Polysemous disjunction in Cinyungwe

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Dissertation Prospectus
December 2025

1 Introduction

In my dissertation, I will investigate three methods of disjunction in Cinyungwe (Bantu, Mozambique), as shown in (1): the coordinators *ayayi*, *peno*, and *pinango*. As I will show, none of these has 'or' as its sole meaning. Moreover, it is possible that the core semantic meanings of all three words are distinct from Boolean (logical) disjunction.

(1) a. Mphaka ni yi-svipa **ayayi** yi-cena? Cinyungwe
9.cat COP 9-black or 9-white
'Is it a black cat or (a) white (one)?'

b. Mphaka ni yi-svipa **peno** yi-cena?
9.cat COP 9-black or 9-white
'Is the cat black or white?'

c. Mphaka ni yi-svipa **pinango** yi-cena.
9.cat COP 9-black or 9-white
'The cat is black or white.'

As disjunctive coordinators, *ayayi*, *peno*, and *pinango* show some overlap in their syntactic distribution, but there are also notable differences in the types of clauses where they occur and the syntactic categories they can coordinate. Even when they appear more or less interchangeable, as in (1), there are hints that their semantic contribution is non-identical. For example, note that (1a) and (1b) are questions, whereas (1c) is an assertion. Additionally, the English translation of (1a) suggests that the disjuncts may be DPs, not simply adjectives.

Beyond disjunction, more differences emerge, as I will show throughout this prospectus. *Ayayi* seems to be polysemous with a form of negation; depending on context, another possible interpretation of (1a) is 'Is it a black cat, not a white one?' *Ayayi* also occasionally appears in syntactic/semantic contexts where conjunction (*na* 'and') is equally acceptable. *Peno* is just as multifunctional. It can function as 'if' or 'whether', introducing a conditional antecedent or embedded question. It can also be used as a response particle meaning 'I don't know.' As for *pinango*, it can appear as a dubitative particle meaning 'maybe'.

None of these many meanings seem to be exclusively encoded by *ayayi*, *peno*, or *pinango*, raising the question of what, precisely, their core semantic contributions really are. To address this question, I will present and analyze original Cinyungwe data, referring to previous typological and theoretical work on disjunction and coordination more broadly.[1] I will examine what it is about Cinyungwe that allows for polysemy between disjunction and negation and between disjunction and epistemic modality. Is the core meaning of *ayayi* negation, from which its disjunctive meaning is derived, or vice versa? Are there two semantically independent but homophonous *ayayi*s? Or, alternately,

[1]Most of the data collection was conducted via virtual elicitation (Zoom and WhatsApp) in 2022 and 2025; the rest was collected in person in Maputo and Tete in 2024. I worked primarily with two language consultants, both originally from Tete city: linguist Crisófia Langa da Câmara and school administrator João Reis Fungulane. I am infinitely grateful to Dr. Langa da Câmara and Mr. Fungulane—as well as their families and colleagues—for their expertise, patience, and generosity. Additionally, this prospectus would not be possible without the feedback and suggestions of my dissertation committee members Profs. Jesse Harris, Michelle Yuan, Jenneke van der Wal, and (in particular) Jessica Rett. I am very lucky to benefit from their ongoing guidance and support, academically and otherwise.

is the core meaning of *ayayi* neither negation nor disjunction? *Peno* has a wide range of potential meanings; can one of these be identified as its core meaning? If so, how are the others derived? Is *pinango* fundamentally dubitative, disjunctive, or something else? For each word, I will identify the meaning(s) that it encodes directly, that it is merely compatible with, and/or that it can implicate pragmatically, and I will analyze how its disjunctive meaning arises. This research will provide important insights into the connections among the semantic domains of disjunction, negation, and epistemic modality.

1.1 Roadmap

In §2, I discuss relevant previous linguistic work (particularly, but not exclusively, on coordination) that informs this project. Sections §3 and §4 present the empirical patterns I have observed so far with *ayayi*, *peno*, and *pinango*. In these sections I also discuss potential analytical directions and the additional data necessary to accept or reject them. In §5, I address two special cases of Cinyungwe disjunction—(possible) bisyndetic disjunction and emphatic negative disjunction—and review similar patterns of polysemy in Cinyungwe conjunction. §6 concludes.

2 Background & literature review

2.1 Background on Cinyungwe

Cinyungwe is a Mozambican Bantu language spoken by about 500,000 people, primarily in the provinces of Tete and Manica (Ngunga et al., 2022). Mozambique is very linguistically diverse, with more than twenty indigenous Bantu languages, Mozambican Sign Language, and the colonial language Portuguese. The vast majority of Mozambicans speak a Bantu language as their first language (INE, 2019), and some rural primary schools teach students in their L1. In 2022, there were 73 Cinyungwe-Portuguese bilingual schools in Tete and Manica (Langa da Câmara, 2024). There is still limited published linguistic research on Cinyungwe, particularly on semantic and pragmatic topics.

The basic word order in Cinyungwe is SVO. A simple transitive sentence is shown in (2).[2]

(2) Suwe a-da-nemb-a livu. Cinyungwe
Suwe 1SM-REM.PST-write-FV 5.book
'Suwe wrote a book.'

Word classes are an important part of Cinyungwe morphology, as in other Bantu languages. Cinyungwe has 17 word classes, which are listed in Table 1: 13 noun classes, an infinitive class, and 3 locative classes. Verbs and various nominal elements (pronouns, numerals, adjectives, possessives, demonstratives) show class agreement through affixes. As we will see in §3.3.2 and §4.2.2, word class agreement is relevant to understanding disjunction in Cinyungwe.

As previously mentioned, my dissertation will examine three candidates for Boolean disjunction in Cinyungwe: *ayayi*, *peno*, and *pinango*. These three words, along with other potential Boolean operators in Cinyungwe (words for 'and' and 'not') are listed in Table 2, along with the range of logical and non-logical meanings I have observed for them.

2.2 Background on coordination

Haspelmath (2004) defines coordinate constructions based on the symmetry of the coordinands. This symmetry relates both to syntactic category and semantic/pragmatic qualities such as salience (Haspelmath, 2004, 2007). Constructions with overt coordinators (e.g., *and, or, but*) are known as syndetic. Syndetic coordination can be further subdivided into **monosyndetic** constructions, which typically have only one coordinator, and **bisyndetic** constructions, which have one coordinator for each coordinand (Haspelmath, 2004). Coordinators themselves, though they may appear between coordinands, form a constituent with either the preceding coordinand (prepositive coordinators) or the following coordinand (postpositive coordinators). This structure is clearest with coordinators that are affixes or clitics (Haspelmath, 2004). Constructions that involve juxtaposition with no coordinators are known as **asyndetic**. In these cases, the coordinate structure is marked intonationally (Haspelmath, 2007).

[2]Bantu-specific glossing abbreviations (i.e., not included in the Leipzig standard abbreviations) used in this paper: SM=subject marker, OM=object marker, and FV=final vowel. Numbers indicate noun class (except when followed by SG or PL).

Table 1: Cinyungwe's word classes, adapted from Ivanov (2018)

Noun classes				
class	prefix	example	SM	OM
1	mu-	munthu 'person'	a-	-mu-
2	(w)a-	wanthu 'people'	(w)a-	-wa-
3	mu-	muti 'tree'	u-	-u-
4	mi-	miti 'trees'	yi-	-yi-
5	li-	livu 'book'	li-	-li-
6	ma-	malivu 'books'	ma/ya-	-ma/ya-
7	ci-	cisu 'knife'	ci-	-ci-
8	bzi-	bzisu 'knives'	bzi-	-bzi-
9	N-	mbwaya 'dog'	yi-	-yi-
10	N-	mbwaya 'dogs'	zi-	-zi-
12	ka-	kambwaya 'small dog'	ka-	-ka
13	tu-	tumbwaya 'small dogs'	tu-	-tu-
14	u-	udziwi 'knowledge'	bu-	-bu-
Infinitive class				
15	ku-	kudya 'to eat'		
Locative classes				
16	pa-	pamuyi 'at the house'	pa-	-pa-
17	ku-	kumuyi 'to the house'	ku-	-ku-
18	mu-	m'muyi 'in the house'	mu-	-mu-

Table 2: Potential Boolean operators in Cinyungwe

Conjunction	
na	'and', 'with', 'by', 'for'
ndipo	'and', 'and then', 'after that', 'but'
pomwe	'and also', 'even', 'where', 'when', 'again'
Disjunction	
ayayi	'or', 'not', 'no'
peno	'or', 'if', 'whether', 'I don't know', 'maybe'
pinango	'or', 'maybe', 'another'
Negation	
ayayi	'or', 'not', 'no'
lini	'not', 'when'
-libe	'did not'

There are several semantic types of coordination. The most common crosslinguistically is **conjunction**, or 'and' coordination (Haspelmath, 2007). My dissertation will primarily focus on **disjunction** ('or'), but conjunction will occasionally be relevant, as there are instances of overlap between these types in Cinyungwe (see §5.3). Other coordination types include **adversative** ('but') and **causal** ('for') coordination. In contrast to conjunction and disjunction, which generally permit more than two coordinands, adversative and causal coordination are obligatorily binary (Haspelmath, 2007).

Some languages have special coordinators or coordinate constructions to express a type of coordination called **emphatic** coordination (Haspelmath, 2007). Both conjunction and disjunction can be emphatic. In English, emphatic conjunction is expressed by the two-part coordinator *both … and*, and emphatic disjunction is expressed by *either … or*. Some languages also have **emphatic negative** coordination, which may more closely resemble simple disjunction or simple conjunction in the language. English is an example of the former (*neither … nor*), and Latin is an example of the latter (*ne-que … ne-que*; *-que* is conjunctive). Another area of variation within emphatic (negative) disjunction is whether a construction involves two distinct coordinators, one of which does not occur as an independent coordinator (as in English), or whether it involves repetition of the same coordinator, which may or may not also function as a single coordinator (Haspelmath, 2007).

