

## **Disjunction in Ket**

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**Abstract.** We explore how disjunction is expressed in Ket, an understudied and highly endangered Yeniseian language of Siberia. We show that Ket has multiple strategies of disjunction, which share morphological resources with indefinites and which differ in their scope-taking properties. We present a preliminary analysis and discuss the broader typology, showing that while Ket's system of disjunction resembles those of Sinhala (Indic; Sri Lanka) and Tiwa (Tibeto-Burman; India), it differs from these systems in several respects. We conclude that multiple disjunction strategies appear to be widespread, but show significant variation, and require additional investigation cross-linguistically.

Keywords. semantics; disjunction; Ket

**1. Introduction.** Languages show significant variation in how they encode disjunction (Haspelmath 2007; Dawson 2020). Where languages like English have one main strategy (i.e. *or*) which is used to convey a number of distinct readings, many languages have multiple strategies for forming disjunctions which unambiguously convey particular readings (e.g. Tiwa and Sinhala; Dawson 2020; Weerasooriya 2019). Languages also differ in the morphological and semantic components that they use in building disjunctive meaning. Where some disjunctions are built using dedicated morphology (such as English *or*), others draw on morphological resources used elsewhere in the language. For instance, disjunction in many languages shares morphological resources with indefinites and/or question particles (e.g. Japanese, Tiwa, and Sinhala; citation), while in Cheyenne, disjunctive meanings are built from conjunction and epistemic modality (Murray 2017).

While there is ample evidence of cross-linguistic variation in disjunction, detailed studies of disjunction in a variety of typologically diverse languages are still relatively few. Due to this, we do not have a good understanding of (i) how common different strategies of disjunction are across languages, and (ii) the total space of variation in how disjunctive meanings are encoded. Expanding our typology to address these questions is difficult to do from grammars and other descriptive materials alone, as disjunction is rarely addressed in any detail at all. Further, the semantic distinctions languages make are subtle, and exploring them fully requires both knowledge of what to look for, and familiarity with semantic fieldwork methodologies that allow for these subtle distinctions to emerge.

With this background in mind, we seek to address this gap in a small way by examining disjunction in Ket, a Yeniseian language of Siberia. Ket has been reported as having multiple disjunction strategies (Nefedov 2015), which share resources with indefinites, but no exploration has been made of their different uses. Through a collaboration between formal semanticists with fieldwork experience (O'Rollins and Dawson) and a Ket language expert (Vajda), we probe the semantic differences between these disjunctions, comparing Ket's system to those that have been described in the literature, and presenting a preliminary analysis based on our findings.

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We find that while Ket's system of disjunction resembles those of Sinhala, an Indic language of Sri Lanka, and Tiwa, a Tibeto-Burman language of India, it differs in from these systems in several respects. A key conclusion from this study is that multiple disjunction strategies appear to be relatively widespread in the world's languages, but show significant variation, and need much further investigation cross-linguistically.

The paper is structured as follows. We first introduce relevant background on the Ket language, including previous description of disjunction in Ket (§2). We then turn to our own investigation in §3, outlining our methodology and findings. In §4, we compare Ket's system of disjunction to languages with similar systems, presenting a preliminary analysis and noting key differences. We conclude in §5.

**2. Background on Ket.** Ket is a language spoken today by probably less than 30 native speakers, predominantly found in Kellog Village on the Yelogui River (Vajda 2024, Eberhard et al. 2024). It's a polysynthetic Yeniseian language (or member of the Dene-Yeniseian language family; Fortescue & Vajda 2022). While there is a variety of descriptive work on Ket (e.g. Werner 1997, Vajda 2000, Vajda 2004, Nefedov 2015), there is, to our knowledge, very little work in formal semantics.

In his work on clause linkage in Ket, Nefedov (2015) provides a brief description the multiple strategies for disjunction in the language. Specifically, Nefedov describes  $q\bar{o}d$  and  $t\bar{a}m$  as simple disjunction, providing the following examples in (1) and (2).

