

Expressing possibility in Daakaka and Saliba-Logea

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Abstract

In this paper, we offer the first detailed description of expressions of possibility in the Oceanic languages Daakaka and Saliba-Logea. We show that in these languages basic expressions of possibility are bi-clausal. This suggests that, depending on their intended scope, typological studies of modal expressions may need to consider grammaticalized bi-clausal structures which have typically been excluded in studies of this domain based on their structural complexity. Relevant features to consider bi-clausal constructions as basic grammaticalized expressions of possibility include their frequency, semantic specificity, and paradigmatic relationship with other modal expressions. The findings presented here are based on the analysis of original corpus data and targeted fieldwork.

1 Introduction

Many languages can express possibility by a variety of constructions ranging from highly grammaticalized to structurally complex, as for example in English:

- (1) a. Mary **may** have won.
- b. **Maybe** Mary won.
- c. It is **possible that** Mary won.

Our understanding of modal expressions has been shaped by a focus on single, structurally simple expressions as in (1-a) and (1-b). By contrast, bi-clausal constructions expressing possibility as in (1-c) do often not make it into typological treatments of modal expressions or are treated as secondary. While the reasons for this are generally not made explicit, the rationale seems to be that bi-clausal structures tend to belong to the realm of lexical expressions rather than grammatical ones. In this paper, we will present data from two Oceanic languages, Daakaka and Saliba-Logea, to show that in these languages, bi-clausal structures are in fact the most grammaticalized option for unambiguously expressing at least certain types of possibility.

In Daakaka, possibility is expressed by subordinating verbs such as *kuowilye*, ‘know’:

- (2) *nye na-m kuowilye [ka na=∅ vyan tiye suw-uk] kyun*
1SG 1SG-REAL know COMP 1SG=POT go kill REF.PRON-1SG.POSS just
‘but I can beat him by myself’ (3101)¹

¹Abbreviations: 1EXCL: first person exclusive; 1INCL: first person inclusive; 1INF: first infinitive; 1PC: first person paucal; 1PL: first person plural; 1SG: first person singular; 1: first person; 2DU: second person dual; 2PC: second person paucal; 2SG: second person singular; 3OBJ: third person object; 3PC: third person paucal; 3PL: third person plural; 3SG: third person singular; 3: third person; ABS: absolutive; ADV: adverb; AD: addressee; AFF: affix; AGR: agreement; AL: alienable; ANA: anaphoric; ART: article; ASR: assertive; AUX: auxiliary; CARIT: caritative case; CAUS: causative; CL3: possessive class three (Daakaka); CM: conjugation marker; COMP: complementizer; COP: copula; DEF: definite; DEM: demonstrative; der.: derivation; DISC: discourse marker; DIST: distal; EP: epenthetic; FUT: future; GEN: genitive; INSTR: instrumental; INTRJ: interjection; INCL: inclusive; IRR: irrealis; LING EVID: linguistic evidence; LOC: locative; M.PROP: modal proprietive; MED: medial distance; COMP: complement-

	mood	AFF	PART	AUX	clitic	ADV	per.	der.	tags	case	nouns	sub.
Bybee'94	+	+	+	+	+	—	+	+	—	—	—	—
Palmer'01	+	+	+	+	+	—	—	—	—	—	—	—
Hengeveld'04	+	+	+	+	+	—	+	+	—	—	—	—
de Haan'06	+	+	+	+	—	+	—	—	+	+	—	—
Narrog'16	+	+	+	+	—	+	+	—	—	—	+	?

Table 1: Modal expressions discussed in different studies; per.: periphrastic; der.: derivation; sub.: subordinating structures.

27 In Saliba-Logea, the noun *gonowa-*, ‘possibility, ability’ is used as a predicative noun, with the content
 28 of the possibility being realized as a separate clause or sequence of clauses:

- 29 (3) *gonowa-m meta [kabo ku dobi ku unui-he-mate]*
 ability-2SG.POSS TOP then 2SG.SBJ go.down 2SG.SBJ catch-CAUS-die
 30 ‘you are able to go down, to catch it and kill it (lit. “Your ability exists to...”)’
 31 (BudoiNualele_01CY_0496)

32 With the present study we build on and extend the current understanding of modal expressions
 33 in Oceanic languages and cross-linguistically by showing that, in some languages, basic expressions
 34 of possibility are bi-clausal and do not have synonymous mono-clausal alternatives. This suggests
 35 that, depending on the intended scope, typological studies of modal expressions may need to consider
 36 certain grammaticalized bi-clausal structures which have typically be ignored in leading studies in this
 37 field. Relevant features in assessing the degree of grammaticalization of bi-clausal structures include
 38 their frequency, semantic specificity, and their paradigmatic relation to other modal expressions. Our
 39 findings are based on the analysis of original data from text corpora and from targeted fieldwork. In
 40 the following we present a detailed account of the semantic properties of the possibility expressions in
 41 the two languages in support of these claims.

42 2 Background

43 2.1 The typology of modal expressions

44 Typological investigations of modal expressions have largely focused on auxiliaries such as English *can*
 45 or *may*, particles and adverbs such as *maybe* and inflectional affixes such as Turkish *meli* (OBLIGATORY).
 46 Bi-clausal structures, by contrast, have generally been excluded from typological studies on modal
 47 expressions.

48 Table 1 gives an overview of the modal expressions that have been treated so far in representative
 49 parts of the typological literature.

50 The table shows that there is considerable variation in the range of expressions each account con-
 51 siders. Some of the differences in treatments are down to terminological decisions. For example, modal
 52 clitics are often treated as a special case of modal particles, as in the following Ngiyambaa example from
 53 Donaldson 1980: 276:²

izer; NEG: negative/negation; NFUT: non-future; NMLZ: nominalizer; NOM: nominative; NP: noun phrase; OBJ: object; OBLIG:
 obligative aspect (Quechua); PART: particle; PAST: past; per.: periphrastic; PL: plural; POSS1: possessive class 1 (Saliba-Logea);
 POSS2: possessive class 2 (Saliba-Logea); POSS: possessive; POT: potential; PP: postposition; PRES: present; PRON: pronoun; PROX:
 proximate distance; PRSUP: presupposition; PRT: preterite; PURP: purpose; REAL: realis; REDUP: reduplication; REFL: reflexive;
 RES: resultative; RPRT: reportative; SBJ: subject; SG: singular; SPKR: speaker; sub.: subordinating structures TAMP: tense, aspect,
 modality, polarity; TOP: topic; TR: transitive; VOL: volitive

²We adopt the glossing by Hengeveld (2004: 1198) for consistency. In the original example, the glossing line reads:

- 54 (5) *ŋindu-dhan giriyambi*
 2SG-RPRT sick:PAST
 55 ‘You are said to have been sick.’

56 In some accounts, such as Narrog (2016), modal particles are treated on a par with modal adverbs such
 57 as *maybe*.

58 Most accounts cover some kinds of periphrastic constructions such as the following example from
 59 Quechua:

- 60 (6) *Miku-na ka-rka-ni*
 eat-OBLIG BE-PAST-1
 61 ‘I must eat’ (Cole, 1982: 151) (Hengeveld (2004: 1199) suggests the following literal translation: ‘I
 62 was characterized by unrealized eating.’)

63 Other differences concern rather marginal phenomena that some authors may have considered too
 64 rare or not sufficiently understood to include them. This probably applies to modal derivations, modal
 65 tags and modal case. Modal derivations are a productive morphological process to create a predicate
 66 meaning, for example, ‘want to do X’ from a verb root meaning ‘do X’, as illustrated by the Ngiyambaa
 67 example in (7):

- 68 (7) *ŋadhu dhinga: dha-l-i-ŋinda ga-ŋa.*
 I:NOM meat:ABS eat-CM-PURP-CARIT be-PRES
 69 ‘I want to eat meat.’ (Donaldson 1980: 281, in the glosses we have used the colon ‘:’ instead of the
 70 plus sign ‘+.’)

71 Modal tags are syntactically flexible elements that modify the commitment of the speaker, such as
 72 English *I think, I guess*.

73 Modal case is a relatively rare phenomenon, where modality can be marked as an affix to a noun
 74 like a case marker. In the following Kayardild example, one such marker is *u*, glossed as M.PROP (modal
 75 proprietive). In combination with different modal markers on the verb, it can express different types
 76 of modality.

- 77 (8) *dangka-a burldi-ju yarbutu-u thabuju-karra-ngun-u wangal-ngun-u*
 man-NOM hit-POT bird-M.PROP brother-GEN-INSTR-M.PROP boomerang-INSTR-M.PROP
 78 ‘The man will/can hit the bird with brother’s boomerang.’ (Evans, 2003: 208)

79 Nouns such as Saliba-Logea *gonowa-* ‘possibility’ as major expressions of modality have hardly been
 80 treated at all. As Narrog (2016: 92f.) notes, *[a]ccording to the available descriptions, nouns as the pivot*
 81 *for non-epistemic modal constructions are comparatively rare. This relative scarcity may of course be an*
 82 *artifact of description [...].*

83 The following Finnish example from Sulkala & Karjalainen (1992: 318) is also cited by Narrog (2016: 93)
 84 to show a modal noun:

- 85 (9) *Sinun on pakko tulla.*
 you.GEN be(3SG) compulsion come.1INF
 86 ‘You have to come.’ (lit. ‘Yours is the compulsion to come.’)³

87 Like the structures from Saliba-Logea, (9) can only be analyzed as a bi-clausal structure. This is prob-
 88 ably why accounts such as Palmer (2001), which explicitly exclude sentence-embedding modal verbs

(4) you+NOM-LING EVID sick+PAST

³The glosses have been modified to fit the Leipzig Glossing Rules: The original source gives *be-3SG* and *come-1INF*, even though there is no separation into morphemes in the original line.

