



Conjugation class and transitivity in Kipsigis

Maria Kouneli, University of Leipzig
maria.kouneli@uni-leipzig.de

1 Introduction

- Research on conjugation classes and theme vowels has mostly focused on Indo-European languages, even though they are not restricted to this language family (see Oltra-Massuet 2020 for an overview).
- The goal of this talk is to investigate the properties of inflectional classes in Kipsigis, a Nilotic language spoken in Kenya:
 - in the nominal domain, the language possesses a variety of thematic suffixes with many similarities to Romance theme vowels; the theory in Oltra-Massuet & Arregi (2005) can account for their distribution
 - in the verbal domain, the language has two conjugation classes, which I will argue spell out little *v*, and are closely related to argument structure, especially the causative alternation
- Recent syntactic approaches to the causative alternation treat it as a Voice alternation:
 - the causative and anticausative variants have the same *v*P (event) layer, but differ in the presence vs. absence of an external argument-introducing Voice head (e.g., Marantz 2013, Alexiadou et al. 2015, Wood 2015, Kastner 2016, 2017, 2018, Wood & Marantz 2017, Nie 2020, Tyler 2020).

- (1) a. The cup **broke**. *Anticausative*
b. Mary **broke** the cup. *Causative*

- I show that the causative alternation in Kipsigis cannot be (just) a Voice alternation: (in)transitivity in the language is calculated at the little *v* level for most verbs that participate in the alternation.

Roadmap:

- 2: Inflectional classes in Kipsigis
- 3: Theories of the causative alternation (with a focus on morphology)
- 4: More on the causative alternation in Kipsigis
- 5: The challenge for Voice theories
- 6: Conclusion

- There are also nouns without/with a zero thematic suffix, which control allomorphy on the secondary suffix:

(5) $\eta\text{ó:k-ta} \rightarrow \eta\text{ó:k-tá}$
 dog-SEC
 ‘dog’

- Thematic suffixes do not have any semantic content and do not play a role in the syntax.
- The language has a variety of plural affixes, and the choice of plural affix (partially) depends on the thematic suffix that a noun has in the singular (e.g., nouns with an *-i* theme vowel take the *-is* plural suffix and athematic nouns usually take the *-wa* plural suffix). This indicates that thematic suffixes are associated with declension class in the language.⁴
- In Kouneli (2020), I extend Oltra-Massuet & Arregi’s (2005) analysis of Spanish theme vowels to Kipsigis, with one small modification:
 - I argue that theme nodes are added post-syntactically
 - For Spanish, Oltra-Massuet & Arregi (2005) suggest that only one theme node is spelled out and that theme node is the highest one below Num
 - I argue that in Kipsigis, it is the theme node attached to Num that is spelled out (thematic suffixes follow the number suffix in Kipsigis, but precede it in Spanish)
 - I tentatively suggest that there is cross-linguistic variation in the choice of the theme node that is pronounced

2.3 Conjugation classes in the verbal domain

- All verbs in Kipsigis belong to one of two conjugation classes, called Class I and Class II in the Nilotic literature (Dimmendaal 1983).
- The difference between the two conjugation classes lies in: the length of the subject prefix, the Aspect allomorph, and the tonal melody of the verb.

Non-past imperfective conjugation paradigm:

(6)	Class I verb <i>tʃam</i> ‘like’ <u>1SG: á-tʃám-é</u> 2SG: í-tʃám-é 3: ø-tʃám-è 1PL: kí-tʃám-é 2PL: ó-tʃám-é	(7)	Class II verb <i>kat</i> ‘greet’ <u>1SG: âr-kàt-í</u> 2SG: îr-kàt-í 3: í-kàt-ì 1PL: kí:-kàt-í 2PL: ô:-kàt-í
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⁴According to Creider & Creider (1989), thematic suffixes have historically evolved from case markers in Kalenjin.

