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The bearable lightness of being:
the encoding of coincidence in two-copula languages

by

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Abstract

In this dissertation, I argue that a difference in merge structure accounts for the distributional differences found in the two copulas of Tł̥chq̣ Yatì, an Athapaskan language of the Northwest Territories, Canada; my major conclusions also apply to two other languages of the family, Navajo and Tsùt'ínà. I claim that the stage-/individual-level distinction that distinguishes predicates formed by the two copulas is the result of Copula 1 projecting a light verb, *v*, while Copula 2 does not project *v*. This results in Copula 1 having semantic and syntactic properties that Copula 2 lacks: the former allows the merge of external arguments, both thematic (subject) and spatiotemporal, and the latter does not. Evidence for this analysis comes from the compatibility of Copula 1, but not Copula 2 with volitional and temporal readings, with case-marking on complements of some forms of Copula 1 but not Copula 2, and from lifetime effects on subjects, ambiguous with Copula 1 but not Copula 2. Additionally, I claim that the copula that appears with adjectival predicates in Tł̥chq̣ Yatì is the manifestation of a different phenomenon, the obligatory realization of a number feature on animate subjects in Athapaskan languages.

According to the analyses proposed here, all copulas are instantiations of a coincidence feature that enables predication by encoding a subsumption relationship between two arguments. I contend that the different patterns of copula use with NP, AP and VP predicates in Tł̥chq̣ Yatì arise from the interaction of the coincidence feature and ϕ -feature agreement.

Extrapolating from the theory of coincidence developed herein, the dissertation makes predictions about copula use in natural languages in general. It proposes that all copula distinctions originate from differences in merge structure, and adduces evidence to show that the predictions about possible copula types are attested in the languages of the world.

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List of Abbreviations

1, 2, 3, 4	1 st , 2 nd , 3 rd , 4 th person
A	adjective
ACC	accusative
Adv	adverb
Agr	agreement head
AR	areal prefix
Asp	aspect head
AST-T	assertion time
C	complementizer
CAUS	causative
CLAS	classifier
CBS	Canadian Bible Society
COIN	coincidence
CONJ	conjunction
COP	copula
D/DET	determiner
DEM	demonstrative
DU	dual
e	entity
EMPH	emphatic
EVID	evidential
Ev-T	event time
FEM	feminine
FOC	focus
FUT	future
GEN	genitive
IPFV	imperfective
INFL	inflectional head
INTERR	interrogative
JUSS	jussive
LD	Lena Drygeese
LM	Lianne Mantla
LOC	locative
MASC	masculine
MLBW	Marie-Louise Bouvier-White

MRS	Mary Rose Sundberg
MS	Mary Siemens
N	noun
NEG	negative
NEUT	neuter
NML	nominalizer
NOM	nominative
NUM	number
OBJ/O	object
OBV	obviative
OPT	optative
P	adposition; phrase
PF	perfective
PL	plural
PNS	possessed noun suffix
POT	potential
PRES	present
PROHIB	prohibitive
PROX	proximate
Q	question particle
REL	relativizer
SBJ/S	subject
SG	singular
SMCM	Silvia María Chávez Morales
SUB	subordinator
T	tense head
t	truth value
TAM	tense/aspect/mode
TCSA	Tłıchq Community Services Agency
THM	thematic prefix
UT-T	utterance time
v	light verb
V	verb
ZMS	Zoe Martinez Sly

Chapter 1. Introduction

This dissertation analyzes the copulas of multiple-copula languages, focussing on Tł̥ch̥ Yatì, an Athapaskan (Dene) language of the Northwest Territories. It contends that copulas are markers of coincidence, a semantic feature with effects in syntax. It proposes that the relationship between the two copulas of Tł̥ch̥ Yatì and between the differing semantics of their interpretations can be accounted for by a difference in merge structure: essentially, that coincidence between different nodes of the syntactic hierarchy produces semantically different interpretations.

1.1. Research question

This study focusses on the Athapaskan languages of North America, with particular attention to Tł̥ch̥ Yatì (Dogrib). The central issue is the paradox of the copulas: how can we reconcile the view that copulas have almost no lexical semantic content with the fact that in Tł̥ch̥ Yatì, as in many languages of the world, two or more copulas are used, and that copula choice can affect the interpretation of predicates?

1.2. Theoretical framework and underlying assumptions

The proposals in this dissertation are couched in the framework of generative grammar, and more specifically the Minimalist Program (Chomsky, 1995a, 1995b). One goal of the Minimalist Program is the replacement of elaborate theoretical structures with simpler, broader principles that give rise to the same observable effects. This is a laudable goal in any discipline, and its pursuit was the principle that enabled the elimination of D-structure and S-structure from the picture of the derivation, and of X' projections without strict motivation. Essentially, the MP is an extended application of Ockham's Razor to generative syntactic theory.

Within this dissertation, the application of a particular instance of minimalist ideas – although one that predates Minimalism – has effects on the assumptions underlying the rest of the work. Speas’s (1994) articulation of the Principle of Economy directly leads to two fundamental assumptions of mine.

