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MARKING EXHAUSTIVITY IN DAGBANI

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Abstract

The paper examines the semantics of the so-called focus particle ko as an exhaustive focus marker which expresses exhaustive identification in Dagbani, a Gur language spoken in Ghana. The paper argues that ko expresses exhaustivity in both in situ and ex situ when it occurs in a focus sentence. The paper explores ko as an operator expressing exhaustive focus on constituents and examines exhaustivity of ko as a pragmatic inference giving specific meaning to it. It shows that the particle only occurs in exhaustive focus environments in the language and focuses on both non-subject constituents and subject constituents. The paper argues that Dagbani expresses exhaustive identification in ex-situ and in-situ with evidence to show that the construction of Dagbani is established as monoclausal. The available data show that ko exhaustively marks objects constituents in post-verbal position and subjects in pre-verbal position. Finally, it shows that ko can co-occur with the Dagbani focus markers [ka, n, la] in ex-situ. The paper employs standard tests for exhaustivity using mainly Kiss's (1998) and test of exhaustivity developed by Szabolcsi (1981).

Keywords: Focus marker, Dagbani, ex-situ, exhaustivity, ko

1. Introduction

The general notion of focus as notional category in language that interacts with grammar refers to the part of the clause that provides the most relevant or most salient information in a given discourse situation. Olawsky (1999), Hudu (2006) and Issah (2008, 2013a, 2013b) have identified and analysed the particles ka, n, and la as focus markers in Dagbani. However, the particle *ko* which expresses exhaustivity has not been identified as a focus marker in Dagbani. This paper argues that ko is an exhaustive focus marker that expresses exhaustivity when it occurs in both in situ and ex situ environments.

The choice between ka and n has been argued to be dependent on the grammatical role of the constituent that is to be moved to the left periphery position (Fiedler and Schwarz 2004, 2005; Hudu 2006; Issah 2008). Issah (2008) confirms that this asymmetry

holds only for simple clauses. The particle ko does not depend on the grammatical role of the constituent that is to be moved to the left periphery position; it marks positions with different grammatical and thematic roles. It exhaustively marks objects and other constituents that are in post-verbal position, and exhaustively marks the subject in pre-verbal position. The examples presented in (1) shows both SF, and NSF marking. Note that the perfective marker becomes zero in a sentence when it has an object or when the verb is followed by a focus marker.

(1) a. **Ali** **ʧaŋ-∅** **ʃikʊrʊ**
Ali go.pef school
'Ali went to school.'

b. **Ali** **ko** **n** **ʧaŋ-∅** **ʃikʊrʊ**
Ali part 1sg go.pef school
'Ali went to school.'

c. **Ali** **ʧaŋ-∅** **ʃikʊrʊ** **ko**
Ali go.pef school part
'Ali went to school.'

It is noticed in the example in (1) that ko can exhaustively mark object constituents in post-verbal position as in (1c), and exhaustively mark the subject in pre-verbal as in (1b). The examples also express exhaustive identification focus in (1b and 1c); and mere informational focus in (1a). Issah (2008) observes that though the exhaustively marked constituents in Dagbani are translated as clefts in English, it is done for the purpose of achieving naturalness in the reading of those sentences in English. In this paper, the exhaustively marked constituents will be translated as monoclausal as in (1b & 1b). The paper looks at whether ko is an exhaustive particle in Dagbani that expresses exhaustivity in both ex situ and in situ focus marking. It is observed that the marker always expresses exhaustivity when it occurs in focused environments. This claim is demonstrated by applying Kiss's (1998) standard tests for exhaustivity to ko focus constructions and the results show that this particle only occurs in exhaustive focus environments in the language.

The paper is organized in five (5) sections. Section 1.1 presents a brief description of Dagbani speakers; section 2 presents methodology and focus marking in Dagbani. Section 3 discusses ko as Dagbani exhaustive focus marker; Section 4 looks at application of some tests on exhaustivity to show that ko is an exhaustive focus marker that expresses exhaustivity and section 5 concludes the paper. to capture certain syntactic alternations in the SVN. Section 5 concludes the paper.

