Modality in Kakataibo[*]

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This paper explores the semantic space of modality in Kakataibo (Panoan). It is found that Kakataibo makes a distinction in the modal space based on the modality type. Circumstantial modality is encoded by a construction while the epistemic space is conveyed by the second position enclitics =*dapi* 'inferential', =*id* 'second-hand information' and =*kuni* 'contrastive assertion'. However, none of these strategies to encode modality restricts the quantificational force, leaving it underspecified. These facts are consistent with the predictions of current typologies of modal systems.

Keywords: modality, conversational background, quantificational force, Kakataibo

1 Introduction

This paper explores the semantic space of modality in Kakataibo (Panoan, ISO 639-3 code 'cbr'). Modality is related to the expression of necessity and possibility. In a modalized utterance, the prejacent proposition, the propositional content without the modal meaning itself, is modified in terms of its possibilities of being necessary or possible. This first dichotomy distinguishes between the meanings of *Anne must go to a university* in contrast to *Anne might go to a university*, where these two utterances differ in their necessity or possibility interpretation, respectively. In addition, modalized utterances may receive different interpretations according to the context. For instance, the utterance

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Anne must go to a university may be interpreted as an obligation for *Anne* (deontic modality) or as an inferred fact (epistemic modality).

In order to study these aspects of modality more precisely, a simplified version of the machinery of *possible world semantics* is adopted here (Kratzer 1977, 1991). Under this framework, modals are analyzed as quantifiers over possible worlds, where universal and existential quantification correspond to necessity and possibility, respectively. The other main components in the semantics of modals are the conversational background and the ordering source. Conversational backgrounds are a set of propositions that provide the context under which modals are evaluated and acquire their modality type (e.g. deontic, epistemic, etc.). For instance, deontic modality is evaluated under those worlds that are compatible with the relevant body of law or moral principles or deontic conversational background; epistemic modality is evaluated under those worlds that are suited to what is known, the available evidence, having an epistemic conversational background. An accessibility relation is responsible for making available the relevant conversational background to the world in which the sentence is evaluated. In some instances, a ranking of the accessible worlds is necessary when some propositions are conflicting among them. The ordering source takes care of ranking the worlds favoring some of these propositions. In summary, the meaning of modals is analyzed using three different tools: quantification force, conversational background (or modal base) and an ordering source.

Typologically, languages tend to divide the modal semantic space by making restrictions or not in the modal force (quantification) or the conversational background (Matthewson 2013). Some languages such as English and German restrict the modal force, which distinguishes *must* from

may in English, but are unselective with regard to the conversational background, which allows the same modal to have different types of readings (e.g. *must* as deontic or epistemic). In contrast, other languages such as St'át'imcets (Matthewson *et al.* 2005) prefer to be selective with the conversational background, which makes modals to receive only one type of reading (e.g. deontic or epistemic, but not both), but they leave the modal force unrestricted, which allows the modal to receive both universal and existential interpretations.

In this paper it will be shown that Kakataibo patterns more like St'át'imcets in that it restricts the conversational background but leaves the modal force underspecified. In Kakataibo, different kinds of modality meanings such as deontic (concerned with a body of law or moral principles), bouletic (concerned with a person's desires), and pure circumstantial (concerned with the circumstances, see Leech 1971, De Haan 2006, Palmer 2014 among others for more on typologies of modal meanings) are expressed through a construction involving the inflected copula verb 'to be' taking as one of its arguments a clausal nominalization marked by -*ti* 'future nominalizer', Clause+*ti* be+FLEX (Section 2). In turn, epistemic modality is encoded by a set of second position clitics =*dapi* 'inferential', =*id* 'second-hand evidential' and =*kuni* 'contrastive assertion' (Section 3). In contrast, the quantificational force of the modals in Kakataibo is left underspecified. In addition, the grammar of Kakataibo allows more than one modal clitic or construction yielding complex modal semantic networks in a single monoclausal sentence.

Kakataibo is a language of the Panoan linguistic family spoken in Peruvian central Amazon by approximately 1500 speakers (Frank 1994) although the current number of speakers is on the rise (Zariquiey p.c.). Kakatibo

constitutes the only member of one of the branches within the Panoan linguistic family (Shell 1985, Loos 1999, Valenzuela 2003, Fleck 2013). This paper focuses only on the San Alejandro dialect of Kakataibo, one of the five identified for this language (Zariquiey 2011a).

The Kakataibo data for this paper comes from the author´s fieldwork, unless otherwise stated. Data comes from both natural speech (NS) obtained through participant observation and elicitation (EL). Sentences from natural speech were checked with native speakers recreating the context in which they were uttered. Elicitation sessions involved direct elicitation and elicitation using visual material (TFSC). Elicitation session always involved explaining a discourse context to the speakers, as is common practice in semantics fieldwork (Matthewson 2004). This paper is based on the judgments of six native speakers of Kakataibo.

