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Verbless Clauses: Revealing the Structure within

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1.1 Introduction

In direct contrast to their frequency amongst the world's languages, verbless constructions, such as those illustrated in the following examples (taken from Stassen 1997:62-63), have received relatively little attention in the LFG literature.¹

- (1) Moskva gorod.
Moscow city
'Moscow is a city.' (Russian: Rapschinsky 1946: 11)
- (2) Né soldádo.
2SG soldier
'You are a soldier.' (Guaraní: Gregores and Suarez 1967: 158)
- (3) John padahk-men.
John teacher-INDEF
'John is a teacher.' (Mokilese: Harrison 1976: 158)

The syntactic analysis of these constructions raises many interesting questions for all theoretical frameworks, for they appear to involve main clause sentences without overt verbs. The existence of a non-verbal but

¹Each of us would like to extend our heartfelt gratitude and appreciation for the profound influence that Joan has had on our linguistic careers, as a role model, mentor and colleague. Over the years we have especially valued her insightful criticisms, encouraging remarks and above all the example of her own work, combining detailed empirical discussion with careful theoretical analysis.

nonetheless sentential c-structure is not in itself at all problematic in LFG, nonetheless the question remains as to what contributes the main PRED of the clausal or root f-structure.

Constructions such as these are closely related to a variety of copula constructions in different languages. These include, for example, languages in which clauses such as those in (1) – (3) contain a *non-verbal* copula element, often deriving originally from a pronoun or demonstrative. Examples include (4) from Maltese and (5) from Hebrew:

- (4) Malta hi gzira.
 Malta COP/3SG.FEM island
 ‘Malta is an island.’ (Borg, 1987/8: 67, cited in Stassen 1997: 78)

- (5) Pnina hi nora xamuda.
 Pnina PRON.FSG awfully cute
 ‘Pnina is awfully cute.’ (Falk 2004: 1)

Technically speaking, such clauses are also ‘verbless’ in that they do not contain a verbal copula element, and similar issues arise as to their f-structure representation, and in particular, the nature of the clausal PRED. See Falk (2004) for detailed discussion of these issues in Hebrew.

In other languages the sorts of propositions expressed in (1) to (3) make use of a verb, sometimes a ‘light’ or bleached version of a lexical verb and often a specialized (auxiliary) verb used in a range of copula or predicative constructions.

- (6) John is a doctor.
 Eve is fond of Mary.
 Sandy seems unhappy.
 Kim is Mary’s friend.

The current paper is intended as a small contribution to the analysis of copula constructions in general by focussing on the analysis of verbless clauses themselves and considering what can constitute evidence in favour of or against a particular syntactic analysis of these clause types. Constructions with overt verbal copulas have received some attention in the LFG literature, as has the related matter of the relational structure of non-verbal predicates dependent on copula verbs (see, for example, Dalrymple et. al. 2004). However, with the exception of Rosén (1996), and some recent discussion in Falk (2004), relatively little attention has been paid to the existence of truly verbless predicative constructions, despite the fact that the study of such constructions may cast light on issues concerning the analysis of copula constructions in general and

also of embedded predicational structures.²

The flexibility of the LFG architecture allows for two quite different approaches to the structure of these clause types. One possibility is that the non-verbal predicate is itself the clausal predicate, selecting in this case for a subject. On this view, a verbless clause such as (7) would have the f-structure given in (8). We refer to this as the ‘single-tier’ analysis.

- (7) Ona vrač.
 3SG.FEM.NOM doctor.SG.NOM
 ‘She is a doctor.’ (Russian: Fennell 1961: 288, cited in Stassen 1997: 64)

- (8)
$$\left[\begin{array}{l} \text{PRED} \quad \text{‘DOCTOR(SUBJ)’} \\ \text{CASE} \quad \text{NOM} \\ \text{NUM} \quad \text{SG} \\ \\ \text{SUBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{‘PRO’} \\ \text{NUM} \quad \text{SG} \\ \text{GEN} \quad \text{FEM} \\ \text{PERS} \quad 3 \\ \text{CASE} \quad \text{NOM} \end{array} \right] \end{array} \right]$$

Another possible analysis is that these verbless clauses have a more hierarchical f-structure in which the f-structure of the non-verbal predicate functions as an argument within a higher f-structure which itself has a PRED, but where there is no overt syntactic element corresponding to this predicate in the c-structure. In LFG terms, this means that the clausal PRED information must be contributed to the f-structure via some other means, such as by the phrase structure rules (Rosén 1996) or through information lexically associated with another element in the clause (e.g. Nordlinger and Sadler’s (2003) analysis of Tariana verbless clauses). Thus, on this view, the f-structure of (7) would have the sort of structure shown in (9).³ We refer to this as the ‘double-tier’ analysis.

²Verbless clauses have received some attention in other theoretical frameworks, see for example Avgustinova and Uszkoreit (2003).