1.1 Dagbani speakers

The study was conducted in Yendi, a native Dagbani settlement and the capital of Dagboŋ kingdom. Native speakers of Dagbani are called Dagbamba.pl or Dagbana.sg. Dagbani is a Gur language that belongs to the Niger-Congo language family and spoken by Dagbamba in the Northern part of Ghana. Dagomba and Dagbani are the forms used by speakers. The geographical area within which Dagbani is spoken is called Dagboŋ. Dagbani has been classified as belonging to the Moore-Gurma sub-group of African languages (Bendor 1971; Greenberg 1963 and Wilson 1970). Though Dagbani has a continuum of dialects, three major dialects stand out: Tomosili, Nayahili and Nanunli; Tomosili is spoken in and around Tamale, Nayahili is spoken in and around Yendi, the seat of the traditional head of Dagboŋ and Nanunli is spoken in and around Bimbila (Inusah 2016, 2017).

2. Methodology

The instrument used for the data collection was an interview guide with people who are native speakers of Dagbani. The data for this paper reflect the pronunciation of the speakers of Nayahili 'the eastern dialect' spoken in Yendi and its surrounding villages. The approach used was qualitative. The key informants were put in conventional contexts that obliged them to use specific words and phrases leading to the collection of the primary data in the study. The secondary data were collected from written text (Karim kundili 2). Both primary and secondary data were cross checked with eleven (11) key informants. The key informants were native speakers of Dagbani (expertise). They were made of six males and five females. The ages of the participants were between 25 and 60 years because I wanted adult participants who were married. Though Dagbani is a tonal language, tone is not marked in this paper.

2.1. Focus Marking in Dagbani

Previous accounts of focus marking in Dagbani (Olawsky 1999; Hudu 2006 and Issah 2008, 2013a, 2013b) show that Dagbani marks focus morphologically by means of the particles ka, n and la. There, however, continue to be diverse views by various researchers as to the role of these various particles in the information structure of the language. Issah (2013a) explains that researchers have really not come to a consensus on the functions of these particles in the information structure of the language. Olawsky (1999) discusses focus marking in Dagbani arguing on the roles of the particles ka, la, and mi as focus markers. The controversy in Dagbani has been the post verbal particle la. Olawsky (1999) describes the particle la as a morpheme with aspectual function that marks habitual as well as a continuous aspect when it is found in between the verb and the object. He uses the data below to buttress his claims:

(2) a. **Fati** **ba** **la** **ʧeʧe**
Fati ride.imperf foc bicycle
'Fati is riding a bicycle'

b. **m** **bɔhindɨ** **la** **Dagbani.**
I learn.imperf foc Dagbani
'I am learning Dagbani.'
(cf. Olawsky 1999:38)

The particle la in (2) is used as post verbal aspectual morpheme that marks habitual as well as continuous aspect; Olawsky (1999) however points out that the la particle could as well be marking emphasis in the language. Hudu (2006) disagrees with Olawsky and argues that in Dagbani, transitive and intransitive verbs that occur in sentence final positions (i.e. with no overt objects) are obligatorily marked for aspect and so if la is an aspectual marker, it will be expected to occur in such final positions. Issah (2008) also disagrees by noting that Olawsky fails to pin down the constituent within the sentence structure on which la marks focus or emphasis. He explains that la imperfective aspectual function in the language is questionable noting that the aspectual function of la is based on two observations: first, it is possible to have an imperfective reading in Dagbani without the la particle as in (3a) and (3b) and second, it is also possible in Dagbani to have the la particle in the sentence structure of Dagbani without necessarily getting an imperfective reading of that sentence as in (3c) and (3d) illustrated bellow:

3. a. **Abu** **bu- Ø** **bi-hi**
Abu beat-imperf child-pl
'Abu is beating children'

b. **Ama** **di-ra**
Ama eat-imperf
'Ama is eating'

c. **Ama** **ku- Ø** **la** **bua**
Ama kill-perf Det goat
'Ama has killed a goat'

d. **bi-hi** **maa** **tu- Ø** **la** **Abu**
Child-plu def insult-perf Det Abu
The children (have) insulted Abu'
(Issah 2008:25)

Olawsky further confirms the status of la as a focus marker morpheme in Dagbani rather than aspectual morpheme. Issah (2013b) then concludes that the particle la marks presentational focus on either constituent that follows the verb or on the entire verb phrase, and it is possible to have an imperfective reading in Dagbani without the la particle as

presented in (3a). The paper supports (Hudu 2006) and Issah (2008, 2013b) that the particle la marks presentational focus on either constituent that follows the verb or on the entire verb phrase, and it is possible to have an imperfective reading in Dagbani without the particle.

