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Properties of Arguments and Predicates of Weather Events in Kinyakyusa

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Abstract

The encoding of weather events reveals a tripartite division of argument-type, predicate-type, and argument-predicate-type. I argue in this article that speakers of Kinyakyusa underscore the predicate-type and partially the argument-type although the predicate-type predominates. Compared to other Bantu languages, Kinyakyusa resembles Sepedi and Sesotho, which are spoken in South Africa, and Kiswahili, which is spoken in East Africa, as regards the properties of the cognate arguments of weather events. Kinyakyusa reveals that the arguments of weather events occupy the subject and/or object position; however, the post-verbal cognate objects do not trigger the affixing of object prefixes on to verbs, which is an indicator of less properties of objecthood but much predominance of the predicate-type. Furthermore, each predicate selects a specific weather event and the assignment of the nominal prefix of the specific weather event helps speakers to provide a proper semantic interpretation of the argument. This makes the language predominantly predicate-type.

Keywords: *Arguments, construe, Kinyakyusa, predicates, weather events*

Introduction

Eriksen et al. (2010, 2012) analysed weather events[2] in a sample of languages by looking at the syntax of predicate structure, the semantics of theta roles, and the grammaticalization of non-arguments into arguments of weather verbs. A tripartite division of the strategies to express weather events include predicate (verbal) type, argument (nominal) type, and argument-predicate (combinational) type, as discussed in detail in the next section of this article. Eriksen et al. (2012: 395) postulated that Kiswahili "employs the argument type for thunder, storm, lightning and wind"; the subject matter which was called to question by Lusekelo (2021), who suggested the predominance of the predicate-type. In this article, the predominance of the predicate-type in Kiswahili is corroborated by the data gathered from Kinyakyusa, a Bantu language spoken in Malawi and Tanzania.

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[2] The idioms weather events, metereological events, weather phenomena, metereological phenomena, metereological conditions, and weather conditions are sometimes interchangeably used in the literature (see Andrason, 2019; Eriksen et al., 2012; Lusekelo, 2021). Though the idiom weather events is preferred in this article, weather conditions is also used.

Andrason and Visser (2017, 2019) collaborate the tripartite division of weather events by Eriksen et al. (2010, 2012) and establish the grammaticalization approach to the arguments and predicates of weather events in Bantu languages. The grammaticalization path established for the Bantu languages spoken in South Africa requires further illumination from other Bantu languages. In this article, I investigate the predicate structure, argument structure, and lexical semantics of the verbs involved in the expression of dynamic and static weather events in Kinyakyusa.

Typological research has shown that predicates for weather events lack proper participants. The arguments which are construed turn out to be not prototypical arguments; rather, they reveal some properties of cognate objects (Andrason & Visser, 2017; Eriksen et al., 2010; Lusekelo, 2021) and abstract arguments conceptualized from the climatology of a given hinterland (Andrason, 2019). As a result, many predicates in the sample languages surveyed so far reveal the existence of intransitive verbs. In the course of the discussion in this article, I present evidence to substantiate that Kinyakyusa reveals two kinds of predicates of weather, namely verbs which permit the occurrence of cognate objects in the post-verbal position and which are similar to Kiswahili (Lusekelo, 2021), and verbs which do not co-occur with any post-verbal arguments.

So far, synchronic analyses of evidence have corroborated the properties of arguments and predicates of weather events postulated by Eriksen et al. (2010, 2012). For instance, Andrason (2019) notes that the word order verb-subject is prominent in the encoding of weather events in Polish, as is the case in Kiswahili (Lusekelo, 2021). Also, Andrason (2019) explains that each weather event is encoded by more mechanisms, but the encoding of *rain*, *snow*, and *wind* is more complex than other weather events; and motion verbs are involved in the expression of dynamic weather events. The synchronic information provided below substantiates that Kinyakyusa has complex ways of encoding *rain* and *wind*, but a simplistic mechanism of expressing other weather events.

Eriksen et al. (2010, 2012) postulate two kinds of weather events, vis-à-vis dynamic weather events (*rain, snow, thunder, wind, hail, lightening, sleet*) and static events (*sunshine, darkness, temperature, daylight, humidity*). The existing literature does not reveal the conceptualisation of all these weather events in each individual language (see Andrason, 2019; Andrason & Visser, 2019; Lusekelo, 2021). In addition, different strategies have been developed by speakers of different languages to express some weather events. For instance, Andrason (2019) presents several conceptualisations of the various kinds of precipitation but notes that "there is no special word for *sleet* in Polish" (p. 81). To express this phenomenon, speakers use a combination of *snow* and *rain*. In isiXhosa, Andrason and Visser (2019) point out that precipitation is encoded by means of nouns and verbs. Specifically, they point out that "the concepts of hail and sleet are usually expressed by nouns *isichotho* and *iliqhwa* respectively. However, these two lexemes can also refer to other types of precipitation. *Isichotho* can denote thick rain. *Iliqhwa* can denote cold rain or, even, snow" (pp. 23-24). To corroborate the findings of the present study with those of previous research on Bantu languages,

in this article, I supply data to show that metonymical representation of weather events is a common phenomenon in Kinyakyusa.

The extra-linguistic phenomena and climatology of a given hinterland are central in the conceptualisation of weather events by speakers of a given language (Andrason, 2019). The Bantu speaking zones in Africa constitutes varied climatic conditions, perhaps divided broadly into three board areas (see Carter & Parker, 2009; Jury 2016). The Western Bantu-speaking area is found in Cameroon and Congo. The dense vegetation, heavy rainfall, and high temperatures are common in the equatorial rainforest. Other parts experience a tropical climate. The Eastern Bantu languages are spoken in a typical tropical climate characterized by rain and dry seasons, high humidity, and average temperature. The Southern Bantu zone experiences pronounced winter and summer. It is, therefore, important to examine how speakers of different Bantu languages conceptualise the weather events experienced in their areas. This is in line with Andrason and Visser (2019: 23), who found that "the idea of snow is conceptualised through the noun *ikhephu*". It is also encoded by the intransitive verb *kephuka* 'be cut off' or the transitive verb *kephula* 'cut off'. In other Bantu languages spoken in South Africa, snow is also conceptualized using the argument *mowo* 'a (snow) fall' in Sepedi, the argument *kgetheha* 'snow', and the predicate *kgetheho* 'fall of snow' in Sesotho (Andrason & Visser 2017: 152-153). In this article, I analyse the conceptualisation of weather events, which is attested in the Kinyakyusa-speaking area, situated in the typical tropical climate in Malawi and Tanzania by looking at their properties of arguments and predicates.

An Overview of the Framework for Expressing Weather Events

The framework of predicate structure articulated by Eriksen et al. (2010, 2012) pinpointed the absence of the key notions of proto-agent and proto-patient in the weather phenomena. The first focus of the framework concerns the tripartite division of the conflation frame, whereby Eriksen et al. (2012) propose that, depending on the linguistic category which is primarily responsible for encoding a given weather event, "meteorological expressions can be divided into three major types; predicate type, argument type and argument-predicate type." (p. 385). Each of these semantic and formal variations underscores a given role, as follows: "in the predicate type, the predicate of the sentence is responsible for the expression of weather. In the argument type, the argument refers to the weather event. Finally, in the argument-predicate type, both are involved" (Ibid., p. 385). The examples include *it rains* for a predicate-type, *rain comes* for an argument-type, and *rain rains* for an argument-predicate-type.