³There are of course a number of significantly different variants here, differing in terms of the grammatical function assigned to the predicative complement and whether this complement is closed or open (and therefore subject to a functional control analysis). See Dalrymple et al. (2004) for some discussion. For the moment we abstract away from all of these details and simply represent the attribute which corresponds to the predicative element as GF, which may correspond to any of XCOMP, COMP, OBL and PREDLINK.

$$(9) \left[\begin{array}{l} \text{PRED} \quad \text{'BE(SUBJ, GF)'} \\ \\ \text{SUBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'PRO'} \\ \text{NUM} \quad \text{SG} \\ \text{PERS} \quad \text{3} \\ \text{GEN} \quad \text{FEM} \\ \text{CASE} \quad \text{NOM} \end{array} \right] \\ \\ \text{GF} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'DOCTOR'} \\ \text{CASE} \quad \text{NOM} \\ \text{NUM} \quad \text{SG} \\ \dots \end{array} \right] \end{array} \right]$$

Although most analyses in the LFG literature of *verbal copula* constructions adopt some version of the double-tiered approach shown above it should be noted that the single-tier analysis is also (in theory) appropriate for verbal copula constructions. That is, the copula verb and the non-verbal predicate could be taken to be co-heads of the clause, with the non-verbal predicate providing the lexical PRED and the copula verb providing tense, aspect, mood and other finiteness information.

Despite the possibility of these two quite different approaches, previous discussion of verbless clauses in the LFG literature seems to start off from the implicit premise that all such constructions cross-linguistically should have the same basic analysis (e.g. Rosén 1996 – for a contrary view in which one and the same surface copula form in Hebrew maps to divergent f-structures see Falk 2004 on the Hebrew copula). However, the fact that different possibilities are theoretically possible within the LFG framework suggests that there is no a priori reason why all verbless clauses, or indeed all copula constructions cross-linguistically, should have the same syntactic structure – this is very much an empirical issue. In this paper we discuss and exemplify the wide range of morphosyntactic variation in verbless clauses crosslinguistically, and show how this variation reveals that verbless clauses are not a single structural type at all. We show how the different properties of verbless clause types indicate distinct syntactic structures, which can be given a natural and revealing account by exploiting the two options available within the flexible architecture of LFG. In doing so we relate our discussion both to treatment of copula constructions in LFG, and recent work outside LFG on the descriptive semantic classification of types of predicative constructions.

1.2 Types of Copula Constructions

While our focus is on verbless constructions *per se*, these are generally functionally equivalent (or at least, in functional overlap with) with copula constructions in other languages (or even within the same language), and thus, for the purposes of framing the subsequent discussion, we begin with a discussion of the types of copula constructions more generally.

As noted by Curnow (2000), copula constructions, or those which “encode notions such as identity and classification”, are extremely divergent in form (p. 1). In his own study he focusses only on the two core subtypes, which are as follows:

- (10) •identity: That man is my father; That woman is Mary.
 •group membership or classification: That woman is a doctor;
 That man is a teacher.

Other types include existence, location and possession, which are often expressed by the same means. Curnow identifies four main strategies for encoding these core subtypes, as follows:

- (11) •use of a copula verb
 •use of a particle copula
 •use of an inflectional copula construction in which a language “treats the copula complement as though it were a verb” - ie the predicate takes some sort of inflection similar to what a verb would normally take
 •use of a zero copula, that is, a lack of overt morphological material

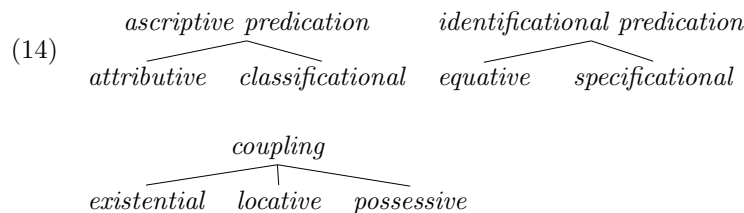
This study shows that in very many languages the choice between alternative strategies is often dependent on factors such as tense and aspect, polarity, status of the clause as main or subordinate, person of the subject, and whether the semantic relation expressed is identification or classification. The fact that the choice of strategy in a given language can be influenced by superficial matters of grammatical encoding raises the interesting question as to whether the alternative strategies are externally distinct but correspond to the same f-structure.

In this paper we are concerned primarily with Curnow’s latter two strategies, since in these constructions there is no clausal predicate distinct from the non-verbal predicative constituent. The following exemplify the inflectional copula (12) and the “zero copula” (13) respectively.

- (12) Ben ğretmen-im.
 I teacher-1SG
 I am a teacher (Turkish: Curnow 2000: 4)

- (13) Pakarli maparnpa.
 man.ABS sorcerer.ABS
 The man is a sorcerer (Watjarri: Douglas 1981: 238)

In more theoretically oriented work within the framework of HPSG, Avgustinova and Uszkoreit (2003) make much the same descriptive distinctions in their taxonomy of relations holding between a subject and a non-verbal predicate (mediated by a copula verb). Broadly, they distinguish ascriptive predication (with its subtypes as shown, corresponding to Curnow's *classification* subtype) from identificational predication (with its subtypes, corresponding to Curnow's *identity* subtype) from coupling predication, which groups together existential, locative and possessive uses of the copula.