- (1) kīd dur'l be'k [**qōd** du-den **qōd** du-es-a-ij ]
  this child always or 3-weep or 3-shout-PRES-ACTIVE
  'This child always either cries or shouts.' (Nefedov 2015:105)
- (2) kīd dur'l be'k [tām du-den tām du-es-a-ij] this child always or 3-weep or 3-shout-PRES-ACTIVE

  'This child always either cries or shouts.' (Nefedov 2015:109)

Nefedov also describes what he calls "choice-aimed disjunction" (i.e. alternative question or interrogative disjunction), which uses the question particle  $b \wedge n d u$ . An example is provided in (3).

(3)  $\bar{y}t$  **bandu** koled-di-ŋa daŋ-a-den, **bandu** assano daŋ-a-den?

1PL QUEST town-INAN-DAT 1PL-PRES-go QUEST hunt.ANOM 1PL-PRES-go

'Are we going to the town or are we going hunting?'

(Nefedov 2015:110)

<sup>&</sup>lt;sup>1</sup> Nefedov also describes the Russian loanword *ili* as a monosyndetic disjunctive strategy. (In contrast,  $q\bar{o}d$  and  $t\bar{a}m$  are bisyndetic.) We set this borrowed strategy aside here, leaving it as an area for future research.

<sup>&</sup>lt;sup>2</sup> Ket examples are presented with a macron for high-even tone  $[\bar{a}]$ , an apostrophe for laryngealized tone [a'], and a double vowel for long rising-falling tone [aa]. The Ket back vowels  $[ui, \bar{x}, \Lambda]$  are transcribed with IPA symbols rather than by using the mid-vowel symbols  $[i, \bar{a}]$  as had been done in some of the sources cited. Note that we have modified Nefedov's examples to match our transcription and glossing systems. Glossing abbreviations are DAT 'dative', IMP 'imperative', INAN 'inanimate', INDEF 'indefinite', PL 'plural', POSS 'possessive', PRES 'present', PST 'past', QUEST 'question', SG 'singular', SUBJ 'subject'.

None of the morphemes used to form these disjunctions are restricted to disjunction. Both  $q\bar{o}d$  and  $t\bar{a}m$  are used with indeterminate pronouns (i.e. wh-words) to form indefinites (Vajda 2004, Nefedov 2015). Similarly, bAndu is a question particle word that is used to form polar questions.<sup>3</sup>

(4) baad **bandu** du-ik-n-bes?
old.man QUEST 3-here-PST-move
'Has the old man (really) come?'
(Nefedov 2015:62)

To our knowledge there is no other work that explores disjunction in Ket, either descriptively or formally, including any semantic contrasts between  $q\bar{o}d$  and  $t\bar{a}m$ . While Nefedov presents the minimal pair in (1) and (2), he does not comment on their distribution or on any meaning differences between the two. This project aims to fill that gap by examining  $q\bar{o}d$  and  $t\bar{a}m$  in more detail, and placing disjunction in Ket in the emerging typology of disjunction cross-linguistically.

**3. Exploring disjunction in Ket.** In this section, we present our findings, showing that there is a semantic and pragmatic contrast between  $q\bar{o}d$  and  $t\bar{a}m$  disjunctions. Specifically, we show that the two disjunctions behave differently in their scopal interactions with certain operators.

The data and generalizations presented here come from a collaboration between the three authors, two of whom are formal semanticists with fieldwork experience and one of whom (Edward Vajda) is a Ket language expert, and Valentina Andreevna Romanenkova (born 1946), a speaker of Southern Ket, whose Ket name is Taŋdalaŋ. The data were collected during elicitation sessions over Skype between Vajda and Romanenkova, during 2023-2024, based on elicitation prompts prepared by the other two authors. These prompts included disambiguating discourse contexts in the style of Matthewson 2004. Elicitation tasks included translation from Russian to Ket in context, and felicity judgments.

In line with Nefedov's findings, reported in  $\S 2$  above, our consultant uses both  $q\bar{o}d$  and  $t\bar{a}m$  to create disjunctive meanings, as illustrated in (5a) and (5b).

- (5) a. hur'p dup [qod jim qod jeel ]
  son he.eats or nuts or berries

  'The son eats nuts or berries. (It doesn't matter which.)'
  - b. hur'p dup [tām jīm tām jeel]
     son he.eats or nuts or berries
     'The son eats nuts or berries. (I don't know which.)'

