Verbal and verbless copular clauses in Moro

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1. Introduction

Moro (ðəmwarəŋ) is a Kordofanian language spoken in the Nuba mountains of Sudan, which Schadeberg (1981) classifies as a Western Heiban language. This paper focuses on the Thetogovela dialect of Moro, one of seven dialects of Moro spoken in the Nuba Hills.[1]

Moro has a rich array of copular clause constructions which show clear contrasts in their syntactic makeup. One class of copular clauses contain verbal heads, others are headed by non-verbal predicates that bear some inflectional morphology which is shared with verbs, while a final group of copular clauses lack any words which could be identified as verbs. I show that verbal and verb-like copular clauses always contain a predicative core. On the other hand, verbless copular clauses lack predicative semantics, serving the functions of identification or equation. I provide a simple syntactic analysis which accounts for the morphosyntactic distribution of the different types of clauses.

The outline of this paper is as follows. Section 2 introduces background concepts related to the syntax and semantics of copular clauses, while Sections 3-5 introduce the three different classes of copular clauses in Moro. Following this description, Section 6 outlines a syntactic analysis of the three clause types.

2. Copular clauses in formal semantics and typology

Many languages adopt different strategies for nominal predication and for identifying two guises of a single individual. While these expressions are often quite divergent, as they are in Moro, it is common to refer to these types of sentences collectively as copular clauses in the typological literature (Hengeveld 1992, Pustet 2003). I will generally adopt this convention below regardless of whether the relevant clauses have an element which is obviously a copula.

Milsark (1974) identified several different types of copular sentences based on the semantic type of the subject and complement

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of the copular sentence in English. Milsark's description of English will provide a useful starting point for our discussion of Moro.

The first type of copular clause is predicational. In these copular clauses, a non-verbal predicate is ascribed to a referential entity in subject position. The subject can also be quantificational but I set such cases aside. In English, predicational copular clauses include sentences with nominal, locative, and adjectival predicates following the copular verb *be*:

Predicational copular clauses in English

(1a)	Mary	**is**	a professor
	INDIVIDUAL		*PREDICATE*
(1b)	Mary	**is**	in the city
	INDIVIDUAL		*PREDICATE*
(1c)	Mary	**is**	tall
	INDIVIDUAL		*PREDICATE*

Typologically, however, it is common to use distinct copula or constructions for these three types of sentences. We will see, for example, that nominal and locative predicates in Moro use distinct types of copula, while adjectives can function directly as predicates. This is unsurprising as there is good evidence that these different predicational copular clauses are not semantically identical (Fernald 2000, Roy 2013).

The second types of copular clause are equative and identificational. I will discuss these together because in both the copula is flanked by two referential arguments, and the function of the copula seems to be one of establishing identity, for example between two guises of the same individual.

Equative copular clause in English

(2)	Mary	**is**	Mrs. Smith
	INDIVIDUAL		*INDIVIDUAL*

Idenfication copular clause in English

(3)	This woman	**is**	Mary
	INDEXICAL		*INDIVIDUAL*

The difference between equative and identificational copular clauses is that one of the arguments of an identificational copular clause is pragmatically established, either by deixis or description of some pragmatically salient context. Identificational copular clauses then supply identifying information about this individual. In contrast, an equative copular clause is one in which two previously known individuals are identified; in other words, two known guises or labels are claimed to identify the same individual.

A third type of copular clause in English is the specificational copular clause. Specificational copular clauses involve the inversion of predicational copular clauses, with a predicative subject and a referential object:

Specificational copular clauses in English

(4a) The cause of the riot **is** the picture on the wall (Moro 1997)
PREDICATE *INDIVIDUAL*

(4b) The tallest girl in the class **is** Mary
PREDICATE *INDIVIDUAL*

The status of specificational copular clauses is more controversial. Moro (1997) and Mikkelsen (2005) argue that they are derived from an underlying predicational structure. Others, in particular Heycock and Kroch (1999) argue on the basis of related constructions that specificational copular clauses are actually equative, a position that receives support from the requirement that the subject of a specificational clause be definite.

On the other hand, Mikkelsen (2005) argues that the requirement that the subject of a specificational sentence be definite is due to its status as a topic. For Mikkelsen, the inverted structures characteristic of specificational sentences emerge just when the predicate is a topic but the subject of the predication is new information. So for Mikkelsen, the syntactic differences between specificational and predicational copular clauses are due to information structure. As we will see below, the information structural profile of copular clauses in Moro play an important role in the realization of non-predicational copular clauses.

Some typological approaches to copular clauses, including Hengeveld 1992, Curnow 2000, and Dixon 2010, ch. 14, focus on the different ways which copular clauses or copular constructions are realized across languages. A major split has been recognized between copular clauses that include a verb and those that do not. However, these works do not always clarify how languages with both verbal and verbless copular clauses realize the semantic classes of copular clauses described above. In the following sections I demonstrate that predicational copular clauses in Moro are realized either as verbal clauses or with verbal morphology, while equative and identificational copular clauses lack a verbal element. As part of this picture, I show that there is an intermediate category of copular clauses which are predicational but nevertheless lack a verb. I show that these elements still share a structural component with verbs, corresponding to the fact that they do show some morphological similarities.

3. Verbal copular clauses and predication

In this section I review two types of verbal copular clauses in Moro, one which is used with nominal predicates and another which is used with locative predicates. These sentence types make use of two distinct copular verbs:[2]

[2] *Abbreviations*: 1/2/3DEIX – near speaker/near hearer/distal deictic copula; ACC – accusative case; ADJ – adjectival final vowel; CL –weak noun class agreement and concord; DPC1 – dependent clause 1 (subjunctive, non-subject relative); DPC2 – dependent clause 2 (subject extraction); EQ – equative copula; FOC – focus prefix; FUT – future tense; COMP2 – cleft/relative clause complementizer; DEM – demonstrative; INDEF

Verbal copula with nominal predicate

(5)	kuku	g-a-d-ó	udʒ	g-é-ŋerá	g-é-lɜŋgitʃ-i-n-ú
	Kuku	CLg-RTC-be-PFV	person	CLg-DPC2-good	CLg-DPC2-know-CAUS-PASS-PFV
	"Kuku is a person who is good to know."				EJ61213

Locative copular clauses

(6)	logopájá	l-a-w-ó	n-tərəbésá	
	cup	CLl-RTC-be.loc-PFV	on-table	
	"The cup is on the table."			AN62413

These sentences closely resemble normal transitive clauses in Moro, which is an SVO language with complex agglutinating morphology on the verb, described in Rose 2013. This section establishes that both of these sentences include a verbal copula, and the constituents following these copulas are predicates. In particular, the nominal complement of the verb in predicate nominal copular clauses is a predicate noun rather than a normal referential argument.