Hudu (2006) further discussed ka and n as focus markers in Dagbani. He argues that ka focuses post-verbal constituents by pre-posing them into initial position and forming a cleft construction in what he calls "sentence initial position (ex situ)" and explains that n focuses the noun phrase or emphatic pronoun in subject position producing a cleft construction and differs from ka only in that no overt surface movement is involved. He presented the following data to back his claim:

(4) a. **Amina ʧaŋ-Ø daa ni**
Amina go-perf market loc
'Amina went to the market.'

b. **Amina n ʧaŋ-Ø daa ni**
Amina 1sg go-perf market loc
'It is Amina who went to the market.'

c. **n zaŋ-Ø Amina na**
1sg take-perf Amina loc
'I brought Amina.'

d. **Amina ka n zaŋ-Ø na**
Amina foc 1sg take-perf loc
'It is Amina that I brought (not Adam)'
(Hudu 2006:19)

The data show ka focusing the object (NSF) in (4d) by pre-posing it into initial position forming a cleft construction and (4c) contains an in situ focus as a simple sentence. (4d) shows that Amina is the only one who went to the market or being brought considering the sentence to be contradicted by any other which has a different referent in place of Amina. The paper agrees with (Hudu 2006) and Issah (2008) that ka is a focus marker but argues that ko is also an exhaustive marker which expresses exhaustive identification when it focuses both subject (SF) and object (NSF) in a sentence. When the two focus particles ka and n co-occur with ko in a sentence, the particle n becomes a resumptive pronoun while ka becomes a relative pronoun. This is illustrated in example (5).

(5) a. **Amina ko n ʧaŋ-Ø daa ni.**
Amina part 1sg go-perf market loc
'Amina went to the market.'

b. **Amina ko ka n zaŋ-Ø na**
Amina part rel 1sg take-perf loc
'It is Amina that I brought. '

c.	**Amina**	**ko**	**n**	**ʧaŋ-Ø**	**daa**	**ni**	**la**
	Amina	part	1sg	go-perf	market	loc	det
	'Amina went to the market.'						

The data in (5a, 5b, 5c) show that ka n or la cannot show exhaustivity when they occur with ko but can be interpreted as deictic discourse particles or and not focus markers. n in (5a) is a resumptive pronoun; ka in (5b) is an RC marker while la in (5c) is a post verbal particle or preverbal that is more of a definite article that encodes familiarity.
Issah (2013a:43) states "the constituent that is marked for contrastive focus must invariably be located within the clause initial position of the sentence with an obligatory introduction of special morphemes called focus markers." He again demonstrates that Dagbani is mainly an ex-situ language, in that its question words are generally located in the sentence-initial position and followed immediately by the appropriate focus marker. Fiedler and Schwarz (2005) in what they call "out-of-focus" encoding posit that there is a structural asymmetry between SF (subject focus) and NSF (non-subject focus) arguing that the canonical SF construction contains a postponed syllabic nasal called "emphatic" by Olwasky (1999). They further argue, using the cleft analysis hypothesis that these constructions are described as biclausal. Though Hudu (2006) also makes the same observation on structural asymmetry between subject and non-subject focus constituents, Issah (2008) observed that the structural asymmetry is not as strict as pointed out and then opined that ex-situ focus constructions in Dagbani must be analysed as monoclausal. These seem to be the case as ko marks focus in monoclausal. The findings agree that Dagbani marks focus morphologically by means of particles in monoclausal.

Kiss (1998:245) argues that "focus is applied in the literature of two syntactically and semantically different types of phenomena which must be kept apart: identificational focus and informational focus." She outlines the difference between the two focus notions that hinges mainly on exhaustivity and movement. She defines contrastive focus semantically as one that represents the value of the variable bound by an abstract operator expressing exhaustive identification, and syntactically as the constituent that acts as an operator moving into scope position and binding a variable. Kiss mentions that situationally given elements for which the predicate phrase potentially hold is identified as the exhaustive subset of the set for which the predicate phrase actually holds and that since some sentences are not marked for it, the focus type is non-obligatory. Hudu (2006) explains that in Dagbani the contrasts with presentational focus is obligatorily expressed in every sentence and marked by a pitch accent. It is expressed by a phrase that conveys new and non- presupposed information without any movement, and that does not express exhaustive identification on given entities. The two focus notions also differ in that whereas presentational focus places no restriction on constituents that mark it, some constituents such as universal quantifiers and also-phrases cannot express contrastive focus.