2.2.1 Syntactic specification

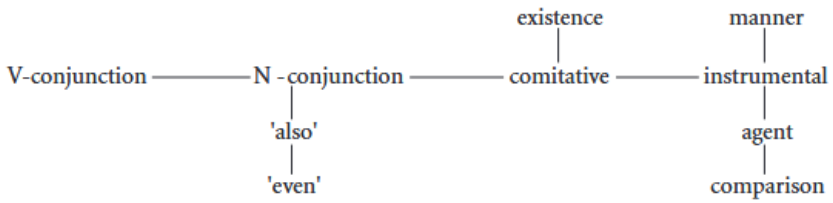
In languages with multiple coordinators for a given coordination type, the constructions often coordinate different subsets of syntactic categories. For example, about half of the world's languages distinguish between nominal and verbal/clausal conjunction in this way (Haspelmath, 2004). Category-sensitive conjunctive coordinators are common in eastern Asian, Austronesian, American languages, and—most notably for my dissertation—African languages (Haspelmath, 2004). In fact, Welmers (1973) suggests that all African languages may differentiate between nominal and clausal conjunction.

This type of differentiation is less common with disjunction, however, which is likely due to the fact that disjunctive coordinators occur in discourse much less frequently than conjunctive coordinators (Haspelmath, 2004). Similarly, for any given language with both conjunctive and disjunctive coordinators, Mauri (2011) argues that its disjunctive coordinators will be at least as morphologically complex as, if not more complex than, its conjunctive ones. Some languages lack a grammaticalized method of disjunction entirely.

2.2.2 Multifunctionality

Conjunctive and disjunctive coordinators are often "polyfunctional" (i.e., polysemous). Haspelmath (2004) identifies several semantic areas of meaning beyond coordination that are often expressed by coordinators crosslinguistically. He proposes the semantic map in (3) for conjunction.

(3) A semantic map for conjunction and related notions (Haspelmath, 2004, p. 21)



He does not include a map for disjunction, but elsewhere, Haspelmath (1997) speculates that disjunctive coordinators may share a diachronic source with indefinite pronouns. For example, the Japanese indefinite pronouns *dare-ka* 'someone' and *nani-ka* 'something' appear to contain the disjunctive coordinator *ka* 'or', and the Kalaallisut (Inuit) free-choice indefinite *sumi-luunniit* 'anywhere, somewhere or other' contains the disjunctive coordinator *-luunniit* 'or'.

2.3 Semantic subtypes of disjunction

In this subsection, I review different semantic subtypes of disjunction that have been reported in various languages, which serve as a context in which to situate the Cinyungwe data. These subtypes include inclusive and exclusive disjunction, alternative and polar disjunction, metalinguistic disjunction, and non-exhaustive connectives.

2.3.1 Inclusive and exclusive 'or'

Logical disjunction distinguishes between **inclusive** disjunction, where one or more disjuncts may hold, and **exclusive** disjunction, where only one disjunct may hold. However, this distinction has not been proven to be encoded in

natural languages. The Latin coordinators *aut* and *vel* have been cited as evidence of disjunctive coordinators specified for exclusivity and inclusivity, but Dik (1972) has challenged this. Another arguable example of this specification is English *and/or* as inclusive disjunction, but this coordinator is much more common in written text than conversational English (Haspelmath, 2007). Now consider the sentence in (4). In many contexts, its disjunctive construction is interpreted exclusively.

(4) Gwen played drums or guitar at the concert. English

Grice (1989) argues that this interpretation is pragmatic (i.e., dependent on discourse context and reasoning by conversation participants) rather than semantic (i.e., part of the intrinsic lexical meaning of *or*). Semantically, *or* encodes inclusive disjunction, but the exclusive meaning can be derived based on the interaction between Grice's Maxims of Quantity and Quality, shown in (5) and (6). These are two of the four maxims that compose Grice's Cooperative Principle.

(5) Maxim of Quantity, paraphrased from Grice (1989)
   i. Be as informative as necessary.
   ii. Don't be more informative than necessary.

(6) Maxim of Quality, paraphrased from Grice (1989)
   i. Say something true.
   ii. Don't say something false or that you lack evidence for.

Upon hearing (4), an addressee might reason as follows: If true, (*Gwen played drums* $\wedge$ *Gwen played guitar*) would be more informative than (*Gwen played drums* $\vee$ *Gwen played guitar*). Therefore, assuming the speaker is being cooperative and providing as much information as they can without saying something untrue, Gwen must *not* have played both instruments, only one of them. Alternately, perhaps the speaker simply does not know which she played. This inference can be characterized as a scalar implicature, a type of conversational implicature. It results from a Quantity-Quality clash involving a scale from a less informative term (*or*) to a more informative term (*and*).

Depending on the pragmatic context, the exclusive-*or* implicature can be canceled. Imagine a situation in which Gwen plays both drums and guitar. Her friends see an advertisement seeking a drummer or guitarist with experience performing live. Vaguely remembering a recent concert, one of them says the sentence in (4). As another example of the cancelability of exclusive interpretations of disjunction, consider the sentences in (7).

(7) a. Marvin died on Tuesday or Wednesday. (Haspelmath, 2007, p. 26) English

   b. Marvin ate cheesecake on Tuesday or Wednesday.

In the actual world, an individual can only die once, but they can eat cheesecake on numerous occasions. The fact that changing the VP cancels the exclusive interpretation shows that exclusivity is not directly encoded by English *or*.

2.3.2 Polar and alternative 'or'

In contrast to inclusive and exclusive disjunction, the distinction between polar (or standard) and alternative (or interrogative) disjunction is well attested. Previous work has described various ways of conceptualizing these types. I use the terms "polar" and "alternative" because this distinction is based primarily on the ambiguity of disjunctive questions between polar question and alternative question readings. **Polar** disjunction occurs in polar questions as in (8) and assertions, whereas **alternative** disjunction occurs in alternative questions as in (9). Languages differ in regards to the acceptability of alternative disjunction in assertions (Haspelmath, 2007; Mauri, 2008; Winans, 2019).

(8) Q: Are you a cat person **or**$_{POL}$ a dog person? English
   A: Yes, I love animals.
   A': No, I'm a chicken person.

(9) Q: Are you a cat person **or**$_{ALT}$ a dog person?
A: Cat person.
A': Dog person.

In a polar disjunctive question, the alternatives the question ranges over "do not correspond to the disjuncts"; instead, the question ranges over the prejacent proposition and its negation (Winans, 2019, p. 252). By contrast, in an alternative disjunction question, the alternatives the question ranges over *do* correspond to the disjuncts (or propositions containing them). Egyptian Arabic has two disjunctive coordinators, *aw* and *walla*, which Winans (2019) argues are specified for polar and alternative disjunction, respectively. A disjunctive question with *aw* is felicitously answered with *aywa* 'yes' or *laʔ* 'no', as shown in (10).[3] *Aw* is also the only form of disjunction that occurs in assertions and *wh*-questions, as shown in (11).

(10) Huwwa Muḥammad bi-ḥibb Amina **aw** Mariam? Egyptian Arabic
Q3SGM Mohammad IMP-like(3SGM) Amina or$_{POL}$ Mariam
'Does Mohammad like Amina or Mariam?' (Winans, 2019, p. 243)

a. ?? Amina / Mariam
b. ✓ aywa(, Mariam) 'yes(, Mariam)' / laʔ 'no'

(11) a. Muḥammad bi-ḥibb Amina **aw** Mariam.
Mohammad IMP-like(3SGM) Amina or$_{POL}$ Mariam
'Mohammad likes Amina or Mariam.' (Winans, 2019, p. 241)

b. Huwwa miin bi-ḥibb Amina **aw** Mariam?
Q3SGM who IMP-like(3SGM) Amina or$_{POL}$ Mariam
'Who likes Amina or Mariam?' (Winans, 2019, p. 251)

In contrast, a disjunctive question with *walla* is only felicitously answered with one of the disjuncts, as shown in (12). Additionally, *walla*, unlike *aw*, is unacceptable in both assertions and *wh*-questions (with the exception of alternative *wh*-questions, which I will not discuss here). This is shown in (13).

(12) Huwwa Muḥammad bi-ḥibb Amina **walla** Mariam? Egyptian Arabic
Q3SGM Mohammad IMP-like(3SGM) Amina or$_{ALT}$ Mariam
'Does Mohammad like Amina or Mariam?' (Winans, 2019, p. 243)

a. ✓Amina / Mariam
b. #Aywa 'yes' / Laʔ 'no'

(13) a. *Muḥammad bi-ḥibb Amina **walla** Mariam.
Mohammad IMP-like(3SGM) Amina or$_{ALT}$ Mariam
Intended: 'Mohammad likes Amina or Mariam.' (Winans, 2019, p. 241)

b. *Huwwa miin bi-ḥibb Amina **walla** Mariam?
Q3SGM who IMP-like(3SGM) Amina or$_{ALT}$ Mariam
Intended: 'Who likes Amina or Mariam?' (Winans, 2019, p. 251)

A similar but non-identical distinction is reported in Safwani Saudi Arabic (Alsadeg, 2025). Beyond Arabic, examples of differentiation for polar and alternative disjunction include Finnish *tai* (polar 'or') and *vai* (alternative 'or') and Basque *edo* (polar 'or') and *ala* (alternative 'or') (Haspelmath, 2007). The Finnish disjunctive constructions are shown in (14).[4]

(14) a. Joskus ovi avaut-ui **tai** ikkuna. Finnish
sometimes door open-3SG.PRF or$_{POL}$ window
'Sometimes a door opened or a window slammed.'

[3] Abbreviations in Winans (2019) are based on Gadalla (2004): IMP=imperfect prefix (habitual or progressive) and 3SGM=third person singular masculine pronoun. Subscript POL and ALT are my additions.

[4] ILL=illative case, a locative case in Finnic languages, meaning 'into'.

b. Mene-mme-kö koulu-un huomenna **vai** jää-mme-kö koti-in.
go-1PL-Q school-ILL tomorrow or$_{ALT}$ stay-1PL-Q home-ILL
'Do we go to school tomorrow or do we stay at home?' (Mauri, 2008, p. 27)

2.3.3 Metalinguistic disjunction

Another semantic type of disjunction is **metalinguistic** disjunction, where the disjuncts constitute two different names for the same entity or event (Haspelmath, 2007). One language with a dedicated coordinator for this specific purpose is Italian. The coordinator *ovvero* is grammatical when used metalinguistically, as in (15a), but ungrammatical in non-metalinguistic constructions, as in (15b).