Research on individual languages has shown variations in the realisation of the tripartite division suggested in the framework. Andrason and Visser (2017), for instance, found variations between Sepedi and Sesoth as compared to isiXhosa and isiZulu. The variations between Bantu languages is also not complete because each language tends to outline fine-grained and complex mechanisms for expressing weather events. In this regard, Andrason (2019: 102) argues that "any class of events or constructions is a complex set of subcategories, each with a slightly distinct profile." As a result, this phenomenon makes it a special area of

investigation. In fact, Eriksen et al. (2012) suggested that we need to examine the mechanisms used to express weather events in individual languages because the diachronic variations within an individual language may contribute to the understanding of the synchronic way of the same subject matter. Therefore, I find it important to continue research on weather events due to the variations obtained in languages such as Polish, which is spoken in the northern hemisphere, and isiXhosa, which is spoken in the southern hemisphere (Andrason, 2019; Andrason & Visser, 2019). Each of these languages show language-internal differences (Eriksen et al., 2010) as well as extra-linguistic mechanisms associated with given geographical settings (Andrason, 2019; Andrason & Visser, 2019).

Comparative research by Eriksen et al. (2010) shows that there are general patterns of expressing weather events in the world's languages. But Andrason (2019) shows that variation is also attested across language families. While Eriksen et al. (2010) show that some languages (e.g. Digo) may employ several mechanisms to express the same kind of weather condition, Nicolle et al. (2004) appear to highlight more mechanisms for expressing precipitation. For instance, Eriksen et al. (2010) point out that speakers of Digo use the verb *nanya* 'to rain' and *imvula* 'rainfall' to provide an array of interpretations. But I find that this is not the only case in other Bantu languages (see Lusekelo, 2021). It becomes necessary to examine the mechanisms for expressing two kinds of weather conditions in a single language to obtain an in-depth understanding of this phenomenon.

Moreover, Andrason (2019) has offered a detailed discussion of the interface between argument structure and the semantics of weather events in Polish. It appears that the language-specific linguistic and extra-linguistic issues are central in the description of weather events. In this article, I contribute to the properties exhibited by the predicative verbs and their subsequent arguments of precipitation (rainfall) and a non-precipitation phenomenon (temperature) in Kinyakyusa. The motivation emanates from Andrason's (2019) analysis of the numerous rainfall and temperature phenomena in Polish, which is spoken in the northern hemisphere. With regard to temperature, the situation is different in languages like Kinyakyusa, which is spoken in the southern hemisphere.

The second focus concerns dynamic and static weather events, which have been postulated by Eriksen et al. (2010, 2012). These two branches show "four main types of weather events will be distinguished" (Eriksen et al., 2012: 391). The distinction between the four types arises from the tripartite division of encoding of weather events: (i) precipitation dynamic events (*rain*, *snow*, *hail,* and *sleet*), (ii) non-precipitation dynamic events (*thunder*, *lightning,* and *wind*), (iii) static events for temperature, atmosphere, and light conditions (*coldness*, *hotness*, *humidity*, *daylight,* and *darkness*); and (iv) static events for sunshine (*sunshine*). Though it appears that *darkness* is not underscored more than *moonlight* is, Eriksen et al. (2012: 398) present evidence from English: *The moon is shining* and *The stars are shining*, and Andrason (2019) presents the argument *księzyc* 'the moon' in Polish. It seems that the fourth type is not found in Bantu languages (see Andrason & Visser, 2017). Perhaps this is a result of the limited weather events associated

with day-and-night in Africa. The foregoing discussion reveals that an investigation of the arguments and predicates for the fourth category is required in Bantu languages.

Furthermore, although Eriksen et al. (2010, 2012) show variations in the expression of static weather events, scholars focus on a fraction of the weather events. For instance, Andrason (2019) does not discuss atmospheric conditions like temperature, humidity, sunshine, and light in isiXhosa. Since I want to evaluate the manner in which Kinyakyusa speakers express weather events, I focus on all four types of weather events. I presume this decision will help to establish the prominent weather events, as Andrason (2019) found the prominence of only precipitation dynamic events of rain, snow, and hail in Polish. To arrive at a proper decision for Kinyakyusa, I examine these weather events: (i) precipitation dynamic events (*rain* and *hail*), (ii) non-precipitation dynamic events (*thunder*, *lightning* and *wind*), (iii) static events for temperature, atmosphere, and light conditions (*coldness*, *hotness*, *humidity*, *daylight* and *darkness*); and (iv) static events for sunshine (*sunshine*). The reason for disregarding snow is that Kinyakyusa is spoken in tropical Africa, where snow is not experienced.

The third focus concerns the claim that the predicates of weather events contribute to the theory of predicate structure, which states that internal semantic features of the verb select the theta role(s) to co-occur with (Rappaport-Hovav et al., 2010). But Eriksen et al. (2010, 2012) pointed out that weather verbs are associated with arguments which are not proper. Similarly, Andrason and Visser (2017), and Lusekelo (2021) emphasise that even the cognate objects may trigger object prefixes in some Bantu languages, and may not in others. Previously, the argument structure of the verb in Bantu languages was assumed to encompass the verb-stem and the noun phrase(s) it triggers to co-occur with around the verb (Rappaport-Hovav et al., 2010), as illustrated by the verb *piga* 'hit' in Kiswahili, which licences an agent and the patient. Since previous works on the verbs of Kinyakyusa did not deal with verbs of weather (see Lusekelo, 2012a, 2024a; Persohn, 2020, van der Wal & Lusekelo, 2022; van der Wal et al., 2023), I want to examine whether the participants of verbs of weather are prototypical or not.

The Encoding of Weather Events in Kinyakyusa

The geographical location and climatological conditions of the hinterlands of speakers of any language contribute to the conceptualisation of the arguments and predicates of weather events (Andrason & Visser, 2017). This point is central to the hinterland of the Kinyakyusa speakers who inhabit the lowlands in Kyela and Karonga districts of Tanzania and Malawi, respectively, (Hara & Lusekelo, 2024; Wilson, 1958), as opposed to those inhabiting the uplands in Busokelo and Rungwe districts of Tanzania (Felberg, 1997; van der Wal and Lusekelo, 2022). The weather events outlined in this article have evidence from the upland areas, which generalises to the lowland areas.

Speakers of Kinyakyusa

Wilson (1958) says the Nyakyusa inhabit the tip of Lake Nyasa in both Nyasaland and Tanganyika. Felberg (1997), LoT (2009), and Lusekelo (2012a, 2024b) provide the areas of Karonga in Malawi, and Kyela and Rungwe in Tanzania. The Karonga

and Kyela areas are a lowland, while Rungwe is an upland. There are about one million speakers in both countries.

The sentences provided in this paper come from the Kinyakyusa spoken in the upland area. This is basically confirmed by the sentences gathered at the Kiwira[3] area, where a major research of the language was conducted by the author in collaboration with other researchers on the topic of information structure (see van der Wal et al., 2023; van der Wal & Lusekelo, 2022). There are slight variations in the sound patterns and lexicon of the lowland Kinyakyusa spoken in Kyela and Karonga as compared to the Kinyakyusa spoken in the upland areas of Busokelo and Rungwe (Felberg, 1997; van der Wal. et al., 2023). To remedy the light variations, I analyse only data from the upland area.