- There is no obvious thematic vowel associated with the two conjugation classes, but Class II contains a prefixal element, possibly an empty mora.⁵
 - The subject agreement prefix is lengthened.
 - In 3rd person, there is an *i-* prefix that is not subject to regular vowel coalescence rules. The vowel [i] is the standard epenthetic vowel in the language.
- (8) a. ka-ɪ-tʃam → k[ɛ:]tʃam
 PST-2SG-like
 ‘you liked’
- b. ka-ɪ-ka:t → k[ai]ka:t
 PST-CL2-greet
 ‘he/she greeted’
- Dimmendaal (1983) argues that Class II has evolved from a Proto-Nilotic causative prefix *i.
 - Moraic affixes are widespread in Nilotic languages (Trommer & Zimmermann 2014, Trommer 2015).
- Further research is needed to determine whether the moraic prefix is enough to account for all differences between the two classes (e.g., tonal differences may follow from the presence of an additional mora, but it is not clear whether aspect allomorphy can be explained).
 - According to Toweett (1979), about 60% of Kipsigis verbs alternate between Class I and Class II, with intransitives (anticausatives) in Class I and transitives (causatives) in Class II.
 - The alternation is fully productive: derived verbs participate, as well as loanwords.
 - For those verbs that alternate, there is an additional phonological difference between the two classes: if the vowel of the last syllable of the verb is short in Class I, it is lengthened in Class II.

- (9) a. Kà-∅-bét ηó:ktà.
 PST-3-get.lost dog.NOM
 ‘The dog got lost.’
- b. Kà-∅-í-bê:t Kíbê:t ηó:ktá.
 PST-3-CL2-get.lost Kibeet.NOM dog
 ‘Kibeet lost the dog.’

⁵Dimmendaal (1983) argues that what I call an empty mora in Class II is actually an *i-* prefix across Nilotic. While it is true that we find an *i-* vowel in some cells of the paradigm in Kipsigis (e.g., 3rd person of some TAM combinations or the imperative), what seems to be present in other cells is a vocalic slot, and not necessarily an *i-*.

- If the verb already has a long vowel in Class I, no change occurs.

- (10) a. Kà-∅-ɪ́ɛːt Kíplàngàt. *Anticausative*
 PST-3-awaken Kiplangat.NOM
 ‘Kiplangat woke up.’
- b. Kà-∅-í-ɪ́ɛːt Kíbê:t Kíplàngàt. *Causative*
 PST-3-CL2-awaken Kibeet.NOM Kiplangat
 ‘Kibeet woke Kiplangat up.’

- More examples from my fieldnotes that participate in the Class I - Class II alternation: *sap* ‘to heal’, *tɔt* ‘to rot’, *tʃɔt* ‘to melt’, *tʃʊs* ‘to deflate’, *nur* ‘to soak’, *pɪt* ‘to grow’.

- All de-adjectival verbs take part in the alternation.

- (11) a. Kà-múr-í:t ɪ̀ŋgóríjè:t.
 PST-dirty-V cloth.NOM
 ‘The cloth got dirty.’
- b. kà-í-mùr-í:t Kíbê:t ɪ̀ŋgòrái:k.
 PST-CL2-dirty-V Kibeet.NOM clothes
 ‘Kibeet got the clothes dirty.’

- The Class I - Class II distinction is sometimes associated with slightly irregular meanings. So, we have the verb *kɔnɔr*, which means ‘to keep’ in Class I, but ‘to dedicate’ in Class II.
- About 40% of verbs, however, do not alternate between Class I and Class II: they occur only in one of the two classes.
 - Most verbs in this category are Class I (transitive and intransitive).
 - Toweett (1979) notes that out of 714 verbs in his sample, there are 60 non-alternating Class II verbs: 40 transitive and 20 intransitive.

Interim summary: Class I is unmarked, and Class II contains a prefix. Verbs that alternate have their intransitive variant in Class I, and their transitive variant in Class II. Non-alternating verbs can belong to either class irrespective of transitivity, but most verbs in Class II are transitive.