While  $q\bar{o}d$  and  $t\bar{a}m$  are both disjunctive, however, they are not fully interchangeable. Where  $t\bar{a}m$  can be used in a variety of different contexts, our consultant expresses a strong preference for  $q\bar{o}d$  in irrealis contexts (e.g. future). Further, as the translations given for (5a) and (5b) reflect,  $q\bar{o}d$  regularly gives rise to indifference inferences, while  $t\bar{a}m$  most often gives rise to ignorance inferences. These differences lead to very different readings, as further exemplified in (6) and (7). Example (6), with  $q\bar{o}d$  disjunction, conveys that the speaker's father is in the habit of fishing regardless of whether it rains or is sunny – the weather doesn't matter. In contrast, (7), with  $t\bar{a}m$ 

<sup>&</sup>lt;sup>3</sup> Nefedov describes  $b_{\Lambda}ndu$  as a variant of the question particle  $\bar{u}$ . It is possibly morphologically decomposable into the question particle plus negation.

disjunction, conveys that the speaker's father either goes fishing in the rain or in the sunshine, but the speaker isn't sure which.

- (6) ōp isqo oyotn [qōd uletta qōd isot] father fishing he.goes or it.rains or sunshine 'Father goes fishing whether it rains or is sunny.'
- (7) ōp isqo oyotn [tām uletta tām iyot ] father fishing he.goes or it.rains or sunshine 'Father goes fishing either when it rains or when it is sunny.'

One way to understand the difference between (6) and (7) is in terms of disjunction scope (Rooth & Partee 1982; Larson 1985; Winter 2002; Dawson 2020). Assuming an operator that leads to the habitual interpretation of these sentences, the disjunction in (6) can be understood to scope under this habitual operator, while in (7) it scopes above it. That is, (6) conveys that the speaker's father's habit is: fishing, rain or shine. In contrast, (7) conveys that the speaker's father's habit is fishing in the rain, or his habit is fishing in sunshine.

The same scope distinction emerges in other contexts too, such as with the intensional verb qo'j 'wish'. As shown in (8),  $q\bar{o}d$  can only receive a narrow scope reading under qo'j: it is judged felicitous if both disjuncts are compatible with the subject's wishes, but infelicitous if only one disjuct is. In contrast,  $t\bar{a}m$  can (and must) receive a wide scope reading with respect to qo'j, as shown in (9: it is judged felicitous if only disjunct is wished for, but infelicitous if the subject wishes for either.

- (8) hup=da qo'j [qōd tultet qōd toqtat] son=POSS wish or swim or run 'Her son wishes to swim or run.'
  - ✓ He wants to do either. He doesn't care which.
  - **X** He wants to do one, but not the other. The speaker isn't sure which.
- (9) hup=da qo'j [tām tuiltet tām toqtat] son=POSS wish or swim or run 'Her son wishes to swim or run.'
  - **X** He wants to do either. He doesn't care which.
  - ✓ He wants to do one, but not the other. The speaker isn't sure which.

A similar pattern emerges in imperatives, as shown in (10) and (11). Here again,  $q\bar{o}d$  is only judged felicitous on a narrow scope reading of disjunction, on which the speaker doesn't care which book is brought, while  $t\bar{a}m$  is only judged felicitous on a wide scope reading in which the speaker is either demanding one book or the other. (For discussion of disjunction scope in imperatives, see Dawson 2022.)

- (10) ab-Aŋa iunosin jesla ases [qōd hu'n da=bindet qōd hu'p d=bindet] 1SG-DAT bring.IMP.PL book which or daughter she=read.it or son he=read.it 'Bring me a book that either she read or he read.'
  - ✓ The speaker doesn't care which one read the book; he will be satisfied with either.
  - X The speaker is asking for a particular book, can't remember which one read it.
- (11) ab-Aŋa iunosin jesla ases [tām hu'n da=bindet tām hu'p d=bindet] 1SG-DAT bring.IMP.PL book which or daughter she=read.it or son he=read.it 'Bring me a book that either she read or he read.'
  - X The speaker doesn't care which one read the book; he will be satisfied with either.
  - ✓ The speaker is asking for a particular book, can't remember which one read it.