It has been shown in the literature that ka and n can encode identificational (contrastive) focus on constituents which is located in the clausal left periphery. Both particles involve the movement of the constituent that is in focus to the left periphery position and then following it immediately with ka or n. The difference between these morphemes is that while ka focuses non-subject constituents, n focuses subject constituents. Issah (2008) notes that the choice between ka and n has been argued to be dependent on the grammatical role of the constituent that is to be moved to the left periphery position: Fiedler and Schwarz (2004), Fiedler and Schwarz (2005) and Hudu (2006). It is however shown that this asymmetry holds only for simple clauses since it is possible to focus subject constituents of embedded clauses with ka which otherwise is used to focus-mark only non-subject constituents. Issah (2008) observes that constituents that can be focused via the use of ka are NP objects as in (1b), adjuncts as in (2b), and pronouns as in (3b). These are the categories that can be hosted by the left periphery position of Dagbani. These constituents, however, undergo overt movement to left periphery positions. It is observed that marking of focus using ka always demands an obligatory movement of the focused constituent to sentence initial position. It is noted that ka does not mark focus in-situ but rather it marks focus in ex-situ position.

The paper supports this analysis but makes a stronger case that the exhaustive meaning associated with the particle ko is not an additional meaning but the meaning that is expressing exhaustivity when it occurs in focus sentences. In the next section, we will demonstrate with specific tests that *ko* only expresses a specific kind of focus namely, exhaustive focus and marks identification focus in both subject constituent and object constituent positions. It will also show that Issah's (2008) claim that focus in situ does not show exhaustivity in Dagbani may not be accurate.

3. Marking Exhaustivity in Dagbani

Hudu (2006:13) argues, "the particle *ka* focuses post-verbal constituents by pre-posing them into initial position and forming a cleft construction. Subjects and other preverbal constituents can only be clefted with the use of *n* focus marker. Constituents that can be focused include noun phrases, emphatic pronouns and adjuncts." The data below presents his argument:

(6) a. n zaŋ-Ø Amina na.
1sg take-perf Amina loc
'I brought Amina.'

b. Amina **ka** n zaŋ-Ø na
Amina foc 1sg take-perf loc
'It is Amina that I brought.'

(7) a. n zaŋ-Ø Amina ***ka*** na.
1sg take-perf Amina foc loc

‘I brought Amina.’

b. n zaŋ-Ø Amina **ko** na.
1sg take-perf Amina foc loc
‘I brought Amina.’

c. Amina **ko** ka n zaŋ-Ø na
Amina part rel 1sg take.perf loc
‘It is Amina that I brought.’
(cf. Hudu 2006: 14)

The data in (6b) explains that the particle *ka* like *n* cannot focus post-verbal constituents in in- situ without clefting but (7) provides an alternative *ko* that can focus post-verbal constituents and preverbal constituent in a monoclausal. The data in (6) also show that one will have to use two different particles *n* to mark SF and *ka* to mark NSF in pre-verbal and post-verbal slots in the language. Issah (2008) mentions that both particles involve the movement of the constituent that is in focus to the left periphery position and then following it immediately with *ka* or *n*. There is a difference between these morphemes: whilst *ka* focuses non-subject constituents, *n* focuses subject constituent. It will be shown that this asymmetry holds only for simple clauses since it is possible to focus subject constituents of simple clauses with *ko* which is also used to focus-mark non-subject constituents and adjuncts as in (7) above. The data below illustrates this claim:

(8) a. Ali da-Ø nɨmdɨ
Ali buy.pef meat
‘Ali bought meat.’

b. Ali **ko** n-da-Ø nɨmdɨ .
Ali part 1sg-buy.pef meat
‘**Ali** bought the meat.’

c. Ali da-Ø nɨmdɨ **ko**
Ali buy.pef meat part
‘Ali bought the **meat.**’

(9) a. **zʊŋɔ** **ko** ka Ali da-Ø nɨmdɨ
today part rel Ali buy.pef meat
‘Today, Ali bought meat.’

b. **mani** **ko** n da-Ø nɨmdɨ maa
1sg.emph part 1sg buy.pef meat Det.
‘I only bought the meat.’