89 from their work, also do not consider modal nouns as in (9). Narrog (2016) differs from most previous
 90 approaches in taking bi-clausal structures also into account and notes that in particular the difference
 91 between modal auxiliaries and full subordinating verbs expressing modality is not always clear and may
 92 sometimes be hard to assess. Another source that acknowledges the importance of bi-clausal structures
 93 in the expression of modal meanings is Givón (1994), who notes that languages may not possess modal
 94 auxiliaries or other simple modal expressions. Among the structures that express meanings such as
 95 deontic necessity instead, he notes for examples conditionals in Korean, as illustrated in (10):

96 (10) *i ch'aek-un an ilk-o-myon, an twe-n-ta*
 this book-TOP NEG read-COMP-if NEG be.good-PRES-PRT
 97 'You **must** read this book' (lit. 'If you don't read this book, it won't be OK'.) (originally from Kim
 98 1986)

99 A similar structure can be found in Mandarin Chinese, where bi-clausal structures expand the system
 100 of modal auxiliaries and other expressions:

101 ... *shǐ tā-men [...] bù-zhī [zěnyàng zuò cái-hǎo].*
 cause 3-PL NEG-know how do only-good
 102 '[this would] cause them to not know what they **should** do.' (lit. '...to not know only how to
 103 behave would be good.') (LCMC-F42.46) (McEnery & Xiao, 2004)

104 This is also reported for Sio (Austronesian) in Bugenhagen (1993: p. 29, ex. (51)):

105 (11) *(Ma) i-veta mine ande (ma) ara*
 IR 3SG-do like:this then IR good
 106 'He [sic] may/should do this.' (More literally: 'If he does like this, then it will be good.')

107 The most systematic investigation of this type of structure to date comes from an article titled *Japanese*
 108 *modals are conditionals* (Akatsuka, 1992) and subsequent work on Japanese modals (e. g. Narrog, 2009).
 109 Thus, the fact that bi-clausal structures may be the main way for a language to express general modal
 110 meanings has not gone entirely unnoticed. By an large, however, bi-clausal structures are not generally
 111 covered by typological surveys on modal expressions.

112 We here discuss the influential study by Bybee *et al.* (1994) in more detail to illustrate how typological
 113 accounts of modal expressions systematically exclude structures like the ones we will discuss. In their
 114 own words, Bybee *et al.* (1994) 'restrict [their] study to verbal grams and further to focus [their] study
 115 on inflectional categories [as opposed to derivational ones]'. They apply the following four criteria to
 116 their selection of morphemes:

- 117 1. The gram must belong to a closed class (with an arbitrary limit of 12 items).
- 118 2. The gram must have a fixed position in relation to the verb (within the clause, to exclude adverbs,
 119 quantifiers and similar).
- 120 3. The gram must be lexically general. 'This criterion is met if the gram occurs with all verbs or with
 121 all the members of a large semantic class of verbs, such as stative verbs, [...]' (Bybee *et al.* , 1994: 39)
- 122 4. The gram must have predictable meaning in most contexts (excluding unproductive and idiosyn-
 123 cratic expressions).

124 The criterion in (1) is meant explicitly to exclude verbs, nouns and adjectives. And while Bybee *et al.*
 125 (1994) acknowledge that there is a certain fuzziness to the restrictions they place on their selection of
 126 morphemes, it is clear that main verbs and nouns are not considered the objects of their study. They
 127 categorize the expressions they include in their study as follows (Bybee *et al.* , 1994: 42): affix, auxiliary,
 128 particle, zero, reduplication, stem change, stress change, tone change. (Bybee *et al.* , 1994) never discuss
 129 the option of investigating bi-clausal structures. It is clear from their discussion, especially in the

130 context of criterion (2), that they are looking for verbal morphology, or modifiers within the verb
131 phrase.

132 The authors frequently state that their study is concerned with ‘grammatical morphemes’ or ‘grams’.
133 All the above criteria are apparently meant to ensure the ‘grammaticality’ of the expressions under
134 investigation. The authors do not consider the possibility that a bi-clausal structure may be highly
135 grammaticalized.

136 Of course, such structures are acknowledged as a possible diachronic origin of more grammaticalized
137 modal expressions. Similar diachronic trajectories have been traced in detail for expressions such as
138 Old English *cunnan* ‘know’, which is the source for Modern English *can* (Bybee, 2003). Bybee *et al.*
139 (1994), too, find primarily verbal origins for the grams they investigate (also compare van der Auwera
140 & Plungian, 1998). Crucially, however, they only consider these verbs in their diachronic relation to
141 the modal grams they describe. They do not entertain the possibility that, in some languages, full verbs
142 or nouns plus an additional clause may be the only way to express modal meanings, and that these
143 structures may qualify as highly grammaticalized. Moreover, they do not observe nominal origins of
144 modal expressions such as the one described here for Saliba-Logea.

145 Synchronically, based on the criteria and discussion in Bybee *et al.* (1994), any researcher working
146 with the available grammatical descriptions of Saliba-Logea and Daakaka (Mosel, 1994; Margetts, 1999;
147 von Prince, 2015), would have to exclude the expressions we are going to discuss from their survey.

148 We suggest that a possible reason for the wide-spread exclusion of bi-clausal structures from the ty-
149 pology of modal expressions is that, in some languages, bi-clausal structures contrast with more highly
150 grammaticalized mono-clausal structures. As a result, a verb or noun that constitutes an independent
151 clause as in (*it is*) *possible (that)* will be more commonly considered as a *lexical* expression of modality
152 rather than a *grammatical* one. However, structural complexity is only one correlate of grammatical-
153 ization. Other hall-marks of grammatical markers are (e. g. Hopper, 2003):

- 154 1. relatively high frequency,
- 155 2. a low degree of semantic specificity, and
- 156 3. a small number of paradigmatic alternatives.

157 We are going to argue that, in Daakaka and Saliba-Logea, the bi-clausal structures we describe are
158 the most grammaticalized way to express at least non-epistemic possibilities. In particular, we will
159 suggest the following:

- 160 • In terms of frequency, the structures we describe behave like highly grammatical items.
- 161 • In terms of **semantic specificity** and compositionality, the structures we describe meet criteria (3)
162 and (4) by Bybee *et al.* (1994)
- 163 • The distinction between open vs. closed classes is more complicated than assumed in Bybee *et al.*
164 (1994), especially in languages with relatively small vocabularies. We need to think more clearly
165 about what we consider as **paradigmatic alternatives**.
- 166

167 We fully acknowledge that there can be good reasons for excluding bi-clausal structures from a ty-
168 pological study on modal expressions. But we would like to suggest that it might be more productive
169 in some cases to use a language-specific definition such as *the expression should be the most grammat-
170 icalized way to serve this function in the language* rather than relying on an absolute limit on structural
171 complexity. Furthermore, investigating the variation of the syntactic complexity of highly grammatic-
172 alized expressions cross-linguistically might in itself be an interesting endeavor.

173 Before closing this section, we should also comment briefly on the role on verb moods such as ir-
174 realis and subjunctive in subordinate clauses. Within the typological literature on modality, it has been
175 acknowledged that *verb mood* has a certain role to play in the expression of possibility. Palmer (2001),
176 in particular, comments on the central role of verb moods as modal expressions, both in subordinate
177 and in main clauses. Moreover Palmer (2001: chapter 4) comments on the role of subordinate clauses

178 in reporting beliefs and attitudes (but notably not as expressions of non-epistemic possibilities).

179 By contrast, Bybee *et al.* (1994) consider subjunctives as little more than a syntactic reflex of clauses
180 embedded under certain matrix predicates and categorically dismiss the usefulness of the notion of
181 irrealis mood (also see Bybee 1998). More importantly, however, neither Palmer (2001) nor Bybee *et al.*
182 (1994), nor, to our knowledge, other comparative studies of modal expressions consider the combination
183 of a particular matrix predicate with a particular embedded mood to constitute a complex expression of
184 modality. Yet, in Daakaka, this is precisely what we propose: the verbs *kuowilye* and *wese* mean other
185 things in other contexts and the potential and distal moods they combine with do not by themselves
186 express possibility. This interdependence between matrix and complement has been observed for other
187 languages, such as Navajo (Bogal-Allbritten, 2016). But it has not played a central role in the wider
188 debate on modal expressions.

189 At the same time, bi-clausal expressions of possibility have not been excluded from all the typological
190 literature. Note that, so far, we have only commented on *the typological literature on modality*. When
191 we turn to the literature on embedded structures, we do find detailed discussions of bi-clausal modal
192 expressions. We will briefly review the state of the art in this area in the following section.

193 2.2 Typology of embedded structures

194 While bi-clausal structures have been relatively neglected in the typological literature on modal expres-
195 sions, in the typological literature on complementation, modal verbs have been discussed from early
196 on (e. g. Givón, 1980; Noonan, 1985; Cristofaro, 2003). Most of these accounts assume that the form
197 of the embedded structure determines its interpretation: If the subject of the modal verb is also the
198 subject of the complement clause, the structure is supposed to express participant-internal modalities.
199 In this section, we will briefly sketch existing accounts on correlations between form and function of
200 subordinating modal expressions and specify more concretely which of these positions we will address.

201 The seminal work by Noonan (1985) is representative of the basic intuition:

202 In general, the stronger the semantic bond between the events described by the matrix and com-
203 plement predicates, the greater the degree of syntactic integration there will be between the two
204 clauses. (Noonan, 1985: 101)

205 Noonan (1985) cites in particular the logical dependency between the embedding verb and its com-
206 plement as a measure of semantic integration. These dependencies concern factors such as time, truth
207 value and participants. To illustrate this idea, consider the following two examples:

208 (12) Mary is (currently) able to work.

209 (13) Mary knows that John will work.

210 In (12), the embedded clause is dependent on the matrix predicate in terms of time, truth value and
211 participants: we cannot very well say **?Mary is able now to work tomorrow*; when we say *Mary is*
212 *NOT able to work*, that implies that she does not work. And Mary's abilities only apply to her own
213 actions, so we cannot say *Mary is able for John to work* or similar. By contrast, in example (13), the
214 state of Mary knowing is fully independent from the event of John working. To the extent that the
215 embedded clause is dependent on the matrix clause, the corresponding information (temporal reference,
216 polarity, participants) may be optionally or obligatorily unexpressed, depending on the language. We
217 will comment on the option of omitting redundant information in the structures from Saliba-Logea and
218 Daakaka, since some of their properties are rather unexpected in this regard.

219 Later work more explicitly addresses the relation between the specific meaning of modal predicate
220 and the syntactic realization of its arguments.

221 Thus, Cristofaro (2003: 110) follows Noonan (1985) in stipulating the following:

222 Different complement relations pertain to different layers of clause structure.

223 With respect to modal embedding verbs, she makes a distinction between possibilities (or necessit-
224 ies) that are attributed to certain individuals on the one hand (participant-internal); and possibilities
225 (or necessities) that hold of entire states of affairs (participant-external). She correlates this semantic
226 difference to the structural difference illustrated by the following example:

- 227 (14) a. It is necessary [that I go].
228 b. I must [go].