(1) Principle of Economy

Project XP only if XP has (phonological or semantic) content.

(Speas, 1994:3)

The application of this principle has led me to decide against assuming extra projected structure in two cases: nominal phrases and individual-level predicates.

1.2.1. Nominal phrases: arguments or predicates?

This work argues that copulas, in Tłchq Yatì and other Northern Athapaskan languages, bear a coincidence feature that enables nouns to be predicates. This proposal runs counter to those of Stowell (1989) and Longobardi (1994), who claim that bare nouns are predicational (of semantic type $\langle e, t \rangle$), and the extended projection D is what enables them to be interpreted as individuals (type e). Longobardi’s evidence, in particular, is drawn exclusively from Indo-European languages (Romance and Germanic). My view, following Wilhelm (2008) is that bare nouns in Tłchq Yatì and related languages are of type e (referring to individuals or kinds), and it is copulas that allow them to become predicates (type $\langle e, t \rangle$.¹)

¹ “... there is no semantic obstacle whatsoever to the existence of bare NP arguments as kind-referring NPs... The denotation of nouns might vary across languages, and this variation might be responsible for the different distributions of bare nominal arguments” (Chierchia, 1998:344).

There is evidence in favour of this assumption. In Northern Athapaskan languages, whether determiners exist is a large question and one that is being explored elsewhere (Wilhelm, 2012).² Certainly there are no articles, either in Denësqłné or in Tłchq Yatıı.³ In all of the sentences in (2), definite readings of the complement nouns are available or even ((2)a) obligatory.

(2) a. Denësqłné:

John	ɣłághe	jíechogh	chu	ɣłághe	łést'éthyulaze	chu
John	one	apple	and	one	bun	and
nághélnígh	ɣú,	jíechogh	ghetthé	nı.		
3S.bought_O	SUB	apple	3S.ate_O	PAST		

‘John bought one apple and one bun, and he ate **the apple**.’

(Wilhelm, 2011)

b. Tłchq Yatıı:

Madłę	ts'èko	hqt'e.
Madłę	ts'èko	ha-ı-t'e
Madeleine	ts'èko	THM-IPFV.3.SBJ-COP2

‘Madeleine is a/the woman.’

(MLBW 2009)

² Wilhelm also argues for a type e analysis of bare nouns in Denësqłné.

³ I use the spelling Denësqłné, following Wilhelm's more recent work. Her older publications use Denësqłné.

c. T̥hçq Yat̥i:

Ts'èko Madl̥ h̥ot'e.

ts'èko Madl̥ ha-ɿ-t'e

woman Madeleine THM-IPFV.3.SBJ-COP2

‘The woman is Madeleine.’

(MLBW 2009)

Furthermore, pronouns (type e) can be predicated of subjects in T̥hçq Yat̥i. All of the clauses in (3) contain pronouns as complements; of copulas in (3)a, b and of a psych verb in (3)c. Pronouns being definite and of type <e>, it is hard to see how they can be acting as predicates under Longobardi's analysis:

(3) a. Xàè sɿ aht'e!

xàè sɿ a-h-t'e

EMPH 1SG THM-IPFV.1SG.SBJ-COP2

‘It is I myself!’

(CBS 2003: Luke 24:39)

b. ...ededɿ h̥ot'e, ...

ede-dɿ ha-ɿ-t'e

REFL-3 THM-IPFV.3.SBJ-COP2

‘It is he...’

(CBS 2003: Acts 4:11)

- c. Sidiì gòq̣hwhq̣.
 sidiì go-ɬ-h-wq̣
 funny 1PL.OBJ-IPFV.3.SBJ-CLAS-think
 ‘He thinks us funny.’
 (MLBW 2009)

Even under an inverse-predication model, where identificational copular clauses result from an inversion of subject and predicate around the copula (Moro, 1997), the problem still exists. In (3)a, b, both arguments of the copula are pronominal (the subject being expressed only in agreement morphology), and hence the complement of the copula is definite in either order.

Longobardi relies on a null determiner to license DPs as arguments. I do not take this approach. Speas’s Principle of Economy suggests that in Tłchq̣ Yatì, and Northern Athapaskan languages in general, there is no reason to do so. I therefore do not assume the projection of DP, when there is arguably no overt exponent of it in the language. NPs are argumental, and the contribution of the copula is to express coincidence between two arguments, and to change a type *e* argument (NP) into a type $\langle e, t \rangle$ predicate (VP, with the copula instantiating *V*).

The issue of NP versus DP is in fact peripheral to the main direction of this dissertation. Given the evidence that in Northern Athapaskan languages, nouns are of type *e*, further chapters will assume that nominal arguments are NPs, and that the copulas are what turn them into predicates.

