ich noch mit der Gründung des Sprachenzentrums befasst. Zudem fiel meine gesamte Tätigkeit für die Universität Potsdam mit meinen unveränderten Aufgaben in Forschung und Lehre an der Universität Wuppertal zusammen und außerdem mit meiner Funktion als Teilprojektleiterin in einem Sonderforschungsbereich. Es war daher gut, die Tätigkeit für die Allgemeine Sprachwissenschaft in Potsdam reduzieren und in verantwortungsvolle Hände übergeben zu können.

Während unserer gemeinsamen Verantwortung für das Fach Allgemeine Sprachwissenschaft an der Universität Potsdam habe ich mit Gisbert noch zwei Dinge besprechen und dem Gründungssenat zur Entscheidung vorlegen können. Das erste betraf einen nachvollziehbaren Vorschlag von Gisbert, die Bezeichnung des Faches beziehungsweise der Einrichtung für das Fach zu verändern. So wurde die von mir im Kontext der Diskussionen im Gründungssenat bevorzugte Bezeichnung „Allgemeine Sprachwissenschaft“ gegen die Bezeichnung „Linguistik“ ausgetauscht, so dass das im Jahr 1993 gegründete Institut den Namen „Institut für Linguistik“ erhielt. Im zweiten Fall ging es um die Zuordnung des Instituts zu der einen oder der anderen der beiden Philosophischen Fakultäten. Nach der Vorstellung des Gründungssenates sollte es nach traditionellem Vorbild gemeinsam mit den Philologien

Teil der Philosophischen Fakultät I sein. Wie ich in Abschnitt 2 dargelegt und begründet habe, war ich selbst der Auffassung, dass das Institut besser in derselben Fakultät aufgehoben wäre wie die Psychologie. Ich habe deshalb gemeinsam mit Gisbert und weiteren Kollegen der Linguistik ausführlich diskutiert, ob die von mir angedachte Trennung der Allgemeinen Sprachwissenschaft von den Philologien und eine institutionalisierte Nähe zur Psychologie durch ihre Etablierung in der Philosophischen Fakultät II neben den offensichtlichen Vorteilen auch Nachteile haben würde und ob sie insgesamt meine Auffassung teilen könnten. Das Ergebnis war, dass man solche Nachteile nicht sah und mir zustimmte, so dass ich dem Gründungssenat einen entsprechenden Beschluss vorschlagen konnte. Dass diese Entscheidung richtig war, zeigt die inzwischen erfolgte Umbenennung der Philosophischen Fakultät II in „Fakultät für Humanwissenschaften“, die die inhaltliche Ausrichtung des Instituts für Linguistik bestens trifft.

Die Aufgaben im Zusammenhang mit den angeführten Berufungsverfahren, denen nach der Beendigung der Amtszeit des Gründungssenates die nicht weniger zeitintensive Durchführung der Verfahren zur Besetzung der fünf C3-Professuren folgte, waren nicht die einzigen, die Gisbert übertragen wurden. So war er von 1993 bis 1994 Leiter des Instituts für Linguistik, was bedeutete, dass die Verantwortung für alle Arbeiten zum Aufbau des Instituts bei ihm lag. Dazu gehörten so wissenschaftsfremde Aufgaben wie die Versorgung des Personals des Instituts mit geeigneten Räumen und mit Sachmitteln oder die Beantragung von Sekretariatsstellen und Ähnlichem. In seiner Funktion als Leiter des Instituts war Gisbert auch verantwortlich für die Entwicklung von linguistischen Studiengängen, was insgesamt viel Zeitaufwand erforderte, aber besonders im Falle des völlig neuen Studiengangs „Patholinguistik“ eine große Herausforderung war, zumal an der Durchführung des Studiengangs medizinische Einrichtungen beteiligt werden sollten, mit denen folglich Vereinbarungen getroffen werden mussten. Auch waren schwierige Gespräche mit Organisationen von Logopäden notwendig, die zunächst in universitär gebildeten „Patholinguisten“ unliebsame Konkurrenten sahen. Ein Vorteil für Gisbert war, dass die auf der Vorschlagsliste der C4-Professur für Patholinguistik an erster Position platzierte Ria de Bleser, die später auch berufen wurde, ihm an der Ausgestaltung des

Studiengang und beim Ausräumen von Problemen hilfreich zur Seite stand.