Finally, while we get an apparent split in scope in the contexts above,  $q\bar{o}d$  and  $t\bar{a}m$  disjunctions behave the same with respect to negation. Specifically, neither  $q\bar{o}d$  nor  $t\bar{a}m$  can scope under clausemate negation. This is illustrated in (12) and (13), which show that neither disjunction is judged felicitous when neither disjunct holds; instead, both get a reading on which one disjunction or the is negated.

- (12) hur'p bīn dūp [qōd na'n qōd hilans] son no he.eats or bread or sweet.thing
  - 'The son won't eat bread or he won't eat sweet things. (I don't care which.)'
  - **X** The son eats neither bread nor cake.
  - ✓ The son eats one, but not the other.
- (13) hur'p bīn dūp [tām na'n tām hilans son no he.eats or bread or sweet.thing
  - 'The son won't eat bread or he won't eat sweet things. (I don't know which.)'
  - X The son eats neither bread nor cake.
  - ✓ The son eats one, but not the other.

To convey the equivalent of a narrow scope reading under negation, a strategy of conjoining (via juxtaposition) two negated elements is used, as shown in (14).<sup>4</sup>

(14) hu'p bīn dūp [bīn na'n bīn hilans son no he.eats no bread no sweet.thing 'The son eats neither bread nor sweet things.'

Note that while (12) and (13) behave identically in their scope with respect to negation, they differ pragmatically. As described above, (12) generally favors a reading on which the speaker is indifferent to which disjunct makes the proposition true, while (13) favors a reading on which the speaker doesn't know (but perhaps cares).

<sup>&</sup>lt;sup>4</sup> Note that a wide scope reading of disjunction over negation entails a narrow scope reading. We believe  $q\bar{o}d$  and  $t\bar{a}m$  disjunctions are rejected in such contexts due to pragmatic competition with (14).

In summary,  $q\bar{o}d$  and  $t\bar{a}m$  both express disjunction, but differ in their pragmatics and scope. Where  $q\bar{o}d$  conveys indifference and scopes under habitual and intensional operators,  $t\bar{a}m$  conveys ignorance and scopes over habitual and intensional operators. Neither  $t\bar{a}m$  nor  $q\bar{o}d$  can scope under clausemate negation, each receiving a wide scope reading, but maintaining their pragmatic distinction. While these generalizations are robust in our data, further work is needed to understand how disjunction interacts with other operators, such as with generalized quantifiers.<sup>5</sup>

**4. Cross-linguistic comparison.** In the previous section, we saw that Ket's two non-interrogative disjunctions differ in their scope taking behavior and in their pragmatics. In this section, we compare to two other languages that have similar systems: Sinhala (Indic) and Tiwa (Tibeto-Burman). Like Ket, both languages have two primary strategies for forming (non-interrogative) disjunction, and these differ in their scope taking behavior and pragmatics. Additionally, also like Ket, disjunction in both languages shares (to some degree) morphology with indefinites.

What we will see through this comparison is that Ket's  $t\bar{a}m$  disjunction patterns very closely with Sinhala  $d\partial$  and Tiwa khi, though we see variation in whether these particles are used to form questions. Similarly, Ket's  $q\bar{o}d$  disjunction patterns closely with Sinhala hari, though shares some pragmatic features with Tiwa ba. In the remainder of this section, we discuss these two broad types of disjunction in turn, and present a preliminary analysis of  $t\bar{a}m$  and  $q\bar{o}d$ , drawing on existing analyses in the literature.

4.1. WIDEST SCOPE DISJUNCTIONS. Ket  $t\bar{a}m$  shares key behaviors with Sinhala  $d_{\theta}$  and Tiwa khi disjunctors (Dawson 2019, 2020, Wathugala & Dawson 2019, Weerasooriya 2019). In all three languages, these disjunctions take widest scope over all other operators. This was shown for  $t\bar{a}m$  in §3, with habituals, intensional verbs, imperatives, and clausemate negation. In addition to taking widest scope, these disjunctions also trigger strong ignorance inferences. That is, they strongly convey that the speaker does not know which disjunct makes the proposition true.