The data in (8a) is mere information that contradicts with (8b-c and 9a-b). The data provide the idea that only Ali bought the meat and no one else expressing exhaustive identification in ex situ in (8b-9a-b) and in situ in (8c) in the post verbal focus environment. The example in (9a) shows *ko* focusing the adverb *zuŋɔ* ‘today’ to mean only today and not

a different day, the particle focus marks on the emphatic pronoun *mani* 'me'. This shows that *ko* can also focus other constituents apart from subjects and objects. While (8b, and 9a-b) show focus exhaustivity in subject ex situ position, (8c) shows focus exhaustivity in object in situ and (8a) shows non-presupposed information. The paper proposes that the particle *ko* also encodes identification focus (exhaustive) and can also mark focus on emphatic pronouns and adjuncts as illustrated in (10):

(10)	a.	**Kpe**	**ko**	ka	o-di	sahɨm	maa
		loc.	part	rel	3sg.eat.perf	food	Det
		'It is **here** that he ate the food.'					
	b.	**mani**	**ko**	n	di	sahɨm	maa
		1sg.emph	part	1sg.	eat.perf	food	Det
		'It is **me** who ate the food.'					

The data provides an adjunct *kpe* 'here' that is pre-posed and focused in initial position in (10a) and emphatic pronoun *mani* 'me' also focused in (10b). Both sentences in (10) show exhaustivity to mean (here only) and (me and nobody else).

3.1 Ex Situ and in Situ Positions

When a focus marker occurs in the pre-verbal position it is described as ex situ as in example (5b) but when it occurs in a post-verbal slot, it is described as in situ as in (5c). Kiss (1998:246) says, "Presentational focus does not have a unique syntactic position and exhaustivity can only be expressed by a constituent pre-posed into preverbal slot." In other words, all contrastive focus positions must be preverbal while presentational focus positions may occur VP-internally or in situ. This might not be true in Dagbani since the particle *ko* may express exhaustivity in both in situ and ex situ as illustrated in example (11) bellow. Hudu (2006) disagrees with Kiss and confirms that the pattern in Dagbani presents an exception to Kiss' claim of universality of preverbal position for contrastively focused positions.

11.	Q: ŋʊn	n	be	jili	bili	maa	ni.		
	who	1sg	inside	house	small	Det.	loc		
	'Who is inside the small house?'								
	b. ʤɛngbarɨgɨ	**ko**	n	be	jili	bili	maa	ni.	
	mouse	**part**	1sg	inside	house	small	Det.	loc	
	'The **mouse** is inside the small house.'								
	c. bɛ	ʧe	ʤɛngbarɨgɨ	**ko**	n	nɨŋ	jili	maa	ni.
	3pl.	leave.perf	mouse	**part**	1sg	do	house	Det	loc
	'The mouse is left inside the house.'								

(cf. Karim kundili 2:45)

The data in (11) show that exhaustivity can be expressed by a constituent pre-posed into preverbal slot as in (11b) as well a post-posed into post-verbal slot in Dagbani as in (11c). This is contrary to Kiss' claim of universality of preverbal position for contrastively focused positions and that exhaustivity can only be expressed by a constituent pre-posed into preverbal slot. In the next section, we will demonstrate with specific tests that *ko* only expresses a specific kind of focus namely, exhaustive focus.

4. The Tests for Exhaustivity: *ko* Focus

In this section, we justify the claim that *ko* is an exhaustive focus marker. This is achieved by using the tests in Kiss (1998). Previous account in Dagbani (Hudu 2006; Issah 2008 2013a) applied the tests in Kiss (1998) to Dagbani data to confirm the status of the particle *ka* and *n* as identificational or contrastive focus markers. Kiss (1998) outlines the difference between the two focus notions that hinges mainly on exhaustivity and movement. Kiss (1998) defines….