3.1. Verbal copular clauses with nominal predicates

The copula *-əd-* 'become' patterns like a verb in Moro.[3] It takes prefixes such as tense and subject agreement, which occur on verbs, and distinguishes perfective and imperfective aspect.

Predicate nominal copular clause in perfective and imperfective aspect

(7a)	é-g-a-d-ó	oraŋ
	1SG-CLg-RTC-be-PFV	man
	"I am a man." (Lit: I became a man)	

(7b)	é-g-a-v-ə́d-eá	oraŋ
	1SG-CLg-RTC-PROG-be-IPFV	man
	"I am about to become a man."	

The ability of *-əd-* to distinguish perfective and imperfective aspect in Moro shows that it is a verb. Adjectives and other non-verbal predicates do not make this distinction, although they do show some pieces of verbal morphology, such as subject agreement. The fact that the imperfective form of the verb has an inchoative translation is due to a general property of punctual verbs in Moro — achievements and changes-of-state — which all have inchoative translations in the imperfective. So the inchoative translation of the imperfective of *-əd-*

– indefinite adjective; INF1/2 – infinitive 1 or infinitive 2; INTNS.REDUP – intensive reduplication; IPFV – imperfective; LOC – locative case/clitic/copula; PASS – passive; PFV – perfective; POS – possessive; PROG – progressive; PST – past tense; PL – plural; REDUP – reduplication; RTC – root clause; SCL – strong concord; SG – singular. All transcriptions are in IPA. Note that the vowel /ɜ/ — <ë> in written Moro — was transcribed /ʌ/ in a number of earlier publications by the author and colleagues.

[3] In the Wërria dialect of Moro, which is most similar to the Moro writing system, this copula is *-əɾ-*, as there is a conditioned /ɽ/~/d/ correspondence between Thetogovela and Werria.

indicates that it denotes a punctual event and is best translated 'become', with (7a) as 'became' and (7b) 'about to become,' though '-be-' will be used interlinearly.

Further evidence for the verbal nature of the copula *-əd-* comes from its ability to occur after negative and inceptive auxiliaries (8), which select verbal predicates.

Predicate nominal copular clause with auxiliaries

(8a) ŋerá ŋ-a-nːá áŋá-d-e oraŋ
child CLŋ-RTC-not.PFV 3SG.INF-be-INF1 man
"A child is not a man."

(8b) ŋerá ŋ-a-válá áŋá-v-əd-é oraŋ
child CLŋ-RTC-INCEP.AUX 3SG.INF-prog-be-INF1 man
"The child is going to be a man." EJ81214

The auxiliaries in (8) surface with normal finite subject agreement, while the copula surfaces with infinitive agreement, as is typical for verbs which follow auxiliaries. In contrast, imperative verb forms lack agreement prefixes.

Additionally, *-əd-* can occur in the imperative (9), which is restricted to verbal predicates:

Predicate nominal copular clause in imperative

(9) ədó oraŋ
be.IMP man
"Be a man!"

Thus, *-əd-* has the basic morphosyntactic distribution of a verb. At the same time, this copular verb patterns in some ways which distinguishes it from regular transitive verbs. First, while the copula *-əd-* can be morphologically causativized, it does not take the normal causative suffix -i, but instead exceptionally takes a causative suffix *-atʃ* (10a). An identical suffix occurs as an allomorph of the locative applicative suffix, but it is unclear if there is any connection. The predicative copula is the only verb that has this unusual causative construction. Additionally, in embedded environments, e.g. as the complement of the paraphrastic causative *-ŋgit-* 'let, cause,' the inchoative suffix *-eṭ* occurs on the predicate copula (10b).

(10a) kuku g-a-d-atʃ-ó ŋálo-ŋ udʒí g-í-tʃ-ˈə́
Kuku CLg-RTC-be-CAUS-PFV Ŋalo-ACC person CLg-DPC2-bad
"Kuku made Ngalo a bad person."

(10b) kuku g-ɜ-ŋgit-ú ŋálo-ŋ ŋé-d-éṭ-e udʒí
Kuku CLg-RTC-be-CAUS-PFV Ŋalo-ACC 3SG-be-INCH-INF1 person
g-í-tʃ-ˈə́
CLg-DPC2-bad
"Kuku caused Ngalo to be a bad person."

The inchoative suffix also occurs on adjectives in embedded contexts, but the irregular locative applicative causative of *-əd-* is

distinct from the causative suffix *-e* which occurs on adjectives. Additionally, the inchoative suffix typically appears on imperative adjectives, while it does not appear on the imperative of the predicate nominal copula (9).

Additionally, there are restrictions on the nominal complement of *-əd-* which collectively suggest it functions as a nominal predicate rather than as a referential argument of the verb.

First, the predicate nominal cannot be definite:

(11a) *kúku g-a-d-ó udʒə́-kɜtíkə
Kuku CLg-RTC-be-PFV person-CLg.that
"Kuku is that person." (intended meaning)

(11b) *tútu g-a-d-ó shone
Tutu CLg-RTC-be-PFV Shawn
"Tutu is Shawn." (intended meaning) EJ8714

Example (11b) is pragmatically natural in Moro, so the source of its unacceptability must be semantic or syntactic. *Tutu* is a birth order name for males which could be, and in this case is, held by the same person who has the given name *Shone*.