1.2.2. Individual-level predicates

The main claim of this dissertation is that distributional differences between the two copulas of Tłıchq Yatı̀ results from a difference in argument structure, and therefore of projected syntactic structure. One of the copulas produces predicates that are eventive ((4)a), while the other does not ((4)b):

(4) a. Ekwò elı.

ekwò Ø-lı

caribou IMP.3.SBJ-COP1

‘S/he/it is a caribou.’ (‘... is being a caribou’, in an ephemeral, non-characterizing sense, e.g., a role in a play)

(MS 2007)

b. Ekwò hq̄t’e.

ekwò ha-l-t’e

caribou THM-IMP.3.SBJ-COP2

‘S/he/it is a caribou.’ (in a characterizing sense)

(MS 2007)

Chapter 3 argues that these two copulas project different structure: Copula 1 projects a ν P, where external subjects and event arguments are merged (Chomsky, 1995b; Kratzer, 1995), while Copula 2 does not. The implication of this claim is that all non-eventive, “timeless” predicates (individual-level, in the terminology of Carlson (1977)) likewise do not project ν P.

This is not the only option available. It is implicit in Chomsky (1995b) that ν is projected by all verbs. However, adopting such an assumption would mean that in

sentences like (4)b, where the predicate is not eventive nor the subject external, ν P is projected without external arguments. Since in neither copula is there an explicit phonological realization of ν , assuming a ν P where it contributes no content would violate the Principle of Economy as well as the goals of Minimalism. Since there is both semantic and (subtle) syntactic evidence for the projection of ν by Copula 1, I assume that ν P exists where there is evidence for it; otherwise not.

1.3. The central puzzle and its solution

The traditional view of copulas is that they lack lexical semantic content. Sentences like (4)a, b pose a paradox to this view, since they are a minimal pair, with the only difference between them formally being the choice of one or the other copula. The contention made in this dissertation is that indeed, the two copulas do lack almost all lexical semantic content, and what content they do have is identical: merely the feature that enables them to be predicate-formers. However, they do differ lexically in that one of them is specified to merge external arguments, while the other is not. It is from this structural difference that the differences in interpretation arise.

1.4. Structure of the dissertation

This work is organized into seven chapters. Chapter 1 introduces the problem, outlines the theoretical framework and key assumptions, provides a summary of the content of the other chapters, and details the terminology used, the methodology of the study and the sources of data.

Chapter 2 provides a more detailed introduction to theory and data. Section 2.1 introduces the concept of coincidence, the feature that I argue is the heart of the copulas. It traces the development of the concept from its initial proposal by Hale (1986), its

instantiations in the domains of time, space and identity, and its role in current approaches to TAM (tense/aspect/mode) grammar and the content of INFL. It proposes that a coincidence feature is central to predication and that this feature is the only lexical semantic content of both copulas. Section 2.2 introduces T̥chq̥ Yatì, gives a brief sketch of its morphosyntactic characteristics and develops a map of the clausal spine, highlighting typologically unusual features and justifying the projection of ν P and AgrNumP, both of which are central to the argumentation in later chapters. Section 2.3 sums up the findings of the chapter. The three domains of coincidence cited by Hale (space, time and identity) are all instantiated grammatically in human languages. T̥chq̥ Yatì is a language in which coincidence is expressed both by TAM categories (time) and by copulas (argument identity). It has a clause structure that is typologically typical of SOV languages, with two features that are less common: number agreement merged in a separate head from person agreement, and a tense system that distinguishes future/non-future rather than past/non-past.

Chapter 3 outlines the argument for a structural difference between the copulas. Section 3.1 presents the paradox of the two copulas in semantic terms, demonstrating that if they indeed contribute nothing to the semantics of clauses, no interpretational differences should arise, yet they do. Section 3.2 posits two hypotheses to explain the source of these interpretational differences, one syntactic and the other lexical-semantic. Hypothesis I places responsibility for the differences on the interaction of copular NP complements with external arguments merged in [Spec, ν P], while Hypothesis II assumes that the lexical semantics of the two copulas specify that one is transient and the other permanent. Section 3.3 considers the copulas in terms of syntactic category: specifically,

where they merge into the clausal spine. Section 3.4 adduces paradigmatic, distributional and selectional evidence to demonstrate that they are both of category V. Section 3.5 makes the case for Copula 1 but not Copula 2 projecting ν , demonstrating that Copula 1 clauses are compatible with volitional subjects, changes of state, and temporal adverbials, while Copula 2 clauses are not. Section 3.6 discusses the issue of semantic versus syntactic evidence, concluding that while in a strongly head-final language like T̥chq̥ Yatì it is extremely difficult to devise tests to separate ν from V, there is some evidence in the form of case-marking in support of Copula 1 alone projecting ν . Section 3.7 weighs the evidence and draws interim conclusions, and 3.8 explores the issue of lifetime effects with individual-level predicates, demonstrating that Hypothesis I predicts these effects to arise as effects of the syntactic structure. Section 3.9 introduces some outlying data that challenge Hypothesis I: the compatibility of predicates of profession with Copula 1. Section 3.10 draws the conclusion that assuming Hypothesis I allows numerous predictions about the properties of the two copulas, predictions that are all confirmed by the facts of the language, with the puzzling exception of predicates of profession.