Avgustinova and Uszkoreit (2003) observe that in Russian copula-less constructions are permitted in all of these functions – ascriptive, identificational, existential, locative and possessive – where they may alternate with an overt copula verb under certain conditions.⁴ Examples include the following, where (15) exemplifies ascriptive clauses and (16) identificational clauses. The ? in (15b.) indicates that the overt present tense copula is possible only with appropriate contextual motivation.

- (15) a. On durak/ tolstyj.
 he.NOM.SG.M fool.NOM.SG.M /fat.NOM.SG.M
 ‘He is a fool/fat.’ (Avgustinova and Uszkoreit 2003: 4)
- b. ?On est’ durak/ tolstyj.
 he.NOM.SG.M is fool.NOM.SG.M /fat.NOM.SG.M
 ‘He is a fool/fat.’ (ibid)

⁴For example, Russian short form adjectives such as *gord* ‘proud.PRD-ADJ.SG.M’ are exclusively predicative and never co-occur with the present tense copula, although they occur with the past tense copula.

- (16) a. Boris brat Ivana.
 Boris.NOM.SG.M brother.NOM.SG.M Ivan.GEN
 ‘Boris is Ivan’s brother.’ (Avgustinova and Uskzoreit 2003: 4)
- b. Boris est’ brat Ivana.
 Boris.NOM.SG.M is brother.NOM.SG.M Ivan.GEN
 ‘Boris is Ivan’s brother.’ (ibid)

What this data demonstrates is that the possibility of the copula being absent, and therefore of non-verbal syntactic predication, is not limited to one particular semantic subtype of copula construction, but is widely available as a syntactic strategy for the expression of predicational structures of a wide variety of types.

1.3 ‘Single-tier’ languages

Returning to the two possible types of analysis for verbless constructions available within LFG, support for the single-tier analysis comes from languages in which non-verbal predicates carry what would otherwise be (intransitive) verbal morphology, just when they function as the clausal predicate. These languages therefore employ Curnow’s (2000) ‘inflectional copula construction’ strategy.⁵ In (17a) from Abkhaz, the adjective ‘dead’ is inflected with subject agreement prefixes and tense/mood suffixes just as the intransitive verb is in (17b):

- (17) a. Də-psó-w-p’.
 3SG.SBJ-dead-PRES-DECL
 ‘He is dead.’
- b. Də-cwá-w-p’.
 3SG.SBJ-sleep-PRES-DECL
 ‘He is sleeping.’ (Abkhaz: Spruit 1986: 97)

Other languages with this type of verbless clause structure include Turkish ((18), also (12) above) and Sirionó (Tupi-Guaraní) (19):

- (18) a. Sen genç-sin.
 2SG young-2SG
 ‘You are young.’
- b. Sen çavuş-sun.
 2SG sergeant-2SG
 ‘You are a sergeant.’ (Turkish: Lees 1972: 70, cited in Stassen 1997: 46)

⁵In Hengeveld’s (1992) typology of verbless clauses, these are referred to as zero-1 constructions.

- (19) a. Ñéǰa-he-rae.
road-REFL-FUT
'It will be a road'
- b. Kiḃáe-rv.
man-PERF
'It was a man.' (Sirionó: Firestone 1965: 24, 34)

In Bininj Gun-wok (non-Pama-Nyungan, Australia) predicate nominals (including those in 'adjective' function) are inflected for a subset of the regular verbal TAM markers: the past imperfective (which in this context simply marks past tense) and the irrealis mood marker (Evans 2003). Consider the following examples:⁶

- (20) Mayh na-mekke nakka bininj-ni.
bird MASC-DEM MASC.DEM human-PAST
'Those birds, they were human then,' (Evans 2003:680, 13.27b)
- (21) Na-mak-ni.
MASC-good-PAST
'He was a good man.' (ibid:682, 13.37c)
- (22) Yawkyawk bokenh na-wu bene-berd-djenj-ni yimankek
young.girl two MASC-REL 3.DU-tail-fish-PAST CTRFAC
kun-dad-niwirrinj.
NEUT-leg-IRR
'There were two young girls who had tails like fish, they didn't have legs.' [lit. 'there were no legs'] (ibid: 357, 8.96)

As these examples show, nominal predicates in Bininj Gun-wok can be inflected with both tense morphology and agreement morphology (as in (22)) – both of which are usually found only on verbs. The fact that there is no evidence for a verbal head in these constructions, combined with the fact that the nominal predicate itself is inflected with specifically predicate morphology argues strongly for the single-tier analysis of these verbless clauses. This analysis is supported by the fact that the nominal is inflected with the propositional tense/mood marking which is otherwise found on verbs, but *not* on nominals which are arguments or adjuncts of other (verbal) heads. Thus, we represent (20) as (23).⁷

⁶CTRFAC = counterfactual, IRR = irrealis, MASC-DEM = masculine demonstrative, MASC-REL = masculine relative pronoun.