(15) a. l' Irlanda **ovvero** l' isola verde Italian
the Ireland or$_M$ the island green
'Ireland, or the green island'

b. *Voglio comprare un dizionario **ovvero** una grammatica.
I.want buy a dictionary or$_M$ a grammar
Intended: 'I want to buy a dictionary or a grammar' (Scorretti, 1988, p. 254)

2.3.4 Non-exhaustive connectives

A non-exhaustive connective, or **nEx connective**, is not a subtype of disjunction; it can be either disjunction or conjunction. A nEx connective links two or more items into a list and specifies that the list is open to potential additions (Barotto & Mauri, 2022). Like inclusive 'or', it leaves the possibility of other alternatives open; unlike inclusive 'or', it "signal[s] overtly the non-exhaustivity of the list" (Barotto & Mauri, 2022, p. 325).

Barotto and Mauri (2022) define non-exhaustivity as a referential property of a plural set that "opens it to referentially vague additions" (p. 319). It requires the *possibility* to identify additional set members, though not their actual identification. Exemplifying markers (e.g., *for example*) and additive focus-sensitive particles (e.g., *also*) presuppose non-exhaustivity. Meanwhile, nEx connectives—along with general extenders (e.g., *and such*), heterogenous plurals, and echo-reduplication—directly encode non-exhaustivity. From a sample of 215 languages, Barotto and Mauri (2022) identify 35 languages with nEx connectives. These connectives are frequently "multifunctional elements" and listing is the "critical context for the[ir] development" (Barotto & Mauri, 2022, p. 354). The authors identify several diachronic pathways for the development of nEx connectives, which are summarized in (16).

(16) Diachronic sources for nEx connectives (Barotto & Mauri, 2022)

a. { heterogenous plural / irrealis / additive / heterogeneity } marker → nEx connective

b. { similative marker / verb of saying / preference marker } → exemplification → nEx connective

2.4 Languages without disjunction

Some languages lack any conjunctive or disjunctive coordinator. For example, Bowler (2014) argues that Warlpiri *manu*—the only coordinator in the language—semantically encodes disjunction but can have a conjunctive reading due to pragmatic strengthening. Other languages have three or more coordinators for a single coordination type (Mauri, 2008, 2011). Mauri (2016) identifies a range of possible sources for disjunctive markers that recur across languages. She theorizes that languages with no dedicated disjunctive coordinator fill this gap by co-opting morphology from semantic domains like potentiality, mutual replaceability, and otherness. Mauri (2008) argues that asyndetic disjunctive constructions (those lacking a coordinator) require an overt irreality marker. Furthermore, if a language uses a disjunctive coordinator in polar disjunction, it will also use one in alternative disjunction, but not vice versa.

Importantly, the examples of non-disjunctive sources of disjunction in this section are consistent with **irrealis** as defined by Phillips (2024): an umbrella concept for events that are non-realized in the actual world, encompassing

the semantic domains in (17). Irrealis markers may represent different subsets of the domains in (17) in different languages.

(17) Meanings under the irrealis umbrella (Phillips, 2024)
i. hypothetical
ii. future
iii. conditional
iv. habitual
v. negative
vi. imperative
vii. interrogative

2.4.1 Dubitative particles

Dubitative particles, such as *perhaps* and *maybe* in English, convey epistemic possibility or uncertainty. In Kuuk Thaayorre (Pama-Nyungan), the dubitative particle *=okun* 'maybe' can also be used to convey disjunctive meanings. Disjunctive constructions with *=okun* appear to be bisyndetic, as shown in (18), although Gaby (2018) points out that sometimes only one instance of the coordinator encliticizes to a disjunct, with the other attaching to some other constituent within the clause.

(18) Nhunt wanthanngun nhiinan, Cairns=**okun**, Melbourne=**okun**? Kuuk Thaayorre
2SG.NOM where.LOC sit:GO:NPST Cairns=DUB Melbourne=DUB
'Where are you going to live, Cairns or Melbourne?'
lit. 'you are going to live somewhere, maybe Cairns, maybe Melbourne'
(Gaby, 2018, p. 323)

2.4.2 Negated hypothetical 'if'

In Hakha Lai (Tibeto-Burman), the co-occurrence of two verbal suffixes—*làw* 'not' and *-leè* 'if'—can result in a disjunctive construction.

(19) Làwthlawpaa falaám ʾa-kal-**làw-leè** haàkhaà-ʾaʾ ʾa-ʾùm. Hakha Lai
farmer Falam 3SG.SBJV-go-NEG-COND Hakha-LOC 3SG.SBJV-exist
'The farmer goes to Falam or he stays in Hakha.'
lit. 'The farmer, if he doesn't go to Falam, he stays in Hakha.'
(Peterson & VanBik, 2004, p. 339)

2.4.3 Negation

In Galo (Sino-Tibetan), many negative constructions are formed with the particle *máa*. Clauses negated with *máa* have a realis interpretation by default, as in (20), but can co-occur with an irrealis marker to describe hypothetical negative situations (21). *Máa* also functions as a "strong/polite negative response to a question" (Post, 2007, p. 675).

(20) Takə́=əə **máa**! Galo
squirrel=COP.IPFV NEG
'They're not squirrels!' (Post, 2007, p. 428)

(21) Pɨhìk-pəgáa=əəm nunù cèn-**máa**-rə́! Galo
hornbill.rufousnecked-hornbill.great.pied=ACC 2PL know-NEG-IRR
'You folks wouldn't know about hornbills.' (Post, 2007, p. 571)

In addition to its function as negation, *máa* can also function as a monosyndetic disjunctive coordinator (the only disjunctive coordinator in Galo, in fact), as in (22). *Máa*-as-disjunction only appears in questions; disjunction in

assertions is formed periphrastically (Post, 2007). Meanwhile, there are no examples of *máa*-as-negation in questions, but Post does not comment on this explicitly.

(22) Rə́-kèn-jàa-rə dɨɨ**=máa** rə́-nèk-jàa-rə dɨɨ? Galo
live/exist-good/east-more-IRR WOND=DISJ live/exist-bad-more-IRR WOND
'Will (life in the future) be better or will it be worse?' (Post, 2007, p. 790)

2.4.4 Question marker

In Polish, the question marker *czy* has an additional function disjoining clauses in questions.

(23) Idziemy jutro do szkoły **czy** zostajemy w domu? Polish
go.PRS.1PL tomorrow to school Q stay.PRS.1PL at home
'Do we go to school tomorrow or do we stay at home?' (Mauri, 2016, p. 45)

2.5 Negation and epistemic modality

The previous section reviewed atypical disjunctive constructions in languages without a dedicated disjunctive coordinator, as background for considering the polysemy of Cinyungwe disjunction. Many of the non-disjunctive meanings of Cinyungwe disjunction can be described as either negation or epistemic modality. As such, it is worth reviewing how these meanings are encoded across languages as well. In this subsection, I review recent work by Phillips (2023, 2024) that examines the interaction between negation and irrealis, as well as a comparative study of epistemic possibility adverbs in Eastern Bantu languages (Bernander, 2025).

2.5.1 Negation and (ir)reality in Australian languages

Declarative clausal negation, or standard negation, is assumed to be universal (Phillips, 2023). The most common method of standard negation among Australian languages—which could possibly be treated as Boolean—is a negative particle, typically a free morpheme, with a relatively fixed position. However, other methods exist. Negation in some Australian languages involves **fusion**, which means that a single morpheme marks both clausal negation and other TAM information. For example, Ngalakan has three negative fusional suffixes, one for each tense. (24) shows an example with *-molk*, a past negative morpheme. Other examples include fusional tense and mood marking under negation, fusional negation and mood marking, and negation-triggered irrealis (Phillips, 2023).

(24) Nu-mu-nani-**molk** mungu-dada benen. Ngalakan
1SG-CL-see-PST-NEG CL-sugarbag DM
'I didn't see (any) wild honey, no matter.' (Merlan, 1983, p. 105)

Another method of standard negation is negation arising from nonrealized moods (i.e., potential, desiderative, or frustrative). It is unclear whether the negative meaning here is entailed or implicated, and Phillips (2023) notes that it is "particularly wanting of further work as the division of labor between semantics and pragmatics has not been rigorously investigated'' (p. 417). In addition to standard negation, Phillips explores negative imperatives, which involve a preverbal particle and/or fusion, and suppletive/lexical negatives, which are verb stems with lexicalized negative meanings like 'not know' and 'not understand'.

Phillips (2024) discusses **negative asymmetry** of reality status in Djambarrpuyŋu. Negative asymmetry refers to morphosyntactic differences between an affirmative sentence and its negative counterpart, beyond simply including a negative marker. It often results in some semantic distinction being neutralized in negation. In reality status negative asymmetry in particular, negated clauses associate with irrealis morphology. Phillips (2024) proposes that irrealis marking introduces a **nonveridicality** presupposition that the prejacent predicate is not metaphysically necessary at the evaluation time. In other words, the predicate is "unsettled" and its truth is "unknowable"; as such, there is at least one possible world in which it does not hold (Phillips, 2024, p. 652). This nonveridicality presupposition is met by negation, potentially resulting in the overlap between modality and negation in Australian languages.

2.5.2 Eastern Bantu epistemic possibility adverbs

Another term for dubitative particles (*perhaps, maybe*) is epistemic possibility adverbs, or EPAs. Bernander (2025) defines EPAs based on their place on a scale of "epistemic support," as shown in (25); EPAs express "neutral epistemic support" (Bernander, 2025, p. 71).

(25) + **full support** ← **partial support** ← **neutral support** → **partial support** → **full support** −
certainty probability possibility improbability impossibility
uncertainty

(Bernander, 2025, p. 74)

In Bantu languages, EPAs tend to appear in the left periphery of a sentence. Bernander (2025) cites several possible diachronic sources for these adverbs, such as verbs of perception and cognition, as well as common additional meanings, such as disjunction. For example, in Tumbuka (N21; Malawi and Zambia), the EPA *panji* 'perhaps' also functions as a bisyndetic emphatic disjunctive coordinator.