In describing the Lower Aguaytía dialect of Kakataibo, Zariquiey (2011b:499-507) identifies =*kuni* 'certitudinal', =*sapi* 'dubitative' and =*kaia* 'contrastive' as epistemic modals, without labeling them as such. The enclitic =*kuni* is described as making the propositional content of the sentence highly certain. The dubitative =*sapi* can be used for weak predictions based on indirect evidence or speculation. The contrastive =*kaia* makes a comparison between events or individuals in which the event or the participant of the proposition uttered is preferred to the events or individuals present in the common ground. The second position clitic =*id*/=*is* has been identified as an evidential marker (Shell 1978, Zariquiey 2011b:508-514). Section 3.2. discusses some diagnostic tests that suggest that =*id* is best considered as an epistemic modal.

Some basic features of the grammar of Kakataibo relevant to the present subject are discussed here (see also Zariquiey 2011b). Kakataibo uses a templatic sentential structure that involves the obligatory presence of at least one of the second position clitics *=ka* or *=id* followed by person marking clitics (PM) and the optional presence of other second position clitics that precede them. The order in which these second position clitics occur is fixed, as shown in (1).

(1)   (XP)=kuni=dapi=ka=id=PM (XP) V

There is an extensive use of nominalizations in Kakataibo. At least four nominalizers in Kakataibo differing in relative tense have been identified: *-ti* 'future nominalizer', *-kë* 'non-future nominalizer', *-a* 'remote past nominalizer' and *-ai* 'present non-habitual nominalizer'. The nominalizer 'future nominalizer' *-ti* is part of the construction encoding circumstantial modality.

Kakataibo encodes aspect via obligatory verbal suffixes *-i* 'imperfective' and *-a* 'perfective'. The imperfective is used for non-past events while the perfective is used for past events.[1] Tense is encoded by a different set of verbal suffixes, as shown below.

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[1] The tense-aspect system of Kakataibo is more complex than what is sketched here, but this will not be discussed in this article since it does not affect the main content of this paper.

(2)   =ka=na   pi-i
           =VAL=1A/S eat-IPFV
           'I eat / I am eating / I am going   to eat / I will eat.'

           ka=na pi-a   =VAL=1A/S eat-PFV   'I ate.'
           ka=na pi-pun-   =VAL=1A/S eat-HOD1   'I ate earlier today.'
           ka=na pi-ña-   =VAL=1A/S eat-HOD2   'I ate earlier today.'
           ka=na pi-nët-   =VAL=1A/S eat-LN   'I ate last night.'
           ka=na pi-on   =VAL=1A/S eat-HST   'I ate yesterday.'
           ka=na pi-ëxan   =VAL=1A/S eat-REC.PST   'I ate some days ago.'
           ka=na pi-akë   =VAL=1A/S eat-REM.PST 'I ate years ago.

2   Circumstantial modality in Kakataibo

Circumstantial modality, concerned with what is possible or necessary given a set of circumstances (e.g. laws, desires, etc.), is encoded in Kakataibo using a construction that has the copula verb 'to be' fully inflected, taking as one of its arguments a clausal nominalization (CN) marked by the future nominalizer *-ti*, [Clause-*ti*]_{CN} be+FLEX. This construction covers the whole semantic range of circumstantial modality, including pure circumstantial, deontic, abilitive and bouletic readings. The quantificational force in this construction is left underspecified being resolved by the context for which both universal and existential readings are obtained. Examples (3)–(6) show deontic uses of this construction. Universal readings are obtained in (3) and (4) while existential ones are given in (5) and (6). The construction and/or morpheme(s) under consideration are boldfaced in the examples.

(3)   Context: A child is getting low grades in school because of being out
        playing; his father warns him:

        minkaina   kirika   **'ati**   **'ai**.[2]
        mi=n=ka=ina   kirika   'a-ti   'a-i
        2=A/S=VAL=2A/S   paper   do-FUT.NMLZ   be-IPFV
        'You have to study.'   (EL)

(4)   Context: A person is telling everybody about his baby tapir that he is
        raising. He is telling people to be aware of that and not to confuse it with a wild
        tapir from the forest.

        a kupinkamina   'ó   bakë   **tunkatima**   **'ai**.
        a kupin=ka=mina   'ó   bake   tunkat-ti=ma   'a-i
        3 for=VAL=2A/S   tapir   baby   shot-FUT.NMLZ=NEG   be-IPFV
        'For that reason, you do not have to shoot at the baby tapir.'   (NS)

(5)   Context: I need to go to the city. I see my friend getting his canoe ready
        for travelling. I ask him if I may travel with him, he answers:

        ën   nuntinukamina   **kuanti**   **'ai**.
        ë=n   nunti=nu=ka=mina   kuan-ti   'a-i
        1=POSS   canoe=LOC=VAL=2A/S go-FUT.NMLZ   be-IPFV
        'You may travel in my canoe.'   (EL)

(6)   Context: The speaker is talking about some visitors that are expected to
        come but are delayed. Since they are delayed, they have to take the
        fastest way to arrive at the community.

        ain   'autonabika   ënu   **uti**   **'ikë**.
        ain   'auto=na=bi=ka=a   ë=nu   u-ti   'ikë
        3.POSS car=INS=EMPH=VAL=3A/S   1=LOC come-FUT.NMLZ be.3.IPFV
        'They have to come in their car / They might come in their car.'   (NS)

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[2] Abbreviations: 1 'first person', 2 'second person', 3 'third person', A 'subject of transitive
   verb', DUR 'durative', EMPH 'emphatic', ESD 'earlier same day', HST 'hesternial',
   INTR 'intransitive', INS 'instrumental', IPFV 'imperfective', LOC 'locative', NMLZ
   'nominalizer', NEG 'negation', N.PROX 'non-proximate', O 'object of transitive verb',
   PL 'plural', PFV 'perfective', POSS 'possessive', PROX 'proximate', REFL 'reflexive',
   REM.PST 'remote past', S 'subject of intransitive verb', SE: simultaneous event', TEMP
   'temporal', VAL 'validational'.

Besides deontic readings, the construction [Clause+ti]$_{CN}$ V+flex can have other circumstantial readings as well, such as pure circumstantial (7), abilitive (8) and bouletic (9).

(7)   Context: I have eaten food that was bad and my stomach is feeling bad.

kana   **kináti**   **'ai**.
ka=na   kinat-ti   'a-i
VAL=1A/S vomit-FUT.NMLZ be-IPFV
'I have to throw up.'   (EL)

(8)   Context: Speakers are discussing how strong they are.

ënkana   cinco in   **papiti**   **'ai**.
ë=n=ka=na   cinco in   papi-ti   'a-i
1=A/S=VAL=1A/S five   tree   carry-FUT.NMLZ be-IPFV
'I am able to carry five (pieces of) wood.' (EL)

(9)   Context: Speaker A wants to go to Lima urgently because a relative is in
        the emergency room in the hospital. Speaker B advises him to use the
        fastest way to get there.

aviónnëkaina   Limanu   **kuanti**   **'ai**.
avión=në=ka=ina   Lima=nu   kuan-ti   'a-i
plane=INS=VAL=2A/S Lima=LOC go-FUT.NMLZ be-IPFV
'You should travel by plane to Lima.' (EL)

While the quantificational force is left underspecified, this construction delimits the conversational background to be only circumstantial given the context of the utterance. Examples (10) and (11) show that the use of this construction where an epistemic conversational background is selected is odd.

(10)   Context: Speaker A knows that speaker B always studies at home in the
        afternoon every day. Speaker A goes to speaker B's home in the
        afternoon. After greeting each other, speaker A tells speaker B:

    # minkaina   kirika **'ati**   **'ai**.
    mi=n=ka=ina   kirika 'a-ti   'a-i
    2=A/S=VAL=2A/S paper do-FUT.NMLZ be-IPFV
    'You have to study.'   (EL)
    Intended: You must be studying.

(11)   Context: I know that each time I eat bad fish I immediately throw up. I have just eaten bad fish. I do not feel any stomach pain or other symptoms of food poisoning. Nevertheless, I say to myself:

    # kana   **kináti**   **'ai**.
    ka=na   kinat-ti   'a-i
    VAL=1A/S vomit-FUT.NMLZ be-IPFV
    'I have to throw up.'   (EL)
    Intended: I may throw up.

This construction does not show further uses than that of expressing circumstantial modality in my database and thus is considered as a grammaticalized device to encode that meaning.

It is interesting to note that out of the available set of nominalizers in Kakataibo (see section 1), this construction only utilizes the future nominalizer *-ti*. This fact is predicted by the claim that circumstantial modals tend to have a future temporal orientation (Condoravdi 2002, Kratzer 2012), that is, circumstantial modals assert something about a possible event that occurs after the time the modal is evaluated. Thus, the use of the future nominalizer adds this component of future temporal orientation to the circumstantial construction in Kakataibo. However, notice that it does not entail that this construction may not occur with non-future readings. Since the relative future tense orientation that *-ti* contributes operates on top of the absolute tense encoded by the main verb inflection, it is possible to evaluate the modal in the future of the past, as illustrated below and examples (33 and 35).