⁷Leaving aside for simplicity's sake the topicalised NP 'those birds', which is the TOPIC.

$$(23) \left[\begin{array}{l} \text{PRED} \quad \text{'HUMAN (SUBJ)'} \\ \text{TENSE} \quad \text{PAST} \\ \text{SUBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'THOSE ONES'} \\ \text{SPEC} \quad \text{DEM} \\ \text{GEN} \quad \text{MASC} \end{array} \right] \end{array} \right]$$

The f-descriptions associated with the tense-inflected nominal are given in (24). We assume that the option for a nominal to behave predicatively and subcategorize for a subject is effected via a lexical rule (or its equivalent):

$$(24) \text{ bininj-ni:} \\ (\uparrow \text{PRED}) = \text{'HUMAN < SUBJ >'} \\ (\uparrow \text{TENSE}) = \text{PAST}$$

Thus, we generally assume that languages in which non-verbal predicates in verbless clauses are inflected with specifically predicative morphology (such as tense/aspect/mood or subject agreement) provide evidence in favour of the single-tier analysis.⁸

A potentially complicating factor, however, concerns the interaction with the expression of possession in such clause types. Consider the analysis of sentences such as (25) or (26) (repeated from (16) above):

(25) John is Peter's brother.
This is my house.

(26) Boris (est') brat Ivana.
Boris.NOM.SG.M (is) brother.NOM.SG.M Ivan.GEN
Boris is Ivan's brother.

Here we have an identity copula mediating a relation between a SUBJ and a possessed nominal. Suppose that the copula verb, even when it is present in these examples, is a purely functional element expressing tense. These examples would then map to single-tier f-structures as the copula (if present) would not project an f-structure of its own. In this

⁸A subtly different distinction is drawn in Avgustinova and Uszkoreit's (2003) HPSG approach to non-verbal predicates in Russian. They draw a firm distinction between short form predicative adjectives in Russian and the other cases of predication without a copula. In each case, a copula may or may not be present, depending on other factors. But in the case of the short form adjectives, they take the adjective to be the head, with any present copula treated as a specifier of the adjective, because there is morphological evidence of predicate status (it can't be used attributively) and therefore can be the output of a lexical rule adding the relevant information. For all other cases, where the copula is present it is the head (of a headed phrase) and when it is absent they adopt a constructional approach in which "the result is a special type of *non-headed phrase*" (p. 12) (a *silent-copula-phrase*), with two non-head daughters.

case, on current assumptions, nominals such as *house* and *brother* have to be syntactically two-place predicates, subcategorising a SUBJ and a POSS. Although this might appear somewhat unexpected at first sight, we do not think there are grounds for ruling out this possibility. Building on the work of Barker (1995) and others, Laczkó (2000) proposes in connection with Hungarian examples such as (27) that a lexical process may operate on a predicate name and add a POSS function to an argument list.⁹

- (27) az én kalap-om
 the I hat-1SG
 ‘my hat’ (Hungarian: Laczkó 2000: 218)

There is no reason in principle not to expect a predicate nominal in certain languages to also undergo this process producing a two-place predicate that subcategorises for both a SUBJ *and* a POSS:¹⁰

- (28) ‘house- π < SUBJ, POSS>’
 ‘brother- π < SUBJ, POSS>’

Interestingly, however, verbless sentences which are potentially analysable along these lines do not seem to occur in Bininj Gun-wok, a language in which, as we saw above, predicate nominals and adjectives appear with subjects in verbless constructions. In Bininj Gun-wok all verbless possessive constructions appear to have the possessor nominal in predicate function, as in the following example, which we assume corresponds to the f-structure in (30). Note that the presence of the past tense marker on the possessor pronoun in this example constitutes evidence that it is functioning as the predicate of the clause.

⁹In Nordlinger and Sadler (2003) we suggest that additional support for this account comes from the frequent systematic ambiguity of nominal tense markers which attach to nouns with possessor arguments: in very many languages, the tense marker can temporally locate either the main nominal predicate or the relation of possession. Thus the Guaraní (Tupi-Guaraní) *h-óga-kwé* (his-house-PST) ‘his former house’ can mean either ‘his thing which used to be a house (e.g. it has burned down)’, in which the property of being a house is located in the past and the tense marker is interpreted with respect to the nominal itself; or it can mean ‘the house which used to be his (but now belongs to somebody else)’, in which the possession relation is located in the past, and the tense marker is not interpreted with respect to the nominal ‘house’.

¹⁰Although, of course, this poses a challenge to the standard assumption that POSS is a type of SUBJ function because we would then expect SUBJ and POSS to be in complementary distribution with a single PRED.