The Geography of Nyakyusaland

The Nyakyusa people inhabit a landmass that stretches between Lake Nyasa/Malawi and Rungwe and Livingstone Mountains in Malawi and Tanzania. Kinyakyusa dialects include *Konde* (spoken near Lake Nyasa/Malawi) and *Mwamba* (spoken in the hills of Rungwe and Livingstone ranges) (Wilson, 1958; Lusekelo, 2012a; Persohn, 2020). This physical landscape determines the weather conditions in Nyakyusaland. The geography influences both dynamic weather events, mainly *rain* and *wind*, and static events like *sunshine, darkness, temperature* and *daylight*, as explained below.

Generally, Nyakyusaland is located within the tropical climate of Africa (Carter & Parker, 2009; Jury, 2016). Specifically, geographers describe Rungwe and Kyela as a typical tropical climate with "rainfall season distributed between November and May" and "a little rain fall between June and October", which is the dry season (Williamson et al., 2014: 117). Both the alternating rainy and dry seasons receive rainfall in Nyakyusaland. The variation of the amount of rainfall is obvious between Nyakyusaland in Kyela District (near Lake Nyasa) and in Rungwe District (near Rungwe Mountains and Livingstone Ranges) in Tanzania. The upper mountain areas like Tukuyu in Rungwe District receive much rainfall (annual average of 2400 mm) (Williamson et al., 2014: 117), while the lower zones, e.g. Masoko in Kyela District, record an annual average of 1700 mm rainfall (Nivet et al., 2018: 356). Nonetheless, the entire Nyakyusaland obtains an average of above 2000 mm rainfall annually (Williamson et al., 2014; Nivet et al., 2018). The experience with rainfall is a common phenomenon amongst speakers of Kinyakyusa.

The rain season tallies with the wind season in Nyakyusaland. Research by Nivet et al. (2018: 355) shows that "the seasonality is well determined by the warm and

[3] Kinyakyusa variants have 7 contrastive vowels, the variant spoken in Kiwira does not make a phonological distinction between ɪ/i and ʊ/u, as far as our previous research could determine (see, van der Wal & Lusekelo, 2022; van der Wal et. al., 2023). It was found that the latter distinction is mostly absent in speech, and although two of our speakers did produce the former distinction, they did not differentiate them meaningfully (see, van der Wal & Lusekelo, 2022; van der Wal et. al., 2023). I, therefore, continue to represent five vowels only. Also, as in our previous publication, I write <l> for the tap sound that is variably more like [l] or [ɾ], but not phonemically distinguished. In addition, the fricative plosive is presented as <b> in this paper.

rainy season from November to May and the cooler and dryer one from June to October when strong trade winds provide up to 100 successive days without rainfall." Moreover, Nivet et al. (2018: 355) report that "the beginning of the rainy season is clearly induced by the African monsoon and by the migration of the Inter-Tropical Convergence Zone in the southern hemisphere." Furthermore, Nivet et al. (2018: 355) report that air masses influenced by the fair southerly wind (especially in April and May) and overloaded with humidity are submitted to ascending currents, producing copious rain showers."

Geographers describe static weather conditions in Nyakyusaland. Nivet et al. (2018: 356) highlight two seasons associated with temperature, namely, "a 'high-precipitation season' from December to June where the mean monthly precipitation is more than 100 mm, and a 'low-precipitation season' from July to November where the monthly precipitation is less than 100 mm." In Nyakyusaland, the temperatures are higher in "a strictly 'dry season' from August to September" (Nivet et al., 2018: 358). The correlation between humidity and rainfall is obvious as "the humidity variation is related with the rainfall" (Nivet et al., 2018: 358). They highlight further that "monthly temperatures range between 19°C and 26°C with an annual maximum in October or November, and a minimum in July (Nivet et al., 2018: 358).

Native speakers of Kinyakyusa are agriculturalists, growing mainly banana, coffee, cocoa, tea, maize, beans, and rice. These crops are cultivated according to terrain. Porter and Flay (1998: 43, 45) report that Rungwe and Livingstone Mountains are part of the banana, coffee, tea, and maize zone in Tanzania. There are tea and coffee estates in Rungwe District. It is reported further that "the maize and rice variant occupies the lake plain at the north end of Lake Nyasa (Lake Malawi) in Nyakyusa country" and "where maize and beans are grown and where grass is cut to be taken uphill to the tethered livestock" (Porter & Flay, 1998: 43). The cultivation of these crops depends fully on the mastery of the weather conditions in the area.

Arguments and Predicates of Weather Events

Table 1 shows both arguments and predicates of weather events in Kinyakyusa, that is, 45 words in total. Apart from copula, there are no other categories used to express weather events.

Event Type	Sub-category	Arguments	Predicates
Dynamic events	Precipitation	*akafula* 'light rain'	*isa* 'come'
		akanyanyafula 'drizzle'	*kisa* 'end (of season)'
		amalondwa 'drops'	*kula* 'storm/blow'
		amapali 'drops'	*gwa* 'fall, drop'
		amatoonyela 'drops'	*palika* 'drizzle'
		ifula 'rain'	*pinga* 'begin (of rain season)'
		amabingu 'rain-clouds'	*suunya* 'drizzle'
	Non-precipitation	*imbepo* 'wind'	*tima* 'to rain'
		umbelo 'storm'	*toonya* 'leak'
			ujiila 'rumble'
Static events	Temperature and	*amafuku* 'heat, sweat'	*bilingana* 'form clouds'
		ikifuku 'hot temperature'	*gwa* 'be fall'

	atmosphere and light conditions	*imbepo* 'coldness'	*satuka* 'fall, to drop'
		indungwa 'dew'	*twinga* 'sweat'
		ingeela 'coldness'	
		ingisi 'darkness'	
		unjasi 'thunder'	
		isuba 'sun'	
		ulubefu 'fog, dampness'	
		ulumu 'sunshine'	
	Sunshine	*ulumuli* 'lightening'	*aka* 'be light'
		ululangalala 'rainbow'	*bala* 'sunshine'
		ulumuli 'daylight'	*mulika* 'to light'
		umwesi 'moon'	
Others	---	*ikisiku* 'rain season'	*malika* 'stop, finish'
		palumu 'dry season'	*pisa* 'to wash away'
		umpwisi 'run off'	

Kinyakyusa makes use of twenty-six arguments to describe weather events (Table 1). The arguments *umpwisi* 'run off', *ikisiku* 'rain season', and *palumu* 'dry season' cannot be classified into the dynamic nor static events suggested by Eriksen et al. (2012).

With regard to the twenty-six arguments, some of the arguments are pairs of cognates, i.e. *ulumuli* 'daylight' and *ulumu* 'sunshine', *amafuku* 'heat' and *ikifuku* 'dry season', and *ifula* 'rain', *akafula* 'drizzle', and *akanyanyafula* 'drizzle'. As a result, only 21 key terms are typical arguments for weather events in the language. Variations of the amount of arguments in individual languages is noted by Andrason (2019). There could be numerous arguments of weather conditions in English and Polish, but fewer in the Bantu languages described by Andrason and Visser (2017). Even the arguments for precipitation in isiXhosa (Andrason & Visser 2019) are more than those attested in Kinyakyusa. Probably the variation emanates from the tropical climate in Nyakyusaland and from the typical winter-summer weather in South Africa.