Additionally, indefinite adjectives cannot occur on nominal predicates:

(12a) *kuku g-a-d-ó umiə g-ənəŋ g-é-ŋer-á
Kuku CLg-RTC-be-PFV boy CLg-SG.INDEF CLg-DPC1-good-ADJ
"Kuku is a good boy." (intended meaning)

(12b) *kuku nə ŋálo-ŋ l-a-d-ó ləmiə l-ɜmən
Kuku and Ŋalo-ACC CLg-RTC-be-PFV boy CLl-PL.INDEF
l-é-ŋer-á
CLl-DPC1-good-ADJ
"Kuku and Ngalo are good boys." (intended meaning) EJ8116

Both of the sentences in (12) are fine when the indefinite modifier is omitted. The restrictions on the nominal complement show that it must have a predicative semantic denotation, rather than the referential or quantificational denotations which are found with regular nominal arguments.

Notably, then, the nominal predicate following the copula must have the same number specification as the subject, a kind of number agreement:

(13) kuku nə ŋálo-ŋ l-a-d-ó ləʤ-ˡə́l-ˡí-tʃ-ˡə́
Kuku and ŋalo-ACC CLl-RTC-be-PFV people-SCLl-DPC1-bad-ADJ
"Kuku and Ngalo are bad people." EJ7211

Alongside these semantic restrictions, two morphosyntactic properties distinguish the nominal predicates from normal nominal objects. First, nominal predicates are not case marked. To see this, we

must look at a human common noun which marks accusative case such as *matʃo* ‘man':

(14) kúku g-a-d-ó matʃo-(*ŋ)
Kuku CLg-RTC-be-PFV man-(ACC)
“Kuku is a man.” AN82916

Second, the predicate nominal cannot be promoted in the passive (15a-b):[4]

(15a) *oraŋ g-ɜ-d-ən-ú
man CLg-RTC-be-PASS-PFV
“Someone became a man/A man was become.” EJ8814

(15b) *udʒí g-í-v-ŕ:ŋatʃ-a ədʒí ŋenea g-ɜ-d-ən-ú
person CLg-DPC2-PROG-teach-IPFV people word CLg-RTC-be-PASS-PFV
“A teacher was become.” (intended meaning) EJ71218

(15c) ŋgálo g-ɜ-d-ɜtʃ-ən-ú udʒí g-í-tʃ-ˡə́
Ngalo CLg-RTC-be-CAUS-PASS-PFV person CLg-DPC2-bad
“Ngalo was made to be a bad person.” EJ71718

However, a passive suffix is able to occur on the predicative copula because it has been causativized in (15c), the passive of (11a). The passive is possible here because a nominal argument, the causee, is now available for promotion to subject position, while the predicate nominal is still ineligible.

Similarly, the nominal predicate cannot be extracted in a cleft or content question (16b). The demonstrative in the non-extracted baseline sentence (16a) modifies the subject but is extraposed to a sentence-final position, a relatively common process in Moro which is irrelevant to the point being made here.

(16a) ðamala g-a-d-ó wánde íð:ɜtíðɜ
camel CLg-RTC-be-PFV what SCLð.that
“What (gender) is that camel?”

(16b) *ŋw-ɜ́nd-ə́ki ðamalə́-:ðɜtíðə g-ə́-d-ó
camel CLg-RTC-be-PFV what
“What (gender) is that camel?” (intended meaning) EJ8814

If passivization and extraction are limited to referential or quantificational arguments, the restrictions on passivizing or extracting the nominal complement of *–əd–* may be due to its status as a predicate, rather than a normal internal argument of a verb.

[4] In closely related Koalib, Nicolas Quint (p.c.) reports that passivization of copular clauses is possible. The source of unacceptability of (15a) thus may be pragmatic, although (15b) seems pragmatically feasible. Alternatively, there may be a difference between copular clauses or passives in the two languages.

3.2. Verbal copular clauses with locative predicates

Verbal copular clauses expressing locative predicates contain the locative copula *–w–* 'dwell, be at.' When this copula has an inanimate subject, it expresses a simple spatial relationship (17). However, *-w-* can also be used with an animate subject in contexts which might be translated as 'live, dwell' (18). Likely a general locative meaning underlies both of these occurrences. Like the predicate nominal copula, the locative copula is a normal verb, meaning it takes all verbal prefixes and marks an aspectual distinction between perfective and imperfective (18a-b).

(17) nala n-a-w-ó ég-ə́tám
necklace CLn-RTC-be.loc-PFV LOC-neck
"The neckace is on (my) neck."

(18a) kúk:u g-a-w-ó lɜmú/n-ajén
Kuku CLg-RTC-be.loc-PFV Khartoum/on-mountain
"Kuku lives in Khartoum/in the mountains."

(18b) kúk:u g-a-v-eá lɜmú/n-ajén
Kuku CLg-RTC-be.loc-IPFV Khartoum/on-mountain
"Kuku is about to live in Khartoum / in the mountains."

Like predicate nominal copular clauses, the imperfective form of *–w–* has an inchoative meaning, meaning that its basic meaning is a punctual change-of-state, or in this case, change-of-location. The *–v–* allomorph of the locative copula in the imperfective (18b) is conditioned by front vowels. These examples also illustrate that the complement of the locative copula must be either a locative phrase or the name of a place.

Additional evidence for the verbal nature of the locative copula comes from its ability to occur in the imperative (19) and can be embedded under negation and other auxiliaries (20):

(19) ə́wó lɜmú
live.IMP Khartoum
"Live in Khartoum!"

(20a) é-g-a-nná é-v-á ɜnni
1SG-CLg-RTC-not.PFV 1SG-live-INF here
"I don't live here."

(20b) í-g-iðí ɲe-v-é lɜmú
1SG-CLg-FUT 1SG-be.loc-INF1 Khartoum
"'I'll be in Khartoum."

Unlike predicate nominal copular clauses, locative copular clauses can occur in the passive. This is likely because Moro has resources for passivizing noun phrases out of their containing locative phrases in object position. In such instances, the noun phrase embedded in the locative object becomes a subject without its locative case marker, which survives as an enclitic on the verb:

(21) ajén j-e-v-ən-ú-u
mountain CLj-RTC-be.loc-PASS-PFV-LOC
"The mountains are lived in!"

Because only full noun phrases can be subjects in Moro, the locative is eligible for passivization because its locative object contains such a nominal, while predicate nominal objects are non-referential predicates.