- (29) Arduk-ni an-ekke modikka.
 my-PAST VEG-that car
 ‘That car used to be mine.’ (Bininj Gun-wok: Evans 2003:268,
 7.32)

- (30)
$$\left[\begin{array}{l} \text{PRED} \quad \text{‘MY (SUBJ)’} \\ \text{TENSE} \quad \text{PAST} \\ \text{SUBJ} \quad [\text{“that car”}] \end{array} \right]$$

It remains an open question, then, whether there are single-tier languages in which non-verbal predicates can subcategorise for both a subject and a possessor function, although we strongly suspect that such languages exist. In any respect, it is clear that the coexistence of POSS and SUBJ as arguments of the nominal predicate is not necessarily an argument against the single-tier analysis. Clearly, the co-occurrence of non-verbal predication with possession throws up a number of complex and interesting issues concerning the representation of possession and the valency of predicates, which we leave for future work.

1.4 Double-tier analysis

As discussed earlier, a double-tier analysis of verbless clauses requires the positing of a ‘dummy’ predicate – a PRED in the f-structure that does not correspond to anything in the c-structure. It may at first sight seem a little contradictory to suggest that there can be morphological evidence for the existence of this additional layer, since we are essentially looking for overt evidence of non-overt structure, but we believe convincing evidence does in fact come from languages in which verbless clauses exhibit ‘tense stacking’. It is to these languages that we turn in this section.

In Bininj Gun-wok we saw nominals inflected for clause-level tense when functioning as predicates of the clause. In other languages *dependent* nominals (i.e. those functioning as arguments or adjuncts in verb-headed clauses) can also be inflected for tense, in this case a tense which is independent of the tense of the clause. Elsewhere we have referred to this type of tense marking as ‘independent nominal tense’ (e.g. Nordlinger and Sadler 2004a). In languages with independent nominal tense, nominal tense marking temporally locates the nominal referent independently of the tense of the clause as a whole. This is exemplified in the following example from Tariana (Arawak).¹¹

¹¹Although relatively unusual this phenomenon is by no means rare. Other languages with this type of nominal tense marking include Halkomelem (Salish) (Gal-

- (31) Kayu-maka hĩ waripere unyane-pena
 so-AFF DEM:ANIM Walipere flood-FUT
 di-kakwa-pidana.
 3SG.NF-plan=REM.P.REP
 ‘Thus Walipere was planning the future flood.’ (Aikhenvald 2003)

In this example the nominal ‘flood’ is inflected with nominal future tense *-pena* (expressing ‘future flood’) despite the fact that the clausal tense is remote past, as indicated by the clausal tense/evidentiality clitic *-pidana*.

A language such as Tariana has available two sets of tense affixes – one set occurring on nominals and marking independent nominal tense, and another set marking propositional tense on verbs and predicate nominals (32). The same is true of Guaraní (Tupi-Guaraní), as shown in (33). What is most interesting from the current perspective is that these can combine on the one nominal, as the following examples show:

- (32) Pi-ya-dapana-miki-ri-naka.
 2SG-POSS-house-PST-NF-PRES.VIS
 ‘This is what used to be your house (I can see it).’ (Tariana: Aikhenvald 2003)
- (33) Che-roga-rã-ta
 1SG-house-FUT_x-FUT_y
 ‘It will be my future house.’ (Guaraní: Dagmar Jung, pc)

Such tense stacking data provides evidence that these verbless predications must be associated with two levels of f-structure: one the locus of the nominal tense and the other the locus of the propositional tense. If this were not the case – if these clauses had the single-tier structure of the Bininj Gun-wok examples above – we would have a clash of tense features, since both the nominal tense and the propositional tense would be unified into the same (clause-level) f-structure. These two possible structures associated with the predicate nominal in (32) are shown in (34) and (35). As is clear in (35), the single-tier analysis is not viable in these tense stacking examples due to the clash of tense features that results.

loway 1983), Iate (Macro-Jê) (Lapenda 1968), Kwakw’ala (Northern Wakashan) (Anderson 1985), Nambiquara (Lowe 1999), Potawatomi (Central Algonquian) (Hockett 1958:238), Somali (Cushitic) (Lecarme 1996, 1999): see Nordlinger and Sadler (2004a) for more detail.

$$(34) \left[\begin{array}{cc} \text{TENSE} & \text{PRES} \\ \text{GF} & \left[\begin{array}{cc} \text{PRED} & \text{'HOUSE(POSS)'} \\ \text{TENSE} & \text{PST} \\ \text{POSS} & \left[\begin{array}{cc} \text{NUM} & \text{SG} \\ \text{PERS} & 2 \\ \text{PRED} & \text{'PRO'} \end{array} \right] \end{array} \right] \end{array} \right]$$

$$(35) \left[\begin{array}{cc} \text{PRED} & \text{'HOUSE(POSS)'} \\ \text{TENSE} & \text{*PRES/PST} \\ \text{POSS} & \left[\begin{array}{cc} \text{NUM} & \text{SG} \\ \text{PERS} & 2 \\ \text{PRED} & \text{'PRO'} \end{array} \right] \end{array} \right]$$