Chapter 4 takes up the problem of this exception, demonstrating that it is not unique to T̥chq̥ Yatì, but also exists in the Athapaskan languages Navajo and Tsùt'ínà. Section 4.1 introduces Navajo, and 4.1.1 the copulas, illustrating their distribution. 4.1.2 compares their distribution to the copulas of T̥chq̥ Yatì, and 4.1.3 analyzes it, proposing that in Navajo, human subjects have special status and can merge as external arguments even if the predicate is individual-level. 4.1.4 draws conclusions and suggests that the T̥chq̥ Yatì predicates of profession are a vestige of a broader system in which privileged subjects have access to [Spec, ν P]. Section 4.2 follows a structure parallel to 4.1, with

4.2.1 introducing the copulas of Tsùùt'ínà and 4.2.2 comparing them to T̥chq Yatì and Navajo. 4.2.3 extends the analysis of Navajo to Tsùùt'ínà, with the difference that in Tsùùt'ínà, it is apparently animate subjects, rather than only human subjects, that can merge in external position, and 4.2.4 draws conclusions. Section 4.3 draws overall conclusions: 4.3.1 examines how Hypothesis I can account for the data from Navajo and Tsùùt'ínà as well as T̥chq Yatì predicates of profession, and 4.3.2 demonstrates that the same data cannot be reconciled with Hypothesis II.

Chapter 5 returns to T̥chq Yatì, taking up the analysis of the behaviour of copulas that co-occur with AP predicates. 5.1 introduces the adjectives of T̥chq Yatì, and 5.2 shows that the stage-/individual-level predicate distinction does not appear to correlate with the distribution of the copulas with AP predicates. 5.3 illustrates the distribution of copulas with AP predicates with respect to subject animacy, demonstrating that copulas are required with AP predicates of animate subjects, and barred with AP predicates of inanimate subjects, proposing that animate nouns have a number feature that requires morphological realization. 5.4 adduces evidence that this is correct, showing that animate subjects, but not inanimate subjects, can trigger morphological number agreement on verbs. 5.5 examines theories of feature checking with respect to number agreement in T̥chq Yatì, and 5.6 develops a typology of predicates based upon the data in the chapter, proposing that copulas are always necessary to predicate NPs, never necessary with VPs, and necessary with APs depending on subject animacy; this typology is claimed to result from the interaction of coincidence with syntactic number. 5.7 addresses the issue of number and classificatory verbs, concluding that it is a separate system, and 0 draws the

conclusion that coincidence is the content of the copula and enables predication of NPs, while adjectives and verbs already encode coincidence on their own.

Chapter 6 is devoted to applying the theory of copulas developed in previous chapters to languages outside the Athapaskan family. 6.1 explores the ways copulas may differ in structure. 6.1.1 examines possible sites for copulas to merge into the clausal spine, 6.1.2 makes predictions of copula properties based on merge site, and 6.1.3 predicts the existence of negative copulas. Section 6.2 assesses the predictions, finding that they are instantiated in natural languages. 6.2.1 looks at languages with a single copula, finding several examples of copulas that merge at V and raise to v , and none that merge higher. 6.2.2 looks at multiple-copula systems, finding that in all languages examined, one copula always merges at V or v , while the other may merge higher. 6.2.3 finds that negative copulas are instantiated as well. 6.2.4 assesses the results, concluding on theoretical grounds that any languages that uses a copula to encode stage-level predicates must have at least one copula that merges at V or v , but that copulas that introduce individual-level predicates may merge at any site on the clausal spine other than v . Section 6.3 applies the theory of coincidence to diachronic change, positing that copulas are liable to grammaticalize due to semantic lightness (6.3.1) and frequency (6.3.2), and predicting that grammaticalization of copulas will proceed by upward movement in the clausal spine (6.3.3). Section 6.3.4 assesses the predictions, showing that the predicted patterns of grammaticalization are attested in natural languages, and revisits the behaviour of copulas with AP predicates in Tł̥chq̣ Yatì, theorizing that it represents a grammaticalization in progress. Section 6.4 draws conclusions.

Chapter 7 draws general conclusions for the dissertation as a whole. Section 7.1 outlines the three chief findings. First, copulas occur in order to enable predication, either by encoding coincidence or by hosting obligatory morphology. Secondly, a structural explanation for copula differences accounts for the observed patterns better than a lexical semantic explanation. Thirdly, a structural explanation makes confirmed predictions about possible copula patterns in natural languages. Section 7.2 outlines some unanswered questions that point to several future research programs. First, the copula distinction in the three languages of study raises the question of whether the distinction exists in all Athapaskan languages. Second, if NPs in Athapaskan languages are arguments, and require copulas to become predicates, it suggests that the coincidence feature, held in this dissertation to be the essence of predication, is involved in semantic type-shifting. Third, positing a structural difference to explain the copula distinction suggests that the same structural difference also underlies non-copular instantiations of the stage/individual-level predicate distinction. Finally, the structural model predicts that more copula types will be found beyond those examined in Chapter 6. These areas of research should be developed not only on their own merits but because they suggest tests that could be used to falsify the findings of this dissertation.

1.5. Methodology

The data in this study are drawn from multiple sources. This section outlines the sources of data for each of the languages of study, and describes the advantages and drawbacks of each type of source.