Some of the arguments consist of possibilities to encode many weather events. This could be possible because one argument can encode more weather events using modifiers. Example (1) shows that the argument *ifula* 'rain' is modified by the adjective *iyingi* 'much, more' to refer to heavy rainfall, while (2) shows that the noun *ulumu* 'sunshine' is modified by the adjective *ulukali* 'hot' and intensified by the adverb *fiijo* 'much' to refer to scorching sun.

(1) *Mmajolo* *ja-a-tim-ile* *i-fula* *ny-ingi*
yesterday SM9-PST-rain-PFV PPX-rainfall 9-much
'Yesterday, it rained heavily/A heavy rain rained yesterday.'

(2) *U-lu-mu* *u-lu-kali* *fiijo* *lu-bal-ile*
PPX-11.sun PPX-11-fierce much SM11-shine-PFV
'A scorching sun shined.'

Metonymical representation of certain weather events is common in Kinyakyusa. For instance, in (3) *umbelo* 'storm-wind' is conflated with an associative

construction to express windy rain (storm) as *ifula ja mbelo*, while *mabwe* stones is conflated with an associative construction to encode hail as *ifula ja mabwe* (4).

(3) *I-fula* *ja* *m-belo* *ji-is-ile.*
PPX-9.rain ASSOC.11 PPX-wind SM9-come-PFV
'Storm has come.'

(4) *Ji-ku-tim-a* *i-fula* *ja* *ma-bwe.*
SM9-INF-rain-PFV PPX-9.rain ASSOC.11 SPPX-6.stone
'Hail falls.'

Kinyakyusa uses nineteen predicates to encode various weather events (Table 1). The predicate *gwa* provides both dynamic events *fall* (drizzle) and *drop* (droplets), and the static reading *be fallen* (darkness, coldness). The verb *kula* entails *to blow* (of wind) and *to storm* (heavy-rain). More than half of these predicates encode motion, hence the data corroborates with the findings presented in Andrason (2019). Most predicates are typically dynamic and durative in nature. According to Lusekelo (2016), these are achievement verbs which underscore the onset and coda altogether. The exception includes the verbs *pinga* 'begin of rain season' and *kisa* 'end of rain season', which are technically revealing properties of achievement verb classes as described by Persohn (2020), as they focus on onset and coda, respectively. The dynamic verbs given above are intransitive in nature. They do not trigger any post-verbal argument. In other cases, even the pre-verbal argument is dropped. But the agreement of the subject and object on the verb (Lusekelo, 2024a, 2024b) and the inherent semantics of the predicate attracts a specific interpretation of a specific weather event. It means that the predicates contain some inherent semantic features which are construed by the speakers of Kinyakyusa for a specific weather event, as discussed in detail in the subsequent section.

There are predicates in Table 1 that display features of static verbs. Based on the semantic classification of verbs, these static verbs describe static weather events. Eriksen et al. (2010, 2012) describe such verbs as stative. This classification is similar to the classification provided in Lusekelo (2016) and Persohn (2020) in that both the onset and coda are encoded in the body of the situations described by the verbs.

Apart from predicates, the copula is commonly used to introduce weather events in Kinyakyusa. The examples in (5-6) exhibit this phenomenon. The first example illustrates a zero copula, which is common in the Bantu family (Gibson et al., 2019). The second example involves the weather event of heavy rain, which is introduced by the copula *-ja,* one of the copulas in Kinyakyusa (Lusekelo, 2012a; Persohn, 2020).

(5) *U-lumu* *lu-kali*
PPX-11.sun SM11-fierce
'The sun is hot.'

(6) *I-fula* *ji-ka-ja* *nyingi*

PPX-9.rain SM9-NEG-be 9.much
'Rain is not heavy.'

The key terms of *ikisiku* 'rain season' and *palumu* 'dry season' can be used in the expression of weather conditions. The former may function as nominal arguments, as illustrated in (7). The later functions as an adverbial (8).

(7) *I-ki-siku ki-fik-ile.*
PPX-7-rain-season SM7-arrive-PFV
'The rain season has begun.'

(8) *A-bi-ku-funj-a pa-lumu.*
FUT-SM2-INF-harvest-PX-9.rain 16-sunny
'They will harvest during dry season.'

This is the only environment in which an adverbial expression is used to encode weather events. Nonetheless, this category does not fit in the dynamic and static types proscribed by Eriksen et al. (2012). Other ways of expression of weather events are presented in the next section.

Predominance of Predicates in Encoding Weather Events

The argument *ifula* 'rainfall' is the typical one that may occupy the nominative position (9) or the objective position (10). The predicate *tima* 'rain' is the canonical one for the description of a rain event, as in all examples here. Notice that example (11) does not host any argument; but speakers of Kinyakyusa will definitely understand that it is a rain event that is described in this context because the verb *tima* 'rain' refers to rainfall. This is a small corner that substantiates the predominance of the predicate in the expression of weather events.

(9) *I-fula ja-a-tim-ile ku-Tukuju.*
PPX-9.rainfall SM9-PST-rain-PFV 17-Tukuyu
'The rainfall rained in Tukuyu/It rained in Tukuyu.'

(10) *Kwa-Kyela ji-ø-tim-ile i-fula.*
17-Kyela SM9-PST-rain-PFV PPX-9.rainfall
'In Kyela, it has rained (the rainfall)/It has rained in Kyela.'

(11) *Ji-ku-tim-a.*
SM9-INF-rain-FV
'It rains.'

I want to re-iterate that the rain event is a known phenomenon in Nyakyusaland. Even though example (11) shows that the predicative verb *tima* 'to rain' occurs without arguments, speakers of Kinyakyusa will interpret the *rain event* without any difficulties. This kind of interpretation of rainfall is obtained from the inherent semantic content of the verb *tima* 'rain'. In the course of the discussion below, I highlight that the inherent lexical semantics assigns proper arguments as experienced by the speakers of Kinyakyusa. The diminutive nominal prefix is

used to derive a noun that expresses "drizzling". The derived argument *akafula* 'light rain' is derived by means of assigning the secondary noun prefix *ka-* (class 12) (see, Lusekelo, 2009, 2024b; Persohn, 2020). The assignment of secondary nominal prefixes is a common phenomenon in Bantu languages (see Van de Velde, 2019).

The common predicate *tima* 'to rain' is used together with this derived argument (12). In addition, the agreement by the noun class of *akafula* 'light rainfall' provides a drizzling reading (13). However, the verb *tima* 'to rain' cannot occur without its predicate in order to provide the reading drizzling unless it bears the noun class of the drizzle (14). Alternatively, the verb *suunya* 'to drizzle' becomes the main verb for drizzling, as illustrated in (15).

(12) *A-ka-fula* *ka-a-tim-ile* *ku-Tukuju.*
PPX-12-rain SM12-PST-rain-PFV 17-Tukuyu
'The light rain drizzled in Tukuyu/It drizzled in Tukuyu.'