Finally, the object of locative copula can be extracted in a cleft (22b):

(22a) kúku n-a-w-ó ŋgá
Kuku CLg-RTC-be.loc-PFV where
"Kuku lives where?"

(22b) ŋ́-ŋgwa ná=ǃkúku g-á-w-ó-u
FOC.where COMP2=Kuku CLg-RTC-be.loc-PFV-LOC
"Where does Kuku live?"

Like all locative objects, passivization or extraction of the object of the locative copula leaves behind a locative clitic on the verb.

In summary, both predicate nominal copular clauses and locative copular clauses are headed by verbal copula. While the nominal complement of nominal copular clauses is a predicate, and thus does not syntactically pattern like a normal structural object, the locative complement of locative copular clauses shows basically the same behavior as other locative modifiers and internal arguments. However, as locative phrases are semantic predicates, both of these clause types are predicative verbal copular clauses.

4. Nonverbal predicational clauses

The next class of copular clauses are nonverbal predicational clauses, where a nonverbal category serves as the main predicate of the clause and hosts inflectional material. There are several types of these; this section focuses mostly on deictic predicates. Deictic predicates are locative predicates that specify the proximity to a set location, typically the position of the speaker. While these predicates share some inflectional morphology with verbs, they are not verbs and do not take complements, instead serving as the predicate themselves. These clauses also function as presentational and existential sentences in Moro. After introducing their basic properties, I show that these clauses are structurally related to a larger class of nonverbal predicate clauses in Moro.

4.1. Deictic clauses

Deixis is spatial reference, the ability of language to refer to positions in space relative to a reference point such as the speaker. Deictic clauses express such relations in Moro. There is a three-way deixis distinction built into the copular element which I will call the deictic predicate, marking locations close to (23a), generally far from (23b), and remote from (23c), the speaker.

(23a) í-g-ɜní ɜn:i / lɜmú / n-ajén
1SG-CLg-be.1DEIX here / Khartoum / on-mountain
"I'm here / here in Khartoum / here in the mountains."

(23b) g-ɜtú ɜt:u: / lɜmú / n-ajén
CLg-be.2DEIX there / Khartoum / on-mountain
"I'm here / here in Khartoum / here in the mountains."

(23c) g-ɜnnoɜŋ ɜnwal:aŋ / lɜmú / n-ajén
CLg-be.2DEIX yonder / Khartoum / on-mountain
"I'm here / here in Khartoum / here in the mountains."

Observe first the similarity between the deictic adverbs *ɜn:i* 'here' and *ət:u* 'there' and their corresponding deictic predicate in (23a) and (23b). The main difference is tone; the H-final tone pattern in the deictic predicate is typical of adjectives. While deictic predicates are not adjectives, deictic predicates and adjectives both fall under the more general category of non-verbal predicates.

Unlike locative copular clauses, which described permanent habitation with animate subjects, deictic clauses always seem to describe temporary location, even with animate subjects. Relevant to this observation is the fact that deictic copular clauses have been grammaticalized to a present tense auxiliary.[5] Another way of characterizing this difference is that locative copular clauses are individual-level predicates, while deictic copular clauses are stage-level predicates in the terminology of Carlson 1977 (see also Kratzer 1995, Fernald 2000, Maienborn 2004, a.o.).

Presentational ('Here's an NP') clauses are intransitive deictic clauses which occur without a locative phrase. While consultants have consistently accepted the local deictic (1DEIX) form of the deictic predicate for these sentences, they sometimes also accept the 2DEIX form of this predicate. Speakers typically reject the distal 3DEIX form in presentational contexts:

(24a) írtə́ g-ɜ́ni
knife CLg-1DEIX
"Here's a knife."

(24b) írtə́ g-ɜ́tu
knife CLg-2DEIX
'There's a knife.' EJ81214

While bare nouns in subject position in most contexts are interpreted as definite, presentational clauses allow indefinite subjects as well.

The locative phrase following the deictic predicates in (23) is an adjunct rather than an argument, so these sentences are not actually different in transitivity per se. Evidence for this conclusion comes from the fact that non-locative predicates allow locative modification by the same class of locative elements in exactly the same way as deictic clauses:

[5] Readers are referred to the Auxiliaries chapter of the upcoming *A Grammar of Moro* for examples and discussion.

(25) í-g-ilið-ú ege (ɜ́n:i/ lɜmú/ n-ajén)
1SG-CLg-buy-PFV house here / Khartoum / on-mountain
"I bought a house here/in Khartoum/on the mountain."

So the locative element following deictic clauses is also an optional modifier rather than a complement. Thus, the deictic element itself is the main predicate in these constructions, unlike locative copular clauses, which predicated the location expressed by their locative complement of the subject.

Further evidence that the locative phrase following the deictic copula is an adjunct comes from its inability to be extracted in a cleft:

(26) ŋgwa nə́ í-g-ɜ́n:i
where COMP2 1SG-CLg-be.1DEIX
"Where am I?" (intended meaning)

Example (26) is not ruled out for semantic reasons, as a question can be formed in situ:

(27) í-g-ɜ́n:i ŋgwa
1SG-CLg-be.1DEIX where
"Where am I?"

The likely explanation for the ungrammaticality of (26) is syntactic. While adverbs can be the pivot of a cleft (Rose et *al.* 2014), they often must be promoted to object position before they can be extracted in Moro, typically by a range of applicative markers. So when a normal verb would have its locative adjunct extracted, Moro would typically require the locative applicative on the verb to occur in extraction contexts. Now the deictic predicate is not a verb, and lacks a locative applicative. So because adjuncts can never be extracted, and because deictic predicates cannot promote their adjuncts with a locative applicative, extraction of locative adjuncts in examples such as (26) are impossible.

Thus, the deictic predicates occurring in deictic clauses are not verbs, but rather the predicative counterparts of the deictic adverbs which they can take as locative modifiers. While they mark normal subject agreement, deictic predicates do not mark verbal inflection; they do not distinguish perfective and perfective forms, and they do not occur with any extension suffixes such as the passive or locative applicative. Moreover, they cannot be embedded under auxiliaries such as negation, which require verbal complements.