2.4 Morphological classes in other Nilotic languages

- Dimmendaal (1983) provides an overview of the Class I - Class II distinction in the Nilotic family, which comprises three branches: Southern (Kalenjin, Datooga-Omotik), Eastern (e.g., Turkana, Maa), and Western (e.g., Dinka, Dholuo).

- He argues that it has evolved from a Proto-Nilotic causative prefix *i, with the causative semantics productively used only in the Kalenjin branch of Southern Nilotic (e.g., Kipsigis).⁶
- For the rest of the Nilotic languages, he identifies at least two stages:
 - **Eastern Nilotic** (with the exception of Bari): he argues that the distinction is purely morphological, with relics of the causative semantics:
 - * there are a couple of verbs that alternate (but these are very rare)
 - * most verbs in Class II are transitive (but intransitives also exist)
 - * most verbs in Class II are eventive (but statives also exist)
 - * most languages have developed a new causative prefix, but while in some languages (e.g., Turkana) it can attach to any verb, in others (e.g., Maa dialects), it can only attach to Class I verbs
 - **Western Nilotic** (and Bari): the distinction is mostly lost; prosodic classes have emerged in some of these languages.

3 Theories of the causative alternation (with a focus on morphology)

- I cannot do justice here to the vast literature on the causative alternation (see Schäfer 2009, Tubino-Blanco 2020 and references therein), but a major question in research in this area is the relationship between the two variants in (1-a) and (1-b).
- In most Distributed Morphology theories of the alternation, the assumption is that both the causative and the anticausative variant are derived from a common base, which minimally includes the root.
- Most of these theories also assume an architecture in which there are (at least) two heads above the root: little *v* (responsible for verbalizing roots and introducing event semantics) and Voice (responsible for introducing the external argument) (Harley 2013, Legate 2014 a.o.).
- But there are differences in what happens above the root:
 - in flavors of little *v* theories (e.g., Folli & Harley 2005, Pylkkänen 2008, Key 2013, Harley 2017), there are different types of little *v* heads which introduce (anti)causative semantics (e.g. v_{cause} and v_{become}). In variants of this approach, there are also dedicated functional Caus heads.
 - in Voice theories (e.g., Alexiadou et al. 2015), there are no different types of little *v*'s; rather, the causative and anticausative variants are the same at the *v*P level, but they differ in the type of Voice head they merge with. (Anti)causative semantics are read off the structural configuration.

⁶Interestingly, this prefix is the only argument-structure-related prefix in Nilotic, with all other morphology being suffixal. Dimmendaal (1983) shows that Nilo-Saharan languages (beyond Nilotic) are mostly prefixal and also show a similar causative prefix. So, he tentatively suggests that it is possible for this to be an old Nilo-Saharan causative marker.

4.1 The causative suffix *-si*

- Some verbs not only change from Class I to Class II, but they also take a causative suffix *-si*.

- (15) a. Kà-∅-já:m-já pà:ndè:k.
PST-3-dry-PL maize.nom
'The maize dried.'
- b. Kà-∅-í-jà:m-sì Tʃé:bê:t/ àsí:stà pà:ndé:k.
PST-CL2-3-dry-CAUS Cheebet.NOM/ sun.NOM maize
'Cheebet/ the sun dried the maize.'
- (16) a. Kà-∅-ɲét Kíbê:t.
PST-3-tire Kibeet.NOM
'Kibeet got tired.'
- b. Kà-∅-í-ɲè:t-sì kà:sì:t Kíbê:t.
PST-3-CL2-tire-CAUS work.NOM Kibeet
'Work got Kibeet tired.'

- Other (potential) unaccusatives in my fieldnotes that are Class I and form their causative by Class II + *si* are: *ilis* 'to drown/sink', *je* 'to break', *nun* 'to rot', *je:t* 'to grow', *sa* 'to dry', *nerɛ:tʃ* 'to get angry', *me* 'die'.
- The causative suffix *-si* also appears on some (potential) unergative verbs.