Neben all diesen Aufgaben wurde Gisbert noch im Dezember 1993 als Gründungsmitglied des Zentrums für Kognitive Studien mit der Aufgabe betraut, einen Entwurf für dessen Satzung zu erarbeiten, die unter anderem die Rechtsstellung, die Aufgaben, die Mitgliedschaften und die Leitung des Zentrums regelte, die von den weiteren Gründungsmitgliedern diskutiert und verabschiedet und schließlich vom Gründungssenat beschlossen wurde. Er war dann maßgeblich beteiligt an der Konzeption eines interdisziplinären Innovationskollegs zum Thema „Formale Modelle kognitiver Komplexität“, dessen Sprecher er von 1994 bis 1999 war und das den Grundstein legte für intensive Kooperationen von Wissenschaftlern, die am Zentrum für Kognitive Studien mitwirkten. Zur Außendarstellung der wissenschaftlichen Aktivitäten vor allem der Professoren des Instituts für Linguistik gründete Gisbert zusammen mit anderen im Jahr 1994 die sprachwissenschaftliche Zeitschrift „Linguistics in Potsdam“ („LiP“), deren erste Ausgabe im Juli 1994 erschien. Später war er maßgeblich beteiligt an der Beantragung der Einrichtung einer von der DFG geförderten interdisziplinären Forschergruppe an der Universität Potsdam zum Thema „Konfligierende Regeln“ (Förderzeitraum 2000–2006), deren Sprecher er von 2000 bis 2003 und Stellvertretender Sprecher er von 2003 bis 2006 war und in deren Kontext er eigene Forschungsprojekte leitete und abschloss.

Viel Energie verwandte Gisbert auch auf die Initiierung und Durchführung wissenschaftlicher Kooperationen mit Berliner Einrichtungen. Ein erstes herausragendes Ergebnis dieser Bemühungen war ein gemeinsamer Antrag der Universität Potsdam und der Humboldt-Universität zu Berlin für ein Graduiertenkolleg zum Thema „Ökonomie und Komplexität der Sprache“ bei der DFG. Der Antrag wurde bewilligt, das Graduiertenkolleg von 1996 bis 2005 gefördert und von Sprachwissenschaftlern der beiden Universitäten sowie unter Mitwirkung auch von Sprachwissenschaftlern des Leibniz-Zentrums Allgemeine Sprachwissenschaft (ZAS) durchgeführt. Gisbert war daran sowohl bei der Formulierung des Antrags als auch mit eigenen Teilprojekten beteiligt. Die Kooperation mit Berliner Universitäten auf hohem wissenschaftlichen Niveau setzte sich fort in dem von der Universität Potsdam beantragten Sonder-

forschungsbereich zum Thema „Informationsstruktur: Die sprachlichen Mittel der Gliederung von Äußerung, Satz und Text“, der von der DFG bewilligt und von 2003 bis 2015 gefördert wurde. An der Durchführung nahmen Wissenschaftler der Universität Potsdam, der Freien Universität Berlin und der Humboldt-Universität zu Berlin teil, die die Fachrichtungen Afrikanistik, Anglistik, Computerlinguistik, Linguistik, Psychologie, Kognitionswissenschaften oder Allgemeine und Theoretische Sprachwissenschaften vertraten. Auch hier war Gisbert an der Formulierung des Antrags und als Leiter beziehungsweise Ko-Leiter von Teilprojekten beteiligt. Im Jahr 2017 wurde ihm von der Volkswagenstiftung ein Forschungsprojekt zum Thema „The Interaction of Modules of Grammar: Prosody and Syntax of Discontinuous NPs“ bewilligt. Im Kontext all dieser Forschungsaktivitäten hat Gisbert zahlreiche Schriften veröffentlicht und Vorträge im In- und Ausland gehalten, die ihn nicht nur als individuellen Wissenschaftler auch international bekannt gemacht haben, sondern nicht zuletzt auch als Repräsentanten und Botschafter des Instituts für Linguistik an der Universität Potsdam.

Es ist mir nicht möglich, im Rahmen meiner Darlegung der Aktivitäten und der Verdienste von Gisbert für die faktische Umsetzung des Gründungskonzeptes des Instituts für Linguistik alle Einzelheiten anzuführen. So sind all die kleinen lästigen Widrigkeiten, die sich wie überall in einer Gründungssituation vor Ort ergeben, für Auswärtige gar nicht sichtbar, können nur erahnt werden. Auch habe ich sicher nicht all sein Engagement und seine Mitverantwortung für die positive wissenschaftliche Entwicklung des Instituts benennen können, die neben der hohen wissenschaftlichen Qualität auch der durch seinen (Mit-)Vorschlag Neuberufenen wissenschaftliche Kooperationen auf hohem Niveau betreffen, die er durch die Einbindung des Instituts in den lokalen Kontext (Zentrum für kognitive Studien, Philologien), den regionalen Kontext (Berliner Universitäten) oder auch darüber hinaus den nationalen und den internationalen Kontext initiiert beziehungsweise mit gestaltet hat. Ich denke aber, dass ich zumindest einen Eindruck habe vermitteln können von der entscheidenden Rolle Gisberts für den außerordentlichen Erfolg des Instituts. Ohne ihn wäre es nicht das, wofür es heute weit über die Region hinaus, auch international, geschätzt und gerühmt wird.