Because they cannot be preceded by the negative auxiliary, the negation of a deictic sentence results in suppletion of the deictic predicate with the negative copula *–eró*. Because this copula does not make deictic distinctions, they are neutralized in this context unless a locative modifier is present:

(28a) é-g-eró ɜ́n:i / lɜmú / n-ajén
1SG-CLg-not.be here / Khartoum / on-mountain
"I'm not here / here in Khartoum / here in the mountains."

(28b) g-eró ɜtːu
CLg-not.be there
"She's not there."

Like its positive deictic counterparts, the negative copula does not mark any aspectual distinctions. Thus, it is not a verb, but rather a weak quantificational predicate, described in the following section.

Like deictic clauses, presentational clauses are negated via suppletion with the negative copula *-eró*:

(29a) írtə́ g-eró
knife CLg-not.be
"There isn't a knife."

(29b) ŋáwá ŋ-eró
water CLŋ-not.be
'There isn't water." EJ81214

To summarize, deictic copular clauses fit the template of copular clauses more generally as they introduce a basic predication. Yet the fact that the deictic copula carries lexical content, along with the fact that these clauses can lack a locative phrase together, indicate that these are not actually copular clauses per se, but rather that the deictic copula itself is the predicate.

4.2. Other nonverbal predicates in Moro

There are a number of non-verbal predicates in Moro besides deictic clauses. These include adjectival (30), genitive (31), and weak quantity predicates (32).

Adjectival predicate
(30) kúku g-a-ŋerá
Kuku CLg-RTC-good.ADJ
'Kuku is good." EJ81214

Genitival predicate
(31) ðamala ð-ə́-kúku
camel CLð-GEN-Kuku
'The camel is kuku's." EJ81214

Weak quantity predicate
(32) jamala j-oaŋá
camels CLj-many
'"There are a lot of camels." AN62413

The first two categories above are self-explanatory. The weak quantity predicates occurring in weak quantity clauses are not actually distinct from adjectives, except perhaps semantically, but they pattern syntactically like adjectival predication in (30). The weak quantifiers (in the sense of Misark 1977) which occur as predicates in this position include *-əmən* 'some' and *-amataŋ* 'a few,' as well as numerals.

The predicates in (30)-(32) share several properties with deictic predicates. First, they do not inflect for aspect, showing they are not verbs. Second, they all are one-place predicates which can hold of inanimate subjects, and do not take complements, showing they are unaccusative predicates. Third, they occur with a preverb in predicate position, where the preverb is typical verbal prefixal inflection, most noticeably finite subject agreement and clause-typing morphology (for adjectives). Finally, all of these elements can also serve as direct adnominal modifiers. Together, then, these predicates constitute a unified class of non-verbal predicates.

5. Identificational, specificational, and equative copular clauses

Identificational, equative, and specificational copular clauses are distinct from other kinds of clauses in Moro in that they lack words with verbal morphology, including subject agreement. Instead, two grammatical particles occur in these clauses. The first marker *ŋw(á)=* is a *focus clitic*; I will argue it is an equative copula whose complement is contrastively focused in most cases. The focus clitic seems to have developed from the focused third person pronoun *ŋúŋ*. The second marker *=(í)ki* is an *identificational clitic*, morphologically identical to the proximal demonstrative but distinct in distribution and use. I will show that the identificational clitic proximal demonstrative marks identificational focus, i.e., it identifies an individual as new by virtue of some presupposed content holding of them (Kiss 1998). We begin with the identificational clitic. We will examine its use in identificational and specificational copular clauses, as well as clefts, to determine its function. We then turn to the focus clitic.

First, the question-answer pair below involves the focus clitic in the question and an identificational clitic in the answer, which is an identificational copular clause. Note that the final vowel of *ŋwá=* and the initial vowel of *=ík:i* fuse with the word they attach to, a common cross-word juncture process in Moro.

Identificational answer to question

(33a) **ŋẃ=**ɜ́dʒ íkːɜtíkɜ
FOC-who SCLg.that
"Who is that?"

(33b) udʒí=kɜtíkɜ kɜ́tʃə́=**kːi**
person-SCLg.that Kachi=ID
"That person is Kachi."

The constituent question word *ɜ́dʒɜ́* 'who' is inherently focused, so it is marked by the focus clitic *ŋẃə* in (33a). However, nothing is presupposed in (33a), so the identificational clitic is absent. In contrast, in (33b) the name Kachi supplies the identity of the relevant individual, so the name Kachi occurs with the identificational clitic *ík:i*. The focus clitic does not occur in the answer, in particular the demonstrative 'subject' has already been mentioned, so the focus clitic is absent.

A second context where we find the identificational clitic is in specificational copular clauses, such as (34b):

(34a) kúku g-a-d-ó úm:iə g-í-ˡcɜ́-ðícɜ
Kuku CLg-RTC-be-PFV boy CLg-DPC2-bad-INTNS.REDUP
"Kuku is an extremely bad boy."
(*translation of* 'Kuku is the worst boy.')

(34b) úm:iə g-í-!cɜ́-ðícɜ kúkə́=kːi
boy CLg-DPC2-bad-INTNS.REDUP Kuku=SCLg.ID
"The worst boy is Kuku."

Example (34a) shows that the phrase *um:iə gíˡcɜ́-ðícɜ* 'an extremely bad boy, the worst boy', with intensive reduplication, is a nominal predicate by virtue of its ability to follow the nominal predicate copula, discussed above. When this predicative expression occurs sentence-initially in (34b), it can be considered an instance of specification, as discussed in Section 2, with the predicate functioning as the apparent subject, while Kúku is being specified as satisfying the relevant predicate.

Third, the identificational occurs in *wh*-clefts (35a) as well as focus clefts, including those built on names, (35b) (Rose *et al.* 2014). The focus clitic also occurs in these clefts, where it obligatorily precedes the focused element.

(35a) **ŋw**=ɜ́ndə́=**kːi** n=údʒí nə́=g-ə́-wəndaʈ́-ó?
FOC=CLg.what=SCLg.ID COMP2=CLg.person COMP2=CLg-DPC2-see-PFV
"What did the person see?"