- (17) a. ∅-rì:r-é là:kwè:t.
3-cry-IPFV child.NOM
'The child is crying.'
- b. Kà-∅-í-rì:r-sì Kíbê:t là:kwé:t.
PST-3-CL2-cry-CAUS Kibeet.NOM child
'Kibeet made the baby cry.'
- (18) a. Ka-∅-i-twá:l Kíbê:t.
PST-3-CL2-jump Kibeet.NOM
'Kibeet jumped.'
- b. Ka-∅-i-twa:l-si Kíbê:t.
PST-3-CL2-jump-CAUS Kibeet.NOM
'Kibeet made him/her jump.'

- It only appears on 2 transitives: *la:ɲ* 'to climb' and *si:r* 'to pass'. These are Class I in their transitive use.

- (19) a. Kà-∅-lá:ɲ Kíplàngàt kêtít.
PST-3-climb Kiplangat.NOM tree
'Kiplangat climbed a tree.'

- b. Kà-∅-í-lá:ŋ-sì Kíbê:t Kiplàngàt kêtít
 PST-3-CL2-climb-CAUS Kibeet.NOM Kiplangat tree
 ‘Kibeet made Kiplangat climb the tree.’

- The suffix *-si* is not productive: it depends on the root.
- When it is present on unergatives and transitives, the causative suffix behaves as a VP-selecting (as opposed to Voice-selecting) causative (Pylkkänen 2008, Harley 2017).
 - For example, adding *kòtʃámé:ŋgé:* ‘on purpose’ (an agent-oriented modifier) to (17-b), the interpretation in which the child cries on purpose is not possible.
 - Similarly, adding *ák rɔgɔɛ:t* ‘with a rope’ to (19-b), it must be Kibeet (i.e. the causer) using the rope.

4.2 Kipsigis also has marked anticausatives

- Kipsigis has a suffix *-ak* that is productively used to form middles.

- (20) a. ∅-é-è Kíbê:t pé:k.
 3-drink-IPFV Kibeet.NOM water
 ‘Kibeet is drinking/drinks water.’

- b. ∅-e-ák-sej pè:k.
 3-drink-MID-IPFV water.NOM
 ‘The water is potable.’

- The same suffix is used to form marked anticausatives from Class I transitive verbs.

- (21) a. Kà-sirìŋ-ák ìŋgòrái:k.
 PST-wrinkle-MID clothes.NOM
 ‘The clothes wrinkled.’

- b. Kà-síríŋ Tʃé:bê:t ìŋgòrái:k.
 PST-wrinkle Cheebeet.NOM clothes
 ‘Cheebeet made the clothes wrinkle.’

- Other verbs in my fieldnotes that form their anticausative with *-ak* are the following: *ja:t* ‘to open’, *ker* ‘to close’, *arv:ŋ* ‘to fold’, *ŋem* ‘to destroy’.

4.3 Summary of the patterns

- The most common morphological patterns for the causative alternation are summarized below (Tr = transitive, Intr = intransitive):

(22) Morphological marking of causative vs. anticausative variant

Class I + <i>ak</i>	Class I	Class II	Class II + <i>si</i>
Intr	Tr		
	Intr	Tr	
	Intr		Tr
		Intr	Tr

5 The challenge for Voice theories

- I argue that *-si* and *-ak* could spell out Voice, but Class II morphology spells out little *v*. Crucially, this little *v* is independent of Voice. Thus, the causative alternation for the majority of Kipsigis verbs is regulated by operations below Voice.

5.1 Class II morphology is little *v* morphology

5.1.1 Class II is a conjugation class

- ‘Class II morphology’ is an umbrella term for all morphophonological effects associated with this conjugation class.
- Verbs that do not participate in the alternation (and even some that do) are arbitrarily assigned to Class I and II, which has a purely morphological effect for those verbs. The class distinction is also purely morphological in other Nilotic languages.
- Class features are usually associated with little *v* in DM.