(26) Li-raya **panji** ndane **panji** nda mu-nung'una w-ane. Tumbuka
5-coat either be.mine or be.of 1-brother 1-POSS.1SG
'The coat is either mine or my young brother's.' (Young, 1932, p. 153)

2.6 Interim summary

This section has provided background information on a range of topics central to my dissertation: Cinyungwe itself, coordination patterns crosslinguistically, semantic types of disjunction, diachronic sources for disjunction in languages without disjunction, and connections between negation, modality, and disjunction crosslinguistically. All of this is important context for the Cinyungwe data presented in the next sections (§3, §4, §5).

3 *Ayayi*: disjunction + negation

Ayayi has two distinct functions: disjunction (most often in questions) and negation (most often in assertions). In simple declarative sentences, *ayayi* almost always functions as subclausal negation.[5] For example, in (27a) and (27b), *ayayi*-as-negation associates with a DP and an infinitive verb respectively.

(27) a. Semo a-da-won-a ma-luwa **ayayi** nyoka. Cinyungwe
Semo 1SM-REM.PST-write-FV 6-flower NEG 10.snake
'Semo saw flowers, not snakes.'

b. Tendani a-ni-fun-a ku-wereng-a **ayayi** ku-nemb-a.
Tendani 1SM-PRS-want-FV INF-read-FV NEG INF-write-FV
'Tendani wants to read, not to write.'

Ayayi-as-negation can also appear in polar questions, assuming an appropriate pragmatic context, as in (28).[6]

(28) *Sometimes the beans taste bad because Father cooks them too fast. When he's careful, they're nice.*
Baba a-da-phik-a ci-mbamba mwakankulumize **ayayi** bwino-bwino?
1.father 1SM-REM.PST-cook-FV 7-beans quickly NEG good-good
'Did Father cook the beans quickly, not carefully?'

By contrast, *ayayi*-as-disjunction most commonly appears in alternative questions and can associate with full clauses (29) as well as smaller disjuncts (e.g., 30).

[5] An exception is subject disjunction, which is discussed in §3.3.2.

[6] In (28), the contrast between the negated adverb *bwinobwino* and its asserted alternative *mwakankulumize*, at least in the case of Father cooking beans, is part of the common ground.

(29) *Maria went to the market for bananas and Siriza for baobab fruit. Only one of them succeeded.*

Maria	a-gul-a	ma-figu	**ayayi**	Siriza	a-gul-a	malambe?
Maria	1SM.REC.PST-buy-FV	6-banana	or	Siriza	1SM.REC.PST-buy-FV	6.baobab

'Did Maria buy bananas, or did Siriza buy baobab fruit?'

(30) *Maria bought fruit at the market, either bananas or baobab, but you don't know which.*

Maria	a-gul-a	ma-figu	**ayayi**	malambe?
Maria	1SM.REC.PST-buy-FV	6-banana	or	6.baobab

'Did Maria buy bananas or baobab fruit?'

This initial picture suggests that *ayayi* functions as disjunction in alternative questions and negation in assertions and polar questions, which could support an analysis of *ayayi*-as-disjunction requiring an alternative interpretation. However, *ayayi*'s distribution is more complicated than I have indicated so far. Table 3 summarizes the distribution of the negation and disjunction variants of *ayayi* as I currently understand them. $\neg$ indicates that *ayayi* appears in a given environment as negation, $\vee$ that it appears as disjunction, and $*$ that it is unacceptable regardless of interpretation.

Table 3: *Ayayi* as disjunction and negation

sentence type	**nouns**	**adj.**	**adv.**	**infinitive verbs**	**tensed verbs**	**clauses**
simple assertion	$\vee$ if subject, else $\neg$	$\neg$	$\neg$	$\neg$	$*$	$*$
modal assertion	$\vee$ or $\neg$	$\vee$ or $\neg$	$\vee$ or $\neg$	$\vee$ or $\neg$	$\vee$	$\vee$
polar question	$\neg$	$\neg$	$\neg$	$\vee$ or $\neg$	$\vee$	$\vee$
alternative question	$\vee$ if object, else $*$	$\vee$	$\vee$	$\vee$	$\vee$	$\vee$

3.1 Analyses of *ayayi* to reject

In this subsection, I review potential analyses of *ayayi* that can be rejected—what *ayayi* isn't—as a first step toward identifying what it is. As I will show, *ayayi*'s distribution and interpretations differ from all of the semantic types of disjunction reviewed in §2.3.

3.1.1 Alternative disjunction

Recall from §2.3 that some languages, such as Egyptian Arabic, have different coordinators for polar and alternative disjunction. Winans (2019) argues that Egyptian Arabic *aw* is polar disjunction and *walla* is alternative disjunction. The coordinators have a mostly complimentary distribution. Only *aw* occurs in polar questions (31), and only *walla* occurs in alternative questions (32), as well as constituent questions and most assertions.

(31) *Mohamed wants to know if Mariam would like to go in a cafe and have something to drink.* Egyptian Arabic

ʕyza	ʔahwa	**aw**	šaay?
want(SGF)	coffee	or_{PQ}	tea

'Do you want coffee or tea?' (Winans, 2019, p. 244)

(32) *A waiter is taking Amina's order. The cafe only serves coffee and tea.*

ʕyza	ʔahwa	**walla**	šaay?
want(SGF)	coffee	or_{AQ}	tea

'Do you want coffee or tea?' (Winans, 2019, p. 244)

In Cinyungwe, *ayayi*-as-disjunction readily appears in alternative questions, but it is not restricted to them. It can also receive a polar interpretation. One piece of evidence for this is that *ayayi* occasionally patterns with conjunction—something that is only possible with polar disjunction. In (33), *na* 'and' can be replaced with *ayayi* with virtually no effect on the sentence meaning. If (33) were restricted to an alternative interpretation (e.g., 'Which is important, reading or writing?'), only the *ayayi* response (33b) would be felicitous.

(33) *A family is discussing whether to send their child to a bilingual (Portuguese–Cinyungwe) or monolingual (Portuguese-only) school. They are considering the potential benefits of education in their mother tongue.*

a. Nji-poni mbiri ya ku-wereng-a **na** ku-nemb-a N'-cinyungwe?
COP-which 9.worth of 15-read-FV and 15-write-FV 18-Cinyungwe
'Is reading and writing in Cinyungwe important?' (*lit.* 'What is the value of reading and writing in Cinyungwe?')

b. Njiponi mbiri ya kuwerenga **ayayi** kunemba N'cinyungwe?
'Is reading or writing in Cinyungwe important?'

Additionally, an embedded question with *ayayi* is felicitous in a context that privileges a polar interpretation. Out of the blue, the most natural interpretation of (34B) would be that Semo either married someone or went to university, and Speaker A found out which of the two occurred. But in the context in (34), Speaker B's guess will be correct as long as A simply learned Semo's marriage status and/or education level, regardless of the answers to those questions. And even if A knows nothing about Semo's education, they can felicitously confirm B's guess if they learned the answer to the other question.

(34) *Semo moved far away as a young man. Your friend has just returned from visiting him, and everyone is curious about his life. Has he married anyone? Has he gone to university?*

A1. Ndakuwuza?
'Guess what?' (lit. 'Have I told you?')

B. Wa-dza-dziw-a peno Semo a-lowol-a mu-nthu **ayayi**
2SG.REC.PST-SEQ-know-FV if Semo 1SM.REC.PST-marry-FV 1-person or
a-yend-a ku-xikola kw-a ma-pfundziro ma-kulu.
1SM.REC.PST-go-FV 17-school 17-of 6-study 6-big
'You discovered whether Semo married someone or went to university.'

A2. Inde, ndadziwa peno Semo alowola munthu. Iye alibe, akalibe n'kazi.
'Yes, I discovered whether Semo married someone. He didn't, he doesn't have a wife.'

To sum up, although *ayayi* is compatible with alternative disjunction, it is also compatible with polar disjunction. Thus I can conclude that Cinyungwe *ayayi* is not specified for this semantic distinction.

3.1.2 Negative hypothetical

One logical connection between disjunction and negation is that a disjunctive phrase like *history or philosophy* in (35a) is similar in meaning to (35b), which incorporates negation. This meaning aligns with Mauri's observation of negative hypothetical/conditional morphology as a diachronic source of negation (Mauri, 2011, 2016). It can be expressed with *else*, *if not*, or *otherwise* in English.

(35) a. She studies history or philosophy.
$[\![$ *studies history or philosophy* $]\!] = \lambda x.\mathrm{S}(x, (\mathrm{history} \vee \mathrm{philosophy}))$

b. I think she studies history. If not history, then philosophy.
$[\![$ *studies history else philosophy* $]\!] = \lambda x.(\neg \mathrm{S}(x,\mathrm{history})) \rightarrow (\mathrm{S}(x,\mathrm{philosophy}))$

The negative hypothetical meaning is captured by the dynamic semantics analysis of disjunction shown in (36), where negation appears on the right side of the union. $\mathrm{c}-\mathrm{c}[\phi]$ is the local context of the second disjunct, a precondition for interpreting an update with ψ (Yagi, 2024).

(36) $\mathrm{c}[\phi \vee \psi] = (\mathrm{c} \cap \phi) \cup ((\mathrm{c} \cap \neg\phi) \cap \psi)$
$= \mathrm{c}[\phi] \cup (\mathrm{c}-\mathrm{c}[\phi])[\psi]$
(Aloni, 2025; Yagi, 2024)

A negative hypothetical interpretation does not align with the behavior of *ayayi*-as-negation. This is shown in (37), repeated from (27a). Say p ='Semo saw flowers' and q ='Semo saw snakes'. If (37) were a negative hypothetical, we would not expect it to entail any of the following: p, q, $\neg p$, $\neg q$. But (37) entails both p and $\neg q$. Negative hypotheticals as a link between disjunction and negation thus cannot explain the dual behavior of *ayayi*.

(37) Semo a-da-won-a ma-luwa **ayayi** nyoka. Cinyungwe
Semo 1SM-REM.PST-see-FV 6-flower NEG 10.snake
'Semo saw flowers, not snakes.'
$[\![$ *adawona maluwa ayayi nyoka* $]\!] = \lambda x.\text{S}(x,\text{flowers}) \wedge \neg \text{S}(x,\text{snakes})$

That said, I have found it difficult to formulate sentences that *do* convey negative hypothetical meanings in Cinyungwe. Dr. Langa da Câmara offered the sentences in (38) as potential approximate translations of a Portuguese sentence with *senão* 'otherwise', but she noted that neither entirely captures same the meaning as *senão*.