Sinhala  $d\partial$  and Tiwa khi are used to form indefinite pronouns through affixation to an indeterminate pronouns (i.e. wh-words; Hagstrom 1998, Dawson 2020). The scope-taking and ignorance effects founds with  $d\partial$  and khi indefinites in Sinhala and Tiwa mirror their disjunctive counterparts (Slade 2015, Dawson 2018, Wathugala & Dawson 2019). As mentioned above in §2, Ket's  $t\bar{a}m$  is also used to form indefinites through suffixation to an indeterminate pronoun, as shown in example (15), where  $t\bar{a}m$  is suffixed to bisep 'where'.

(15) **tām biseŋ** d-esomdaq INDEF where 1SG.SUBJ-lay.it.down 'I lay it down somewhere.'

Further systematic work is needed to explore how  $t\bar{a}m$  indefinites behave scopally and pragmatically to see if these parallels between disjunctions and indefinites hold for Ket too.

There is an extensive literature<sup>6</sup> arguing for a choice functional analysis for particles like  $d\partial$  and khi which can be readily adopted for Ket  $t\bar{a}m$ . On this analysis,  $t\bar{a}m$  introduces a choice function variable that ranges over a set consisting of the disjuncts, as shown in (16). (In the case

<sup>&</sup>lt;sup>5</sup> At present the syntax and semantics of universal quantification in Ket is poorly understood. Further investigation into how quantification is done is necessary in order to explore its interaction with disjunction.

<sup>&</sup>lt;sup>6</sup> See Hagstrom 1998, Cable 2010, Slade 2011, Dawson 2019, 2020, and Wathugala & Dawson 2019.

of indefinites, pending results from an investigation into  $t\bar{a}m$  indefinites in Ket, it would range over a set introduced by the indeterminate pronoun.)

(16) 
$$[\![t\bar{a}m\ A\ t\bar{a}m\ B]\!]^g = f(\{[\![A]\!], [\![B]\!]\})$$

To derive the obligatory wide-scope readings of these disjunctions, the choice function variable is existentially closed high in the structure, allowing it to outscope other operators. Note that further investigation is needed to determine exactly where in the structure this existential closure takes place (e.g. at a finite clause boundary, as in Tiwa; Dawson 2020). This existential closure, combined with a choice functional semantics, leads to ignorance implicatures (Dawson 2020).

While this analysis can account for the data presented in §2 and §3 above, further investigation into the semantics of  $t\bar{a}m$  disjunctions is also required to test two key predictions of such an analysis. The first concerns whether  $t\bar{a}m$  disjunctions violate what (Brasoveanu & Farkas 2011) dub the Binder Roof Constraint, as they are predicted to on a choice functional analysis (see Charlow 2014 and Dawson 2020 for discussion of this constraint specifically for disjunction). The second concerns the status of the ignorance inferences associated with  $t\bar{a}m$  disjunctions. On the analysis suggested here, such inferences are implicated rather than part of their core semantics. This is yet to be shown empirically. Note that at least in Tiwa, ignorance implicatures associated with wide-scope disjunctions are implicated (Dawson 2020).

One point that may bear on the status of the ignorance inference concerns an additional reported use of the particle  $t\bar{a}m$  as a marker of epistemic possibility. Specifically, Nefedov (2015:102) notes that  $t\bar{a}m$  can be used beyond disjunctions and indefinites as an adverb meaning 'probably, perhaps', providing the example in (17).

(17) baaam tām dadijiyoвon old.woman probably she.went.crazy

'The old woman has probably gone crazy.' (Nefedov 2015:103)

This independent modal use is not attested for either Sinhala  $d\partial$  or Tiwa khi, showing that while the three particles have many shared behaviors, they do not have identical distributions and uses. This in turn may suggest a different underlying semantics for  $t\bar{a}m$  that results in similar behaviors.