The temporal perspective of the modalized clause can be changed by simply manipulating the tense/aspect inflection of the main verb (see Section 1) of the construction. Examples (12) and (13) illustrate this with the remote past suffix and the earlier same day suffix, respectively.

(12)   Context: I have had a serious car accident. I broke a leg and had to be in recovery for eight months.

bari isinkana   kuin **abati**   **'akë**.
bari isi=n=ka=na   kuin abat-ti   'a-akë
sun   other=TEMP=VAL=1A/S   very run-FUT.NMLZ be-REM.PST
'I could run fast years ago.'   (EL)

(13)   Context: I know that each time I eat bad fish I immediately throw up. I ate bad fish in the morning.

kana   **kináti**   **'apuni**.
ka=na   kinat-ti   'a-pun-i
VAL=1A/S   vomit-FUT.NMLZ   be-HOD1-IPFV
'I had to throw up earlier today.'   (EL)

Negation of the circumstantial modal meaning is accomplished using the general negative clitic =ma. This strategy is used to negate all the subtypes of circumstantial modality, (14) shows an instance of negation of an abilitive. This strategy is used for both existential and universal readings. However, a different strategy, [Clause-*ti*]CN '*a-ti-paya=ma* do-FUT.NMLZ-?=NEG, is preferred in negative existential contexts, as in (15). Notice that both constructions are accepted in that context but the second construction [Clause-*ti*]CN '*a-ti-paya=ma* cannot be used in sentences involving universal quantification.

(14)   Context: The speaker is talking about a hernia that he got because of
        carrying many heavy pieces of wood. This affects his ability to carry
        things now.

        kana   ñu   iyë   **papiti**   **'aima**.
        ka=na   ñu   iyë   papi-ti   'a-i=ma
        VAL=1A/S   thing heavy carry-FUT.NMLZ   be-IPFV=NEG
        'I cannot carry heavy things.'   (EL)

(15)   Context: Discussing what human beings are capable or not of doing.

        unikamaka   nuanti   **'atipayama**.
        uni=kama=ka=a   nuan-ti   'a-ti-paya=ma
        people=PL=VAL=3A/S   fly-FUT.NMLZ   be-FUT.NMLZ-?=NEG
        'People cannot fly.'   (EL)

It has been shown that the construction [Clause+ti]$_{CN}$ V+flex triggers a circumstantial conversational background but leaves the quantificational force underspecified. Following Matthewson *et al.* (2005), a simplified semantics of this construction, represented as *α*, is given in (16). This proposal assumes a minimal standard formal machinery used to model modals (Portner 2009): a conversational background (^{c}), and the basic components of possible worlds, world (^{w}) and time (^{t}). The ordering source of the conversation background is not included here for simplicity and because it has not been dealt with in this section. Notice that other ways to account for the contextual quantificational ambiguity of the modals have been proposed using choice functions variables (Rullman *et al.* 2008) and a (non-)empty ordering source (Peterson 2012).

(16) $[[\alpha\phi]]^{w, t, c}$ is only defined if B(c) is circumstantial.
        If defined, $[[\alpha\phi]]^{w, t, c} = 1$ iff for all/some words in w' $\in$ B(c)(w, t),
        $[[\alpha\phi]]^{w, t, c} = 1$

The main properties of the circumstantial modal construction [Clause+ti]$_{CN}$ V+flex have been sketched here. This construction covers the

whole semantic space of circumstantial modality including deontic, ability and bouletic readings. It has also been shown that this construction is compatible with both existential and universal interpretations.

3   Epistemic modality in Kakataibo

Epistemic modality, concerned with what is possible or necessary given what is known and what the available evidence is, is encoded in Kakataibo by the second position clitics *=dapi* 'inferential', *=id* 'second-hand evidential' and *=kuni* 'contrastive assertion'. These enclitics are analyzed next.

3.1   =dapi

The second position clitic *=dapi* 'inferential' carries a presupposition that the content of the proposition comes from inference. The type of evidence for the inference may be general knowledge, perceived evidence or previous experience. *=dapi* is compatible with universal and existential readings, which suggests that its quantificational force is left underspecified for the context to resolve. The conversational background imposed for this enclitic is always epistemic. Example (17) shows an instance of the use of *=dapi* with a universal reading and the evidence for the inference is directly perceived. (18) gets an existential interpretation given that the hearing of a shooting may be a sign of something else than hunting, such as alerting people that something is taking place. Example (19) is based on the knowledge that people in the community share while (20) corresponds to general knowledge.