(35b) **ŋw=**ógovél**=kːi** n=údʒí nə́=g-ə́-wəndaʈ́-ó?
FOC= CLg.monkey=SCLg.ID COMP2=CLg.person COMP2=CLg-DPC2-see-PFV
'It's the monkey that the person saw.' AN101315

Interrogative and focus clefts are typically used in texts where the content of the embedded/relative clause is known in the discourse; as with the identificational and specificational copular clauses, then, the use of the identificational cleft in clefts serves to identify the element it attaches to relative to a discourse-old property, whether the demonstrative in (33b), the fronted predicate in (34b), or the embedded clause in (35a, b).

The identificational clitic is morphologically identical to the proximal demonstrative: it can only occur on nouns and noun phrases, and it agrees with these noun phrases in number and gender, exhibiting what is called strong concord, typically restricted to definite modifiers (Jenks 2013).

However, the identificational clitic is not a normal proximal demonstrative. First, while demonstratives contribute deictic semantics, the identificational clitic lacks deictic, particularly the expected proximal semantics, as it can occur with a distal demonstrative (33b). Second, while demonstratives are typically restricted to common nouns, the identificational clitic can attach to a

proper noun (33b, 34b). And third, while demonstratives are typically restricted to definite noun phrases, the identificational clitic can occur with interrogative pronouns in *wh*-clefts (35a), which are inherently indefinite, indicating that the identificational cleft is not definite. As such, its function seems primarily to indicate that the constituent it attaches to satisfies some given or presupposed content. However, it is not known if the focus associated with the identificational clitic is exhaustive or not; more work is needed on this front.

Syntactically, the initial noun phrase in identificational copular clauses seems to be functioning as a subject, while the identified noun phrase seems to be functioning as a kind of predicate. Evidence for this view comes from the observation that the initial noun phrase in an identificational clause can be omitted as in (36b, *compare* 33b).

Identificational confirmation request

(36a) **ŋẃ**-kɜ́tʃì =kːɜtíkɜ
FOC-Kachi SCLg.that
"Is that Kachi?"

(36b) aa kɜ́tʃə́=**kːi**
yes Kachi-SCLg.ID
"Yes, it's Katchi" AN62413

If the initial noun phrase is a subject, its ability to be left out is expected, as subjects are freely omitted in other clause types.

Second, when pronouns occur as the subjects of identificational clefts, they occur in their independent form (37b), which is otherwise used for focus:

Identity crisis

(37a) ɲíɲí ŋw-ɜ́dʒɜ́=kːi?
1SG.PRO.FOC FOC-who-ID
"Who am I?"

(37b) (ŋː á) kúkːə́=kːi
2SG.PRO Kuku-ID
"You're Kuku." AN111015

The fact that independent pronouns are used in identificational clefts can be attributed to the absence of verbal agreement to track subject reference, as there is no verbal copula or verbal agreement in these copular clauses.

We turn now to the focus clitic *ŋẃə=*. The claim is that this is an equative copula which places contrastive focus or perhaps emphasis on the element it attaches to, meaning its focus need not be necessarily new. This characterization seems to cover the use of the focus clitic with the name in (36a), with the clefts in (35), as well as the interrogative pronoun in (37a).

A further illustration of the contrastive, but not necessarily information focus, associated with the focus clitic comes from contexts where pronouns are answers to questions. In such contexts, an identificational clitic cannot be used as in (36b) and (37b), but the focus clitic can. As pronouns are not new information, this indicates

that the identificational clitic must apply to new information, but no such restriction holds of the focus proclitic *ŋẃ=*.

Pronominal identification

(38a) (ŋẃ)-kúku ŋẃ-ɜdʒɜ́=ki?
FOC-Kuku FOC-who-ID
"Who is Kuku?"

(38b1) *ŋẃ=íɲí* kúkːə́=kːi
FOC-1SG.PRO Kuku-ID
"Kuku is *me*."

(38b2) *ŋẃ=áŋá* kúkːə́=kːi
FOC-2SG.PRO Kuku-ID
"Kuku is *you*."

(38b3) *ŋẃú=ŋúŋ* kúkːə́=kːi
FOC-3SG.PRO Kuku-ID
"Kuku is *him*."

In the answers in (38-b1-b3), the name Kuku cannot receive the identificational clitic because it is part of the question, hence old information, and incompatible with focus. Of course, the pronouns cannot be new information, as pronouns contain presuppositions about the identity of their referent. Yet the pronouns are focused, perhaps contrastively, so they receive the focus proclitic *ŋẃ=*. In that light, these sentences seem to have a predicate fronting structure, where the copula-NP_{focus} occurs sentence initially. This analysis is described in more detail in section 6.3.

Two additional observations support the idea that *ŋẃ=* is an equative copula. First, true equatives without focus allow a similar copula form identical to the third person singular human pronoun, *ŋúŋ*:[6]

True equatives

(39a) %matʃ-ɜ́k-ɜtikːɜ ŋúŋ kúku
man-SCLg-that EQ Kuku
"That man is Kuku."

(39b1) %kúku ŋúŋ élàŋ
Kuku EQ chief
"Kuku is the chief." AN111015

However, when I asked another consultant about these examples, he found them odd, offering a literal translation "Kuku him chief" which he could not make sense of. In place of these examples, he offered 'bare' equatives:

[6] Nicolas Quint (p.c.) points out that the Moro sentences in (39a-b) can be word-by-word translated into Sudanese Arabic with the same meaning (see, e.g., Edwards 2006 on Egyptian Arabic). The consultant who provided these forms lives with the Moro community in Khartoum, where Arabic is dominant, while the consultant who rejected these sentences lives in the United States. As both consultants grew up in the same town in the Nuba Mountains, it is possible that the form with the pronoun is a calque from Sudanese Arabic.

Bare equatives

(40a) matʃ-ɜ́k-ɜtik:ɜ kúku
man-SCLg-that Kuku
"That man is Kuku."

(40b) kúku élàŋ
Kuku chief
"Kuku is the chief." EJ081516

A disclaimer should be offered for the sentences above: the sentences in (39) have only come up once in elicitation, and the sentences in (40) were only offered as corrections for the first, they have never been used spontaneously, as speakers prefer to include identificational clitics or the nominal predicate copula. Morover, in the 3000+ sentences of the Moro Story Corpus (Naser et al. 2016), I have been unable to find anything like the sentences in (39), although the identificational and equative sentences described in section 6 do occur. A plausible explanation is that equative sentences are pragmatically marked, and hence rare in narrative contexts, and that more common uses of these sentence types typically involve inversion or concealed clefting as a way of focusing or backgrounding the different constituents. It is possible that the rarity of the sentences above in discourse could account for their awkwardness to speakers.