(38) Peno kuna mafigu...
'If there are bananas...'

a. ...ni-m'-fun-a ma-figu, ni-ni-fun-a **lini** malambe.
1SG-PRS-want-FV 6-banana 1SG-PRS-want-FV NEG 6.baobab
'...I want bananas, I don't want baobab.'

b. ...ni-m'-fun-a ma-figu {**ayayi** / **si**} malambe. cfv
1SG-PRS-want-FV 6-banana not 6.baobab
'...I want bananas, not baobab.'
b

3.1.3 Negative coordinator 'let alone'

Fillmore et al. (1988) classifies English *let alone* (along with *much less*, *not to mention*, and others) as a phrasal coordinator that presupposes that its conjuncts are located at different points on a scale of certainty. An English example of a *let alone* construction is given in (39).

(39) I barely got up in time for LUNCH, **let alone** BREAKFAST. English
(Fillmore et al., 1988, p. 518)

Harris (2024) argues that *let alone* cannot scope over a tensed verb or over negation (or anything higher). That is, the second cooordinate in a *let alone* construction normally cannot contain these elements. This is an interesting parallel to *ayayi*, which cannot negate or disjoin tensed verbs in simple assertions (i.e., *ayayi* is ungrammatical in such sentences). However, the meanings of *ayayi* and *let alone* are still quite different. In an *ayayi*-as-disjunction construction, neither coordinate is negated; in an *ayayi*-as-negation construction, the first argument is not negated, while the second is (see, e.g., (37)). By contrast, in a *let alone* construction, the first coordinate must also be negated. Additionally, *let alone* is generally licensed in downward-entailing (DE) environments, and it has been argued to be a negative polarity item (NPI) based on this (Fillmore et al., 1988). *Ayayi*-as-disjunction, meanwhile, readily appears in upward-entailing (UE) environments, as in (40). And *ayayi*-as-negation *creates* a DE environment, rather than appearing within one.

(40) Nkhuku **ayayi** mbuzi za-da-pit-a n'-nyumba! Cinyungwe
10.chicken or 10.goat 10-PST-go-FV 18-9.house
'Chickens or goats went inside the house!'

Cinyungwe does have 'let alone' constructions, but they are formed with the word *neye* 'no'. Replacing *neye* with *ayayi* results in ungrammaticality, as shown in (41) and (42), which are translations of Portuguese sentences containing *muito menos* 'much less' constructions. In (41), the inclusion of *alibe* 's/he didn't' in the second coordinate is optional.

(41) Siriza a-li-be ku-yend-a ku-xikola {**neye** / ***ayayi**} (a-li-be) ku-cit-a
Siriza 1SM-AUX-NEG INF-go-FV 17-school no 1SM-AUX-NEG INF-take-FV
mayezo.
5.exam
'Siriza didn't go to school, much less take the test.' (*lit.* 'Siriza didn't go to school, no (she didn't) take the test.')

(42) Ndi-li-be ku-dy-a ma-figu ma-wiri {**neye** / ***ayayi**} ma-tato-yo.
1SG-AUX-NEG INF-eat-FV 6-banana 6-two no 6-three-DIST
'I didn't eat two bananas, much less three of them.' (*lit.* 'I didn't eat two bananas, no those three.')

Negative emphatic coordination in Cinyungwe can also be formed with *neye*, as shown in (43). For additional negative emphatic coordinate constructions, see §5.2.

(43) Mphaka nji yi-svipa lini **neye** nji yi-cena lini.
9.cat COP 9-black NEG no COP 9-white NEG
'The cat is neither black nor white.' (*lit.* 'The cat is not black, no it is not white.')

3.2 Non-*ayayi* negation

As previously mentioned, *ayayi* is neither the sole means of disjunction nor the sole means of negation in Cinyungwe. There are (at least) three other negation methods, *lini*, *-be*, and *si*. *Lini* is polysemous itself. As negation, it follows the main verb (44). It is not available with simple or recent past tense verbs, where it instead functions as the *wh*-word 'when'.[7]

(44) Tendani a-ni-fun-a **lini** ku-nemb-a. *cf.* Tendani anifuna kunemba.
Tendani 1SM-PRS-want-FV not 15-write-FV 'Tendani wants to write.'
'Tendani does not want to write.'

The standard method of clausal negation with a simple or recent past tense main verb is *-be*, as shown in (45). This suffix is inserted along with the auxiliary *-li* (from *kukhala* 'to be, to have'). The subject marker attaches to this structure, and the main verb appears in its infinitive form.

(45) Mayi a-li-**be** ku-yend-a ku-n'-sika. *cf.* Mayi a(da)yenda kun'sika.
1.mother 1SM-AUX-NEG 15-go-FV 17-3-market 'Mother went to the market.'
'Mother did not go to the market.'

Syntactically, *lini* must follow a verb that is inflected for tense, whereas *ayayi* cannot negate a tensed verb in an assertion. This difference is shown in (46).

(46) a. Tendani a-ni-fun-a ku-wereng-a, *(a-ni-fun-a) **lini** ku-nemb-a.
Tendani 1SM-PRS-want-FV INF-read-FV 1SM-PRS-want-FV NEG INF-write-FV
'Tendani wants to read, he doesn't want to write.'

b. Tendani a-ni-fun-a ku-wereng-a **ayayi** (*a-ni-fun-a) ku-nemb-a.
Tendani 1SM-PRS-want-FV INF-read-FV not 1SM-PRS-want-FV INF-write-FV
'Tendani wants to read, not to write.'

A similar pattern exists when we compare *-be* and *ayayi*. In (47a), the verb *-wona* 'see' is repeated (though not in the exact same form, as it undergoes morphological changes). In (47b), repeating the verb after *ayayi* is ungrammatical.

[7] This is likely the core meaning of *lini*, as it follows the typical morphology of a *wh*-word (perhaps more accurately called a *ni*-word in the context of Cinyungwe): *mbani/yani* 'who(m)', *cani* 'what', *-poni* 'which'.

(47) a. Semo a-da-won-a ma-luwa a-li-**be** *(ku-won-a) nyoka.
Semo 1SM-PST-see-FV 6-flower 1-AUX-NEG INF-see-FV 10.snake
'Semo saw flowers, he didn't see snakes.'

b. Semo a-da-won-a ma-luwa **ayayi** (*a-da-won-a) nyoka.
Semo 1SM-PST-see-FV 6-flower not 1SM-PST-see-FV 10.snake
'Semo saw flowers, not snakes.'

Another means of negation is *si*, but so far I have not encountered many examples of it. One is shown in (38), where it is interchangeable with *ayayi*.

3.3 Empirical and analytical threads to pursue

Given that *ayayi* does not encode alternative or polar disjunction, a negative hypothetical meaning, or the meaning of 'let alone', what does it encode? Here are some clues I intend to pursue in my ongoing research.

3.3.1 Fusion with irrealis

Ayayi-as-disjunction cannot disjoin object DPs in simple assertions. However, in certain declarative syntactic environments, such as under the scope of a modal (48) or *only*-focus (49), a disjunctive interpretation becomes available.

(48) Siriza a-nga-gul-e ma-figu **ayayi** ma-lambe. Cinyungwe
Siriza 1SM-POSS-buy-FV 6-banana or 6-baobab
'Siriza might buy bananas or baobab.'

(49) Tendani basi nd-iye a-gul-a ma-figu **ayayi** ma-lambe.
Tendani only COP-1.PN 1SM.REC.PST-buy-FV 6-banana or 6-baobab
'Only Tendani bought bananas or baobab.'

The pattern in (47)—otherwise unacceptable disjunction interpretations being "rescued" by modality—can also be observed in Russian. The disjunctive coordinator *ili* is typically ungrammatical with plural agreement (50) but with a modal, plural agreement becomes possible (51). A similar pattern exists in Mainstream American English (Arthur Mateos, p.c.).

(50) Petja **ili** Vasja prišël-Ø/*prišl-i. Russian
Petja or Vasja came-SG/*came-PL
'Petja or Vasja came.' (Ivlieva, 2013, p. 101, ex. 415)

(51) Doma dolžen-Ø/dolžn-y byt' Petja **ili** Vasja.
at.home must-SG/must-PL be Petja or Vasja
'Petja or Vasja must be at home.' (Ivlieva, 2013, p. 103, ex. 423)

Recall that Mauri (2016) proposes irrealis as a common diachronic source for disjunction, and that Phillips (2023, 2024) defines irrealis as an umbrella category containing not just modality but also negation. Phillips also discusses the existence of fusional phenomena in Australian languages, such as negation-triggered irrealis and the fusion of negation and mood marking. By Phillips' definition—the realm of the unrealized—disjunction would also qualify as irrealis. In this case, finding a case of disjunction-triggered irrealis or fusional disjunction and mood marking would not be overly surprising—particularly if *ayayi* itself originates from negation. This approach could also explain the apparent preference of *ayayi*-as-disjunction for questions, which also fall under the category of irrealis. It is unclear how exhaustive focus with *basi* fits into this picture, though.

3.3.2 Subject-verb (noun class) agreement

As in Russian, number agreement is a factor in the acceptability of subject disjunction with *ayayi*. As shown in §2.1, Cinyungwe has thirteen noun classes: six singular-plural pairs (1/2, 3/4, 5/6, 7/8, 9/10, 12/13) and one class for uncountable nouns (14). If the subject contains two human singular nouns from the same class (1 or 12), disjoined by *ayayi*, the verb shows class 1/2 agreement, as in (52). Distinguishing between these subject markers is difficult, as *a-* is an allomorph of both. Note also that the disjunctive *ayayi* examples in this subsection, (52) and (53a), are counterexamples to the usual unavailability of disjunctive readings of *ayayi* in simple assertions.

(52) (Ka-)mu-lumbwana **ayayi** (ka-)n'-tsikana a-da-kuw-a.
(12-)1-boy or (12-)1-girl 1/2SM-PST-shout-FV
'The (small) boy or the (small) girl shouted.'