229 In the first case, the complement clause is coreferential with the subject pronoun *it* of the one-place
230 predicate *be necessary*. In the second case, the subject of the two-place predicate *must* is also the one
231 who will go. In other words, in (14-a), the subject of the matrix verb is different from the embedded
232 clause, because the embedded clause has the subject *I*, the subject of the matrix clause, *it*, corresponds
233 to the embedded clause itself. In (14-b), however, the subject of the necessity predicate is identical with
234 the subject of the action that is said to be necessary.

235 According to Cristofaro (2003), expressions of obligations and permissions are generally ambigu-
236 ous between the two readings—that either an individual may bring about a certain state of affairs
237 (participant-internal), or that a certain state of affairs is permitted or required to come about (participant-
238 internal). By contrast, abilities are considered to allow only for one reading: the subject has an inherent
239 possibility to bring about a certain situation.

240 In this sense, the semantic difference between deontic and ability readings is said to correlate with
241 the structural difference between a one-place modal predicate with a clausal subject such as (14-a) as
242 opposed to a two-place predicate with an individual subject such as (14-b). In some languages, this
243 correlation is said to be firmly encoded in grammar:

244 The difference between expression [sic] of obligation and permission on the one hand and expres-
245 sions of ability on the other is reflected syntactically in some languages. (Cristofaro, 2003: 101)

246 Thus, in the following example from Acehnese, the modal verb *jeuet* ‘can’ only receives a personal
247 suffix if it expresses ability. When expressing permission, the suffix is not allowed. This, according to
248 Cristofaro (2003: 101) can be ‘taken as evidence that the condition of the permission is construed as
249 holding for the dependent SoA as a whole.’

- 250 (15) a. *h'an=jeuet=textbfjih [jii=jak]*
NEG=can=Gloss3 3=go
251 ‘He cannot walk yet’ (Durie, 1985: 289)
252 b. *h'an jeuet(*=textbfgeuh) [geu=jak u=keude]*
NEG can(*=Gloss3) 3=go to=town
253 ‘He cannot go to town’ (Durie, 1985: 289)⁴

254 Like Cristofaro (2003), Hengeveld (2004) also stipulates a correlation between interpretation of an
255 expression and its formal realization. In participant-oriented (participant-internal) facultative modal-
256 ities, the subject is the person with the ability. In event-oriented (participant-external) modalities, the
257 subject is often clausal (*I am able to work* vs. *It can take three hours to get there*). For example, Hengeveld
258 (2004: 1194) states that deontic (participant-external) modality is often expressed by impersonal struc-
259 tures like the following, although other options are also available in some languages:

- 260 (16) *Bura-da ayakkabıları çıkar-mak var.*
DEM-LOC shoes take.off-INF exist

⁴The glosses were adjusted to reflect general conventions:

261 'One has to take of his [sic] shoes here.' (lit. 'There is taking off of shoes here.')

262 (originally from Schaaik, 1985)

263 Schmidtke-Bode (2014) diagnoses a similar correlation between form and function in expressions
264 of possibility. Like Cristofaro (2003) and Hengeveld (2004), he concludes that deontic (participant-
265 external) interpretations are available for modal predicates with clausal subjects, although he asserts
266 that, far more frequently, clauses are subjects of epistemic expressions.

267 The logical possibility of subject clauses expressing abilities is not discussed in Schmidtke-Bode
268 (2014). Other expressions of abilities or other possibilities hardly find their way into the discussion.

269 The strongest expectations that we find in the literature are the following:

- 270 (17) a. Structures with clausal subjects should express epistemic or participant-external modality, not
271 ability.
- 272 b. Structures with personal subjects such that the subject of the modal predicate is coreferential
273 with the subject of the embedded clause can express ability and maybe deontic modality.

274 More generally, it is a common assumption in the literature on modal semantics that the range of
275 interpretations of modal expressions is constrained by their syntactic structure (e. g. Hacquard, 2009;
276 Wolf, 2014). While in most debates on modal semantics, these assumptions play a rather minor role,
277 we are going to comment systematically on apparent counter-examples to the above expectations, in
278 order to enrich the discourse on the relation between syntax and semantics.

279 2.3 Conclusions

280 We have seen that bi-clausal expressions of possibility have received considerable attention in the
281 descriptive literature on Japanese, and, to a lesser extent, other East-Asian languages; and in the typological
282 literature on embedded clauses. More generally, there is some work in formal semantics and
283 syntax that looks at the correlation between structural realization and interpretation of modal expressions.
284 In the typological literature on modal expressions, however, bi-clausal structures have received
285 only very little attention and have often been excluded systematically.

286 In this article, our primary objective is to give a first comprehensive descriptive account of expressions
287 of possibility in Daakaka and Saliba-Logea. But simultaneously, we would like to take the
288 opportunity to highlight that the phenomena we describe might be part of a more widespread linguistic
289 strategy, the prevalence of which might have been obscured by the traditional focus on single-
290 morpheme expressions of modal meanings. And we would like to invite a debate around how we
291 define grammaticality, how we use this notion to restrict the range of expressions under consideration
292 in typological studies, and to what extent existing practices are optimal for typologically balanced
293 sampling.

294 2.4 Modal expressions in Oceanic

295 The discussion on modal meanings in Oceanic languages has focused primarily on the distinction
296 between realis and irrealis mood and evidentiality (e. g. Barbour 2011; Palmer 2007; Cleary-Kemp 2014).
297 By contrast, the question of how different types of possibility are expressed is relatively understudied
298 in this group of languages.

299 Within the discourse about possibility expressions in Oceanic languages, bi-clausal structures have
300 previously been recognized as the main way to express possibilities in some languages, even as this
301 diagnosis has suffered from a lack of clarity about the distinction between full verbs and auxiliaries
302 (Dixon 1988: 279 Lichtenberk 2016: 332).

303 A wide range of verb meanings has been identified as sources for modal expressions in Oceanic.
304 Among the sources for expressions of ability, we find 'be a match for', 'be appropriate, be adequate', 'be

305 enough, be sufficient' (Lichtenberk, 2016: 336). Musgrave (2007: 92) also reports a verb meaning *know*
 306 as an expression of ability in Neve'ei, very similar to the Daakaka structures with *kuowilye*. Frequently,
 307 the same expression can be used not only for participant-internal modalities, but also for participant-
 308 external ones.

309 The differences between the two readings often correspond to differences in form. Generally speak-
 310 ing, personal subjects correlate with participant-internal possibility or ability while clausal subjects
 311 correspond to participant-external possibility.⁵ These correspondences between form and meaning
 312 confirm previous generalizations by Noonan (1985), Cristofaro (2003) and others. The following ex-
 313 amples illustrate these alternations. In the first example of each pair, the subject of the modal predicate
 314 refers to an individual. The interpretation is that the modal expression refers to the inherent ability
 315 or need, in the case of (20), of this individual subject.⁶ In the second example of each pair, the subject
 316 is a third person singular, which can in these contexts only refer to the proposition expressed by the
 317 subsequent clause. The interpretation is one of participant-external possibility. The difference can also
 318 be illustrated by more literal translations, for example for (18): The first clause can be translated as 'are
 319 you able to carry a bag of copra?'. The second one means 'is it possible that you carry a bag of copra?'.
 320

321 The examples also show that, in each case, the event that is deemed possible or necessary comes
 322 with its own TAM marking which is morpho-syntactically separate from the expression of ability or
 necessity itself.⁷ This suggests that they are indeed bi-clausal structures.

323 (18) Toqabaqita (Lichtenberk, 2008: 994) (emphasis by the authors):⁸

324 a. *Qo talaqa-na qoki ngali-a baeka kafara?*
 2SG.NFUT fit-3OBJ 2SG.FUT carry-3OBJ bag copra
 325 'Can you carry a bag of copra?'

326 b. *Qe talaqa-na qoki ngali-a baeka kafara?*
 3SG.NFUT fit-3OBJ 2SG.FUT carry-3OBJ bag copra
 327 'Is it physically possible for you to carry a bag of copra?'

328 (19) Manam (Lichtenberk, 2016: 339f.) (emphasis by the authors):

329 a. *ʔaŋári i-tubutúbu, tago u-bóadu m-éne?-i*
 canarium.nut 3SG.REAL-be.wet NEG 1SG.REAL-be.able 1SG.IRR-climb-3SG.OBJ
 330 'The canarium nut tree is wet; I am not able to climb it.'

331 b. *ʔaŋári i-tubutúbu, tago i-bóadu m-éne?-i*
 canarium.nut 3SG.REAL-be.wet NEG 3SG.REAL-be.able 1SG.IRR-climb-3SG.OBJ
 332 'The canarium nut tree is wet; it is not possible for me to climb it.'

333 (20) Boumaa Fijian, explicitly described as bi-clausal by Dixon (1988: 280)⁹

334 a. *Era dodonu me=ra la'o*
 3PL necessary should=3PL go
 335 'They must go.'

⁵By *clausal subjects* we refer both to structures in which the subject is given directly by a clause as in *That she had remembered his name surprised him.*, and structures in which the subject position is occupied by a pronoun that is coreferential with a clause as in *It surprised him that she remembered his name.*

⁶In this article, we are only concerned with expressions of possibility, not necessity. In the context of internal modalities, necessity would translate as a physical or emotional need instead of ability. It has been observed in Nauze (2008) and Narrog (2016: 98, 100) that, cross-linguistically, expressions of participant-internal necessity are rather rare. We wonder, however, whether this meaning is not often subsumed by verbs translated as *want*, as seems to be the case in Daakaka.

⁷This observation aims purely at the morpho-syntactic structure of these expressions. It may very well be that the value of the embedded TAM marking is in some cases determined by the embedding verb, and in this sense, not independent from it. Nevertheless, mono-clausal structures in Oceanic languages typically only have one predicate marked for TAM (with the exception of certain serial verb constructions).

⁸In Lichtenberk (2016), the glosses are slightly changed: In (a), *talaqa* is glossed as 'be.able', and in (b), it is glossed as 'be.possible', in line with the difference in interpretation.

⁹The original is un glossed. The glosses were adapted from (Lichtenberk, 2016: 336), highlights by the authors.

336 b. *E dodonu me=ra la'o.*
 337 3SG necessary should=3PL go
 'They must go.'

338 We will also comment on these correspondences between form and meaning and show that they are
 339 not always as neat as portrayed here.