5 Schlussbemerkungen

Die im Jahr 1993 erfolgte Gründung des Instituts für Linguistik an der Universität Potsdam mit seiner Ausstattung von zehn Professuren war für die Repräsentation der Sprachwissenschaft an einer deutschen Universität eine große Chance, zugleich aber auch ein Risiko, das die für die Gründung Verantwortlichen, das heißt der Gründungssenat und das Ministerium für Wissenschaft, Forschung und Kultur des Landes Brandenburg, mit hohen Erwartungen an das Institut auf sich genommen haben. Die Erwartungen betrafen sowohl dem Potential entsprechende Leistungen in der Forschung, mit dem Ergebnis herausragender wissenschaftlicher Profilierung, als auch Erfolge der Studiengänge, vor allem der innovativen, arbeitsmarktorientierten Studiengänge der Patholinguistik und der Computerlinguistik. Diese Erwartungen wurden in jeder Hinsicht erfüllt, wenn nicht gar übertroffen. So konnte man wohl erwarten, dass aufgrund der institutionalisierten umfangreichen Forschungskapazität und der Qualität der Berufenen aus dem Institut heraus exzellente Forschung geleistet werden würde. Mit der außergewöhnlich hohen Einwerbung von Drittmitteln, nicht zuletzt durch DFG-geförderte wissenschaftliche Kooperationen, die mittlerweile als Maßstab für wissenschaftliche Qualität gesehen wird, konnte jedoch zum Zeitpunkt der Gründung des Instituts nicht gerechnet werden. Ähnliches gilt für die beiden sehr gut nachgefragten arbeitsmarktorientierten Studiengänge, zumal bereits in den Anfängen des Instituts der Studiengang Patholinguistik durch eine so große Anzahl von Studierenden nachgefragt wurde, dass er mit einem *numerus clausus* versehen werden musste. Diese Erfolge des Instituts können und sollten allen, die für seine Konzipierung und Gründung verantwortlich oder daran beteiligt waren, bestätigen, dass sich ihr Einsatz gelohnt hat, auch wenn dafür in manch anderem Bereich durch die zeitliche Belastung Verzicht geleistet werden musste. Vielleicht ist es nicht unangemessen, an dieser Stelle zu erwähnen, dass keine und kein an der Konzeption des Instituts und ihrer Umsetzung Beteiligte(r) für seine Tätigkeit in den relevanten Kommissionen, auch als Auswärtige(r), finanziell entlohnt wurde. Auch ich selbst habe für meine fast dreijährige Tätigkeit für den Gründungssenat der Universität Potsdam keinerlei finanzielle Zuwendung erhalten oder auch nur

erwünscht, abgesehen von der erfolgten Erstattung der Reisekosten. Ich habe diese Tätigkeit stets als meinen gern geleisteten persönlichen Beitrag zur deutschen Wiedervereinigung betrachtet. Gleichwohl habe ich mich sehr gefreut, als mir im Februar 1995 von der damaligen „Philosophischen Fakultät II“ durch deren Dekanin, Professor Dr. Bärbel Kirsch, unter anderem „in Anerkennung und Würdigung“ meines „hervorragenden Wirkens beim Aufbau der Universität Potsdam und der Philosophischen Fakultät II“ die Ehrendoktorwürde verliehen wurde, die mich in ganz besonderer Weise an meine Tätigkeit für die Universität Potsdam und nicht zuletzt für die Gründung des Instituts für Linguistik an der Universität Potsdam erinnert.

Gisbert Fanselow's work has been invaluable and inspiring to many researchers working on syntax, morphology, and information structure, both from a theoretical and from an experimental perspective. This volume comprises a collection of articles dedicated to Gisbert on the occasion of his 60th birthday, covering a range of topics from these areas and beyond. The contributions have in common that in a broad sense they have to do with language structures (and thus trees), and that in a more specific sense they have to do with birds. They thus cover two of Gisbert's major interests in- and outside of the linguistic world (and perhaps even at the interface).



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