If the subject contains two nonhuman singular (or uncountable) nouns from the same class, disjoined by *ayayi*, the verb shows class 8 (plural) agreement. Notably, class 8 agreement can also be used in cases of class mismatches. The expected plural agreement is ungrammatical—unless both nouns are plural themselves—and the expected singular agreement requires a negative reading of *ayayi*.

I have confirmed this pattern with classes 3, 5, 7, 9, 12, and 14. Examples with the class 3 nouns *mpira* 'ball' and *mwala* 'stone' are provided below. (53a) shows class 8 plural agreement with an obligatory disjunctive reading. (53b) shows the ungrammaticality of class 4 plural agreement, which would appear in a sentence like 'The balls fell down' or 'The stones fell down.' (53c) shows class 3 singular agreement with an obligatory negation reading.

(53) a. Mpira **ayayi** mwala bzi-da-gw-a.
3.ball or/*not 3.stone 8SM-PST-fall-FV
'The ball or the stone fell down.'

b. *Mpira **ayayi** mwala mi-da-gw-a.
3.ball or/not 3.stone 4SM-PST-fall-FV

c. Mpira **ayayi** mwala u-da-gw-a.
3.ball not/*or 3.stone 3SM-PST-fall-FV
'The ball, not the stone, fell down.'

Class 8 agreement is ungrammatical with human singular noun disjuncts from the same class.

(54) *Mu-lumbwana **ayayi** n'-tsikana bzi-da-kuw-a.
1-boy or 1-girl 8SM-PST-shout-FV
Intended: 'The boy or the girl shouted.'

To summarize, for subjects of the form **[noun$_{SG}$] ayayi$_{DISJ}$ [noun$_{SG}$]**, human nouns trigger class 1/2 agreement and nonhuman nouns trigger class 8 agreement. *Ayayi*-as-disjunction apparently requires plural subject agreement, whereas *ayayi*-as-negation requires singular subject agreement. This is significant because it is another instance of *ayayi*-as-disjunction patterning with conjunction, suggesting a polar disjunctive interpretation of (52) and (53a).

3.3.3 Intonation

The sentence in (55), repeated from (48), can be interpreted as disjunction or negation based seemingly entirely on intonation.[8]

(55) Siriza a-nga-gul-e ma-figu **ayayi** malambe.
Siriza 1SM-POSS-buy-FV 6-banana or/not 6.baobab
'Siriza might buy bananas or/not baobab.'

[8]Many thanks to Sun-Ah Jun for her assistance with analyzing the phrasal prosody of the two versions of (55).

Under a disjunctive reading, *mafigu* is marked with an upstepped pitch accent (L+^H*) and followed by a high boundary tone (H-), as shown in Figure 1. Under a negation reading, *mafigu* is marked with a downstepped pitch accent (L+!H*) and followed by a low boundary tone (L-), as shown in Figure 2. *Ayayi* is marked with a L+H* pitch accent in both versions, but it is more prosodically prominent as negation. Further work is needed to determine what meanings are associated with these pitch accents in Cinyungwe.

Figure 1: Modal assertion with *ayayi*-as-disjunction

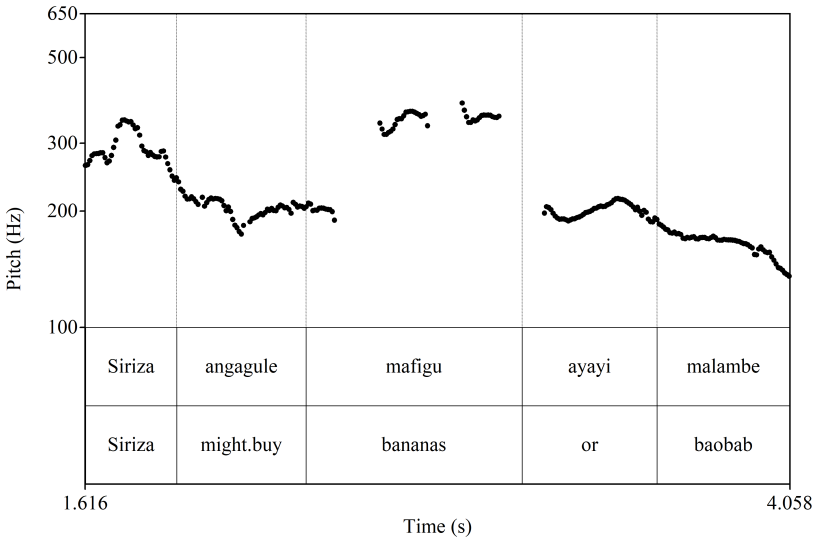
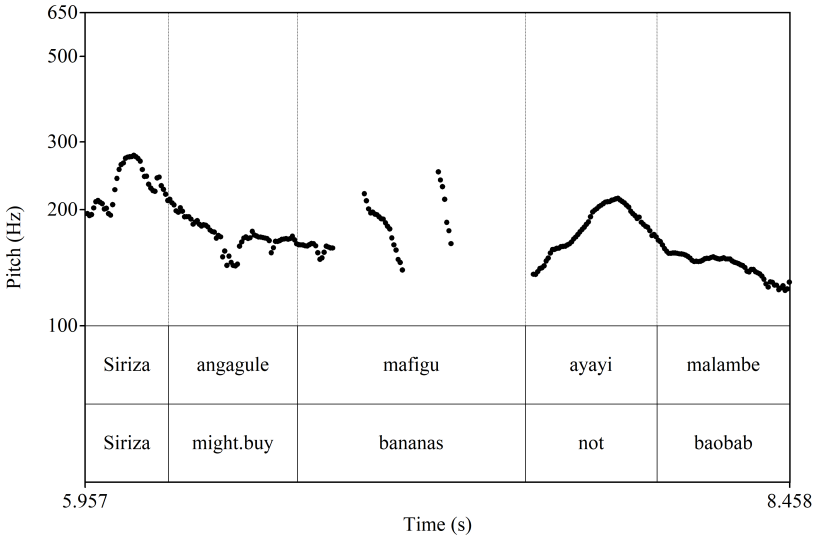


Figure 2: Modal assertion with *ayayi*-as-negation



3.3.4 Morphology

In Bernander's (2025) typological study on epistemic possibility adverbs (EPAs) in almost eighty East African Bantu languages, eight languages have some variation of the EPA *many(ay)i*. These languages are listed in Table 4. Most of the languages are spoken in Tanzania (which borders Mozambique to the north); two are spoken in Uganda (north

of Tanzania). A variety of Ngoni is spoken in Mozambique. Several of these EPAs can mark negative epistemic possibility, that is, uncertainty, in addition to affirmative possibility (Bernander, 2025). These include Hehe *manyi*, Pogolo *maani*, and Ndamba *mani*. The Pogolo EPA also has a disjunctive function. I will consult the original sources on these languages to determine if *many(ay)i* could be related to *ayayi*.

Table 4: Languages with the EPA *many(ay)i* (Bernander, 2025)

Group	**language**	**code**	**EPA**
Southern Highlands	Hehe	G62	*manyi*
	Bena	G63	
	Ngoni	N12	*manyiki*
	Manda	N14	*manya*
Kilombero	Pogolo	G51	*maani*
	Ndamba	G52	*mani*
Great Lakes	Nyoro	JE11	*many(ay)i*
	Masaaba	JE31	
Rufiji	Mpoto	N11	*manyayi*

Another Mozambican Bantu language, Cicopi, has a negative particle *-ya-*, as shown in (56), but to the best of my knowledge this does not exist in Cinyungwe.

(56) Nyumba-ini a-ya-hiyel-a. Cicopi
9.house-LOC 1SM-NEG-sweep-FV
'S/he didn't sweep the house.' (Nhantumbo & Van Der Wal, 2025, p. 525)

Ayayi may not be monomorphemic, although I have been glossing it that way. The initial *a-* resembles the class 1 subject marker. The morpheme *ya* could potentially derive from the verb *kusaya* 'to not have', which Martins (1991) notes can function as negation when used as an auxiliary verb. If so, this would constitute evidence against *ayayi*'s core meaning being disjunctive. Finding a source for *-yi* is not straightforward. One possibility is that it is a suppletive allomorph of the auxiliary *-li/ri*, but I have not observed such an allomorph elsewhere. It could also be derived from the demonstrative *-yu* 'this', which has an allomorph *-yi*.

3.3.5 Response particle

It is possible to use *ayayi* similarly to *neye* 'no' in response to a polar question, as shown in (57). However, I have yet to identify a context where *ayayi* is preferred over *neye* for this purpose. This use of *ayayi* can co-occur with another form of negation; in fact, in (57b), the addition of *alibe* 'didn't' improves the acceptability of the response.

(57) Mayi adayenda kun'sika?
'Did mother go to the market?'

a. Neye.
'No.'

b. Ayayi, ?(a-li-be).
no 1SM-AUX-NEG
'No, (she didn't).'

3.4 Interim summary

In this section, I have argued that the Cinyungwe word *ayayi* cannot be accurately analyzed as encoding alternative disjunction, polar disjunction, negative hypothetical meaning, or 'let alone.' I also introduced other means of negation in Cinyungwe and discussed several patterns that may be valuable in developing a "positive" analysis of *ayayi*: exceptional instances of *ayayi*-disjoined objects in assertions; subject-verb agreement with an *ayayi*-disjoined subject; intonational differences between sentences with *ayayi*-as-disjunction and *ayayi*-as-negation; possible diachronic (and crosslinguistic) sources for *ayayi*; and the use of *ayayi* as a negative response particle.

Based on my research so far, I do not think that *ayayi* encodes disjunction specifically (of any form). I hypothesize that it is multimorphemic, perhaps partially sharing its etymology with the EPA *many(ay)i* in other Bantu languages or perhaps derived partially from the negative auxiliary verb *kusaya* and a proximal demonstrative. In the first case, its literal meaning might be along the lines of '(don't) know', as Bernander (2025) cites a verb of knowing as the source for *many(ay)i*. In the second case, it might mean 'it's not this'. I also hypothesize that *ayayi* interacts somehow with irreality—perhaps being restricted to irrealis environments or encoding a fusion of negation and mood marking—and plurality—perhaps being restricted to environments with plural alternatives, when functioning as disjunction.