340 2.5 Methodology

341 For our study, we have primarily relied on corpus data from language documentation projects. For
 342 Saliba-Logea, we used Margetts *et al.* (2017), comprising close to 150,000 word tokens, with close to
 343 70,000 glossed morphemes. For Daakaka, we relied on von Prince (2013). We also have access to data
 344 from new fieldwork on the language, based on storyboard elicitations. The storyboards we used are
 345 TFS Working Group (2011a); Rolka & Cable (2010); TFS Working Group (2010); Vander Klok (2013); TFS
 346 Working Group (2011b); [author redacted] (compare [author redacted], also see Burton & Matthewson
 347 2015). In total, the corpus data for Daakaka comprise about 76,000 word tokens, with about 68,000
 348 glossed morphemes. All the data were imported into the corpus platform ANNIS (Krause & Zeldes,
 349 2016; Zipser & Romary, 2010), using Druskat (2018), for optimal search and analysis options. Glosses
 350 were unified and, where necessary, adjusted to the current state-of-the art.

351 The translations are taken directly from the corpus data. Their exact interpretations are primarily
 352 determined by the context and cautiously informed by the authors' expertise on both languages.

353 3 Expressing possibility in Daakaka

354 3.1 Overview

355 There are a number of ways in which possibility can be expressed in Daakaka. The simplest way to
 356 do so is through potential mood. Daakaka has a system of seven markers that encode tense, aspect,
 357 modality and polarity (TAMP). They are shown in table 2.

	enclitic	proclitic	monosyllabic
Pos. Realis	= <i>m</i>	<i>mw</i> =	<i>mwe/mV</i>
Neg. Realis			<i>to</i>
Pos. Potential	= <i>p</i> / \emptyset	<i>w</i> =	<i>wV</i>
Neg. Potential	= <i>n</i>		<i>nV</i>
Distal	= <i>t</i>	<i>t</i> =	<i>tV</i>
Open Polarity			<i>doo</i>
Change of State			<i>bwet</i>

Table 2: Table of TAM and polarity markers in Daakaka

358 These markers are an obligatory part of the close-knit verbal complex that forms the core of finite
 359 clauses, as illustrated below.

SBJ.AGR	(=)TAMP	(AUX)	(REDUP-)	Verb	(-RES)	(=TR)
<i>na</i> , ...	= <i>m</i> , ...	<i>du, pwer</i>	= <i>ne</i>

Table 3: Structure of the verbal complex in Daakaka

360 The positive potential marker is used in directive utterances such as (21):

361 (21) *Ko=p tas we!*
 2SG=POT sit first
 362 ‘Sit down please!’

363 Narrog (2016: 94) offers the following account of the relation between modal expressions and mood
 364 markers:

365 In some areas of the world, as in Australia and the Pacific, languages often have no direct expres-
 366 sion of deontic and dynamic modalities at all, while they have richly developed mood paradigms.
 367 Scholars of these languages sometimes indicate that moods may be functional equivalents to
 368 modality. Specifically, hortatives or imperatives may express deontic necessities, and potential or
 369 irrealis moods circumstantial or participant-internal possibility. [...] However, [...], these moods
 370 typically remain performative, and are therefore qualitatively different from non-epistemic mod-
 371 alities [...].

372 The Daakaka potential marker is not restricted to expressing directive or other non-assertive speech
 373 acts. In combination with the assertive particle *ka*, it occurs frequently in assertions, where it expresses
 374 a reference to future events or to possibilities of the present and future as shown in the following
 375 examples.

376 (22) *barvinye swa ka we luk teve-sye m-ada em*
 grass one ASR POT grow side.of-3s.POSS CL2-1D.IN.POSS house
 377 ‘a grass will grow next to our house’ (2523)

378 (23) *Ka w=i Ros o ka w=i Yokon.*
 ASR POT=COP Ros or ASR POT=COP Yokon
 379 [Context: Mata discovers that someone stole her yam. She asks her friend Lising who the thief
 380 is.] ‘It might be Rose or it might be Yokon.’ (SB_Daakaka_RedYam_Seebu.21)

381 In unembedded contexts, the potential marker only rarely encodes possibility, however. Daakaka also
 382 has a modal tag, *vyen* ‘I think’, to specify some level of uncertainty.

383 But the most prominent way to express possibility involves bi-clausal structures with the verbs *kuow-*
 384 *ilye* ‘know’ and *wese* ‘suffice’. The two differ in their distribution and meaning in ways that will be
 385 explored below in more detail.

386 3.2 *Kuowilye*, ‘know’

387 The verb *kuowilye* means ‘know’, both in the sense of familiarity with an individual or object and in
 388 the sense of propositional knowledge. Its object can be a noun phrase, as shown in (24):

389 (24) *si to kuowilye s-an daa*
 1PC.INCL NEG.REAL know CL3-3SG.POSS language
 390 ‘we don’t know his language’ (2354)

391 When expressing propositional knowledge, *kuowilye* typically takes a finite clause as its object, headed
 392 by the realis complementizer *na*:¹⁰

393 (25) *mwe kuowilye [na lisepep mwe ane]*
 REAL know COMP lisepep REAL eat
 394 ‘She knew that the lisepep had eaten him.’ (1610)

¹⁰There are two complementizers in the language, the complementizer *na* for realis contexts, and the complementizer *ka* for non-realis contexts (compare von Prince, 2015).

395 (26) *s-an bivian to kuowilye [na mwe mer]*
 CL3-3SG.POSS friend NEG.REAL know COMP REAL dead
 396 ‘his friend didn’t know that he had died’ (0828)

397 In addition to knowledge, *kuowilye* can also express abilities and possibilities. In this case, too, the
 398 activity whose possibility is asserted can be given by a noun phrase as in (27):

399 (27) *mo kuowilye sap=an*
 REAL know dance=NMLZ
 400 ‘she can dance’ (lit. ‘she knows dancing’) (Q2011:89d)

401 More frequently, the object of the possibility expressed by *kuowilye* is denoted by an embedded clause.
 402 In this case, the embedded clause is headed by the irrealis complementizer *ka*, which can also be omitted,
 403 and is in potential mood. The optional use of the complementizer clearly marks the clause as embedded.
 404 The same structure is also used in the context of other embedding verbs such as *dimyane* ‘want’ or
 405 *tuwuli-esi* ‘try’. Furthermore, note that the predicate of the embedded clause is marked by the potential
 406 mood marker. Apart from a small set of specific serial verb constructions, Daakaka allows for only one
 407 TAM-marked predicate per clause (von Prince, 2015).

408 (28) *nye na_i=m kuowilye [ka na_i=∅ vyan tiye suw-uk kyun]*
 1SG 1SG=REAL know COMP 1SG=POT go kill REFL.PRON-1SG.POSS just
 409 ‘but I can beat him by myself’ (3101)

410 (29) *Ma tiye yen em ane vyanten, [...] ko_i=m kuowilye [ka ko_i=p mer].*
 REAL kill in house TR man 2SG-REAL know COMP 2SG=POT dead
 411 ‘It hurts people on the inside, you can die.’ (1847)

412 As these two cases show, the subject of *kuowilye* can be a personal subject that is then necessarily
 413 coreferential with the subject of the embedded clause. In (28), this subject is the first person singular,
 414 in (29), it is the second person singular.¹¹

415 It is also possible for *kuowilye* to take impersonal subjects, although this is much rarer. In the few
 416 instances we have found that have an impersonal subject, it is probably not clausal. For example,
 417 the following sentence is from an account of a traditional sport in which villages used to compete
 418 against each other. The impersonal subject here could refer either to one of the previously mentioned
 419 participating villages; or to the event of the competition itself.

420 (30) *mwe kuowilye ka wa tilya vyanten milipsyees sikya sungavi*
 REAL know say POT take man six touch ten
 421 ‘It [the village/ the competition] can take six to ten men’ (2698)

422 The verb *kuowilye* can express various kinds of possibility. It frequently denotes participant-internal
 423 possibilities, that is, possibilities conditioned by the inherent properties of the subject:

424 (31) *ko to kuowilye kuo-kuo=an*
 2SG NEG.REAL know REDUP-RUN=NMLZ
 425 ‘you can’t [swim] fast’ (1412)

426 (32) *Mwe meu mo kuowilye ka wa sikya dom ves?*
 REAL live REAL know COMP POT touch year how.much
 427 ‘How long can it live?’ (0117) (lit. ‘it lives it can reach how many years’)

428 *Kuowilye* can also express participant-external possibility, such as circumstantial possibility – the cir-

¹¹Even though *kuowilye* is a control predicate in these cases, the expression of the controlled subject by the subject agreement marker is obligatory; this situation is cross-linguistically relatively rarely reported (Stiebels, 2007).

429 cumstances or conditions allow for an event to happen; or deontic possibility, in the sense that a certain
 430 event is compatible with a given set of rules.

431 The first type is illustrated in the following two examples. Note that, in (33), the subject of *kuowilye* is
 432 obviously personal, but the possibility expressed is not participant-internal: This is about a certain bird
 433 that may sing either to the right or to the left of the road when a person is on their way to accomplish
 434 a certain goal. If they hear the bird's song to their right, this indicates that they will be lucky and
 435 accomplish their goal. As such, we are here talking about favourable circumstances, not about abilities.
 436 While this constellation has not been ruled out by the typological literature (e. g. Cristofaro, 2003), it
 437 does show that form-meaning correspondences are not always as neat as portrayed by Lichtenberk
 438 (2016) (see section 2.4).

439 (33) *mw=i s-am laki te ko_i=m kuowilye [ko_i=p syokilyene sewe sa ko=m vyan*
 REAL-COP CL3-2SG.POSS luck DISC 2s-REAL know 2s-POT find what TOP 2s-REAL go
 440 *ane]*
 TR
 441 'it means you're lucky and you may find what you're after' (4968/9)

442 (34) *ka we vyan w=i doma te —_i mo kuowilye [ka we —_i vyan doma, kueli me*
 COMP POT go POT-COP today DISC REAL know ASR POT go today return come
 443 *doma tetes kyun.]*
 today again just
 444 'another one, if for example he wants to go today, he can go today and return today again' (1027)

445 Deontic readings of *kuowilye* with a personal subject are presented below. In (35), the speaker describes
 446 the kinship conditions that determine how people are supposed to behave towards one another. These
 447 conditions do not only depend on the kinship relation but also on the marital status of everyone in-
 448 volved. When a man marries, his relation to some of his female relatives changes. The reading we get
 449 is clearly about a set of social rules, not inherent capacities of the subject.