(13) *Kwa-Kyela* *ka-ø-suuny-ile* *a-ka-fula.*
17-Kyela SM12-PST-drizzle-PFV PPX-12-light-rain
'In Kyela, it drizzled (the light rain)/It drizzled in Kyela.'

(14) *Ki-ku-tim-a.*
SM12-INF-rain-FV
'It drizzles.'

(15) *Ji-ku-suuny-a.*
SM12-INF-drizzle-FV
'It drizzles.'

One point is re-iterated and another advanced from the examples above. The re-iterated point is that the semantics of the verb *tima* 'rain' has reference to rainfall, hence predominantly a predicate-type. The supporting point here is that though the common predicative *tima* 'to rain' triggers the interpretation of *ifula* 'rains', as illustrated in (9-11) above, here the subject agreement with a diminutive, nominal prefix triggers the interpretation drizzle, as illustrated in (12-15) above. The agreement with the nominal prefix triggers an interpretation which is relevant to the nominal category of the argument. The semantic contents of the nominal prefixes allow a perfect interpretation of the rain-related event. Noun class 5 (underlying *ili-*) triggers the interpretation of *ifula* 'rains', while noun class 12 (aka-) triggers *akafula* 'light rains'.

Moreover, the lexical semantics of the predicates is re-iterated further. The verb *suunya* 'to drizzle' occurs without an argument but it provides the interpretation *drizzles* (15). Given the encounters of different kinds of rainfall by the speakers of Kinyakyusa, it is obvious now that this kind of interpretation of *drizzling* is obtained from the inherent semantic content of this verb *suunya* 'to drizzle'.

A storm in Kinyakyusa is called *umbelo* 'windy rain'. Usually a windy storm that blows north-south is referred to as *rungwe*. Geographers point out that the

southerly winds blow between April and May, which is a period that marks the end of the rainy season (Nivet et al., 2018). The assumption by speakers of Kinyakyusa is that the winds blow from Rungwe Mountains towards Lake Nyasa. This experience is confirmed by geographers. The south-north wind is referred to as *suumbi*. This name is derived from Lake Nyasa, the source of the winds (Lusekelo, 2012b). In fact, Nivet et al. (2018) point out the presence of strong trade winds between June and October every year. The trade winds blow towards the equator. In fact, the Nyakyusa areas near Mount Rungwe are located on the windward side (Williamson et al., 2014).

The predicative verb *kula* denotes both the storm and the windy rains. It attracts the argument *umbelo* that refers to both *storm* and *strong wind* (16). The verbs *tima* 'to rain' and *suunya* 'to drizzle' cannot be used with the argument *umbelo* 'storm' (17-18). But the argument *ifula* 'rainfall' can also become the predicate of the verb *kula* 'to storm' (19). However, the interpretation obtained in (19) typically concerns storm/windy rain rather than regular rainfall called *ifula*.

(16) *U-m-belo* *gu-a-kul-ile* *ku-Masoko.*
PPX-3-storm SM3-PST-storm-PFV17-Masoko
'The storm stormed in Masoko/It stormed in Masoko.'
'The wind blew in Masoko/It blew heavily in Masoko.'

(17) **U-m-belo* *gu-a-tim-ile* *ku-Mbeje.*
PPX-3-storm SM3-PST-rain-PFV 17-Mbeya
'Intention: It stormed in Mbeya.'

(18) **U-m-belo* *gu-a-suuny-ile* *ku-Mbeje.*
PPX-3-storm SM3-PST-drizzle-PFV 17-Mbeya
'Intention: It drizzled in Mbeya.'

(19) *I-fula* *ja-a-kul-ile* *ku-Mbeje.*
PPX-12.rain SM12-PST-storm-PFV 17-Mbeya
'It stormed in Mbeya.'

As I highlighted for other terms presented above, the inherent semantic content of the predicate *kula* 'to storm/to blow' triggers the specific interpretation of storm/windy rain. Example (20) shows that the verb *kula* 'to storm/to blow' is assigned the agreement marker for nominal class 9 (for *ifula* 'rainfall'), but it provides the reading storming. (21) illustrates the subject marker for class 3 (*umbelo* 'storm') and its subsequent interpretation. Likewise, the assignment of the subject marker with the nominal prefix of class 3 triggers the interpretation of a storm (22).

(20) *Ji-ku-kul-a.*
SM9-INF-storm-PFV
'It storms (the rainfall)/*It rains.'

(21) *Gu-ku-kul-a*

SM3-INF-storm-PFV
'It storms (the storm/rainfall).'

(22) *Gu-ku-tim-a.*
SM3-INF-storm-PFV
'It storms (the rain/storm)/*It rains.'

The drops of rainfall are referred to by the noun *amalondwa*. The arguments *amatonyeela* and *amapali* are derived from the verb *toonya* 'to drop', *satuka* 'to fall, drop' and *palika* 'to fall, drop', respectively. The typical predicate that selects the arguments *amalondwa* and *amatonyeela* is *toonya* 'leak' (23-24). The predicate for *amapali* can either be *gwa* 'to fall, drop', or *palika* 'to fall, drop' (25-26).

(23) *A-ma-londwa ga-a-toony-ile nyumba.*
PPX-6-drop SM6-PST-leak-PFV 18.house
'The drops leaked into the house.'

(24) *A-ma-tonyeela ga-and-ile uku-toony-a.*
PPX-6-drop SM6-begin-PFV INF-drop-FV
'The drops began dropping.'

(25) *A-ma-pali gi-ku-gw-a.*
PPX-6-droplet SM6-INF-fall-PFV
'The droplets are falling.'

(26) *A-ma-pali ga-malik-ile uku-palik-a.*
PPX-6-droplet SM6-begin-PFV INF-drop-FV
'The droplets stopped falling.'

The arguments are not obligatory, as is the case with many languages (Eriksen et al. 2012; Andrason & Visser 2017). Predicates alone provide the interpretation of a given weather condition, similar to Kiswahili (Lusekelo, 2021). For instance, the predicates in (27-28) assign the arguments for droplets (*light rain*), which is construed from the inherent semantic content of the verbs. Speakers of Kinyakyusa will understand that the use of these predicates point to light rain.

(27) *Gi-ku-toony-a.*
SM6-INF-drop-APPL-FV 18.house
'They leak/drop.'

(28) *Ji-ti-ku-palik-a.*
SM9-NEG-INF-drop-FV
'It does not drop.'

Static weather events can be encoded using the same predicate. For instance, the predicate *gwa* 'fall' may refer to darkness (29). The same predicate *gwa* 'fall' may be used for coldness (30).

(29) *I-ngisi* *ji-gw-ile.*
PPX-9.darkness SM9-fall-PFV
'Darkness has fallen/It has become dark.'

(30) *Ji-gw-ile* *i-ngeela.*
SM9-fall-PFV PPX-coldness
'Coldness has fallen/It has become cold.'

Moreover, the arguments are optional in Kinyakyusa. The semantic content of predicates helps to construe the intended weather events. However, the subjective agreement prefix is central in determining the semantic interpretation of the sentences. For instance, the noun *ulumu* 'sunshine' is placed in noun class 11. It agrees with the verb to provide the interpretation *sunshine* (31). This is different to the noun *umwesi* 'moon' (class 3), which agrees with the verb to offer the reading *moonlight* (32).