(17)   Context: The speaker is arriving at the community from a distant city. He
        sees that the soil is wet and the river water level is higher:

        ubë**dapi**ka   ʻiubáxa.
        ubë=dapi=ka=a   ʻi-ut-bait-a-x-a
        rain=dapi=VAL=3A/S be-DOWN-DUR-PFV-3-NON.PROX
        ʻIt must have been raining.ʼ (EL)

(18)   Context: The speaker is walking in the forest. Suddenly, a gunshot is
        heard:

        dapika   ñu   ʻaxi.
        dapi=ka=a   ñu   ʻa-a-x-i
        dapi=VAL=3A/S   animal do-PFV-3-PROX
        ʻ(They) might have killed animals.ʼ   (EL)

(19)   Context: You know that community dwellers usually go in group to the
        community hall when people from outside arrive. You see that the
        community hall is full of community dwellers.

        a nukën idi   ukëkama**dapi**ka   nukuáxi.
        a nukën id-i   u-kë=kama=dapi=ka=a   nuku-t-a-x-i
        3 1PL.O   see-NMLZ come-N.FUT.NMLZ=PL=dapi=VAL=3A/S reach-REFL-
        PFV-3-NON.PROX
        ʻVisitors might have arrived.ʼ   (EL)

(20)   Context: Manioc has been boiling for more than an hour.

        ʻasa   ʻarukë**dapi**ka   ʻiaxa.
        ʻasa   ʻaru-kë=dapi=ka=a   ʻi-a-x-a
        manioc cook-NFUT.NMLZ=dapi=VAL=3A/S   be-PFV-3-N.PROX
        ʻThe manioc must have been cooked.ʼ   (EL)

        As in the case of the circumstantial modality construction, there are no
restrictions with regard to the tense of the proposition modalized by *=dapi*.
Previous examples showed a past temporal perspective. The following example
shows an instance with a present temporal perspective.

(21)   Context: The Peruvian soccer team is playing a match for the World Cup
        classifiers. People are watching the game but not the speaker and
        suddenly cheerful screaming is heard:

        Perú**dapi**ka   kanani.
        Perú=dapi=ka=a   kanan-i-i
        Perú=dapi=VAL=3A/S   win-IPFV-PROX
        'Peru may be winning.'   (EL)

Negation of the prejacent of *=dapi* uses the general negator *=ma*. However, notice that attaching *=ma* to the main verb yields ambiguous readings between the negation of the prejacent (22a) and negation of the modal (22b) when not enough context is given. Notice that the possibility of having these two interpretations implies that the modal meaning can project through negation which, in turn, is a diagnostic test indicating that *=dapi* is best regarded as a modal instead of a pure evidential.

(22)   Context A: Norua has been saying that he needs to go to San
            Alejandro to do some errands. But you know that there are no canoes
            available and the weather is bad:

            Context B: You know that Norua has to go up river to work with a
            contractor in the woods. The contractor has paid him a part of his
            salary in advance. Norua feels obligated to pay his debt.

            Norua**dapi**ka   puentenu   kuanima.
            Norua=dapi=ka=a   puentenu   kuan-i=ma
            Norua=dapi=VAL=3A/S   bridge=LOC   go-IPFV=NEG
            'Norua might not go to the bridge (San Alejandro city).'
            'It is not the case that Norua might go to San Alejandro.' (EL)

A simplified semantics of *=dapi* is given in (23) in its modal function. Notice that it incorporates the inferential requirement it raises and its ability to occur in universal and existential readings.

(23) $[[\alpha\varphi]]^{w, t, c}$ is only defined if B(c) is inferential.
        If defined, $[[\alpha\varphi]]^{w, t, c}$ = 1 iff for all/some words in w' $\in$ B(c)(w, t),
        $[[\alpha\varphi]]^{w, t, c}$ =1

In this subsection the main properties of =dapi have been shown. This enclitic requires an epistemic modal base that triggers the requirement that the speaker acquired the knowledge expressed by the proposition through inference. The enclitic =dapi does not lexically specify the quantificational force, which is left out for context. Variations in the reference time can be accomplished by simply manipulating the verbal morphology. Negation of =dapi allows for double readings changing the scope of the semantic operators.

3.2   =id

The second position clitic *=id* is a second-hand modal evidential. The use of *=id* is felicitous when the speaker has obtained the knowledge that the proposition expresses through somebody else's report. This reportative sphere includes information from second, and more distant sources, hearsay and oral tradition. The quantificational force of this epistemic modal is not lexically specified either; *=id* is appropriate regardless of whether the source of the report is considered to be reliable or not. Examples (24)–(26) illustrate the use of *=id* with different sources of the report.