> …identificational (exhaustive) focus as a subset of the set of contextually or situationally given elements for which the predicate phrase can potentially hold; it is identified as the exhaustive subset of this set for which the predicate phrase actually holds, and information focus as that if a sentence part conveys new, nonpresupposed information without expressing exhaustive identification performed on a set of contextually or situationally given entities, it is a mere information focus (Kiss 1998:246-249)

These tests are employed in this paper to find out if *ko* is an identificational focus marker that expresses exhaustivity. This is achieved by using the tests developed by Szabolsci (1981). The tests employed include: coordination and entailment test, partial answer interpreted as full answer, distributional restrictions on exhaustivity and interpretation

4.1 Coordination and Entailment Test

Duah (2015:10) states that "the coordination test was first used by Szabolsci (1981) to identify exhaustivity of focus in Hungarian." He explains that the test involves a pair of sentences in which one contains two co-ordinate DPs that are focused, and differ from the second in which one of the coordinate DPs is dropped. Here, exhaustivity depends on the lack of logical consequence between the two sentences. The focus expresses exhaustive identification only if the second sentence is not among the logical consequences of the first. When this test is applied to *ko*, it confirms its status as identification focus marker in Dagbani. The following are examples:

(12) Q: ŋʊn ɲu kom maa?
who drink.perf water Det
'Who drank the water?'

A: **Ali** **mini** **Ayi** **ko** n ɲu-Ø kom maa
Ali conj Ayi part 1sg drink.perf water Det.
Ali and Ayi drank the water."

A1: **Ali** **ko** n ɲu-Ø kom maa.
Ali part 1sg drink.perf water Det.
'**Ali** drank the water.'

A2: **Ali** **n** ɲu-Ø kom maa.
Ali foc drink.perf water Det.
'Ali drank the water.'

B: **Ali** **mini** **Ayi** ɲu-Ø kom maa
Ali conj Ayi drink.perf water Det.
'Ali and Ayi drank the water.'

B1: **bɛ** ɲu-Ø kom maa.
3pl drink.perf water Det.
'They drank the water.'

Example (12A) shows that the coordinated NP Ali and Ayi are focused and marked with the particle *ko.* It implies that example (12A1) cannot replace (12A) to answer the question so the two sentences are said to be in complementary distribution. This is because the use of *ko* in (12A) implies that the water was drank by exactly two people (Ali and Ayi) while (12A1) implies that it was drank by only Ali. However, when example (12B) is given as response to the question (Q), example (12B1) or (12A2) may also be used as a partial answer since the sentences do not contradict each other. It is assumed that in the test, the particle *ko* has passed the test of exhaustivity because while (12A) does not entail (12A1), (12B) does entail (12B1) and (12A2) ere *n* is used to focus Ali.

A variation of the coordination test involves focused numerals (see Szabolsci 1981). "In this test, a numeral is added to a noun and focused; where focus is exhaustive the focused entity must be equal in number to the entity in question otherwise the sentence would be contradictory" (Duah 2015:11). For example, in a story, *Ata* 'name', *ʤɛnkuno* 'cat' and *ʤɛngbariga* 'mouse' lived in the same house and one day they decided to cook together. In their interaction the extract in (13) was heard:

(13) Ata, ʤɛnkuno mini ʤɛngbarɨga to-Ø sakɔro mini sima-ʒɛri
Ata cat conj mouse pound.perf fufu conj groundnut-soup
'Ata, cat and mouse pounded fufu and prepared groundnut soup'
(cf: karimkundili 2:42)

Q: niriba a-la **ko** n-to sakɔro maa?
People how.many part 1sg-pound.perf fufu Det

'How many people pounded the fufu?'

A:	**niriba**	**ata**	n-to-Ø	sakɔro	maa
	people	three	1sg-pound.perf	fufu	Det
	'**Three people** pounded the fufu?'				
A1*:*	**niriba**	**aji**	n-to	sakɔro	maa
	People	two	1sg.pound.perf	fufu	Det
	'**Two people** pounded the fufu?'				
B:	**niriba**	**ata**	**ko** n-to-Ø	sakɔro	maa
	People	three	part 1sg.pound.perf.	fufu	Det
	'**Three people** pounded the fufu.'				
B1:	**niriba**	**aji**	**ko** n-to-Ø	sakɔro	maa
	people	two	part 1sg.pound.perf.	fufu	Det
	'**Two people** pounded the fufu?'				

The data in (13) is an extract from the written text (Karim kundili 2). It is observed that while (13A) entails (13A1), for example, the set of individuals who pounded the fufu is given as four people in (13A). nevertheless, (13A1) follows from (13A) because if three students pounded the fufu, then at least two people pounded the fufu. (B) does not entail (B1) because (B1) carries the implication that only two people pounded the fufu showing that ex situ focus with *ko* also involves exhaustive identification.