Thus, the presence of the propositional tense marker outside of the independent nominal tense marker in these examples provides evidence for a double-tier analysis of these verbless clauses, in which the nominal predicate has a grammatical function in the clause, rather than serving as the predicate directly (as in Bininj Gun-wok). Otherwise, as we have seen, we would have a clash of tense features in the f-structure of the nominal. If the propositional tense marker is *constructive* however, in the sense that it itself contributes the grammatical function that the nominal stem serves in the clause (Nordlinger 1998b), then the two tense markers contribute information to different f-structures and such a feature clash is avoided. This is shown by the (partial) f-structure for (32) in (34), which is licensed by the following f-descriptions associated with the various tense affixes.¹² The inside-out statement in (36b) specifies that the TENSE = PRES is in the f-structure within which ↑ (the f-structure of the nominal) appears as the value of the attribute GF.¹³

- (36) a. PST-NF: (↑ TENSE) = PST
 b. PRES.VIS: ((GF ↑) TENSE) = PRES

Note that the constructive analysis of propositional tense markers outlined above is needed independently in Tariana (and a number of other languages) because the propositional tense marker can appear on dependent nominals as well as predicative nominals. Aikhenvald (2003)

¹²For simplicity, we have only represented the tense information in the following f-descriptions, and not additional information such as gender and evidentiality. Such information can be incorporated with no impact on the analysis presented.

¹³See Dalrymple 2001 and the references cited therein for a formal definition of inside-out function application and discussion of its application in other grammatical analyses.

states that the propositional tense/evidentiality marker in Tariana appears on any focussed constituent in the clause, including dependent nominals; (37) and (38) are examples and provide further support for the analysis above in which the propositional tense constructs a GF for the nominal to which it is attached (see Nordlinger and Sadler 2004b for further discussion).

(37) Kayu-maka diha nawiki-nha ñamu
 so-AFF he person-PAUS evil.spirit
 na-nite nawiki-miki-ri-mha.
 3PL.say-TOP.ADV+CL:ANIM person-PST-NF-PRES.NONVIS
 ‘So this man called evil spirit ñamu, they say he is the one who used to be a person (lit. he is an ‘ex-person’).’ (Aikhenvald 2003)

(38) Naha-se-pidana na-inu di-na iniri-nuku
 they-CONTR-REM.P.REP 3PL-kill 3PL-OBJ traíra-TOP
 ‘They killed the traíra fish.’ (ibid)

Thus, we take the tense stacking data in Tariana and Guaraní to provide strong evidence that in these languages, nominal predicates are the value of a GF within the clause, as shown in (34). It remains to be explained, however, just what this GF is, and where the PRED of the clausal f-structure comes from in these constructions.

As noted by Rosén (1996), analyses of these clause types in the LFG literature differ as to whether such predicative complements correspond to open or closed functions at f-structure. Andrews (1982), for example, treats them as having the open function NCOMP, while Grimshaw (1982) takes NCOMP itself to be a closed function. Dalrymple et al. (2004) argue that these complements may be open or closed at f-structure – depending on both the language and the particular construction – and follow Butt et al. (1999) in calling the closed function PREDLINK. Unfortunately we don’t have the subtle syntactic data required to distinguish between an open or closed function for these predicative nominals in Tariana and Guaraní, and so we will likewise treat them as having the closed function PREDLINK, pending further investigation.¹⁴

We assume that a dummy clausal predicate is contributed by the

¹⁴Note that agreement between a SUBJ and a non-verbal predicate just falls out under a single-tier analysis and under a double-tier XCOMP analysis as a case of subject-predicate agreement. However under the PREDLINK analysis it is necessary to state this in some sort of non-standard way (for example, by an additional lexical entry for the predicate adjective which constructs the PREDLINK function and the dummy predicate and states an inside-out constraint over the agreement features of the SUBJ in the f-structure containing the PREDLINK, i.e. ((PREDLINK ↑) SUBJ)).

propositional marker itself in these constructions. Thus, the lexical f-descriptions for the tense markers, and the full f-structure for (32) is shown in (40).

$$\begin{aligned}
 (39) \quad & \text{PST-NF: } (\uparrow \text{TENSE}) = \text{PST} \\
 & \text{PRES.VIS: } ((\text{GF } \uparrow) \text{TENSE}) = \text{PRES} \\
 & \quad \quad \quad ((\text{GF } \uparrow) \text{PRED}) = \text{'be } \langle \text{SUBJ, PREDLINK} \rangle\text{' } \\
 & \quad \quad \quad (((\text{GF } \uparrow) \text{SUBJ PRED}) = \text{'PRO'})
 \end{aligned}$$

$$(40) \quad \left[\begin{array}{l} \text{TENSE} \quad \text{PRES} \\ \text{PRED} \quad \text{'BE } \langle \text{SUBJ, PREDLINK} \rangle\text{' } \\ \text{SUBJ} \quad \left[\text{PRED} \quad \text{'PRO'} \right] \\ \\ \text{PREDLINK} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'HOUSE} \langle \text{POSS} \rangle\text{' } \\ \text{TENSE} \quad \text{PST} \\ \text{POSS} \quad \left[\begin{array}{l} \text{NUM} \quad \text{SG} \\ \text{PERS} \quad 2 \\ \text{PRED} \quad \text{'PRO'} \end{array} \right] \end{array} \right] \end{array} \right]$$

On this analysis, the fact that the propositional tense marker in Guaraní constructs a clausal predicate when attached to nominals accounts for the absence of this marker on dependent nominals in verb-headed clauses (since there would then be two clausal PRED values). To account for the occurrence of these affixes with dependent nominals in Tariana, we assume that this part of the f-description is optional in this language.