(31) *Lu-ku-bal-a* *(pa-musi).*
SM11-INF-shine- FV 16-day
'It (sun) shines during the day.'

(32) *Gu-ku-bal-a* *(pa-kilo).*
SM3-INF-shine- FV 16-night
'It (moon) shines at night.'

Stative weather verbs are commonly expressed in the copulative constructions in Kinyakyusa. For example, the state of *imbepo* 'coldness' is realised with the copula *-li* 'be' (33).

(33) *I-mbepo* *ji-ka-li* *ng-ali* *mmajolo.*
PPX-9.coldness SM9-NEG-be 9-hot yesterday
'The coldness was not very cold yesterday/It was not cold yesterday.'

The use of other arguments and predicates falls in the realm of the constructions discussed above. In Kinyakyusa, clouds are referred to as *amabingu* 'rain-clouds'. The proper predicate for the formation of *amabingu* 'rain-clouds' is *bilingana* 'be-cloudy' (34). Like other predicative verbs, the verb *bilingana* 'be-cloudy' may not co-occur with the argument but the same interpretation is obtained (35).

(34) *A-ma-bingu* *ga-ø-bilingene* *ku-mwanya.*
PPX-6-cloud SM6-PST-leak-PFV 17-top
'The clouds formed in the sky.'

(35) *Ga-ø-bilingene.*
SM6-PST-cloud.PFV
'It has clouded.'

The use of verb extensions may allow the predicates to become transitive. Example (36) indicates the argument *amafuku* 'sweat' occurring in the post-verbal position.

The post-verbal argument can also be inferred once only if the predicate is used, as illustrated in (37).

(36) *A-ba-ana ba-twing-ile a-ma-fuku mi-ngi.*
PPX-2-child SM2-sweat-PFV PPX-6-sweat 6-much
'The children sweated much sweat/Children sweated.'

(37) *Bi-ku-twing-a ulu.*
SM2-INF-Sweat-FV now
'They are sweating now.

Lastly, some strands of terms of weather are not assigned to specific predicative verbs. The first strand concerns two arguments which bear the semantics of "run off" in Kinyakyusa, namely *amatebe* 'puddle, pool of water' and *umpwisi* 'run off'. The former is associated with collected water that runs into a stream, while the latter concerns a collection of water in a depression or gully. The second category concerns two climatic seasons predominantly occurring annually in Nyakyusaland, namely *ikisiku* 'rainy season' and *palumu* 'sunny/dry season'. Usually, *ikisiku* 'rainy season' is experienced between November and July every year. The period of *palumu* 'sunny/dry season' is experienced between July and September annually. Specifically, the interpretation of *ikisiku* extends to the period of prolonged heavy rains. This period is between February and April every year. The last strand concerns the atmospheric condition. It involves *ulubefu* 'fog, dampness', which is common in northern Nyakyusaland. This is close to Mount Rungwe. During the wet season, *indungwa* 'drew' becomes common in this area.

Discussion

Cognate Objects in Weather Verbs

Andrason and Visser (2017) establish three diagnostics of the grammaticalisation path of weather verbs in the Bantu languages spoken in South Africa. The first diagnostic is the occurrence of the arguments of weather in the post-verbal position. Almost all languages allow at least cognate objects to occur in the post-verbal position.

Kinyakyusa allows its weather predicates to trigger post-verbal objects. Example (5), repeated here as example (38), shows that a dynamic event can occur in the post-verbal position. Likewise, example (36), repeated here as example (39), indicates a static event in the post-verbal position. Thus, Kinyakyusa behaves like the other Bantu languages investigated so far.

(38) *Mmajolo ja-a-tim-ile i-fula ny-ingi*
yesterday SM9-PST-rain-PFV PPX-rainfall 9-much
'Yesterday, it rained heavily/A heavy rain rained yesterday.'

(39) *A-ba-ana ba-twing-ile a-ma-fuku mi-ngi.*
PPX-2-child SM2-sweat-PFV PPX-6-sweat 6-much
'The children sweated much sweat/Children sweated.'

The second diagnostic is the occurrence of the object prefix of the post-verbal argument of a weather verb. All Bantu languages allow cognate object prefixes on the verb, except Sesotho. Kinyakyusa behaves like other Bantu languages though with some exception. Lusekelo (2012a, 2024a) establishes two kinds of verbs in Kinyakyusa. Some verbs, e.g. *piija* 'cook' and *lila* 'cry', attract optional object prefixes (40-41). When the object prefix is used, the definite interpretation is obtained. Alternatively, all sentences without object prefixes become indefinite.

(40) *Atu* *a-(ba)-piij-ile* *a-ba-ana* *i-mbalaga*
1.Atu SM1-OM2-cook-APPL.PFV PPX-2-child PPX-10.banana
'Atu cooked for (the) children some banana.'

(41) *Kalulu* *a-(ba)-lil-il-e* *a-ba-ana*
1a.Kalulu SM1-OM2-cry- APPL.PFV PPX-2-child
'Kalulu cried for (the) children.'

Another type of verbs show obligatory object prefixes. For example, the verbs *bona* 'see' and *keeta* 'look' require mandatory object marking in all cases (42-43). There is no definiteness involved in this regard.

(42) *Atu* *a-*(m)-bwene* *u-mu-ndu*
1.Atu SM1-OM1-see.PFV PPX-1-person
'Atu saw a/the person.'

(43) *Atu* *a-*(ki)-bwene* *i-ki-tili*
1.Atu SM1-OM7-see.PFV PPX-7-cap
'Atu saw a/the cap.'

Cognate objects behave alike. Example (44) shows the cognate object *amapali* 'drops' being obligatorily prefixed on the verb *bona* 'see', while example (45) demonstrates the cognate object *amatoonyela* 'drops' that is optionally prefixed on the predicate *uma* 'dry'.

(44) *Atu* *a-*(ga)-bwene* *a-ma-pali*
1.Atu SM1-OM6-see.PFV PPX-6-drop
'Atu saw a/the droplets.'

(45) *U-lumu* *lu-ga-umike* *a-ma-pali*
PPX-11.sunshine SM11-OM6-dry.PFV PPX-6-drop
'The sun dried droplets.'

Given the foregoing discussion, generally one may argue that Kinyakyusa behaves like Sepedi in that it allows cognate object prefixes in some verbs and disallows cognate object prefixes in others. However, the weather verbs are intransitive. The cognate object nouns are not prototypical, like in other languages of the world (Eriksen et al., 201012; Andrason, 2019). Therefore, Kinyakyusa reveals stage 2 of the grammaticalization path suggested by Andrason and Visser (2017). However, Kinyakyusa does not allows full cliticisation of object prefixes on the verbs. The last diagnostic is the possibility of the cognate object to be promoted to

the subject position. Kinyakyusa does not permit the passivisation of cognate objects. However, the weather arguments introduced by copulas can be passivized, as illustrated in (46-47). Therefore, it has features similar to those of Sepedi. Kinyakyusa is really in between stage 1 and 2 of the grammaticalization path.

(46) *I-fula* *ji-ka-li* *pa-ku-tima*
PPX-9.rain SM9-NEG-be 16-INF-rain
'The rain was not raining.'

(47) *U-lumu* *lw-a-li* *lu-kali*
PPX-12.sun SM12-PST-be 12-fierce
'The sun was scorching.'