4.1.1 Partial Answer Interpreted as full Answer

Hartmann and Zimmermann (2007:253) state, "if a focus (or focus-sensitive) particle cannot occur in mention some focus environments then that particle has exhaustivity properties associated with it." The purpose of this test is to find out if the particle *ko* can or cannot occur in mention-some focus environments in Dagbani as used by Hartmann and Zimmerman to test focus in Hausa. Consider the following scenario adapted from Hartmann and Zimmerman (2007:253) adopted from Duah (2015:12).

(14). "A student who is anxious that he might have failed a test approaches his teacher and asks: 'Can you tell me whether I have passed or not?' Unfortunately, teacher is by law forbidden to tell a student directly about his or her result. However, there is no law forbidding him to talk about other students' performances" (Duah 2015:12).

(15)	Q:	ʧiʧa**,**	m-pa:si	teisi	maa	bee	m-be pa:si?
		teacher	1sg-pass.perf	exam	Det	conj	1sg-neg pass.perf
		'Teacher, did I pass the exams or not?'					
	A:	Alima	pa :si-Ø	teisi	maa		
		Alima	pass.perf	exam	Det		
		'**Alima** passed the test.'					
	A1:	Alima	**ko**	pa :si-Ø	teisi	maa	
		Alima	part	pass.perf	exam	Det	

‘ **Alima** passed the test.’

A2:	Alima	**ko**	m-be	pa:si-Ø	teisi	maa
	Alima	part	1sg.neg	pass.perf	exam	Det

‘Alima did not pass the test.’

(15A) provides the information that is not clear for other students to know their fate in the exam. The information in (15A1) with *ko* suggests that only *Alima* passed and the rest failed, so students can now tell their fate. But if the answer in (15A2) is given, then one would consider being part of those who passed since the *ko* focused subject indicated that only *Alima* failed the exam. Thus, the particle *ko* fails in a mention some contexts because it identifies a focused item(s) as the exhaustive subset of situationally relevant given elements.

4.1.2 Distributional Restrictions on Exhaustivity: Additive particles also/too

Duah (2014:13) notes that “exhaustive focus behaves differently from informational focus in that while the former bares certain operators such as additive particles ‘also’ or ‘too’ the latter may occur with such operators.” The test explains that while exhaustive focus identifies only members of a set to the exclusion of others, also/too may add to the set. In Dagbani additive particles appear to be restricted where focus is exhaustive. This is illustrated in examples (16 and 17)

(16)

Q:	bɔ	jaʔ-a	ko	o-daʔ		
	what	again	part	3sg-buy.perf		
	‘What else did he buy?”					
A:	Azima	da-Ø	loori	gba		
	Azima	buy.perf	lorry	also		
	‘Azima also bought a lorry’					
A1:	*loori	(*gba)	ko	(*gba)	Azima	da.
	lorry	also	part	also	Azima	buy.perf
	*‘It was also a lorry that Azima bought.’					

(17)

Q:	ŋʊn	jaʔ-a	n -ʧaŋ	ʃɨkʊrʊ	pahi		
	Who	again	1sg-go.perf	school	add		
	‘Who else went to school?’						
A:	Azima	gba	n-ʧaŋ	ʃɨkʊrʊ	maa	ʃɛlɨ	
	Azima	also	1sg-go.perf	school	Det	some	
	‘Azima also went to school.’						
A1:	Azima	(*gba)	ko	(*gba)	ʧaŋ	ʃɨkʊrʊ	maa	ʃɛlɨ
	Azima	also	part	also	go.perf	school	Det	some
	*‘it was also Azima who went to school.’							

The data in (16 and 17) show the interaction of additive particles with in situ focus and ex situ focus with the ko particle. In (16A) and (17A), where the focus is on the subject Azima has different presuppositions than (16) and (17A1), respectively, where the object bears the focus. In each case, an appropriate context with an antecedent sentence is given which satisfies this presupposition. It is seen from the data in (16A1 and 17A1) that the prediction of Kiss does not hold for Dagbani. For instance, (16A&17A) show that, it is possible for Dagbani exhaustivity to co-occur with universal quantifier; gba "also" without affecting it grammaticality.