Second, there is a focus-affiliated particle which resembles the focus clitic *ŋẃ=*, a homophonous element *ŋúŋ* 'only,' which occurs as a VP-final adverb for focus on any constituent inside the VP:[7]

(41) é-g-a-natʃ-ó kúku-ŋ dia **ŋúŋ**
1SG-CLg-RTC-give-PFV Kuku-ACC cow FOC
é-g-an:-e-natʃ-a ŋál:o-ŋ
1SG-CLg-not.aux 1SG-give-INF2 Ngalo-ACC
"I only gave the cow to Kuku, I didn't give it to Ngalo."

In this example, focus is on the recipient, which occurs immediately following the verb. From this position, *ŋúŋ* can associate with focus on any noun phrase inside the VP it is adjoined to. This focus is clearly contrastive, however, consistent with the characterization of *ŋẃ=* as contrastive.

The copular sentences with *ŋw=* above, for example in (36-38), are notable in that they lack any main predicate which hosts verbal morphology. The lack of verbal morphology is due to the fact that these sentences lack a verbal core. The clearest evidence for this claim comes from negation. Interestingly, identificational and equative copular clauses cannot be negated by the normal negative auxiliary, but can only be negated by subordination to a higher negative clause:

Identificational copular clause under negation

(42a) ŋ̀w-kɜtʃì kɜtík:ɜ
FOC-Kachi SCLg.2d
"Is that Kachi?"

[7] Arabic has a similar but not identical of pronouns to mark focus internal to VP; Ouhalla (1999) offers an analysis of thse facts for Moroccan Arabic.

(42b) ndo, k-an:á =t̪á kɜtʃə́-k:i
no CLg-neg.aux =COMP1 Kachi-ID
"No, it's not Kachi." (Lit: 'No, it's not that it's Kachi.') AN62413

Sentences like (42b) are the only ones where the negative auxiliary is not followed by a verb. Instead, it is followed by the finite complementizer *=t̪á*, which in turn embeds the copular clause. Tellingly, clefts must be negated with the same strategy (Rose *et al.* 2015). As negation is normally a verbal auxiliary which takes an infinitival complement (Jenks & Rose 2017), the inability of identificational clauses, clefts, and equative clauses to occur as the complement to a negative auxiliary provides evidence that they lack a verb.

6. The structure of copular clauses and clause types

The preceding sections provided evidence for three types of clauses:

I. Verbal copular clauses
  a. Predicate nominal copular clauses
  b. Locative copular clauses

II. Nonverbal predicational clauses
  a. Deictic and presentational clauses
  b. Adjectival clauses
  c. Genitive clauses
  d. Weak quantificational clauses

III. Nonpredicational clauses
  a. Identificational clauses
  b. Specificational clauses
  c. Clefts
  d. Equative clauses

In this section I sketch a syntactic analysis of these three basic categories, guided by the intuition that shared morphological and semantic characteristics reflect a shared syntactic core.

The main idea is that both verbal and nonverbal predicational clauses contain a semantic core of predication that nonpredicational clauses lack. Since Bowers (1993), most formal syntactic analyses of predication including copular clauses have assumed that clausal predication is always introduced syntactically by PredPs (e.g. Pereltsvaig 2001, Adger & Ramchand 2003, Mikkelsen 2005). Such minimal units of structure introduce a subject in their specifier position and a predicate of some category ('XP') as their complement.

$$[_{\text{PredP}}\ \textbf{Subject}\ [_{\text{Pred'}}\ \textbf{Pred}\ [\ \textbf{XP}\ ]]]$$

Sometimes PredPs survive intact without additional structure, for example in small clause environments such as the complement of English *with* in a sentence like *We have no chance with* [$_{\text{PredP}}$ *John angry*]. In many other sentences, however, the Pred head also introduces a syntactic category feature which projects additional

structure. In most verbal clauses in English, for example, the syntactic category of Pred is V.

In contrast, I propose that nonpredicational clauses in Moro must lack a PredP structure altogether and instead are equation phrases (EqPs) (cf. Zaring 1996, Carnie 1997).8 In Moro, Eq must be realized as the pronoun ŋuŋ or a null head.

This proposal allows us to get a handle on what the first two classes of clauses might have in common that the third clause does not, providing a relatively simple account of the three-way distinction in terms of selection. The basic idea is that the first two classes of sentences have a predicative core, while the non-predicative clauses do not. Yet only with class one, with verbal copula, does the Pred head, which is the copula, also introduce a verb feature:

a. Verbal copular clauses
[$_{\text{PredP}}$ **Subject** [$_{\text{Pred'}}$ **Pred**[+V] [**XP**]]]

b. Nonverbal predicational clauses
[$_{\text{PredP}}$ **Subject** [$_{\text{Pred'}}$ **Pred**[-V] [**XP**]]]

c. Nonpredicational clauses
[$_{\text{EqP}}$ **Subject** [$_{\text{Eq'}}$ **Eq** [**XP**]]]

Unlike the predicative clauses, however, Class 3 clauses lack a PredP structure and instead are headed by a EQ head, alternately realized as *ŋuŋ* or *ŋẃ*.

We can then account for the ability of nonverbal predicational clauses to occur with normal clausal inflection, such as subject agreement, by postulating that the inflectional layer, which I assume for now is introduced by the functional head T(ense), must take a complement which contains a PredP. This accounts for the possibility of subject agreement in just the first two cases below:

a. Verbal copular clauses
[$_{\text{TP}}$ **Subject** [$_{\text{T'}}$ **Agr-Fin** [$_{\text{PredP}}$ ~~Subject~~ [$_{\text{Pred'}}$ **Pred**[+V] [**XP**]]]

b. Nonverbal predicational clauses
[$_{\text{TP}}$ **Subject** [$_{\text{T'}}$ **Agr-Fin** [$_{\text{PredP}}$ ~~Subject~~ [$_{\text{Pred'}}$ Pred[-V] [XP]]

c. Nonpredicational clauses
[$_{\text{EqP}}$ **Subject** [$_{\text{Eq'}}$ **Eq** [**XP**]]]

This proposal adopts the idea that TP is simply absent in non-predicational clauses, an observation that I explore in a bit more detail below.