5.1.2 Locality effects

- Class II is determined by individual roots and it sometimes causes vowel lengthening of the root.
- A class switch sometimes gives rise to idiomatic interpretations (e.g., the verb *kɔnɔr* means ‘to keep’ in Class I, but ‘to dedicate’ in Class II).
- Given standard assumptions about locality in DM (Marantz 1997), these facts receive a straightforward explanation if Class II is on little *v*.

5.1.3 Derived nominals

- There is a debate in the literature about ‘how much’ functional structure is embedded in complex event nominals, especially with respect to Voice (see Alexiadou 2001, 2017, Wood 2019 and references therein). It is uncontroversial though that result nominals do not embed Voice.

- In Kipsigis, all nouns derived from Class II verbs (whether they alternate or not) contain a prefix *ka:-*, the nominal allomorph of Class II morphology (Toweett 1979). Below you see the (non-event) nominalization of the non-alternating transitive verb *ka:t* ‘to greet’.

(23) *(ka:)-kat-ɛ:t ‘hello’.
 CL2-greet-N hello
 ‘Hello is a greeting.’

- Since no Voice projection is present here, it follows that Class II morphology is on little *v*.
- It also means that *ka:-* is the allomorph of a Class II *v* in the context of *n*.

5.1.4 Reduplication

- Kipsigis has productive verbal reduplication for multiple events.

(24) ∅-i-twàl-twâ:l-é là:kwè:t
 3-CL2-jump.RED-IPFV child.NOM
 ‘The child is jumping repeatedly.’

- Verbs that alternate between Class I and Class II not only have the right conjugation class in reduplicated contexts, but they also have the right vowel length on the verbal stem. Importantly, we know that vowel length has been calculated before reduplication because of the linking vowel [a:], which is present for reduplicated CVC stems, but absent for reduplicated CVVC stems (Toweett 1979).

(25) sá:p vs. sâ:p ‘to heal’

- a. Kì:-∅-sáp-â:-sáp-ì Kíbê:t.
 PST-3-heal.RED-IPFV Kibeet.NOM
 ‘Kibeet healed (himself) over and over.’ (anticausative)
- b. Kì:-∅-i-sâ:p-sâ:p-ì Kíbê:t Kìp-làngàt.
 PST-3-CL2-heal.RED-IPFV Kibeet.NOM Kiplangat
 ‘Kibeet was healing Kiplangat over and over.’ (causative)

- Assuming that verbal reduplication targets little *v*, and not Voice, this indicates that Class II causative morphology is on little *v*.
- Verbs that form their causative with *-si* and verbs that form their anticausative with *-ak* have pluractional forms for both the causative and anticausative variant, but these suffixes are outside of the reduplication domain.

(26) ka-∅-ŋwal-ŋwa:l-ak kê:tít.
 PST-3-bend.RED.MID tree.NOM
 ‘The tree bended repeatedly.’

- But nouns that involve a switch from Class I to Class II (with or without *-si*) do maintain the distinction in the derived nominal; the distinction is through the prefix *ka:-*, which we have already seen is the allomorph of a Class II little *v* in the context of little *n*.

(31)	<div style="border: 1px solid black; display: inline-block; padding: 2px;">sap</div> -e:t-à:p Kibê:t. heal-N-POSS Kibet ‘Kibeet’s healing (on his own) (antic.)’	(32)	<div style="border: 1px solid black; display: inline-block; padding: 2px;">ka:-sap</div> -e:t-à:p Kibê:t. CL2-heal-N-POSS Kibet ‘Kibet’s healing (by someone) (caus.)’
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- The external argument cannot be expressed overtly in (32).
- Since there is evidence from other nominalizations in the language and robust cross-linguistic generalizations about the unavailability of transitive Voice in nominalizations, (31)-(32) show that Class II morphology must be available even in the absence of Voice.⁹