450 (35) *[...] te —_i mo kuowilye [ka —_i we pyos-pyos ane]*
 DISC REAL know COMP POT REDUP-joke TR
 451 'then he can joke with her' (5102)

452 The sentence in (36) describes taboos surrounding certain places. Again, *kuowilye* does not refer to the
 453 inherent ability of people to enter those places, but to their clearance. So this reading, too, is a deontic
 454 one.

455 (36) *te mw=i or yo swa na vyanten kevene ya to kuowilye [ka ya=n*
 DISC REAL=COP place taboo one COMP person every 3PL NEG.REAL know COMP 3PL=NEG.POT
 456 *vyan]*
 go
 457 'it's a sacred place where not everybody can go' (0691)

458 In contrast to *wese*, which we will describe in the following section, *kuowilye* cannot express epistemic
 459 possibility. In the following example, which was elicited as a translation from Bislama, the version with
 460 *wese* was offered, and a replacement of *wese* with *kuowilye* was rejected.

461 (37) *Ma wese/*kuowilye ka t=i vyanten minyes sa ma liye dom.*
 REAL suffice/*know COMP DIST=COP person different TOP REAL take yam
 462 'It may have been someone else who took the yam.' (Q2017:5.1.1)

463 3.3 *Wese*, ‘enough, suffice’

464 The second major expression of possibilities in Daakaka is *wese*, which also means *be enough, suffice*.
 465 This meaning is illustrated in the following examples. In (38), we see *wese* with a pronominal subject,
 466 referring to a coconut:

467 (38) *en=tak to wese, na=p min-tase tuswa mon we*
 DEF=PROX NEG.REAL enough 1SG=POT drink-again one also first
 468 ‘this [coconut] is not enough, I shall drink another one first’ (0231)

469 In the following sentence, *wese* is used as a serial verb of quantification. The subsequent clause is
 470 probably best analyzed as an purpose clause, since *wese* appears to be strictly intransitive.

471 (39) *temeli mwe yas mwe wese [ka we te vislee]*
 child REAL strong REAL enough COMP POT cut bow.and.arrow
 472 ‘the boy was strong enough to make a bow and arrows’ (3371)

473 In the following case, it is not entirely clear whether the subject is clausal (*to realize my plan will be*
 474 *possible*) or nominal (*the two pigs will be sufficient for me to realize my plan*), and accordingly, whether
 475 the subordinate clause is a complement, or adverbial. Examples like this one show the continuity
 476 between the two readings and motivate the diachronic development that probably links them.

477 (40) *barar w=i ló te ka wa wese [ka na=p gene sok nyur-nyur=an]*
 pig POT=COP two DISC COMP POT enough COMP 1SG=POT make 1SG.POSS REDUP-think=NMLZ
 478 ‘Two pigs will be enough for me to realize my plan.’ (lit. ‘when the pigs are two, it/they will be
 479 enough for me to realize my plan’) (5476)

480 When *wese* expresses more general abilities, possibilities and the like, the subject can be personal or
 481 clausal. The following example shows a personal subject with *wese* expressing a participant-internal
 482 possibility, as would be expected for a personal subject.

483 (41) *...s-an pon-pon=an mwe goli na mwe goli, ra to wese*
 ...CL3-3SG.POSS REDUP-whistle=NMLZ REAL writhe COMP REAL writhe 1PL.INCL NEG.REAL enough
 484 [*ra=n ka*]
 1PL.INCL=NEG.POT say
 485 ‘its whistling is so convoluted, we can’t imitate it’ (6118)

486 In (42), the subject is clausal and the possibility expressed is clearly participant-external: it is not the
 487 internal ability, or lack thereof, that determines that the people that are the subject of the embedded
 488 clause cannot enter their village; instead, the obstacle is the still-hot lava. Also note that we are again
 489 dealing with a complementizer and TAM marking on the predicate of the bracketed phrase, which
 490 clearly mark it as clausal, and as subordinate – similar to what we have seen before with *kuowilye*.

491 (42) *to wese [ka ye=n me vyan tevy-an wuovyor toowe or]*
 NEG.REAL enough COMP 3PC=NEG.POT come go side.of-3SG.POSS lava cover place
 492 ‘They could not go [inside the village], because lava covered the place.’ (0996)

493 In contrast to the expectations about correspondences between form and meaning outlined in section
 494 2.2, *wese* also occurs with clausal subjects in cases in which the possibility it expresses is very likely
 495 participant-internal, rather than external. The following sentence is from a description of a certain kind
 496 of insect which has a pupa stage during which it forms a cocoon. It is a generic description of this kind
 497 of cocoon. We therefore have to assume that the sentence talks about the general, intrinsic fragility of
 498 these cocoons, rather than a specific set of circumstances which may lead to their coming open.

499 (43) *ma wese na bwee-tye mwe lyoo, ma sengep milye an*
 REAL enough COMP container-of.it REAL break REAL be.open on.top 3SG.POSS
 500 ‘It’s cocoon can break, it opens at the top,...’ (6004)

501 As stated in section 2.1, this observation contradicts prior generalizations from Cristofaro (2003) and
 502 others, saying that predicates of possibility with a clausal subject generally refer to participant-external
 503 possibilities. We will see another possible counter-example to this generalization below in (80).

504 In contrast to *kuowilye*, *wese* also has a clearly epistemic reading, which is illustrated by the following
 505 examples. In (44), the subject of *wese* is clearly clausal. In the other two examples, there are no morpho-
 506 syntactic clues to diagnose whether the subject is clausal or whether the matrix subject is coreferential
 507 with the embedded subject.

508 (44) *ma wese webung w=i sii, w=i vyer ma ge=te, mu ku-kyu*
 REAL enough day POT=COP three POT=COP four REAL like=MED REAL REDUP-surround
 509 ‘it might have been three or four days, [the lava] surrounded him’ (0978)

510 (45) *Mwe me, ma wese ka te me yan vilye s-an vi*
 REAL come REAL enough COMP DIST come on place CL3-AL.POSS white.man
 511 ‘It came, it probably came from the place of the white men.’(4104)

512 (46) *kuli vis en-te wa wese ka w=i lim*
 edible.part.of weapon DEF-MED POT enough COMP POT-COP five
 513 ‘there were probably five bullets’ (6361)

514 Newer fieldwork suggests that epistemic *wese* requires a higher degree of certainty than afforded by
 515 English *might* or *may*. For example, in the storyboard by Rolka & Cable (2010), Tom is looking for his
 516 cat. There are three baskets and the cat is hiding in one of them. In this situation, it is fine to say, in
 517 English, *Tom thought that the cat may be in the small basket*. But the corresponding sentence with *wese*
 518 was rejected by Daakaka speakers with the explanation that, in this situation, Tom would not have
 519 reason to believe that the small basket was a more likely hiding place than the other two baskets.

520 Unlike *kuowilye*, *wese* is not a control predicate. This means that the subject of the embedded clause
 521 does not have to be coreferential with the subject of *wese*. Quite often, the subject of *wese* will be
 522 an inanimate object, even though in the translation, it is more natural to take the animate subject of
 523 the embedded clause as the subject of a corresponding possibility predicate. This is illustrated by the
 524 following examples.

525 The example in (47) describes a pillow created from parts of a tree fern. After processing them, it
 526 says, people can rest their head on the finished product.

527 (47) *...ma wese na vyanten ma wilya yan*
 REAL enough COMP man REAL rest.head on
 528 ‘people can rest their head on it’ (lit. ‘[the woven pillow] is sufficient for people to rest their head
 529 on’)¹² (2863)

530 In a similar fashion, the example in (48) describes the boat that the two protagonists of the story, a rat
 531 and kingfisher, have fashioned out of a pawpaw:

532 (48) *...vyan mwe wese na ka ye=p saa te ye=m lingi vyan yen tes*
 go REAL enough COMP COMP 3d-POT float DISC 3d=REAL put go in sea
 533 ‘Then they could float [on the pawpaw boat] and they put it on the sea.’ (lit. ‘Then [the boat they

¹²The literal translation is, of course, also an acceptable sentence of English, which expresses essentially the same meaning as the free translation. Unlike the free translation, however, it comes with an added implicature that, while the pillow can be used as a head rest, but might not be the optimal way to support one’s head while sleeping. This implicature is absent from the original text.

534 had made] was sufficient for them to float’) (4988)

535 From the closely related, neighboring language Dalkalaen, we find the following example, in a story
536 where two boys spot the reflection of some bananas in the water and mistakenly believe they could
537 take the bananas out of the water. They keep trying, but:

538 (49) *vii en=ti to wese ne me.*
banana DEM=PROX NEG.REAL enough NEG.POT come
539 ‘they couldn’t get the bananas out.’ (lit. ‘the bananas couldn’t come.’) (SB_Dalkalaen_Bananas_Amos.10)

540 These examples illustrate that *wese* often expresses the internal possibility of an inanimate object to be
541 used in a certain way, or an affordance of this object.

542 Even though *kuowilye* is used far more often as an expression of possibility than *wese*, *wese* is used
543 very often in negative contexts. Meanings that are expressed by *kuowilye* in the positive versions are
544 sometimes expressed by *wese* in their negated version. This is illustrated by the following example
545 which was produced during an elicitation of the TFS Working Group (2011a) storyboard. In this story,
546 Mary’s friends come to ask her whether she can come with them to play. But she has a number of
547 chores to do first and so refuses.

548 (50) A: *Meri ko=m kuowilye ko=p usili kenma si=p vyan bangbang?*
Mary 2SG=REAL know 2SG=POT follow 2DU.EXCL 2PC=POT go play
549 ‘Mary, can you come with us to play?’
550 B: *To wese ka na=p usili kama, ka na=p kase belet.*
NEG.REAL enough COMP 1SG=POT follow 2DU ASR 1SG=POT wash plate
551 ‘I can’t come with you, I have to wash the dishes.’