1.5.1. Fieldwork

The most important source of data is fieldwork that I carried out from 2007 to 2012 with native speakers of Tł̥chq̣ Yatì, Tsùùt'ínà, and Spanish, who are named in the acknowledgements. For the most part, this fieldwork took the form of traditional eliciting, where I asked a native-speaker consultant to translate English utterances into the target language, or proposed target-language utterances of my own composition and asked the speaker to judge their grammaticality. This sort of data collection has great advantages: it allows the researcher and consultant to investigate specific grammatical phenomena with great precision, and it yields information on both grammatical and ungrammatical utterances, an important point when one is trying to determine the rules of a language. There are certain disadvantages associated with this method as well, however. It inevitably involves translation of English sentences into the target language, either by the consultant or by the researcher. Such translation may produce sentences that, while grammatical, may be less natural than those occurring conversationally in the target language.

To offset this factor, I also did some fieldwork with storyboards prepared using the MuDBE application (Burton, 2008). I would show the consultant a series of pictures illustrating a story intended to capture a particular grammatical phenomenon, explaining in English where necessary. I would then wait a few minutes and ask the consultant to view the story again, without any English commentary; she would then retell the story in the target language. This had the advantage of producing language that was more likely to be natural and less affected by artifacts of translation; on the

other hand, it was a far more time-consuming than traditional elicitation, both in the preparation of the storyboards and the process of retelling the story.

1.5.2. Textual data

Another important source of data was published texts in the languages of study. For the main language of study, Tłıchq Yatı, the most important text by far for the purposes of this dissertation is the *Dogrib New Testament* (Canadian Bible Society, 2003, henceforth CBS 2003). It is the longest published text in the language, and in its electronic incarnation is completely searchable, making it a valuable source of linguistic data. However, it too is a translation from English, and the risk exists that that process may have introduced constructions that might not occur, or might occur with less frequency, in ordinary Tłıchq speech.

Other Tłıchq Yatı texts that I have used include a number of stories, chiefly retellings of legends and oral histories, published by the Dogrib Divisional Board of Education and the Tłıchq Community Services Agency. Some of these texts are transcriptions of elders' narratives; others are re-translations into Tłıchq Yatı of stories translated into English in the 1970s and 1980s.

A few Navajo examples come from Goddard and Reichard's (1933) *Navajo Texts* and Matthews's (1969) *Navajo Legends*. Given that considerable change may occur in a language in forty or eighty years, the extent to which these examples may reflect the modern language is not certain.

All textual data, of course, has the drawback that it can only attest what is grammatical, not what is ungrammatical. Additionally, differences in register may come into play. As an example, consider the English quantifier *much*. In a formal written register, this word

occurs in both affirmative and negative contexts: *much research has been done* and *not much research has been done* are equally acceptable. However, in the spoken register, *much* is definitely dispreferred in the affirmative: while *not much money is in my account* is fine, *??much money is in my account* is not. If this kind of variation in grammaticality according to register exists in Tłchq Yatì or Navajo, textual data – except when it records conversations – will not uncover it.

1.5.3. Data from linguistic work

Other data are drawn from published linguistic work, both descriptive and theoretical, concerning the languages of study. Of these, the *Tłchq Yatì Multimedia Dictionary* (Tłchq Community Services Agency, 2007, henceforth TCSA 2007) has been very useful. Its inclusion of forms from multiple dialects and numerous context sentences makes it an excellent resource. I have made similar use of *The Navajo Language : A Grammar and Colloquial Dictionary* (Young & Morgan, 1987) and *Analytical Lexicon of Navajo* (Young, Morgan & Midgette, 1992), and the *Tsùùt'ínà Pedagogical Dictionary* (Starlight & Donovan, 2008), although data from the last of these should be treated with a degree of caution since this dictionary is not yet in finished form (Bruce Starlight, pc, 2012).

1.5.4. Conventions in representing data

Examples of utterances in this dissertation generally occur in a three- or four-line format. The first line is the utterance itself, generally in the orthography of the language of study. In some cases, where the example is recorded in an orthography that differs from the standard modern one, an extra line is inserted with the modern orthography. The next line is ordinarily a morphological breakdown. I have not attempted a breakdown of every word into its component morphemes, but in general only those words whose composition

is important for the grammatical phenomenon that the example illustrates. Below this line is a morpheme-by-morpheme gloss. I have used the Leipzig glossing conventions (Comrie, no date, accessed 2012 07 07) by preference. However, when citing examples from published work that includes morphological breakdowns, I have preserved the original authors' glossing except where it was necessary to make changes to avoid confusion, as when an author uses an abbreviation identical to a Leipzig abbreviation but with a different meaning.

Many of the sources that I have used do not include morphological breakdowns or glosses; some do not include translations. In such cases I have created my own glosses or translations, based on published grammars and dictionaries for the most part. Where errors have crept in, they are, of course, my own.

1.6. Terminology

This section defines some of the terms that are used in this dissertation, and details the reasons for choosing them above others.

1.6.1. Copulas

This dissertation is concerned with copulas. It is therefore important to state at the outset what a copula is.