5.2.2 Applicatives

- Assuming that allomorphy can only be conditioned by adjacent (overt) nodes (e.g., Embick 2010), for little *v* to show an allomorph conditioned by Voice, these two nodes should be adjacent, without intervening overt material.
- Prediction: a high applicative morpheme should thus bleed this allomorphy rule, because Appl is merged between *v* and Voice (Pylkkänen 2008).¹⁰
- This is not borne out:

(33)	kà-∅- <div style="border: 1px solid black; display: inline-block; padding: 2px;">í-sâ:p-tʃi</div> Kìplàngàt Tʃé:bê:t Kibê:t. PST-3-CL2-heal-APPL Kiplangat Chebet.NOM Kibet ‘Chebet healed Kibet for Kiplangat.’
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5.3 Summary and open questions

- Class II causative morphology in Kipsigis cannot be analyzed as the allomorph of little *v* in the context of Voice; causative morphology is thus ‘calculated’ lower in the structure.
- The data can be easily accounted for in theories that use flavors of little *v*, such as Folli & Harley (2005).
 - In those theories, Class II morphology would spell out v_{cause} .
- At first glance, the data are problematic for Voice theories of the causative alternation, since their morphological predictions are not borne out. But:

⁹A possibility is that these nominalizations are D nominalizations in Alexiadou’s (2017) terms, which are not subject to the ban against transitive Voice. However, the morphology of the nominals in (31)-(32) is morphology associated with little *n* in Kipsigis (Kouneli 2019, 2020), which points against such an analysis. Thanks to Yininig Nie for discussion of this point.

¹⁰This argument is weakened if the spellout of the Kipsigis applicative is a raising applicative in Nie’s (2020) analysis.

- We see a distinction between anticausative (ok for Voice theories) and causative morphology (problematic for Voice theories) in Kipsigis, and Voice theories have been developed mostly for languages with morphologically marked anticausatives - is this significant?
- Class II morphology seems to be very low in the structure; other processes in the language show a similar sensitivity to low (in)transitivity, which indicates there might be an alternation in the way the internal argument is introduced for some verbs (Kouneli 2021).
- I have shown that Class II morphology spells out little *v*, but some important questions remain:
 - How exactly do we account for the fact that Class II has a regular syntactic and semantic import for verbs that alternate, but seems purely morphological for verbs that don't?
 - Possible answer to this question: little *v* in Kipsigis is spelled out as Class I by default, and as Class II if it carries causative semantics (v_{cause}). But there is also a Class II non-causative little *v*, which is chosen by individual roots (we could think of this in terms of syncretism).
 - Relevant observation (also a puzzle at this point): while alternating Class II verbs must have a long vowel in their last syllable, no such requirement exists for non-alternating Class II verbs.

6 Conclusion

- Kipsigis has two conjugation classes, with Class II being morphologically associated with (at least) a moraic prefix.
 - Spyropoulos et al. (2015) have argued that the second conjugation class in Modern Greek is an empty vocalic slot spelling out little *v*.
- Verbs that participate in the causative alternation do so by alternating between Class I and Class II, but the remainder of the verbs are arbitrarily assigned to one of the two classes.
 - As many talks in this workshop show (e.g., Kovačević et al., Mišmaš & Simonović today, Kastner & Martin tomorrow), there seems to be a connection between conjugation class (and theme vowels) and argument structure even in European languages.
 - In other Nilotic languages, the distinction between classes is 'more' morphological. Thus, Nilotic is a good testing ground for theories of the evolution of conjugation classes in the verbal domain, and could offer insights into their correct treatment in other languages (Grestenberger tomorrow).
- The Class I - Class II distinction cannot be easily captured by Voice theories of the causative alternation, which indicates that not all cross-linguistic variation in the alternation can be explained by variation in the typology of Voice heads.

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