552 In some cases, negated *wese* expresses a meaning similar to *never*:

553 (51) *pyan em ane san kuokuo=an or mwe pyang-pyang kyun pwer, to wese*
under house TR 3SG.POSS shut=NMLZ place REAL REDUP-hot just stay NEG.REAL enough
554 *meas ne ate taem tuswa, tevy-an mwe saa pwer milye*
cold NEG.POT bite time one side.of-3SG.POSS REAL hang stay on.top
555 ‘inside its cocoon, it’s warm, it can never be cold, because it hangs up high’ (6000)

556 (52) *te na ye=m du yene meo to wese ka na bangbang myane*
DISC COMP 3pc=REAL stay now namalau NEG.REAL enough COMP NEG.POT play with
557 *tyu*
chicken
558 ‘and as the two are now, the megapode never plays with the chicken’ (1384)

559 3.4 Conclusions

560 In the previous sections, we have seen that both *kuowilye* and *wese* enter into bi-clausal structures
561 when expressing possibilities. The second clause contains a TAM-marked predicate and can always be
562 introduced by the irrealis complementizer *ka*, which clearly shows that these structures are not mono-
563 clausal. In the case of *kuowilye*, the embedded clause functions as its object. In the case of *wese*, the
564 embedded clause can either be the subject of this verb, or a purpose clause.

565 We have also established that both *kuowilye* and *wese* show a wide range of interpretations. In par-
566 ticular, *kuowilye* covers both participant-internal and participant-external meanings. Both meanings
567 are also attested for *wese*, which has the additional meaning of epistemic possibility. We would like
568 to add that, apart from certain epistemic readings of *wese*, both verbs are clearly restricted to possi-
569 bility interpretations to the exclusion of necessity interpretations. Various flavours of necessity can be

570 expressed by the verb *ka* ‘say, want, think’, *dimyane* ‘want’, and the Bislama loan *mas* (from English
 571 ‘must’, but with a much wider range of applications).

572 Even if we only count the occurrences of *kuowilye* when it is translated as *can, could, may, might* or
 573 *will*, we find that it is among the one hundred most frequent tokens in the corpus. *Wese* as an expression
 574 of possibility is less frequent, but still well within the two hundred most frequent tokens, along with
 575 several pronouns and aspectual particles. Modally interpreted *kuowilye* is at the 94th percentile of
 576 token frequencies; modally interpreted *wese* is at the 90th percentile. This means that these elements
 577 are radically more frequent than we would expect of a purely lexical expression of possibility such as
 578 English *possible*.

579 Table 4 summarizes the frequencies of both items. It also shows that the modal uses of both items
 580 are far more frequent than the non-modal uses, further strengthening the impression that the modal
 581 uses are highly grammaticalized.

Table 4: Total: occurrences of *kuowilye* and *wese*; Poss: number of occurrences with a modal interpretation; Neg.
 Poss: number of negated occurrences with a modal interpretation. Perc.: Percentile rank of modally interpreted
 occurrences in overall token frequency.

Expression	Total	Poss.	Neg. Poss	Perc.
<i>kuowilye</i>	185	112	13	94
<i>wese</i>	79	56	29	90

582 We can also see from this table that modal *wese* is proportionally more frequent in its negated form
 583 compared to *kuowilye*: a little more than half of all modal occurrences of *wese* are negated, while only
 584 about seven percent of all modal occurrences of *kuowilye* are negative.

585 Thus, in terms of semantic specificity and in terms of frequency, modal uses of *kuowilye* and *wese*
 586 with their corresponding complement clauses look like highly grammaticalized expressions. The ques-
 587 tion whether they belong to a closed class, or to a small paradigm, is harder to assess, because it depends
 588 heavily on what we count as paradigmatic alternatives. Daakaka has several hundred verbs (von Prince,
 589 2017). But among those, only a small number have been observed to take complement clauses. Fur-
 590 thermore, among complementizing verbs, only seven have been observed to take complement clauses
 591 in potential mood, comparable to infinite complement clauses in English. Apart from *kuowilye* and
 592 *wese*, these are *dimyane* ‘want’, *tuwuli-esi* ‘try’, *ka* ‘say, want’ and *nyurnyurane* ‘plan’. If we were to
 593 only count these items as paradigmatic alternatives, *kuowilye* and *wese* would pass Bybee *et al.* (1994)’s
 594 test for belonging to a closed class (see section 2.1). Crucially, this picture differs dramatically from
 595 languages such as written English: There are dozens of predicates with non-finite clausal complements
 596 that are frequent enough to show up repeatedly even in a corpus as small as our Daakaka corpus, in-
 597 cluding *want, try, need, seem, be able, begin, like, continue, appear, expect, tend, fail, wish, decide, intend,*
 598 *start, refuse, manage, agree, be allowed, be forced* and many others (based on a preliminary survey of
 599 the British National Corpus).

600 These observations serve to illustrate that 1) whether a word class is closed or open, big or small,
 601 depends crucially on the definition of its distribution (e. g. verbs vs. transitive verbs vs. embedding
 602 verbs etc.), and 2) there may be stark differences between languages in the size of (parts of) their lexica,
 603 which makes the reliance on paradigms as a way to identify cross-linguistically similar categories even
 604 more difficult.

605 Concluding this section, we have shown the following:

- 606 1. Both *wese* and *kuowilye* have frequencies far above average lexical items and comparable to certain
 607 pronouns, aspectual particles and other grammatical items.
- 608 2. Both expressions have a wide variety of modal interpretations and are not restricted to one specific
 609 kind of possibility.
- 610 3. The only other expression of possibility is the potential marker. Far more frequently, however, this

611 marker expresses future assertions, imperatives and a range of other meanings that are not restricted
612 to possibility.

613 4. The two expressions can be argued to be part of a small and closed paradigm.

614 It seems therefore fair to say that the two sentence-embedding predicates *kuowilye* and *wese* are the
615 most highly grammaticalized way to express general possibilities in Daakaka.

616 4 Expressing possibility in Saliba-Logea

617 4.1 Overview

618 Saliba-Logea is the term for two closely related Oceanic language variants that are spoken on the
619 eponymous islands of Saliba and Logea respectively (also known as Sariba and Rogeia). We will refer
620 to Saliba-Logea here as one language. Both islands belong to Papua New Guinea and the language is
621 part of the Papuan-Tip cluster. Even though Saliba-Logea is also an Oceanic language of Melanesia
622 and shares many structural properties with Vanuatu languages like Daakaka, its TAM system is very
623 different. Most importantly, TAM marking in Saliba-Logea is optional in many contexts, especially in
624 assertions about the actual past or present. The main subject of our investigation is the predicative
625 noun *gonowa-*, which will be discussed in the following section. In the present section, we will de-
626 scribe alternative ways of encoding possibility in the language and how they differ semantically from
627 expressions with *gonowa-*.

628 The optionality of TAM marking is illustrated by the following example:

629 (53) *pologi wa hesau ye unui*
frog ANA a 3SG.SBJ catch
630 ‘He caught one of the frogs.’ (FrogStory_01AW_0156)

631 While most of the utterances that are unmarked for modal or temporal reference are about the actual
632 past or present, they can also refer to merely possible or hypothetical situations. This is illustrated by
633 the following example, where the unmarked, bracketed part indicates a future possibility. The second
634 part is introduced by *kabo*, which expresses immediateness (past or future) and often occurs in event
635 sequences (Margetts, 1999: 14):

636 (54) [*ku boita*] *meta kabo ka-m kao kayakayauna yo pane-m ne kayakayauna*
2SG.SBJ die TOP then POSS2-2SG.POSS face which and smell-2SG.POSS ART which
637 ‘[You may die/if you die], then how would you look and how would you smell?’ (lit. ‘...which
638 [would be] your face’ and which [would be] your smell) (Boneyawa_11BG_0079)

639 Possibility can be expressed more specifically by a number of lexemes. One of them is *benā*, which can
640 express intentions and obligations as in (55), but also occurs in purpose clauses and false-belief reports
641 as in (56).

642 (55) *ka gado [benā ku unui-he-mate]*
1EXCL.SBJ want POT 2SG.SBJ catch-CAUS-die
643 ‘we want you to catch it and kill it’ (BudoiNualele_01CY_0492)

644 (56) ... *yo-na nuwatu [benā bwaiyatu]*
POSS1-3SG.POSS thought POT kundu.drum
645 ‘[A woman heard the sound of the waves and] thought it was kundu drums.’ (Bagodu_01AH_0014)

646 The most common way to express epistemic possibility is the word *nuwana* ‘maybe’. Like *gonowa-*
647 ‘possibility/ability’ it is of nominal origin: *nuwa-* means ‘heart’ or ‘mind’. The noun is obligatorily

648 inflected for the person and number of its inalienable possessor, unless it is incorporated into the verb
 649 in external possessive constructions (cf. Margetts, 1999: 235). It is attested with all person/number
 650 distinctions. Example (57) shows *nuwa-* ‘heart/mind’ with a first person singular possessor, (58) shows
 651 a third person singular possessor.¹³

652 (57) *kalita wa nuwa-gu wa ye luluhi*
 sea.water ANA mind-1SG.POSS ANA 3SG.SBJ forget
 653 ‘I forgot the sea water.’ (lit. ‘My mind forgot the seawater.’) (Bagodu_01AH_0054)¹⁴

654 (58) *nuwa-na wa ye luluhi*
 mind-3SG.POSS ANA 3SG.SBJ forget
 655 ‘She forgot.’ (lit. ‘Her mind forgot.’) (Bagodu_01AH_0056)

656 The form *nuwana* ‘maybe’ thus corresponds etymologically to the third-person singular form *nuwana*
 657 ‘her/his/its mind/heart’. It is therefore possible to analyze a structure like the following as literally
 658 saying ‘its mind exists that I didn’t anchor properly’:

659 (59) *nuwana nige ya loni komakomani*
 maybe NEG 1SG.SBJ anchor carefully
 660 ‘maybe I didn’t anchor properly’ (WakonaYeKahaihai_01DN_0026)

661 However, in its function as a marker of epistemic possibility, *nuwana* only occurs in the third-person
 662 singular form. It is therefore not clear whether in modal expressions with *nuwana* ‘maybe’ the form
 663 still constitutes a predicative noun in a bi-clausal construction, or whether it has been reanalyzed as a
 664 modal adverb or particle modifying the verb in a mono-causal clause construction.