Den Dikken (2006) argues that copulas are a type of Relator: meaningless elements that serve to connect subjects and predicates. This view continues a long tradition of considering copulas semantically empty. While I agree with den Dikken's view of the copula as a connector, I argue that it is merely *almost* meaningless: it is one possible grammatical encoding of the semantic feature of coincidence of identity.

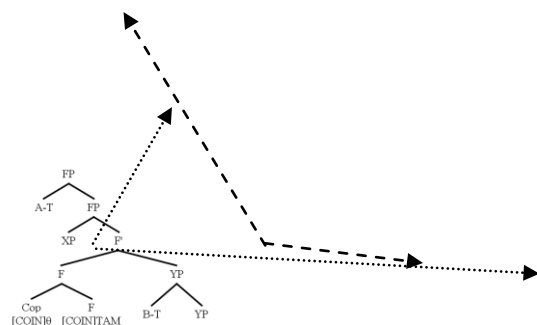
Coincidence of identity consists of the assertion that a Figure is subsumed within a Ground. Chapter 2 of this dissertation makes the case that coincidence is widespread in syntax. TAM distinctions encode coincidence between times, or more generally, situations. Adpositions encode temporal, spatial or causal coincidence. Copulas encode coincidence of identity: the subsumption of an individual or kind within a larger kind having particular properties.

A copula consists of two semantic components: the copula root, marking coincidence of identity ($[\pm\text{COIN}]_\theta$) between its subject and predicate, and its inflectional TAM morphology, marking $[\pm\text{COIN}]_{\text{TAM}}$ between temporal/situation arguments.^{4,5} We should therefore be careful not to confuse these two components. A copula merging at a functional head F will have the structure (5), where XP and YP are the phrases that are the subject and complement of the copula proper, related by $[\text{COIN}]_\theta$, and A-T and B-T are TAM arguments of the functional head (instantiated by the copula's TAM morphology), related by $[\text{COIN}]_{\text{TAM}}$. The tree in (5) illustrates the two components of the copula, where the dotted lines connect the copula with its thematic arguments, and the dashed lines connect the functional head with its TAM arguments.

⁴ Negative copulas (instantiations of $[-\text{COIN}]$ exist in some languages; one (Bambara) is discussed in chapter 6.

⁵ That different instances of coincidence take different kinds of arguments should not be surprising. TAM heads such as tense cannot be reinterpreted as expressing coincidence of identity between a subject and predicate: *Hyena cat-ed*, where the tense marking encodes non-coincidence between the time of speech and the time of the situation, cannot mean 'A hyena is not a cat'. We can view this as a selectional property: TAM heads are specified to select temporal arguments, while copulas are specified to select thematic arguments.

(5)



I consider one of the defining characteristics of copulas to be their selectional flexibility. Copulas relate two arguments, encoding a Figure/Ground relation between them, an idea that will be developed in Chapter 2. These arguments can be of several categories; this distinction separates copulas from TAM heads, such as tense and aspect, which are strictly constrained in their selection of complements. Consequently, when there is structural evidence of a syntactic object *X* merging at a functional head, its complement is, for the purposes of this study, the test of whether it is a copula. If the complement may be thematic, *X* is a copula. (Recall from the discussion above that copulas also carry TAM information). If only one category of complement is possible, and it is a projection of another functional head (such as *Asp*), *X* is a TAM head.

1.6.2. Minimalism and Indigenous languages

Any field is subject to changes in vocabulary. The fields of theoretical syntax and the documentation of North American Indigenous languages are perhaps more so than most, and for different reasons.

On the theoretical side, the development of generative grammar over the last fifty-odd years has included several incarnations of the standard theory, and terminology has changed accordingly. This dissertation being framed within the current version of the theory, Minimalism, I accordingly refer to feature checking rather than assignment, inflectional phrases or tense phrases (IP/TP) rather than sentence nodes (S), and so forth.

This terminological shift is over fifteen years old, and I will not devote further space to detailing it here.

In language documentation, recent years have seen a widening awareness among non-Indigenous people of political issues attached to the names used for Indigenous languages and ethnic groups, in both official circles and everyday life. There has been a corresponding trend to change usage of such names to reflect what the speakers of the languages wish their language and group to be called, rather than using names applied by outsiders. I therefore refer to Tł̥chq̣ Yatì rather than Dogrib and to Tsúùt'ínà rather than Sarcee. Nevertheless, I use Navajo rather than Diné Bizaad. This last was a difficult choice. The name Navajo has been established in the linguistic literature for a hundred years, including much literature produced by native speakers of the language. In 1994, the Navajo National Government voted not to change the name of the nation from Naabeehó to Diné, as Diné has associations with times of oppression and suffering (Norell, 1994). The Navajo language also appears far more often in linguistic literature than either Tł̥chq̣ Yatì or Tsúùt'ínà, and the consequences of a name change are weightier. For these reasons, I have elected to continue using the name Navajo.

This introduction has outlined the research question that drives this dissertation, the theoretical framework in which it is couched and some assumptions deriving from that

framework, and the terminology used. The next chapter develops the theory of coincidence and outlines the clause structure of Tł̥chq̓ Yatì, the main language of study.