The Grammaticalization Path of Encoding Weather Events

The diachronic investigation discussed herein shows that some variations appear to unfold as regards the model of grammaticalisation suggested by Eriksen (2010, 2012). Andrason (2019: 100) supports the model as he argues that "from a diachronic perspective, the evidence presented in this study corroborates the developmental path of the encoding of precipitation events: argument type > argument-predicate type > predicate type." This is confirmed in Kinyakyusa, although only two stages are firmly attested in the language. With regard to arguments, perhaps cognate arguments may be assumed to encode the first state. Only cognate objects are possible in Kinyakyusa, as illustrated by the expressions in (49&51). However, even these cognate objects reveal some properties of predicates. For example, *gikupalika* 'it drizzles' is assigned with the stative form *-ik-*, while the argument *gukubela* ends with a final vowel rather than the derivational suffix *-o*. Both cases indicate that the enconding of weather events by arguments alone is really becoming null in Kinyakyusa.

(48) *A-ma-pali* *gi-ku-palik-a*
PPX-6-droplet SM6-INF-drizzle-FV
'Droplets drizzle.'

(49) *Gi-ku-palik-a*
SM6-INF-drizzle-FV
'They drizzle.'

(50) *U-mbelo* *gu-ku-bel-a*
PPX-6.wind SM6-INF-blow-FV
'Wind blows.'

(51) *Gu-ku-bel-a*
SM6-INF-blow-FV
'It drizzles.'

The other arguments cannot be used without predicates, as exemplified in (52-53). This rules out the fact that arguments can be used to encode weather events, which is possible in other languages (Eriksen et. al., 2012; Andrason, 2019).

(52) **Ji-ku-fula*
SM9-INF-rain
'It rains.'

(53) **Lu-ku-lumu*
SM6-INF-sun
'It shines.'

Another diachronic investigation can be used to examine a synchronic, complex way of encoding weather events. The properties of Kinyakyusa do not corroborate those of Andrason (2019: 99), who found that "three types of events (rain, snow and wind) exhibit the greatest range of encodings, not only with respect to morpho-syntactic types, but also as far as verbal and nominal lexemes, typically associated with these events, are concerned." In Kinyakyusa, only rain is expressed in many and complex ways.

Rain is canonically represented as *ifula* 'rain'. The encoding of a range of senses involve other predicates. (54) provides eight manners in which this argument is realised using eight different predicates.

(54) a. *Jikutima* 'It rains'
b. *Jikukula* 'It blows/It storms'
c. *Jikusuunya* 'It drizzles'
d. *Jikupalika* 'It drizzles'
e. *Jikutoonya* 'It drops'
f. *Jikuujiila* 'It rumbles'
g. *Jikukubilila* 'It blows onto (something)'
h. *Jikuputiila* 'It blows onto (something)'

Another prominent weather event is wind. It is canonically represented as *imbepo* 'wind' (class 9) or *umbelo* 'storm' (class 5). The encoding of different senses of the former is given in (55) and of the latter in (56).

(55) a. *Jikukula* 'It blows'
b. *Jikuujiila* 'It rumbles'
c. *Jikukubilila* 'It blows onto (something)'
d. *Jikuputiila* 'It blows onto (something)'

(56) a. *Gukukula* 'It blows'
b. *Gukuujiila* 'It rumbles'
c. *Gukukubilila* 'It blows onto (something)'
d. *Gukuputiila* 'It blows onto (something)'

The foregoing discussion reveals that the encoding of *rain* and *wind* corroborates partially the findings of Andrason (2019). While Polish maintains five nouns for rain, Kinyakyusa makes use of eight verbs for the same entity, namely *ifula* 'rain'. The implication of this suggestion is that the prominence of the complex manner of expressing weather events varies from one language to the other.

Even for languages from the same family, variation appears to be obvious. For instance, some variation of precipitation is realised between isiXhosa and Kinyakyusa. While isiXhosa speakers construe precipitation as *na* 'type of rainfall' and *netha* 'to rain, fall, drop' (Andrason & Visser, 2019), the evidence gathered shows that Kinyakyusa speakers construe precipitation in terms of the argument *ifula* 'rain' and the utilisation of different predicates to present different kinds of rain. This claim is not unique to Kinyakyusa. In other Bantu languages, the predicate *rain* is associated with other roles. Nurse and Rottland (1991) found the Sonjo Bantu word *nyesha* 'to irrigate' being similar to the Kiswahili word *nyesha* 'to rain'. Thus, this predicate is attested across Bantu languages, but it is not found in Kinyakyusa. An immediate argument similar to *nyesha* 'to irrigate' in Sonjo or -*netha* 'to rain, fall, drop' in isiXhosa is *ona* 'to pour'. This predicate can be used to mean irrigation (57). It can also be used to refer to heavy rain in Kinyakyusa (58).

(57) *A-ba-sukuulu bi-ku-on-el-ela* *a-ma-seke.*
PPX-2-pupil SM2-INF-irrigate-APPL-PFV PPX-6-vegetable
'Pupils irrigate vegetables.'

(58) *I-fula* *ji-ku-on-ek-a* *lilimo.*
PPX-5.rain SM2-INF-irrigate-STAT-FV today
'It rains heavily today/It rains in buckets today.'

The verbal nature of the mechanisms to encode weather events helps to assign Kinyakyusa to the group of languages which predominantly use predicates. Eriksen et al. (2012) and Andrason (2019) argue that the grammaticalisation path ends with a predicate type. In this stage, predicates convey weather events while arguments perform other functions. This is not fully achieved in Kinyakyusa. Probably the argument-predicate type is the main strategy employed to encode weather events. The combination of arguments and predicates is discussed under the umbrella of predicate structure theory in the subsequent section. The grammaticalisation of terms for weather events involves metaphorical and metonymical expressions as well. I argue that the abundance of weather conditions may allow varieties of the same weather event to be represented differently in the same language. The abundance of *rain* and *wind* in Nyakyusaland necessitated the speakers envisaging numerous predicates to conceptualise the varied kinds of *rain* and *wind*.

An apparent case concerns snow, which is not experienced in Nyakyusaland but which is experienced in South Africa. Andrason (2019) found *snow* as another prominent weather event, which is encoded in Polish in complex ways. As I pointed out above, speakers of each language experience different weather conditions. As a result, speakers develop different terms to depict weather events. It means the languages spoken in the poles of the northern and southern hemispheres experience cold temperature. For instance, in isiXhosa, Andrason and Visser (2019: 24) found that it is related to a cut-off or piece of the sky, perhaps.

> The idea of snow is conceptualised through the noun *ikhephu*. If this noun is related to verbs such as the intransitive base -*khephuka* 'be cut

> off, break off (of a large piece), totter to its fall', or the transitive variant -*khephula* 'cut off', and to the expression -*thi khephu* 'cut off a large piece of anything', its original meaning might have been 'an off-cut, a piece'. (Andrason & Visser, 2019: 24).