(24)   Context: I did not see you yesterday at all. Someone told me that you hit
        the pregnant dog. Then, I say to you when I meet you:

        idmina   'ochíti   tuáñu   mëó.
        id=mina   'ochíti   tuá=ñu   më-on
        id=2A/S   dog   offspring=HAVE   hit-HST
        'You hit the pregnant dog yesterday, reportedly.' (EL)

(25)   Context: Someone has told the speaker about the events that occurred years ago and the speaker did not directly experience them:

don Cris**id**a   uakëxa.
don Cris=id=a   u-akë-x-a
don Cris=id=3A/S   come-REM.PST-3-N.PROX
'Don Cris came years ago, reportedly.' (EL)

(26)   Context: First sentence of a traditional story:

ëda   'a**id**a   chunan   tita   no
ë=da   'a-i-id=a   chuna=n   tita   no
1=LIKE do-A/S>S:SE=id=3A/S   spider.monkey=POSS mother   mestizo
biakëxa.
bis-akë-x-a
catch-REM.PST-3-N.PROX
'Thus, the big spider monkey caught the mestizo person, they say.' (NS)

The relation between the semantics of evidentiality, that indicates source of information, and epistemic modality, related to the necessity or possibility of a proposition given what the available information is, share the feature of being built on the available knowledge. This semantic link between these two categories has recently received much attention (Kratzer 1991, Izvorsky 1997, de Haan 1999, Aikhenvald 2004, among others) and has led to some scholars to claim that some evidentials are better analyzed as epistemic modals in certain languages (Izvorsky 1997). Of course, some languages keep these categories separated based on the different behavior they show (Faller 2002, Matthewson *et al*. 2007). Namely, the evidential analysis assumes that a report is made, but it is not part of the propositional content of the sentence. In contrast, the epistemic modal analysis asserts that a report is made, but does not say anything about the content of the report. Here I sketch three standard diagnostic tests that suggest that =*id* is better regarded as an evidential modal, i.e., it conflates both functions.

A fully-fledged analysis of these properties cannot be carried out here due to space constraints and awaits future research.

Under the epistemic modal analysis of *=id*, it is predicted that a sentence will be infelicitous when it contains an embedded true proposition under the scope of *=id* (Faller 2002, Matthewson *et al*. 2007). The reason for this prediction is that under the modal analysis the speaker does not have enough grounds to regard the proposition as true, since the information comes from a report. This prediction holds in Kakataibo, as shown in (27).

(27)   Context: I did not see you yesterday at all. Someone told me that you hit the pregnant dog. Then, I say to you when I meet you:

#	**id**mina	'ochíti	tuáñu	mëó,	kana	mi idó
	id=mina	'ochíti	tuáñu	më-on	ka=na	mi id-on
	id=2A/S	dog	offspring=HAVE	hit-HST	VAL=1A/S	2 see-HST

‘You hit the pregnant dog yesterday, reportedly, I saw you yesterday.’(EL)

The second test relates to the nature of the semantic content of *=id*. Under the modal analysis of this enclitic, it is assumed that its meaning is not part of the semantic content of the proposition, but rather is a presupposition (Faller 2002, Matthewson *et al*. 2007). As such, it is predicted that the reportative semantic contribution of it is cancellable. Example (27) also shows that this prediction holds since the sentence is infelicitous when the reportative content is cancelled.

The last test to be considered here is that of infelicity of a sentence where the proposition embedded under *=id* is known to be false. The reason for this is that the speaker is asserting that that proposition is universally or existentially true (Faller 2002, Matthewson *et al*. 2007), even when the information for it

comes from a report. Example (28) shows that this prediction is upheld. This supports the modal analysis of *=id*.

(28)   Context: I am outside talking with my friend and see rain fall down:

     # ubë**id**a   'iutia   'aibika   'iutima
        ubë=id=a   'i-ut-i-a   'aibi=ka=a   'i-ut-i=ma
        rain=id=3A/S be-DOWN-PRS-N.PROX but=VAL=3A/S be-DOWN-
        IPFV=NEG
        'It is raining, reportedly, but it is not raining'   (EL)

Given the properties of *=id* sketched here, a simplified semantics of this enclitic is given in (25). The requirement of the information to come from a third party is built as a presupposition and the quantificational force is left underspecified.

(29) $[[\alpha\phi]]^{w, t, c}$ is only defined if B(c) is reportative.
       If defined, $[[\alpha\phi]]^{w, t, c}$ = 1 iff for all/some words in w' ∈ B(c)(w, t),
       $[[\alpha\phi]]^{w, t, c}$ =1

In this subsection it has been shown that the enclitic *=id* imposes a requirement that the information of the proposition embedded under it comes from a report (e.g. second-hand, hearsay, traditional story). The quantificational force of *=id* is not delimited. Finally, some standard diagnostic tests were presented that suggest that *=id* is best treated as an evidential epistemic modal.

3.3   =kuni, an epistemic clitic?