Chapter 2. Coincidence: the theory and the setting

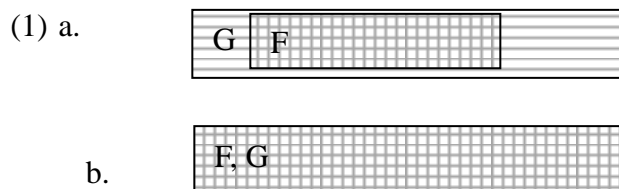
This chapter outlines the theory of coincidence on which the dissertation depends, as well as the clause structure of Tłchq Yatı, which has some cross-linguistically unusual characteristics. It therefore provides the necessary background for Chapter 3, which contains the analysis of the structural differences between the copulas. Section 2.1 deals with coincidence theory and its previous applications in the literature, while 2.2 gives a brief overview of Tłchq Yatı and argues for a representation of its clause structure.

2.1. The theory of coincidence

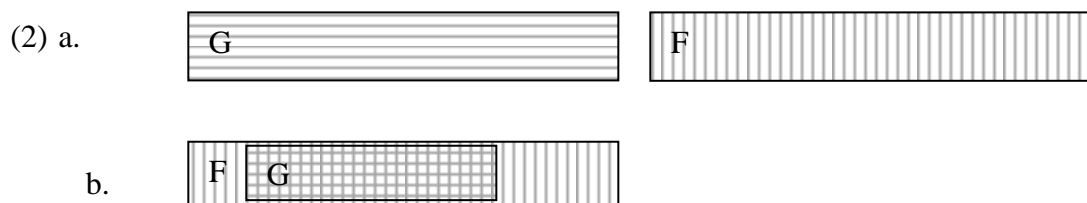
For more than two decades, a number of syntacticians within generative linguistics have explored a program of research based on coincidence: the notion that the inclusion of a “figure” within a “ground”, to which it is compared, is formally represented in grammar. This chapter defines coincidence, reviews the research that has made use of the concept of coincidence to illuminate various elements of morphosyntactic structure, and proposes a further extension of coincidence theory to the copula.

2.1.1. The concept of coincidence

Coincidence, defined as a relation between a “figure” and a “ground” to which it is compared, was first articulated by Hale (1986:239), who called it “the fundamental theory of relations” in identity, time and space (p.242). “Central coincidence”, in Hale’s view, was a relation of either the figure’s co-extensiveness with, or inclusion in, the ground, as in (1).



In (1)a, the figure (F) is wholly included within the ground (G); so, too, is the figure in (1)b, which is co-extensive with the ground, as co-extension is a special case of inclusion. In both proper inclusion, as in (1)a, and co-extension (1)b, there is no point within the figure that is not also within the ground. In (2), by contrast, we see examples of non-central coincidence.

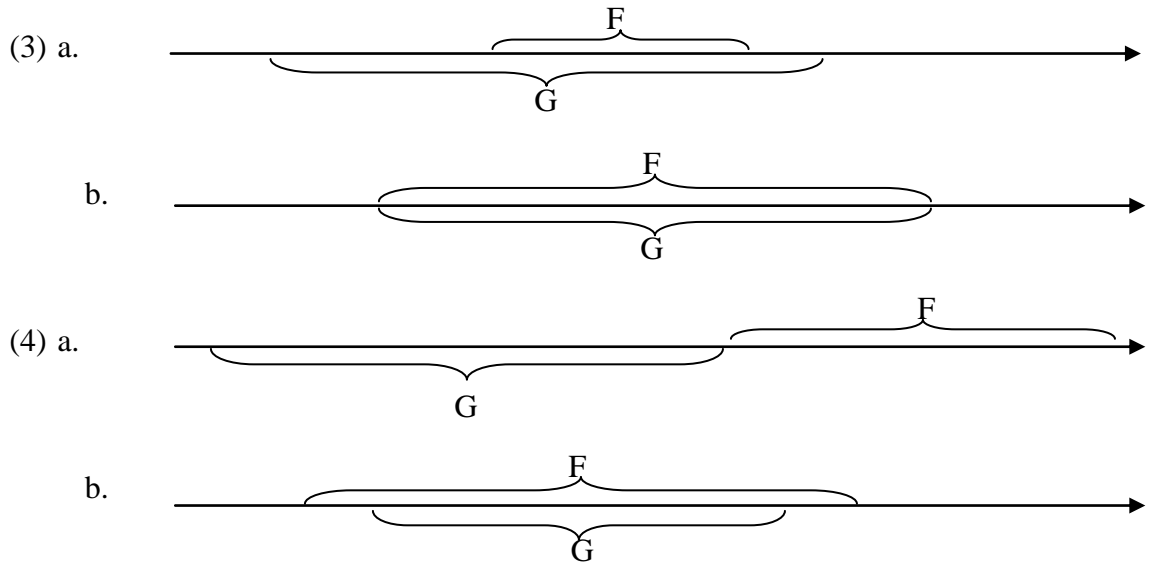


In both (2)a and (2)b, there are points in the figure that are not included within the ground: in (2)a because there is no point in either that is included within the other, and in (2)b because there are points in the figure that lie outside of the ground.