4.1.3 Interpretation of Negation

This test is applied to show that ex situ focus with *ko* involves exhaustivity. According to Issah (2008), the main proposal of this test is that if a structure is said to be exhaustive, then it should not be possible to follow such a structure up, by agreeing and adding anything to what is said to be in focus. It suggests that negating new information is odd since it does not exclude other possibilities. Thus whilst exhaustivity can be negated, new information cannot be negated. The test of interpretation of negation asserts that in a dialogue, only exhaustivity can be negated as in (18).

(18) Q: ŋʊn n ʧaŋ puuni **kpe?**
who 1sg go.perf farm loc
'Who went to the farm here?'
A: Ali ʧaŋ -Ø puuni kpe
Ali go.perf farm loc
'Ali went to the farm here.'
A1: Ali ***ko*** n-ʧaŋ puuni kpe
Ali part 1sg-go.perf farm loc
'Ali went to the farm here (nobody else)'
A2: aayi o ʧaŋ puuni gba
no 3sg go.perf farm also
No, Ali went to the farm also.'

The data in (18A1) show that exhaustivity is expressed by ko while that of (18) do not express exhaustivity. (18A1) implies that only *Ali* but nobody else goes to the farm. (18A) can also be used to answer the question but in case the information in (18A1) is false, then the speaker can be corrected in a form of a repair. This indicates that the morpheme *ko* becomes syntactically, an indispensable element in constituents which are exhaustively focused.

4.2 The Exhaustivity of ko as a Pragmatic Inference

The particle *ko* exhaustively identifies entities given in a context or marks them as information that is non-presupposed interpreted to mean "only X and nobody else." This can be seen when we compare the particle *ko* with the exclusive particle *kɔŋko* 'only' in the examples below:

(20) A: Afi ʧaŋ la daa-Ø **kɔŋko**
Afi go.perf Det market only
'Afi went to the market only.'
A1: Afi be ʧaŋ daa **kɔŋko** amaa o-ʧaŋ kuliga *(gba)
Afi neg go.perf market only conj 3sg go.perf stream too
'Afi didn't go to the market only but she went to the stream too.'

(21) A: daa **ko** ka o-ʧaŋ-Ø
Market part rel 3sg.go.perf
'It was the market that she went.'

A1: ka daa ko ka o-ʧaŋ amaa Afi ʧaŋ ʃɪkʊrʊ *(gba)
Not market part rel 3sg.go.perf conj Afi go.perf school too
'Afi didn't go to the market only but she went to the stream too.'

The data in (20A) show that Afi went only to the market but the meaning in (20A1) changes to show that the market was not the only place but the stream too. When negation is introduced into the initial clause containing the particle *ko*, the understanding is that X only went to the market is neutralized with the negation introduced.

5. Conclusion

The papers examined the particle *ko* as an exhaustive focus marker in Dagbani. It has shown that ex situ focus and in situ focus marked by the particle *ko* in Dagbani express exhaustivity. Thus, the focus particle *ko* can appropriately be identified as an exhaustive focus particle because it occurs only in exhaustive focus environment showing [+exhaustive]. *ko* has been proved to mean only X and nothing else by applying various standard tests for exhaustivity to test it. The data showed that the particle only occurs in exhaustive focus environments in the language monoclausal. It is also shown that Dagbani is mainly an ex-situ and in situ language with focus particles marking focus in situ and ex-situ to show exhaustivity. Consider the conversation between these people:

(21) Adam: ŋɔn ɲu kom maa?
who drinkperf water Det
'Who drank the water?'
Alima: **Ali** **ko** n ɲu-Ø kom maa.
Ali part 1sg drink.perf water Det.
'Ali drank the water.'

Alima: **Ali** **ɲu** kom **ko**
Ali drink.perf water part
'Ali drank the water'

(22) Adam: ŋun **ko** n kana kpe?
who part 1sg. come.perf loc
"Who came here alone?"
Alima: **Ali** **ko** n kana kpe
Ali part 1sg. perf loc
"Ali came here."

The test of exhaustivity confirms that *ko* as a focus particle which only occurs in exhaustive focus environments in Dagbani. *ko* marks both SF and NSF with or without movement in a focus sentence, and can also co-occur with focus markers [*ka, n,* la] in ex situ by changing their functions to a deictic discourse particle and not focus markers.

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