The second position enclitic *=kuni* 'contrastive assertion' does not lexically restrict the modal base, that is, *=kuni* is compatible with a circumstantial reading when co-occurring with the Clause+*ti* be+FLEX construction, as well as with an epistemic reading. In addition, it does not restrict the quantificational force

either. The semantics of *=kuni* has one more ingredient, it expresses a contrast between the proposition embedded under it and an opposite proposition already present in the common ground. This opposite proposition may be explicit in the discourse context or assumed by the speaker. In using *=kuni*, the speaker raises the presupposition that he has the best grounds to believe that that proposition is true. Given these semantics components, sentences having *=kuni* are usually interpreted as stronger than their bare counterparts.

The following examples illustrate typical uses of *=kuni*. In (30), the speaker has seen by himself that the event of the pipe-line breaking occurred, but other people in the community did not see that, which makes the speaker the one who has the better grounds to assert *p*. The proposition in (31) contrasts with the speaker's not going to his garden for many days. Examples (32) and (33) show instances of *=kuni* co-occurring with the circumstantial modality construction.

(30)   Context: I have seen that my cousin's pipe-line broke, but other people
         have not seen it and were saying that this was not the case. I say to
         everybody:

         aín   tubo**kuni**ka   baikiaxa.
         aín   tubo=kuni=ka=a   bai-ki-a-x-a
         3.POSS   tube=kuni=VAL=3A/S   crack-INTR-PST-3-N.PROX
         'His tube did get cracked.'   (NS)

(31)   Context: The speaker is saying that he needed to go work in his garden
        since some days ago, but he has not been able to go there because he had
        to take care of his kids who go to school. Today is Friday and his kids
        end the school week. He still needs to go to his garden:

        a pikúkëbë**kuni**kana   *más tarde* kuani.
        a pikut-këbë=kuni=ka=na   más tarde   kuan-i
        3 come.out-A/S≠S:SE=kuni=VAL=1A/S later   go-IPFV
        'When they come out (from school), I am going (to my garden).' (NS)

(32)   Context: Students have been getting average grades, but the teacher
        believes they can do better. The teacher thinks that his students do not
        study as much as they should. The teacher also thinks that students
        believe that they study really hard.

        min**kuni**kaina   más   kirika 'ati   dinanti   'ai.
        mi=n=kuni=ka=ina   más   kirika 'a-ti   dinan-ti   'a-i
        2=A/S=kuni=VAL=2A/S more paper do-FUT.NMLZ think-FUT.NMLZ be-
        IPFV
        'You do have to think about studying more.' (NS)

(33)   Context: The speaker is complaining about the wood company that
        works in the community that has not paid them. The speaker believes
        that the wood company is trying to get away with not paying them
        anything.

        a**kuni**ka   nukën no   kupionti   'ikë.
        a=kuni=ka=a   nukën no   kupion-ti   'ikë
        3=kuni=VAL=3A/S 1PL.O non-K. person pay-FUT.NMZL be.3.PFV
        'That mestizo (person) certainly had to pay us.' (NS)

        The quantificational force of *=kuni* is unrestricted, allowing universal and
existential interpretations depending on the context. An existential interpretation
of *=kuni* is given below.

(34)   Context: Norua had suffered a car accident years ago. He was not able to
        walk for months, but after intense rehabilitation he could walk again.
        The speaker has seen Norua running fast some days ago, but other
        people have not seen that.

        Norua**kuni**ka   kuin abáti   'ikë.
        Norua=kuni=ka=a   kuin abat-ti   'ikë
        Norua=kuni=VAL=3A/S   very run-FUT.NMLZ   be.3.IPFV
        'Norua can run fast.' (EL)

The semantics of =*kuni* expresses a high degree of certainty by the speaker,
which suggests an epistemic source. However, the inability of =*kuni* to convey
circumstantial readings without the presence of the [Clause+ti]$_{CN}$ V+flex
construction, which is necessary and sufficient to trigger circumstantial
modality, casts doubt of its arguably modal status. An alternative analysis of this
second-position clitic regards it as a focus particle in that one of its main
functions is to contrast the proposition that is embedded under it to other
proposition already present in the common ground. However, the specifics of
the semantics of =*kuni* awaits further research.

        The main properties of =*kuni*, not lexically restricting the conversational
background and quantificational force and presupposing an opposite proposition,
have been shown here. One way to model the contrast imposed by =*kuni* is to
restrict the set of possible worlds to those worlds that are highly compatible with
the current world. This could be done by making the ordering source rank those
worlds that are compatible with the current world higher. The introduction of
extra machinery will be required to formalized the semantics of =*kuni*. This
awaits future implementation. However, notice that an alternative analysis of
=*kuni* as a focus particle is still under consideration.