665 There is a further expression of possibility which, like *nuwana* ‘maybe’ and *gonowa-* ‘possibility,
 666 ability’ centres around a noun that can be directly possessed. The noun *kabi* generally refers to the
 667 inherent nature of the possessor, as in (60):

668 (60) *ye laki-laki meta yau nige kabi-gu ye kata*
 3SG.SBJ REDUP-big TOP 1SG NEG nature-1SG.POSS 3SG know
 669 ‘He grows up and he doesn’t know me [as his father].’ (lit. ‘...and he doesn’t know my nature’)
 670 (Adoption_01AO_0050)

671 This noun is homophonous with a verb meaning ‘hold, grab, reach’, as in (61):

672 (61) *hesau ye tolo sae na ye kabi sae wa nige gonowa-na*
 a 3SG.SBJ stand(up) go.up and.then 3SG.SBJ touch go.up ANA NEG ability-3SG.POSS
 673 ‘One [of them] climbs on top [of the timber] and reaches up, but he can’t [reach the shirt].’ (Abs-
 674 Rel1_02DO_0009)

675 In the vast majority of occurrences, *kabi* is inflected for an inalienable possessor and occurs in a
 676 fixed expression with the verb *kata* ‘know’ to encode knowledge of or familiarity with a referent or a
 677 proposition. In these constructions *kabi* ‘nature’ occurs as the object of *kata* ‘know’, the direct possessor
 678 of *kabi* ‘nature’ encodes the referent or proposition known and the subject of *kata* refers to experiencer
 679 of ‘knowing’. The formula can be described as [*x* knows the *kabi* of *y*]. A literal translation of (62)
 680 below would be ‘we know the nature of the customs’ and (63) ‘I know your nature’.

¹³Expressions such as ‘my mind forgot’ are not unexpected in an Oceanic language, because mental states, emotions and medical conditions are often expressed by *psycho-collocations* or *experiential collocations*, which require a specific combination of a possessed body-part noun and a predicate (compare Matisoff 1986, Verhoeven 2007, [redacted 1]).

¹⁴The phrase [*kalita wa*] is a topicalized object here.

681 (62) *laugagayo te doha bega-di doha kabi-di ka kata*
 law near.SPKR like not.much-3PL.OBJ like nature-3PL.POSS 1EXCL.SBJ know
 682 ‘we know these laws a little’ (HairCutting_03BC_0010)

683 (63) *kabi-m ya kata haka kowa sinebada lupu-lupo-na*
 nature-2SG.POSS 1SG.SBJ know INTRJ 2SG old.woman REDUP-trick-3SG.POSS
 684 ‘I know you (I’ve seen through you), you are a trickster.’ (Bagodu_01AH_0112)

685 While all person-number distinctions are attested, the most frequent form is a third-person-singular
 686 possessor:

687 (64) *hesa-na nige kabi-na ya kata*
 name-3SG.POSS NEG nature-3SG.POSS 1SG.SBJ know
 688 ‘I don’t know its name’(Garden_01CY_0412)

689 Apart from expressing familiarity with specific objects or facts, *kabi- ...kata* can also express practical
 690 knowledge, or the learned ability to do something. In this sense, *kabi- ...kata* is also an expression
 691 of possibility. In this function, the construction differs from *nuwana* and *gonowa-*, however, in that
 692 the ability to which it refers is not generally specified by a separate clause, but by another noun, as
 693 illustrated below:

694 (65) *ena [[bosa kabi-na] ye kata] kabo sina-mai ye he-kata-gai*
 if basket nature-3SG.POSS 3SG.SBJ know then mother-1EXCL.POSS 3SG.SBJ CAUS-know-1EXCL.OBJ
 695 ‘if she knows how to weave a basket our mother will teach us’ (BasketWeaving_05AA_0098)

696 (66) *kabo taki meta-i kabo [[diving kabi-na] ya kata]*
 then just near.AD-LOC then diving nature-3SG.POSS 1SG.SBJ know
 697 ‘there I learned how to dive’ (lit. ‘[from] there I know diving’) (Diving_01DP_0017)

698 If the knowledge referred to is of an activity or skill this can be expressed by a directly possessed
 699 nominalized verb, as in (67), where *bosa* ‘basket’ is the possessor of *halusi* ‘weave’:

700 (67) *[Bosa halusi-na] kabi-na ka kata*
 basket weave-3SG.POSS nature-3SG.POSS 1EXCL.SBJ know
 701 ‘we know how to weave baskets’ (lit. ‘we know the weaving of the basket’)

702 4.2 *Gonowa-*

703 The most general and most frequent way to express non-epistemic possibilities is with the lexeme
 704 *gonowa-* ‘possibility, ability’, which is used as a predicative noun. The content of the possibility is real-
 705 ized as a separate clause which typically follows the non-verbal predicate with *gonowa-*. The inflection
 706 on *gonowa-* again indicates the person and number features of its possessor. The syntactic relation
 707 between the clause containing *gonowa-* and the subsequent clause is not clear, since Saliba-Logea does
 708 not appear to differentiate formally between main clauses, complement clauses, relative clauses and
 709 adverbial clauses (Margetts, 1999: 17). Functionally though, the clause specifying the content of the
 710 possibility can be identified as the (semantic) subject of the predicate *gonowa-*.

711 (68) *gonowa-m meta [kabo ku dobi ku unui-he-mate]*
 ability-2SG.POSS TOP then 2SG.SBJ go.down 2SG.SBJ catch-CAUS-die
 712 ‘you are able to go down, to catch it and kill it (lit. “Your ability exists to...”)’
 713 (BudoiNualele_01CY_0496)

714 Noun phrases in Saliba-Logea can function as predicates without a copula and without derivational
 715 morphology. The main patterns are briefly summarized below. Clauses consisting only of an NP can

716 be translated as existential clauses:

717 (69) *taubada hesau ma-natu-na*
old.man a with-child-3SG.POSS
718 ‘There was man was with his child.’ (lit. ‘An old man with his child’) (Boneyawa_07BC_0006)

719 (70) *kulu-na unai pasa*
hair-3SG.POSS PP.SG flower
720 ‘In his hair were flowers.’ (lit. ‘In his hair flowers’) (Bagodu_01AH_0073)

721 Clauses consisting of a noun phrase with a possessor can be translated as ‘POSSESSOR has/ had NP’:

722 (71) [*meta ena ka-gu kaha*] *ya uyo-ma*
TOP if POSS2-1SG.POSS sibling 1SG.SBJ return-to.SPKR
723 ‘If I have a sister/ friend to go with me I’ll come back.’ (lit. ‘if my friend, then I’ll come back’)
724 (Fishing_01BQ_0571)

725 (72) *nige ka-di kai*
NEG POSS2-3PL.POSS food
726 ‘they had no food’ (lit. ‘Not their food’) (BwalaDoini_01CO_0153)

727 Considering these patterns, a structure of *gonowa*-POSSESSOR CLAUSE can be paraphrased as ‘the
728 possibility of POSSESSOR to CLAUSE exists’ or ‘POSSESSOR has the possibility to CLAUSE.’

729 The clause encoding the content of the possibility can also precede the *gonowa*- clause as in (61), re-
730 peated from above. This pattern seems to be more common with negated possibility but is not restricted
731 to this context.

732 (61) *hesau ye tolo sae na ye kabi sae wa nige gonowa-na*
a 3SG.SBJ stand(up) go.up and.then 3SG.SBJ touch go.up ANA NEG ability-3SG.POSS
733 ‘One [of them] climbs on top [of the timber] and reaches up, but he can’t [reach the shirt].’ (Abs-
734 Rel1_02DO_0009)

735 The noun *gonowa*- is also used to express similarity or equality. In these contexts, it is generally redu-
736 plicated as *gono-gonowa*-.¹⁵ The possessor suffix of *gonowa*- can be singular or plural:

737 (73) *magai ne kewa-na ne koya tupi-di gono-gonowa-na hinage kalita*
place ART top-3SG.POSS ART mountain hill-3PL.POSS REDUP-same-3SG.POSS also sea.water
738 *luwa-na ne unai*
inside-3SG.POSS ART PP.SG

739 ‘there are landscapes under water with mountains and valleys just like above water’ (lit. ‘the place
740 here on top [has] mountains, the same [holds] under water.’) (Diving_01DP_0163)

741 (74) *gono-gonowa-na doha teina kaiwa yo pasa ta kuma-i tenem kalita*
REDUP-same-3SG.POSS like near.SPKR tree and flower 1INCL.SBJ plant-TR that.DIST sea.water
742 *luwa-na ne ka-di kao gono-gonowa-di*
inside-3SG.POSS ART POSS2-3PL.POSS face REDUP-same-3PL.POSS
743 ‘[They are] **the same** as these trees and flowers we have planted, those ones underwater look **the**
744 **same**.’ (Diving_02DP_0099)

745 (75) *mahabu yo boneyawa gono-gonowa-di*
mahabu and funny.story REDUP-same-3PL.POSS
746 ‘mahabu and boneyawa mean **the same thing**’ (Mahabu_01AH_0011)

¹⁵Reduplication plus *-na* generally derives nominal modifiers from nouns.

747 The only clear examples of *gonowa-* expressing similarity or equality involve the reduplicated form
 748 *gonogonowa-*. It is therefore well possible that this form constitutes a separate lexeme which might have
 749 diachronically originated from *gonowa-*, but has since then reanalyzed. To the extent that there is a dia-
 750 chronic link between the equality expressed by *gono(-)gonowa-* and the possibility denoted by *gonowa-*,
 751 this would be in tune with what Lichtenberk (2016) described for some other Oceanic languages, where
 752 an expression of non-epistemic possibility also means ‘match, fit’. This polysemy pattern has however
 753 not been widely described so far. For instance, there is no entry for a grammaticalization link between
 754 equality and ability or possibility in Heine & Kuteva (2002). An interesting possibility for linking the
 755 two meanings is suggested by examples like the following, which could also be translated as something
 756 like ‘my strength is not equal to the task of swimming’:

757 (76) *nuwana nige ye-gu bayao gonowa-na kabo ya tuba*
 maybe NEG POSS1-1SG.POSS strength possibility/same-3SG.POSS then 1SG.SBJ swim
 758 ‘maybe I would not have the strength to be able to swim’ (WakonaYeKahaihai_01DN_0069)

759 Another example where *gonowa-* is ambiguous between possibility and similarity is given in (77), where
 760 the word *yauwedo* (‘hello, thanks’) is explained by way of its similarity to the greeting *lautoki*.