6.1. Verbal copular clauses

For verbal copular clauses, I assume that the copula itself is Pred, and that it also contains a verbal feature (=VPred). The category of the

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[8] *Pace* Adger & Ramchand (2003), who argue that even equative and identificational sentences in Scottish Gaelic involve predicational structure. Yet all that is really important for my sketch is that the difference between Eq and Pred be visible to a higher functional head.

verbal Pred head's complement, either an NP or a PP, is selected by the corresponding predicate:

a. Predicate nominal copular clause
[$_{TP}$ *Kúku* [$_{T'}$ *ga-* [$_{VPredP}$ ~~*Kúku*~~ [$_{VPred'}$ *dó* [$_{NP}$ *ummiə*]]]
"Kuku is a boy."
b. Locative copular clause
[$_{TP}$ *Kúku* [$_{T'}$ *ga-* [$_{VPredP}$ ~~*Kúku*~~ [$_{VPred'}$ *wó* [$_{PP}$ *najén*]]]]]
"Kuku is in the mountains."

These simple claims are sufficient to derive the verbal properties of these clauses. Note first that the subject must move from the specifier of VPredP to the specifier of TP where it agrees with the T head. Next, the verbal properties of these clauses follows from the verbal category of the VPred head, which enables it to serve as a possible complement to aspectual heads, realized as verbal affixes, and verbal auxiliaries such as negation. The top level of structure, TP, hosts subject inflection and clause type (*ga-*). Unlike auxiliaries, this category selects only for a predicative core.

VPredP are also like other verbs because they take the subject as their specifier and a predicate as their complement. However, while most VPredPs take a VP complement which is a predicate of events (e.g. Kratzer 1996), the heads *-əd-* and *-w-* must take NP and PP predicates as their complements, respectively.

6.2. Nonverbal predicational clauses

Nonverbal predicational clauses have a predicative core, like verbal copular clauses, but the PredP in in this case is nonverbal and 'intransitive.' I represent the predicate itself as the Pred head below:

a. Deictic clauses
[$_{TP}$ *Kúku gɜ-* [$_{PPredP}$ ~~*Kúku*~~ [$_{PPred'}$ *tú*]]]]
"Kuku is there."

b. Adjectival clauses
[$_{TP}$ *Kúku ga-* [$_{APredP}$ ~~*Kúku*~~ [$_{APred'}$ *ŋer-á*]]]]
"Kuku is good."

c. Genitive clauses
[$_{TP}$ *ðamala ða-* [$_{GenPredP}$ ~~*ðamala*~~ [$_{GenPred'}$ ə́-*Kuku*]]]
"The camel is Kuku's."

d. Weak quantificational clauses
[$_{TP}$ *jamala ja-* [$_{QPredP}$ ~~*jamala*~~ [$_{QPred'}$ *joaɲ-á*]]]]
"The camels are plentiful."

While the specific details are unimportant, I take the lexical categories of these heads to be distinct. Adjectival and weak quantificational clauses have the adjectival suffix *–á* on the end, which I view as a Pred head.

Recall that the unavailability of aspectual morphology or verbal auxiliaries such as negation cannot be attributed to the semantics of

the verbal copula. This is because the perfective-imperfective distinction can readily occur on verbal stative predicates, including in verbal copular clauses where the imperfective form has an inchoative interpretation (8, 18). As such, a purely morphosyntactic explanation is needed.

The morphosyntactic explanation for the inability of verbal morphology to combine with nonverbal predicates is based on the simple mechanics of syntactic selection: perfective vs imperfective must occur on a functional head which only takes verbal complements. Similarly, the observation that auxiliaries such as negation cannot occur with nonverbal predicative complements indicates that these auxiliaries select for verbal complements.

At the same time, the availability of agreement morphology and other finite verbal morphology on nonverbal predicational clauses demonstrates that the functional structure that is realized as this inflectional material — the TP layer — does not need to take verbal complements. Instead, it seems that the TP layer is only sensitive to whether its complement is predicative.

6.3. Nonpredicational clauses

Unlike the last two types of copular clauses, identificational, specificational, and equative clauses lack a PredP complement. In its place is an Eq head, realized as either a pronoun or null head:

Equative clauses
[$_{EqP}$ *matʃ-ɟ́k-ɜtikɜ* [$_{Eq'}$ *ŋúŋ/Ø* [*Kúku*]]]
"That man is Kuku."

As was discussed above, the absence of PredP accounts for the inability of finite inflectional morphology, such as subject agreement, to combine with equatives. As suggested earlier, the choice of overt vs silent copula in equatives seems to be related to focus; the idea is that all sentencees without verbal predicates are equative.

Another way of marking focus seems to be with predicate fronting. Adger and Ramchand (2003) propose that the equivalent of Eq' in Scottish Gaelic can front for purposes of focus. If we extend this analysis to Moro, we derive a natural account for distribution of *ŋẃ=* in Moro, which primarily occurs clause initially:

Focused equative clauses
[$_{FocP}$ [$_{Eq'}$ *ŋẃ=* [*Kúku*]] [$_{Foc'}$ Foc [$_{EqP}$ *matʃ-ɟ́k-ɜtikɜ* ~~Eq'~~]
"That man is *Kuku*"

Finally, the identificational clitic *=íki* seems to have the specific function of marking the constituent it attaches to essentially as the answer to some question. This is clearly seen in its use in clefts, but also in its use in equative questions and answers seen throughout section 5.

In conclusion, we can capture the syntactic differences between predicative copular clauses and equative structures and their kin in

Moro by adopting the view that they have fundamentally different structure. More specifically, predicative copular clauses contain a PRED projection while equative copula are projections of an EQ head. These fundamental differences between predicational and equative copular clauses in Moro supports the idea that copular clauses are not all derived from a shared syntactic core.

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