4 *Peno* and *pinango*: disjunction + epistemic possibility

As previously mentioned, *peno* and *pinango* have both disjunctive and epistemic modal meanings. As disjunction, their syntactic distribution partially overlaps. In (58), they are interchangeable, but in (59), the choice of coordinator depends on sentence type (interrogative or declarative). Only *peno* is acceptable in the question in (59a) only *pinango* is natural in the assertion in (59b).

(58) a. *I see Semo running, clearly scared. I know he is afraid of flowers and snakes, so I conclude:*
Semo a-da-won-a ma-luwa {**peno** / **pinango**} nyoka.
Semo 1SM-PST-see-FV 6-flower or 10.snake
'Semo saw flowers or snakes.'

b. *We prepared dinner for a guest, but they are nodding off at the table.*
U-n'-fun-a ku-dy-a {**peno** / **pinango**} ku-gon-a?
2SG-PRS-want-FV INF-eat-FV or INF-sleep-FV
'Do you want to eat or sleep?'

(59) a. Mphaka ni y-isvipa {**peno** / ***pinango**} y-icena?
9.cat COP 9-black or 9-white
'Is the cat black or white?'

b. Mphaka ni y-isvipa {**?peno** / **pinango**} y-icena.
9.cat COP 9-black or 9-white
'The cat is black or white.' *(You were already talking about the cat.)*

Table 5 summarizes the distribution of *peno* and *pinango* as disjunctive coordinators as I currently understand it. One clear pattern is the general preference of *pinango* for assertions and *peno* for alternative questions. I have very little data on their behavior in modal assertions or polar questions so far, so I have not included a row for those judgments yet.

Table 5: Disjunctive *peno* and *pinango*

sentence type	**nouns**	**adj.**	**adv.**	**infinitives**	**tensed verbs**	**clauses**
simple assertion	peno, pinango	pinango	*	peno, pinango	??pinango	pinango
alternative question	peno	peno	*	peno	peno	peno

4.1 *Peno* and *pinango* as EPAs

Peno is the only Cinyungwe example of an EPA included in Bernander (2025), based on data from van der Mohl (1904). Alongside its function as an EPA, a range of additional meanings are listed, some of which I have observed myself (conditional, disjunctive coordinator) and others I have not (evidential, approximate number). I have also observed uses of *peno* that are not mentioned in the study. For example, *peno* can function as a response particle expressing not only epistemic possibility (which is unsurprising for an EPA) but also uncertainty, as shown in (60). I suspect that *peno* is derived from the verb *kupenula* 'to not know for sure, to hesitate.'[9] Recall from §2.5.2 that Bernander's (2025) scale of epistemic support classifies both possibility and uncertainty as neutral support. He describes them as affirmative and negative "variant[s] of what is essentially the same meaning." This polysemy results in a "puzzling morphosyntactic result" (Bernander, 2025, p. 106).

(60) A. Mwana wadya?
'Did the child eat?'

B. **Peno**.
'Maybe.' *or* 'I don't know.'

Peno can also mean 'if', as in (61). This is a non-conditional isntance of 'if', functioning instead like *whether* and introducing an embedded question, but *peno* can also introduce a conditional antecedent.

(61) Ni-n-dziw-a lini **peno** a-mu-gul-ir-a-di.
1SG-PRS-know-FV NEG if 1SM-1OM-buy-APPL-FV-really
'I don't know if s/he really bought (them) for him/her.'

As for *pinango*, although it is not acceptable as a response to a question, it does appear as a dubitative particle meaning 'maybe' in sentences such as (62).

(62) **Pinango** Siriza a-gul-a ma-figu.
maybe Siriza 1SM.REC-buy-FV 6-banana
'Maybe Siriza bought bananas.'

4.2 Empirical and analytical threads to pursue

4.2.1 Alternative disjunction

I do not have enough data to argue that *peno*-as-disjunction encodes alternative disjunction specifically, but initial evidence suggests this may be the case. In (63), where the speaker suspects that Semo no longer has both children and grandchildren, *peno* (in addition to *ayayi*) is available. But in (64), where the speaker lacks this suspicion, only *ayayi* is felicitous.

(63) *Several younger members of Semo's family died last year.*
Semo a-na w-ana {**peno** / **ayayi**} azu-kulu?
Semo 1SM-have 2-child or 2-grandchild
'Does Semo have children or grandchildren?' (Who is still alive?)

(64) *Semo is an elderly man. You wonder if he has children, and perhaps grandchildren too.*
Semo a-na w-ana {#**peno** / **ayayi**} azu-kulu?
'Does Semo have children or grandchildren?'

Pinango-as-disjunction may not be specified for either alternative or polar disjunction. It may be syntactically restricted to assertions, but as (65) shows, it is compatible with an alternative disjunctive reading. Attempting to elicit polar questions with *pinango* will hopefully clarify this situation.

[9] Another way of saying 'I don't know' in Cinyungwe appears in (61): *nindziwa lini*, from the verb *kudziwa* 'to know'.

(65) *Siriza is only allowed to choose one activity, not both.*
Siriza a-nga-pfundz-e ku-yimb-a {**peno** / **pinango**} ku-tal-a.
Siriza 1SM-POSS-learn-FV INF-sing-FV or INF-draw-FV
'Siriza can learn to sing or to draw.'

Additionally, recall that *peno* is typically unavailable in assertions. Its acceptabiltiy along with *pinango* in (66) suggests that *peno*, like *ayayi* in §3.3.1, may be sensitive to or otherwise interact with reality status.

4.2.2 Subject-verb (noun class) agreement

As with *ayayi*, both *peno* and *pinango* allow plural subject-verb agreement when disjoining subject nouns, as shown in (66). However, these examples are not ideal data, because the DPs *poto* and *kopo* are not from the same noun class. As such, it could be that the class 8 prefix is only used in these sentences due to class mismatch. It will be valuable to replicate the tests I discussed in §3.3.2 with *peno* and *pinango*.

(66) a. Poto **peno** kopo bzi-da-sv-edw-a?
5.pot or 9.cup 8SM-PST-break-PASS-FV
'Did the pot or cup break?'

b. Poto **pinango** kopo bzi-da-sv-edw-a.
5.pot or 9.cup 8SM-PST-break-PASS-FV
'The pot or cup broke.'

4.2.3 Morphology

As mentioned above, I suspect that the diachronic source of *peno* is the verb *kupenula* 'to not know for sure, to hesitate' (definition based on that of Martins (1991)). Further support for this theory comes from Cisena (N44), a Mozambican Bantu language that is closely related to Cinyungwe. Bernander (2025) reports an EPA *penu* in Sena, potentially deriving from *kupenula* 'to doubt'. Another possible source could be the proximal demonstrative pronoun/determiner *-no* (67), one of four demonstratives in Cinyungwe. Inflected for class 16 locative agreement, this demonstrative means 'here', as shown in (68). However, it is unclear why the resulting form of the EPA/coordinator would be *peno* instead of *pano*.

(67) n'-kate u-no
3-cake 3-this.close
'this cake here'

(68) Ti-mba-khal-a pa-no.
1PL-PROG-live-FV 16-this
'We live here' (Martins, 1991, p. 77)

The etymology of *pinango* seems the most straightforward of the three disjunctive coordinators. It most likely derives from the indefinite pronoun/adjective *-ina* 'one, some, someone, other(s)', which according to Martins (1991) can also appear as *-inango*. With class 16 locative agreement, the resulting forms would be *pina* and *pinango*. The core meaning of *pinango* might therefore be 'elsewhere', formed from the stem *-inango* 'other' and the class 16 prefix *pa-* ('at').

(69) M'-bodzi ng-wa-bwino, **w-inango** ng-wa-bwino lini.
1-one COP-1-good 1-other COP-1-good NEG
'One (friend) is good, the other is not so good.' (Martins, 1991, p. 52)

(70) M-p-inango.
COP-16-other
'It's another.' (Martins, 1991, p. 66)

Not just any form of *-ina(ngo)* can function as a coordinator. Only *pinango* has acquired this additional meaning. This may be a broader crosslinguistic pattern, as I found multiple instances of EPAs glossed as 16-'other' in Bernander (2025), such as Swahili and Elwana *pengine* and variations of the word *pangi* in eight other languages.

4.3 Interim summary

In this section, I have shown the range of meanings of *peno* and *pinango*, speculated that *peno*-as disjunction may be restricted to alternative disjunction, described initial noun class agreement patterns, and reviewed potential diachronic sources for both words. I hypothesize that *peno*'s core meaning relates to lack of knowledge or doubt and that *pinango*'s core meaning relates to otherness ('elsewhere'). If these hypotheses are correct, then, as with *ayayi*, neither *peno* nor *pinango* has Boolean disjunction as its core semantic meaning. Instead, both words appear to be instances of Cinyungwe co-opting discourse adverbial epistemic modals to express disjunction. While this is consistent with the characterization of English discourse-adverbial epistemics in the literature (e.g., *otherwise*, Phillips and Kotek, 2020), it is not predicted by standard semantic approaches to disjunction and epistemic modality.

5 Special cases

5.1 Bisyndetic disjunction?

Occasionally, *ayayi*, *peno*, and *pinango* appear in combination with each other. With verbal or clausal disjunction, one coordinator appears sentence-initially and the other appears in its standard position. *Peno* can do this most flexibly, "doubling" itself as in (71) and (72). This resembles bisyndetic disjunction or perhaps emphatic disjunction on the surface level, but given that *peno* can also mean 'if', is the first *peno* truly functioning as a coordinator in these sentences? Unlike *peno*, *ayayi* and *pinango* cannot double themselves, as shown in (71) and (72).

(71) **Peno** u-n'-fun-a ku-dy-a **peno** ku-gon-a, ndi-wuz-e.
if/or? 2SG-PRS-want-FV INF-eat-FV or INF-sleep-FV 1SG-tell-SBJV
'If you want to eat or sleep, (just) tell me.'

(72) **Peno** Siriza a-da-dy-a **peno** a-da-mw-a madzi, ni-n'-dziw-a lini.
if/or? Siriza 1SM-PST-eat-FV or 1SM-PST-drink-FV water 1SG-PRS-know-FV not
'I don't know if Siriza ate or drank water.'

(73) *__Ayayi__ un'funa kudya __ayayi__ kugona ndiwuze.