4   'Stackability' of modals

As it could have been noticed in the previous section, in Kakataibo it is possible to have constructions with more than one modal (construction or second position clitic) in it. Kakataibo grammar allows three second position clitics, *=dapi*, *=id* and *=kuni*, and the circumstantial construction to be combined in one single monoclausal sentence. The possibilities of scope ambiguity and meaning of such sentences are left for future research. Here I make some observations about their behavior.

The combination of *=dapi* with the circumstantial construction reduces the possibility of that proposition to be true, as shown in (35). Versions of (35) having only *=dapi* or only the circumstantial construction are also accepted in the same contexts. Speakers comment that in uttering (35) one is less sure of the proposition to be true than in the mono-modal versions.

(35)   Context: The speaker finds a lake. After measuring the depth of the lake
        with a stick, he finds that the lake is very deep. The water is very muddy:

        ënënu**dapi**ka   runun **'iti**   **'ikë**.
        ënë=nu=dapi=ka=a   runun 'i-ti   'ikë
        this=LOC=dapi=VAL=3A/S snake   be-FUT.NMLZ   be.3.IPFV
        'There might be snakes here.' (EL)

The combination of *=kuni* with other modals make the proposition more likely to be regarded as true. For instance, in (36) the speaker is contrasting the proposition that his brother just recently used some oil to turn on the generator to the proposition of his brother having used it sometime further back in time (e.g. some days ago). In addition, the speaker is only inferring that his brother actually used the generator since he had not actually seen him using it. Thus, in uttering (36) the speaker makes the inference of his brother using the engine,

which, in turn, allows him to contrast this proposition to another one already present in the common ground, namely, his brother using the engine some days ago.

(36)   Context: The speaker's brother is being accused of using some gallons of oil on the community's generator when he was not authorized to do so. Speaker knows that the generator was not turned on and that his brother just went to turn it on with a gallon of oil.

recién**kunidapi**ka   medio galón   kastáxa.
recién=kuni=dapi=ka=a   medio galón   kastan-a-x-a
just=kuni=dapi=VAL=3A/S   half   gallon spend-PFV-3-N.PROX
'He might have just only used half a gallon (of oil).' (NS)

The combination of *=id* with other modals always has this modal enclitic as the highest operator. For instance, in example (30), the speaker conveys that invaders did kill other native people and the speaker came to know this through a report. In contrast, (37) cannot be used to express that third party speakers did tell the speaker of (37) that invaders killed their ancestors.

(37)   Context: The speaker is talking about how their ancestors happened to arrive to their current location. He is saying that their ancestors had to abandon their homeland due to the invasion of Spanish conquerors.

kamáno**kuniida**   'akëxa.
kamáno=kuni=id=a   'a-akë-x-a
non.K,native.people=kuni=REP=3A/S   do-REM.PST-3-N.PROX
'(They) did kill native people, they say.' (NS)

This section presented the possibility of stacking more than one modal operator in a single monoclausal sentence in Kakataibo. The semantics of the modal operators gets further complicated due to the different possibilities in scope the modals have. A fine grained study of their interactions is left for future research.

5   Conclusions

This paper aimed to explore the semantic space of modals in Kakataibo. It has been argued here that Kakataibo modals are partly distinguished by the conversational background they convey. The whole semantic space of circumstantial modality is encoded by a construction while the epistemic semantic space is conveyed by three second-position clitics. It has also been argued that none of the modal strategies used in Kakataibo restricts the quantificational force, rather it is left underspecified. The fact that Kakataibo allows more than one modal in a sentence is not unknown (see Thráinsson and Vikner 1995 for Scandinavian languages), but it has received less attention in the literature, which motivates further study.

Some preliminary evidence to consider *=id* as an evidential modal was presented in section 3.2. However, the analysis of a more extensive set of diagnostic tests to evaluate this claim for *=id* and the other epistemic enclitics awaits future research.

Table 1. Classification of modal systems (adapted from Matthewson 2013)

	Selective conversational background	*Unselective modal background*
Selective modal force	Javanese (Vander Klok 2008)	English, German
Unselective modal force	Kakataibo, St'át'imcets (Matthewson *et al*. 2005)	?

The distinction in the conversational background and the unselectiveness in the quantificational force in the Kakataibo modals are predicted by

Matthewson's (2013) typology of modal systems. This typology, as shown in the table above, points out that languages tend to encode either the quantificational force or the conversational background of the modal in a single grammatical unit. The fact that languages encode both aspects of modality has been reported in Javanese (Vander Klok 2008), although further research may show further examples. Kakataibo fits nicely in this typology since its modals are selective in the conversational background but unselective in the quantificational force. However, recall the semantics of the second position enclitic *=kuni*. It was argued here that *=kuni* did not restrict its quantificational force nor its conversational background. If this analysis of *=kuni* as a modal is on the right track, it would show an instance of an unselective marker for modal type and force.

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