One possible alternative to the choice functional analysis is to treat  $t\bar{a}m$  disjunctions as conjunctions (via juxtaposition) of modalized disjuncts, as Zimmermann (2001) suggests for disjunctions in English and more broadly. Such an analysis would easily explain the independent use of  $t\bar{a}m$  as a marker of epistemic possibility. If the ignorance inferences associated with  $t\bar{a}m$  disjunctions turn out to not be defeasible as they are in Tiwa, this would lend further support to an analysis of  $t\bar{a}m$  as an epistemic modal.

If this epistemic analysis turns out to be correct,  $t\bar{a}m$  disjunctions would be more similar to disjunction in Cheyenne, rather than Sinhala or Tiwa. As Murray (2017) shows, disjunction in Cheyenne is transparently built from conjunction and a marker of epistemic modality. Such an analysis would, however, fail to easily explain the link between  $t\bar{a}m$  disjunctions and indefinites that the choice functional analysis is able to handle straightforwardly. Additional work would also be needed to derive the wide scope behavior of  $t\bar{a}m$  disjunctions on this analysis.

Finally, Sinhala  $d\vartheta$  differs from both Tiwa  $kh\acute{t}$  and Ket  $t\bar{a}m$  in being used as a question particle to form polar questions, wh-questions, and alternative questions (Kishimoto 2005; Slade 2011). Neither Tiwa  $kh\acute{t}$  nor Ket  $t\bar{a}m$  have this function. In particular, the two languages have different strategies for forming alternative questions, where we might expect a disjunctive particle like  $kh\acute{t}$  or  $t\bar{a}m$  to occur. Specifically, Tiwa has a dedicated alternative question disjunctor na (Dawson 2020), while Ket uses the question particle  $b\land ndu$ . This was shown above in §2, with an example from Nefedov (2015). Our own data confirms this. As (18) shows, our consultant uses  $b\land ndu$  to form an alternative question.

(18) ū kasqansa osturyanbes **bandu** kuusnbes? you speak in.Ket QUEST in.Russian 'Do you speak Ket, or Russian?'

Interestingly, our consultant reports that  $q\bar{o}d$  and  $t\bar{a}m$  cannot be used in questions at all. Further work needed to determine whether this judgment is due to a grammatical constraint or some pragmatic concern. Note that when asked about a context that favors a polar question reading of a disjunction, our consultant still rejects  $q\bar{o}d$  and  $t\bar{a}m$  in favor of a  $b\wedge ndu$  question with differing intonation from (18).

To summarize,  $t\bar{a}m$  disjunctions show similar scope behavior to Sinhala  $d\partial$  and Tiwa khi disjunctions: all three take obligatory wide scope over higher operators. Like these disjunctions,  $t\bar{a}m$  also conveys a strong sense of speaker ignorance. The three particles differ in their broader distribution, however, as summarized in Table 1.

	disjunction	indefinites	epistemic modal	questions
Ket tām	✓	✓	✓	Х
Sinhala $d\partial$	1	✓	×	✓
Tiwa <i>khí</i>	✓	$\checkmark$	×	X

Table 1. Distribution of tām, də, and khí

Selecting an analysis that explains the shared behaviors of these three particles while also accounting for their different uses beyond disjunction and indefinites requires further investigation.

4.2. VARIABLE AND NARROW SCOPE DISJUNCTIONS. In §3, we saw that in contrast to  $t\bar{a}m$  disjunction,  $q\bar{o}d$  disjunction in Ket takes narrow scope in habituals, under intensional verb qo'j 'wish', and in imperatives. Like Ket, both Sinhala and Tiwa have disjunctions that similarly can scope under other operators. Specifically, Tiwa ba disjunctions must scope under all operators that are higher in the structure (Dawson 2019, 2020), while Sinhala hari shows different scope behaviors with different operators (Weerasooriya 2019).

In several respects, Ket's  $q\bar{o}d$  disjunction patterns more closely with Sinhala *hari* than Tiwa *ba*. First, both  $q\bar{o}d$  and *hari* are also used to form indefinite pronouns, similarly to the wide scope disjunction particles discussed above. An example of a  $q\bar{o}d$  indefinite in Ket is provided in example (19), showing that  $q\bar{o}d$  can form an indefinite 'anywhere' in conjunction with *biseq* 'where'.