(74) *__Pinango__ un'funa kudya __pinango__ kugona ndiwuze.

Sometimes, *ayayi* or *pinango* appears in place of the second *peno* (75). Additionally, *pinango*—but not *ayayi*—can swap places with *peno* (76). Each of these combinations obligatorily invovles *peno*; a combination with *ayayi* and *pinango* is not natural.

(75) **Peno** un'funa kudya {**ayayi** / **pinango**} kugona ndiwuze.

(76) a. **Pinango** un'funa kudya {**peno** / ?**ayayi**} kugona ndiwuze.

b. ??**Ayayi** un'funa kudya {**peno** / **pinango**} kugona ndiwuze.

These disjunction combinations seem to affect the politeness of the sentence. One way to notice this is by inserting the vocative *mwanawe* 'little child'—which is less appropriate in a very polite context—at the beginning of the sentence. Both versions of (77a) are natural sentences, but (77b) and (77c), which involve *pinango*, are marginal, suggesting that these constructions are more polite. One potential explanation could be that the coordinator combinations in (77) are equally grammatical but their meanings differ subtly from each other in, for example, degrees of contrast. Perhaps stronger contrast is perceived as less polite due to a manner implicature.

(77) *You are talking to your nephew who came to visit you and you want to make him comfortable at your house.*

a. Mwanawe **peno** un'funa kudya {**peno** / **ayayi**} kugona ndiwuze.

b. ?Mwanawe **peno** un'funa kudya **pinango** kugona ndiwuze.

c. ??Mwanawe **pinango** un'funa kudya **peno** kugona ndiwuze.

Disjunction combinations are also possible when coordinating two complete sentences with different subjects. These follow similar but non-identical patterns to the examples above with verbs.

(78) a. **Peno** Semo a-da-won-a ma-luwa {**peno** / **ayayi** / ?**pinango**} Kapenu
maybe Semo 1SM-PST-see-FV 6-flower maybe/or? 1SM-PST-see-FV
a-da-won-a nyoka, ni-n'-dziw-a lini.
10.snake 1SG-PRS-know-FV NEG
'Maybe Semo saw flowers, or maybe Kapenu saw snakes, I don't know.'

b. ?**Peno** Semo adawona maluwa **pinango** Kapenu adawona nyoka nindziwa lini.

c. ??**Pinango** Semo adawona maluwa **peno** Kapenu adawona nyoka nindziwa lini.

5.2 Emphatic negative disjunction

There are several ways to form 'neither … nor' constructions in Cinyungwe. The most common method, which has several variants, uses negation on each disjunct along with one of the following connectives: *pomwe*, *ayayi*, or *neye*, as shown in (79) and (80).

(79) *You are looking for a cat that is either black or white; you don't care which. You ask if a neighbor's cat meets this requirement.*
Neye, mphaka nji yisvipa lini, {**pomwe** / **ayayi**} nji yicena lini.
no 9.cat COP 9-black NEG also / or COP 9-white NEG
'No, the cat isn't black or white.' *or* 'No, the cat is neither black nor white.'

(80) *Semo has two dogs, one white and one yellow. They ran away, and Kapenu mentions seeing a dog near his house. Semo asks if the dog was white or yellow. Kapenu responds:*
Neye, i-khali i-cena lini, **neye** i-khali ya safalawu lini.
no 9-AUX.PST 9-white NEG no 9-AUX.PST of yellow NEG
'No, it wasn't white, nor was it yellow.'

Another emphatic negative disjunctive construction is *lini (ne) … ne*, as shown in (82). The first *ne* is optional, and *lini* is not repeated, in contrast to its use in (79) and (78).

(81) Mwana a-ni-fun-a lini **(ne)** mbwaya **ne** kolo.
1.child 1SM-PRS-want-FV NEG nor 9.dog nor monkey
'The child doesn't want a dog nor a monkey.'

5.3 Conjunction is polysemous, too

The conjunctive coordinator *na* has at least four distinct meanings, suggesting that polysemous coordinators/Boolean operators may be a broader pattern in Cinyungwe, rather than limited to disjunction. In (82), *na* can be interpreted as either conjunction ('and') or accompaniment ('with').

(82) Semo a-da-won-a mphaka **na** mbwaya.
Semo 1SM-PST-see-FV 9.cat and/with 9.dog
'Semo saw the cat and/with the dog.'

This pattern, called comitative conjunction, is attested in other languages (McNally, 1993; Stassen, 2000, 2003). One analysis of comitative conjunction, which I adopt for Cinyungwe, is that *na* is polysemous between a conjunctive and a comitative (accompaniment) function. This may be due to a monosemous comitative marker taking on coordinative characteristics over time (Haspelmath, 2007). There are a range of diagnostics to support this view (Lippard, 2023a, 2023b); one example is word order and agreement. In SVO languages, if the subject consists of conjoined DPs, the verb follows both conjuncts and often shows plural agreement, whereas a PP adjunct follows the verb and does not trigger plural agreement (Haspelmath, 2004, 2007; Stassen, 2003). Both of these patterns are possible with *na*.

(83) a. [Ine **na** n'kazi] ti-da-fika.
I and 1.woman 1PL-PST-arrive
'The woman and I arrived.'

b. [Ine] n-da-fika [**na** n'kazi].
I 1SG-PST-arrive with 1.woman
'I arrived with the woman.'

Additionally, according to the Coordinate Structure Constraint (CSC), conjuncts cannot move out of coordinate structures. Conjunctive NPs are subject to the CSC, but comitative NPs are not (Haspelmath, 2007). In (84), the availability of *mbani* in a sentence-initial or sentence-final position indicates that *na* is not a coordinator here.

(84) (Mbani) u-n'-kumbuk-a kuti (mbani) a-da-dy-a **na** Siriza (mbani)?
who 2SG-PRS-think-FV that who 1SM-PST-eat-FV with Siriza who
'Who do you think ate with Siriza?'

In addition to its conjunctive and comitative functions, *na* also introduces *by*-phrases in passive sentences (85) and means 'with' in instrumental constructions (86).

(85) Madzi ma-da-bwer-es-er-edw-a Kapenu **na** mwana.
6.water 6sm-pst-come-caus-appl-pass-fv Kapenu by 1.child
'Water was brought for Kapenu by the child'

(86) Siriza a-da-phik-a ci-mbamba **na** ntikho.
Siriza 1SM-PST-cook-FV 7-beans with spoon
'Siriza cooked beans with a spoon.'

Finally, *na* also appears in NPI phrases such as (87). Martins (1991) observes that this use of *na* can also be performed by *ne*. Elsewhere, *ne* means 'nor' (emphatic negative disjunction), as in (81). Martins (1991) identifies 'nor' as another meaning of *na*, but with the possible exception of (87), the consultants I am working with do not use *na* in this way.

(87) mwana **na** mbodzi
1.child ? 1.one
'any child at all'

Pomwe 'and, also', another conjunctive coordinator, also sometimes appears in emphatic negative disjunctive constructions, as previously shown in (79). *Pomwe* is just as multifunctional as *na*; its range of meanings include 'when' (88), 'again' (89), and 'even' (90).

(88) **pomwe** a-khali mwana
when 1SM-PST.IMPF 1.child
'when s/he was little'

(89) Bzi-da-ci-tik-a **pomwe**.
8-PST-7OM-happen-FV again
'It happened once again.'

(90) *Semo wasn't expecting to see animals here in the hospital, especially not chickens!*

Semo	a-da-won-a	mphaka,	mbwaya,	nkhuku	**pomwe**.
Semo	1SM-PST-see-FV	10.cat	10.dog	10.chicken	even

'Semo saw cats, dogs, and even chickens.'

Like *pinango*, *pomwe* appears to show class 16 agreement. It most likely derives from the relative pronoun *-omwe*, as shown in (91). Although *-omwe* inflects for the other locative classes as well (i.e., *komwe* 'where to' and *momwe* 'where inside'), only the version with class 16 agreement shows the additional range of meanings described in this subsection.

(91)

Ni	Semo	**omwe**	adadya	na	Siriza.
COP	Semo	who	ate	with	Siriza

'It was Semo who ate with Siriza.'

6 Closing thoughts

6.1 The relationship between disjunction and irrealis

Mauri (2008) suggests that explicit realis marking would be incompatible with disjunction. A slot in a possible world can only be filled by one alternative at a time. This makes the alternatives equivalent possibilities and places them in the domain of the imagined or hypothetical—irrealis. Phillips (2023) makes a similar argument for the inclusion of negation under the umbrella of irrealis. Irrealis currently looks like a promising direction for my research. However, as it is conceptually very broad and abstract, I will need to find ways to test specific predictions. One possible place to start is two typologies proposed by Mauri (2008). Based on surveying a range of languages, Mauri describes three types of disjunctive constructions. The construction types include (a) those requiring both a disjunctive connective and an irrealis marker, (b) those requiring only a disjunctive connective, and (c) those requiring only an irrealis marker. According to Mauri (2008), disjunctive constructions that require *neither* of these things are unattested.

6.2 Notions of contrast and alternative

A recurring puzzle throughout my research so far has been imprecise and sometimes contradictory definitions of elements of disjunctive meaning related to contrast, alternatives, exclusivity, (non-)exhaustivity, and (non-)veridicality (see, for example, Barotto and Mauri (2022) and Repp (2010)). In polar disjunction, in what sense are the disjuncts alternatives of each other? Why does Cinyungwe use the same lexical item for meanings as different as (a) negation that draws explicit contrast between constituents and eliminates possibilities and (b) disjunction that expands possibilities and can sometimes freely vary with conjunction? If contrast, like irreality, is a broad umbrella category, what are the specific ways that it can manifest in a language independently from focus or topic? Why are there so many overlapping and complex ways of expressing supposedly fundamental logical meanings in Cinyungwe?

6.3 Research plan

During the dissertation process, I will continue to collect data through elicitation sessions. Meeting with consultants regularly allows me to intersperse challenging and complicated tasks with simpler questions, which I use to develop paradigms and explore tangents. I will also write regularly, as I have found that working on multiple shorter documents (squibs, abstracts, handouts) that I can compile and revise later is helpful for tracking my progress and organizing my thoughts. In general, I hope to break this very large project into smaller recurring tasks that I can move between or work on simultaneously.

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