761 (77) *kita kalina-da unai ne gonowa-na doha lautoki unai ta*
 1INCL language-1INCL.POSS PP.SG ART possibility/same-3SG.POSS like greetings PP.SG 1INCL.SBJ
 762 *hepaisowa*
 use
 763 ‘in our language, we use it in the same way as “lautoki” / we can use it like “lautoki”’. (AboutDialects_01DP_0021-
 764 22)

765 Abilities and, even more often, inabilities or participant-internal (im)possibilities are regularly ex-
 766 pressed by *gonowa-*. This noun can form a single-word sentence or be followed by a clause that elabor-
 767 ates on the type of possibility in question. The following examples also show that the ability-denoting
 768 *gonowa-* can take the full range of person-number features for its possessor. This is an important factor
 769 for our analysis as *gonowa-* as an inflected noun that constitutes an independent clause:

770 (78) *Gonowa-m?*
 possibility-2sg.poss
 771 ‘are you ok / are you able to do it / are you managing?’ (lit. *your possibility*)

772 (79) *Gonowa-gu*
 possibility-1sg.Poss
 773 ‘I can do it / I’m ok’ (lit. ‘my possibility’)

774 (68) *gonowa-m meta [kabo ku dobi ku unui-he-mate]*
 possibility-2SG.POSS TOP then 2SG.SBJ go.down 2SG.SBJ catch-CAUS-die
 775 ‘you are able to go down, to catch it and kill it’ (BudoiNualele_01CY_0497-9) (repeated from above)

776 However, it appears that the form *gonowa-na*, with a third person singular possessor, is highly spe-
 777 cialized and, like *nuwa-na* ‘maybe’, might no longer be fully transparent as a possessed, predicative
 778 noun phrase. Examples like (80) show that *gonowa-* can be inflected for a third-person-singular pos-
 779 sessor even if the subject of the ability is, for example, a first person.

780 (80) *nige gonowa-na [ya wose sagu-i-go]*
 NEG possibility-3SG.POSS 1SG.SBJ paddle help-TR-2SG.OBJ
 781 ‘I can’t help you paddling.’ (Boneyawa_11BG0097)

782 In combination with its reference to participant-internal possibility, this observation can be inter-

783 preted in two different ways.

- 784 1. Either, *gonowa-na* is an inflected noun here, in which case the possessor suffix can only refer to
785 the subsequent clause, because the subject of that clause, in turn, is a first person singular. This
786 would make it a counterexample against the widespread assumption about form-meaning corres-
787 pondences we introduced in section 2.1: Structures with clausal subjects should express epistemic
788 or participant-external modality, not ability.¹⁶ We have already seen in the context of the Daakaka
789 example in (43) that the form-meaning correspondences do not appear to be as strict as previously
790 suggested.
- 791 2. Or, cases like this one are an indication that *gonowana* is being reanalyzed as an adverbial marker
792 of possibility rather than an inflected, predicative noun.

793 Apart from participant-internal possibility, *gonowa-* can also express participant-external possibility.
794 In these cases, the possessor is typically a third-person singular, indicating its coreference with the
795 complement clause. The following two examples show cases of circumstantial impossibility – the small
796 size of the pawpaw tree in one case, the dinghy being anchored in the other.

- 797 (81) [*nige gonowa-na* [ta mwalaē]] [*mwaūyope meta ye gagili kalili*]
NEG possibility-3SG.POSS 1INCL.SBJ go.in pawpaw TOP 3SG.SBJ small very
798 ‘one couldn’t really climb that pawpaw, the pawpaw was too small’ (Boneyawa_02AJ_0016)
- 799 (82) [*nige gonowa-na* [se dobi]] [*pana anka wa ye tabe-tabe didi-ni*]
NEG possibility-3SG.POSS 3PL.SBJ go.down because anchor ANA 3SG.SBJ REDUP-pull flow-TR
800 ‘they couldn’t go out to the sea because the anchor was pulling [at the dinghy]’ (Boneyawa_30DP_0018)

801 Deontic possibilities can also be expressed with *gonowa(-na)*, as shown in the following two ex-
802 amples. Example (83) is about the customs and rules associated with the building of canoes. The
803 sentence in (84) concerns the rules of fishing.

- 804 (83) *gonowa-na kabo kowa ku gelu*
ability-3SG.POSS will 2SG 2SG.SBJ board
805 ‘Thus it would be alright for you to board.’ (CanoeBuilding_01BC_0091)
- 806 (84) *huku meta nige laugagayo [gonowa-na [tamowai gaibu ye lau ye*
fishing TOP NEG rule possibility-3SG.POSS person just.like.that 3SG.SBJ go 3SG.SBJ
807 *huku]]*
fish
808 ‘In terms of fishing there are no rules, anybody can go and fish just like that.’ (CanoeBuild-
809 *ing_01BC_0115)*

810 Epistemic possibility is usually expressed by *nuwana*, as mentioned before. One candidate for an epi-
811 stemic interpretation of *gonowa(-na)* is the following example, which comes from a story about an old
812 woman who encounters a freezer for the first time in her life when she goes to the store. As she reaches
813 to take something out of the freezer, she is shocked by the sudden sensation of cold and believes she
814 received an electric shock. Another plausible interpretation here is, however, that *gonowa-* expresses
815 the internal, generic ability of ice to cause an electric shock. We therefore have no unambiguous ex-
816 ample of *gonowa-* expressing epistemic possibility and this meaning might not be part of its semantic
817 range.

- 818 (85) *eh temeta aisi meta [nige gonowa-na temeta pawa ye hai-go] ...*
eh near.AD power near.AD NEG possibility-3SG.POSS near.AD power 3SG.SBJ take-2SG.OBJ
819 ‘Hey, that’s ice! That can’t give you an electric shock ...’ (PowerGotMe_01AQ_39)

¹⁶Technically, we are dealing with a possessor instead of a subject, but functionally, the possessor fills the role of the subject in relation to the predicative noun.

820 A hypothetical use of *gonowa(-na)* in combination with *taba* is attested below. The term *taba* is closely
821 associated with counterfactual and other irrealis contexts:

822 (86) *doha taba tamowai gonowa-na* [doha haedi hali teha unai ye lau-ma]
like IRR person possibility-3SG.POSS like where other side PP.SG 3SG.SBJ go-to.SPKR
823 ‘for instance when a person comes from somewhere’ (AboutDialects_01DP_6)

824 The same combination can also be used for polite questions:

825 (87) *taba gonowa-na* [ku he-kata-gau]
IRR possibility-3SG.POSS G.POSS 2SG.SBJ CAUS-know-1SG.OBJ
826 ‘Could you let me know [how you made your haul]?’ (lit. ‘If you could teach me ...’) (Boney-
827 awa_29CO_0040)

828 4.3 Conclusions

829 In the preceding section, we have argued that *gonowa-* is a predicative noun which forms bi-clausal
830 structures to express possibility. In some cases, its status is ambiguous and we cannot clearly distin-
831 guish between *gonowa-na* as an inalienably possessed, predicative noun in a bi-clausal construction as
832 opposed to a situation where *gonowana* has been reanalyzed as an adverbial particle modifying a single
833 clause.

834 We have shown that *gonowa(-na)* can express a wide range of possibilities, including participant-
835 internal, circumstantial, deontic and hypothetical readings. In addition, epistemic readings cannot be
836 fully excluded based on our data. It is also a high-frequency item of the language: The form inflected for
837 a third person singular possessor *gonowana* alone is at the 99th percentile of token frequencies in the
838 corpus data we used. The form *gonowana* occurs 234 times in the corpus of 150k tokens. In combination
839 with other inflections, the total number of occurrences of (unreduplicated) *gonowa-* is 250. Note that
840 this unreduplicated form almost always expresses possibility. This number is similar to the pronoun
841 *yau* (1SG), which occurs 238 times, the noun *waga* (‘canoe’), which occurs 237 times and is the main
842 topic of several texts, and the aspectual particle *taki* (‘just’), which occurs 256 times. The word *nuwana*,
843 which we have discussed above as a highly grammaticalized expression of epistemic possibility, occurs
844 260 times. The noun *kabi* ‘manner’, which features prominently in expressions of ability, occurs a total
845 of 151 times with various possessors—of those occurrences, 106 are followed by *kata* ‘know’. We can
846 conclude that the frequency of *gonowa-* indicates a highly general use, comparable to some of the most
847 frequent nouns and to some grammatical markers. *Gonowa-* does not, however, express obligation or
848 necessity. Most contexts that are translated with *must* or *have to* involve the morpheme *benə*, which
849 was briefly discussed in examples (55)f.

850 Moreover, *gonowana* can be seen to contrast paradigmatically with *nuwana*, which primarily ex-
851 presses epistemic possibility and has a similar syntactic distribution, and possibly also with *kabi-...kata*
852 as an expression of learned ability. It is hard to assess how many nouns enter into bi-clausal construc-
853 tions similar to *gonowa-*, since there is no formal marking of the syntagmatic relationship between the
854 noun and its complement clause. We are however confident that, apart from the candidates mentioned
855 here, there are few if any other nouns that exhibit similar behaviour. In contrast to English *possible*,
856 *gonowa-* does not appear to compete with a wide range of lexical expressions with a comparable dis-
857 tribution and function. Also, there are no items in the language that are structurally simpler and could
858 replace *gonowa-* in most contexts.

859 In sum, we suggest that *gonowa(-na)* meets the criteria for a highly grammaticalized item, even
860 though it sometimes, maybe always, forms a bi-clausal structure: It has a wide range of meanings, is
861 highly frequent and can be described to be part of a small paradigm. In a typology that is concerned with
862 grammatical markings of possibility regardless of their structural complexity, items such as *gonowa(-na)*
863 should therefore definitely be considered.

864 5 Summary

865 In this article, we have presented a detailed description and analysis of expressions of possibility in the
866 Oceanic languages Daakaka and Saliba-Logea. Most of the empirical observations presented here have
867 not previously been published. Among our observations are cases that demonstrate that the relation
868 between form and function is not as straightforward as sometimes assumed. In particular, participant-
869 internal possibilities can be expressed by structures involving clausal subjects.

870 Further, we have shown that, in both languages, the bi-clausal structures we describe are the most
871 highly grammaticalized ways to express certain types of possibility. This is evidenced by their low
872 semantic specificity, high frequency, and small number of paradigmatically contrasting items. The
873 present study therefore extends the current understanding of modal expressions both in Oceanic lan-
874 guages and cross-linguistically, in that previous studies of modal expressions tend to exclude bi-clausal
875 constructions on the grounds of their structural complexity and, possibly, based on an analysis of the
876 relevant terms as lexical rather than grammatical expressions of modality.

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