1.5 Paradigmatic Alternations: Some Issues

We have so far argued in this paper that, in different languages and on the basis of overt morphological evidence, both the single-tier and the double-tier analysis of verbless predicative constructions are motivated. Although we have mentioned in passing some data from languages in which both overt copula and zero (or inflectional) copula constructions exist side by side, we have not yet considered what light these cases shed on the range of possible analyses.

In a reasonably large number of languages it is in fact the case that the absence of an overt copula stands in paradigmatic opposition to the presence of non-present tense copula forms within a particular construction.

For example, in Hebrew the copula-less (41) has a present tense interpretation parallel with the past tense (42) (Falk 2004), and similar facts hold in other Semitic languages such as Arabic.

- (41) Pnina nora xamuda.
 Pnina awfully cute
 ‘Pnina is awfully cute.’ (Hebrew: Falk 2004: 1)
- (42) Pnina hayta nora xamuda.
 Pnina be.PAST.3FSG awfully cute
 ‘Pnina was awfully cute.’ (ibid)

Similarly, in Russian, the present tense copula is ungrammatical in combination with the predicative short adjectives, but is required to encode tense in past and future tense constructions (Avgustinova and Uszkoreit 2003).

- (43) On (*est') gord rezul'tatami.
 he.NOM.SG.M is proud-PRED-ADJ.SG.M results.INST.PL
 ‘He is proud of the results.’ (Russian: Avgustinova and Uszkoreit 2003: 1-2)
- (44) On byl gord rezul'tatami.
 he.NOM.SG.M was proud-PRED-ADJ.SG.M results.INST.PL
 ‘He was proud of the results.’ (ibid:2)

Since the two clause types in (41)–(42) and (43)–(44) respectively are apparently functionally equivalent – differing only in temporal features, it seems correct to propose an analysis under which the predication relations will be the same across both clauses. In principle, of course, the requisite parallelism of analysis can be maintained on either the single-tier or the double-tier approach – in the former the overt copula is simply a tense-marking co-head of the non-verbal predicate, while in the latter a dummy PRED is constructionally or lexically introduced in the absence of the copula. Given that the role of the copula is *solely* functional in these examples, however, we take it that these cases of tense-related paradigmatic alternation are suggestive of a single-tier analysis. In (45) we provide an example of a lexical approach to such cases of paradigmatic alternation, but a constructional approach is also a possibility.¹⁵

- (45) *gord*
 (↑ PRED) = ‘GORD(SUBJ, OBL)’
 (↑ SUBJ NUM) = SG

¹⁵This accords with Falk’s (2004) assumption for the alternation in (41)–(42) (although he does not formalise an analysis of the zero copula case), and with the HPSG analysis of Avgustinova and Uszkoreit (2003) for (43) and (44) in which the copula is taken as an optional specifier (i.e. dependent) of the adjectival predicate. It should be noted that both papers take quite different approaches to other copula constructions in Hebrew and Russian respectively.

(↑ SUBJ GEND) = MASC
 ((↑ TENSE) = PRES)

(46) *byl*
 (↑ TENSE) = PAST

Treating tense as an instantiated feature (e.g. replacing PRES by PRES_ in (45) above) would prevent present tense being contributed by both the lexical equation introduced by the predicative adjective and also by an overt present tense copula. However the issue of how to ensure (for this construction) that the present tense copula is obligatorily absent, remains. On a constructional view it is of course possible to disjoin ϵ with V_{cop} in the relevant phrase structure rule, and then associate (↑ TENSE) = PRES with the ϵ disjunct and \neg (↑ TENSE) = PRES with the other disjunct. But this in turn would require a “special” c-structure rule. Since our purpose here is not to provide an analysis of Russian copula constructions we leave these matters to one side.

We now turn to a different sort of contrastive opposition which interacts with the means of expression for copula constructions in some languages.

In many Australian languages, such as Wambaya (Nordlinger 1998a) and Martuthunira (Dench 1995), non-verbal predicates form independent propositions, but without any predicate-specific morphology (such as tense marking). Where a copula of sorts is possible, there is a distinct meaning difference between the use and absence of the copula in these constructions.

For example, in Martuthunira, Dench (1995) shows that while ascriptive verbless clauses (such as those headed by common nominals in (47) and (48)) are effectively tenseless and imply a characteristic property, the use of a verbal copula allows the setting of temporal bounds on these states, as shown in (49).