(19) **qōd biseŋ** esandaq INDEF where lay.it.down.IMP 'Lay it down anywhere.'

In contrast, Tiwa ba is only used in disjunction (Dawson 2020).<sup>7</sup> In addition to its distribution in disjunction and indefinites,  $q\bar{o}d$  also patterns with hari in its scopal behavior, which is described in some detail by Weerasooriya (2019). Like  $q\bar{o}d$ , hari must take narrow scope with respect to intensional operators. Similary, both  $q\bar{o}d$  and hari resist scoping under clausemate negation.

While  $q\bar{o}d$  clearly patterns with hari in terms of scope and its clear morphological link to indefinites, further work is needed to compare their pragmatic effects. Both Slade (2011) and Weerasooriya (2019) report ignorance effects for hari disjunctions (and indefinites). While Weerasooriya (2019) discusses free choice effects within the scope of intensional operators, he does not discuss the indifference readings that are so salient for  $q\bar{o}d$  disjunctions in Ket even in the absence of intensional operators (e.g. in example (12) above). Instead, these indifference readings are more similar to those found with Tiwa ba (Dawson 2020).

While much further work is needed to provide a full analysis of  $q\bar{o}d$  disjunction in Ket, we assume that  $q\bar{o}d$  has a basically existential semantics in both disjunction and indefinites. Specifically, we draw on approaches that treat disjunctions as fundamentally alternative-denoting (Alonso-Ovalle 2006, i.a.). On such approaches, the alternatives introduced by disjunction are either bound by an operator higher in the structure, or subject to existential closure, yielding a disjunctive reading. We assume  $q\bar{o}d$  itself introduces existential force. A key benefit of this analysis is that it easily extends to  $q\bar{o}d$  indefinites: the indeterminate pronoun  $q\bar{o}d$  attaches to likewise denotes a set of alternatives (Shimoyama 2006, i.a.). While further work is needed to ensure  $q\bar{o}d$  disjunctions receive only the scope readings attested, Weerasooriya (2019) does provide an analysis of the PPI effects of Sinhala hari on an existential quantifier account that can be extended to  $q\bar{o}d$ .

Finally, the pragmatic effects that  $q\bar{o}d$  disjunctions give rise to could arise due to domain conditions placed on the scope of  $q\bar{o}d$ 's existential force. Kratzer & Shimoyama (2002) and Alonso-Ovalle & Menéndez-Benito (2010) show that domain-widening or anti-singleton constraints can lead to indifference inferences in existential quantification (as well as ignorance inferences). The details of such an analysis remain to be worked out, particularly in ensuring that indifference inferences are derived rather than ignorance ones. One potential avenue for this could be through competition with  $t\bar{a}m$  disjunctions.

**5. Conclusion.** In this paper, we have provided a description of how Ket forms disjunctions. Building on initial description by Nefedov (2015), we have shown that Ket has multiple disjunctions that differ in their semantic and pragmatic behavior. Specifically, Ket's  $t\bar{a}m$  disjunctions take wide scope over other operators and are associated with speaker ignorance, while  $q\bar{o}d$  disjunctions scope under intensional operators but above clausemate negation, and convey speaker indifference. Both morphemes are further used to form indefinites, and  $t\bar{a}m$  has an additional use as a marker of epistemic possibility.

The contrasts that Ket makes with its disjunctions are remarkably similar to the contrasts made in several unrelated and geographically distant languages, namely Sinhala and Tiwa. This finding suggests that this sort of multiple-disjunction system is potentially widespread in the

<sup>&</sup>lt;sup>7</sup> Tiwa has a separate particle *pha* that is only used to form indefinites and which behaves similarly to Sinhala's *hari* indefinites in scope and pragmatics (Dawson 2020).

world's languages. We compared  $t\bar{a}m$  and  $q\bar{o}d$  to disjunctions in Sinhala and Tiwa, showing that while there are striking similarities, the systems do show some differences requiring further investigation. In-depth studies of disjunction in a variety of languages with similar systems will likely reveal further distinctions, helping to refine the emerging typology of disjunction in the world's languages.

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