The situation is different not only in Kinyakyusa but also in Chidigo and Makonde. Tropical Africa does not experience snow. As a result, Bantu languages have not developed mechanisms to express snow. In Kinyakyusa, both *snow* and *hail* are associated with a *storm*. The name *ifula ja mabwe* [rain of stones/stony rain] 'storm rain/hail' is derived from the combination of the argument *ifula* 'rainfall' and the *amabwe* 'stones'. There is no typical name in Kinyakyusa for snow or hail. In Chidigo, the loanword *theluji* 'snow' is attested (Nicolle et al. 2004). It is not strange that Kraal (2005) does not provide the word for *snow* in Makonde.

As I highlighted above, the predicate of *ifula ja mabwe* [stony rain] 'storm rain/hail' is *kula* 'to storm/to hail'. However, the regular predicate of *tima* 'to rain' can be used together with specifically selected argument of *ifula ja mabwe* 'storm /hail'. In case the argument is omitted, either the specific predicate is used or the nominal prefix of the specific argument becomes mandatory.

Another exemplary case is the variation in the verbs utilised to express similar weather events. I pointed out above that the predicates for various weather events are 19 in Kinyakyusa. But isiXhosa consists of many verbs of precipitation, e.g. *na* 'to rain', *netha* 'to rain', *khwitsha* 'to drizzle', *dyudyuza/* 'to rain heavily', *gxigxisa* 'to storm', *sikhukhula* 'to storm', *khithika* 'fall' etc. (Andrason & Visser 2019). Also, according to Andrason and Visser (2019), isiXhosa consists of many verbs *snow* compared to Kinyakyusa. There are four verbs associated with snow in isiXhosa, i.e. *khephuka* 'be cut', *khephula* 'cut off', *wa* 'fall', and *khitha* drop down' (Andrason & Visser 2019: 23). The variation with Kinyakyusa is apparently a result of different geographical structure and climatic conditions; hence a call for an expanded research on weather terms in other Bantu languages.

Predicate Structure Theory

The theory of predicate structure postulates that each lexical verb attracts particular arguments to co-occur with (Rappaport Hovav et al., 2010). The inherent contents of the verbs licence subjects and objects. In the study of weather verbs, Eriksen et al. (2012) state clearly that weather verbs lack active participants. However, in African languages, the subject and object position is central in determining the status of arguments of the verb. In many instances, agreement on the verb is the primary diagnostic of argumenthood (Lusekelo, 2024a; Rugemalira, 1993).

The behaviour of Kinyakyusa weather verbs is that they occupy both the subject and the object position. However, the weather verbs do not trigger the attachment of object prefixes to the verbs; rather they allow subject marking on the verbal complex, like in isiXhosa, as Andrason and Visser (2019: 19) found that "the argument *imvula* can occupy the subject position, thus triggering the subject agreement on the verb and the use of prefix of class." The key term *ifula* 'rain' is central and it is subject marked on verbs in Kinyakyusa (class 9/10). It is pervasive

in the Bantu language family: *mvua* in Kiswahili (class 9/10) (Eriksen et al., 2010, 2012), *mvula* (class 9/10) in Digo, spoken in Kenya and Tanzania (Nicolle et al., 2004), and *imbula/dimbula* (class 9/10) in Makonde, spoken in Mozambique and Tanzania (Kraal, 2005). Even the predicate *toonya* 'drop' in Kinyakyusa is also attested in other Bantu languages as *to rain*: Makonde (*tonya*), Digo (*nya*) and Kiswahili (*nyesha*) (Eriksen et al., 2010, 2012; Nicolle et al., 2004; Kraal, 2005). The predicate *toonya* 'leak' has slightly different meaning in Kinyakyusa. Nonetheless, it is plausible to suggest that the speakers construe precipitation in a more or less similar fashion.

Research has shown that each verb selects its argument(s), secifically, summarized as "event structure varies depending on the way in which the verb grammatically relates to its arguments, and in particular to its external argument" (Rappaport Hovav et al. (2010: 3). Some verbs are transitive, while others are intransitive. The theory of predicate structure states that verbs select a given set of noun phrases to surround it. This is corroborated by the weather verbs in Kinyakyusa which categorically select a given weather event, even without the physical presence of its argument in a sentence. Speakers construe the arguments based on the predicates.

In the realm of object marking, the inherent semantic content of the verb determines the presence or absence of an object prefix on the verb. Lusekelo (2012a, 2024a) shows that verbs with some properties attract compulsory object marking, while other verbs allow optional object marking. Research has shown that while the semantics of the verb attracts obligatory object prefixes, definiteness determines the use of object prefixes for verbs which allow optional object prefixes. Similarly, weather verbs in Kinyakyusa provide another category of predicates. This category does not allow the object prefixes to appear on the verb. The list of verbs appears in (2) for the dynamic weather events and (4) for static weather events. These verbs behave in a manner that the argument is construed from the experience with weather conditions and the inherent semantic content of the verbs. For instance, the verb *tima* licences the referent as *ifula* 'rain', not otherwise. Also, the verb *bala* licenses the referent *ulumu* 'sunshine' or *umwesi* 'moonlight'.

Conclusion

In this article, I have discussed evidence that characterises the arguments and predicates of weather events in Kinyakyusa. I provide three kinds of concluding remarks here.

Firstly, the tripartite division of the mechanisms for encoding weather events is not dully achieved in Kinyakyusa. Eriksen et al. (2010, 20012) proposed the predicate type, argument type, and argument-predicate-type. Kinyakyusa predominantly makes use of two, namely the predicate-type and argument-predicate types. The argument-type is narrowly expressed by cognate objects which are rare.

Secondly, weather verbs form a category which reveal its own unique features. Lusekelo (2012a, 2024a) proposed that in the lexical semantics of verbs, there

verbs which trigger mandatory object prefixes, and the ones which trigger object prefixes for indicating definiteness. The weather predicates and arguments in Kinyakyusa reveal a third category: only a couple of verbs (*palika* 'drizzle' [*amapali* 'droplets'], *toonya* 'drop' [*amatoonyela* 'drops'], *bela* 'blow' [*umbelo* 'wind'], and *mulika* 'light' [*ulumuli* 'daylight']) take cognate objects. But such verbs do not require mandatory and optional object markers. Their interpretation of arguments is conceptualised as abstract nominal entities shared by the members of the speech community. As a result, these cognate objects can function to designate the second category of semantic and formal variation in the division of the mechanisms for expressing weather events by means of arguments alone. Threfore, I argue that even though the inherent semantic contents of weather verbs do not require arguments, speakers of Kinyakyusa construe the intended meaning from their experience with the environment. I re-iterate here that the requirement of arguments is not necessary for the weather verbs in this language because the contribution of the environment to weather terms is paramount in understanding the predicates and null arguments of weather conditions. This claim now frustrates the suggestion above because the rare mechanism for encoding weather events by cognate objects individually become more redundant. As a result, Kinyakyusa is primarily categorized as predicate-type and argument-predicate type language.

Thirdly, morpho-syntax is necessary for determining the expression of weather events in African languages. The foregoing discussion corroborates Eriksen et al. (2012), who proposed the significance of morpho-syntax in the realisation of weather events. In fact, the morphosyntax of Kinyakyusa and of other Bantu languages (Andrason & Visser, 2017, 2019; Lusekelo, 2021) permit the agglutination of agreement affixes on predicates. In Kinyakyusa, the subject agreement prefix assigns the perfect argument of the weather verbs. Thus, individual predicates can be used to designate a certain kind of weather without the physical co-occurrence of the relevant arguments.

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