(47) Kartungu-ngara pawulu-ngara murtiwarla paju.
 2SG.GEN-PL child-PL fast REAL
 ‘Your children are very fast (runners).’ (Martuthunira: Dench 1995: 205)

(48) Ngunhaa jami panyu ngurntura-a.
 that.NOM medicine good cold-ACC
 ‘That medicine is good for colds.’ (ibid: 209)

(49) Pukarti-ngara nyina-marri-nguru jalya-rru.
 snakewood-PL be-COLL-PRED rubbish-NOW
 ‘The snakewood trees are all rubbish now (they weren’t always).’
 (ibid: 210)

In Wambaya the verb otherwise meaning ‘sit’ can be used as a copula, normally with a stage level interpretation, while the non-verbal predication again implies a characteristic property. Consider the following contrast:

- (50) Gurijbi/bagijbi ini alaji.
 good.I.NOM/bad.I.NOM this.I.SG.NOM boy.I.NOM
 ‘This boy is good/bad.’ (Wambaya: Nordlinger 1998a:179)
- (51) Alaji gi gurijbi/bagijbi mirra.
 boy.I.NOM 3SG.S(PR) good.I.NOM/bad.I.NOM sit
 ‘This boy feels good/bad.’ (ibid)

A similar type of distinction is also found in Hebrew. Falk (2004) attributes to Shlonsky (1997) the observation that in the present tense the choice between the zero copula or the pronominal copula can encode a stage-level vs. individual-level distinction, respectively.¹⁶

- (52) Ha-dinozaur hu šikor.
 the-dinosaur PRON.MSG drunk.MSG
 ‘The dinosaur is a drunkard.’ (Falk 2004: 11)
- (53) Ha-dinozaur šikor.
 the-dinosaur drunk.MSG
 ‘The dinosaur is drunk.’ (ibid)

The question is how this contrast is to be viewed in terms of determining the associated f-structures. Given that non-verbal elements can serve as predicates in these languages, the null hypothesis for the verbless examples would seem to be the single-tier analysis. The question is whether the stage level or temporally bounded/situated examples should be similarly treated as single-tier (with the copula verb taken to be a cohead of the non-verbal predicate), or whether the semantic contrast between the two constructions types should be taken as evidence for them having different syntactic structures – the verbless examples ‘single-tiered’ and the copula examples ‘double-tiered’.

It is beyond the scope of this paper to adequately address this question here, but note that a similar contrast is also found in Bininj Gunwok (a single-tier language, on our analysis) *in the absence of any overt copulas at all*. In Bininj Gunwok the choice of subject-coding prefix on some adjectives has a clear semantic effect. Thus in the examples below, the use of a pronominal prefix gives a situational or eventive (stage-level) reading (54) while the use of the gender marker denotes a

¹⁶Falk (2004) treats the zero copula as single-tier and the pronominal copula as double-tier with a PREDLINK.

long term or characteristic property (individual-level), as in (55) and (56).

- (54) Kodjok ka-mak.
 (name) 3-good
 ‘Kodjok’s OK (e.g. not upset or sick).’ (Bininj Gun-wok: Evans 2003: 557)
- (55) Kodjok na-mak.
 (name) MA-good
 ‘Kodjok’s a good/handsome person.’ (ibid)
- (56) Na-mak-ni.
 MA-good-PST
 ‘He was a good man.’ (ibid)

Note that this choice of pronominal or gender morphology has no bearing on the ability to combine with tense markers. The root *ngudjwarre* means ‘bad at walking, bad on one’s feet’; *al-ngudjwarre-ni* (with feminine gender prefix and past tense) was translated to mean ‘she was too old to walk, unable to walk’ (i.e. an individual level predicate), while *ba-ngudjwarre-ni* (with the verbal pronominal prefix and past tense) was translated as meaning ‘she (felt) too tired to walk’ (a stage level predicate) (Evans 2003: 557).

We interpret the Bininj Gun-wok data as showing that both sides of the semantic opposition can be encoded in single-tier f-structures, and can be independent of the use of an overt copula. So there is no reason to expect the verbal copulas above necessarily to be associated with double-tier analyses rather than single-tier co-head analyses.

1.6 Conclusion

While there is much work still to be done on the syntax and semantics of verbless clauses cross-linguistically, it is clear that the standard assumption that verbless clauses should all receive the same syntactic analysis is unfounded. Once verbless clauses are examined in detail, syntactic and morphological differences emerge revealing subtly different syntactic structures. In this paper we have shown that verbless clauses across the world’s languages can be divided into (at least) two different structural types: one in which the non-verbal predicate is itself the f-structure PRED of the clause (the single-tier analysis); and another in which the non-verbal predicate has a grammatical function within a higher clause with a nonovert head in the c-structure (the double-tier analysis). In the absence of positive evidence to the contrary, the single-tier analysis – which is more economical in assuming less structure – is

the default hypothesis for verbless clauses cross-linguistically. However, positive evidence for the double-tier analysis is possible, as for example with the interesting cases of tense stacking in the languages of Tariana and Guaraní. While these clause types raise interesting and challenging issues for all theoretical frameworks, we have shown how these different syntactic structures can be captured naturally within the flexible architecture of LFG. It is hoped that this discussion will prompt further research into the nature of verbless clauses cross-linguistically, and their relationship to copula clauses of all types.

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