Hale applied the concept of central coincidence to the domains of identity, time and space. What does inclusion mean in these contexts?

In the spatial domain, inclusion is fairly straightforward. The diagrams in (1) and (2) are a spatial expression of central coincidence in any case. The temporal domain calls for some further explanation, however.

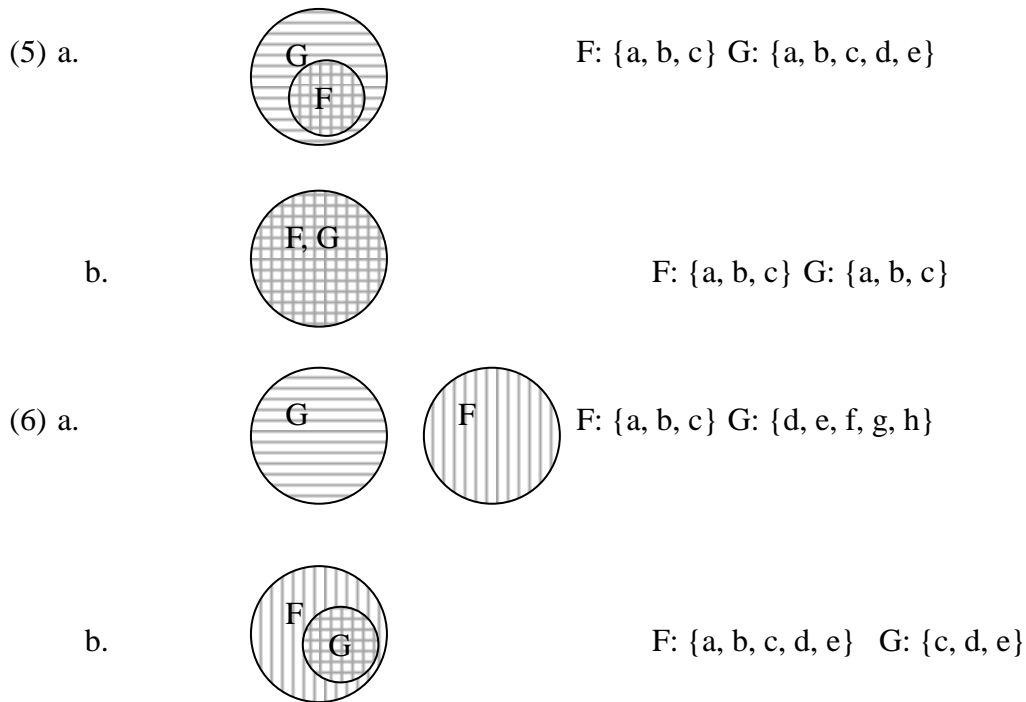
Though time is one-dimensional as opposed to the three dimensions of space, the concept of inclusion of a figure in a ground still holds. The timelines in (3) and (4) demonstrate central coincidence, and the lack of it, in the temporal domain.



The timelines in (3)a and (3)b demonstrate proper inclusion and co-extension, respectively, in parallel with (1)a and (1)b. In (3)a, the span of time denoted by F lies wholly within that denoted by G; there is no point in time within F that is not also in G. In (3)b, which is a special case of (3)a, the co-extension of F and G means that, unlike (3)a, there are no points in G that are not in F; however, like (3)a, there are no points in F that are not in G.

In (4)a and (4)b, the relationship between F and G is one of non-inclusion, and thus of non-central coincidence, since in both cases there are points in time within F that are not in G: in (4)a because there is no point that lies within both F and G, and in (4)b because there are points in F that either precede or follow G.

What of central coincidence of identity? In this case, I resort to set-theoretic definitions, though, again, the concepts are quite intuitive. Consider the Venn diagrams in (5) and (6).



The diagrams in (5)a and (5)b illustrate the cases of proper inclusion and co-extension applied to set identity relations, where F and G both represent sets. In (5), there is no member of F that is not also a member of G, whether G includes only the members of F ((5)b), or additional members as well ((5)a). In (6)a, F and G share no members, while in (6)b, there are members of F that are not members of G. Therefore, comparing F to G yields relationships of central coincidence in (5) but not in (6).

Defining the meaning of central coincidence when applied to space, time and identity relations is important for assessing how it has been applied theoretically, which is the focus of the next section.

2.1.2. Applications of coincidence in the literature

This section reviews several applications of Hale's coincidence concept to the analysis of TAM (tense/aspect/mode) categories. This dissertation hypothesizes that the stage-

/individual-level predicate distinction between the copulas of Tł̥chq Yatı̆ results from a difference in their temporal syntax centred around the interpretation of coincidence between different syntactic nodes. That being the case, some background in the application of coincidence to temporal grammar would not be amiss.

Hale’s treatment of Warlpiri (Hale, 1986) distinguished between central coincidence, in which the figure lies within the ground, and non-central coincidence, when the figure (or its trajectory, if it is seen as moving) adjoins, approaches or recedes from the ground.⁶ As a means of explaining certain characteristics of Warlpiri grammar, Hale posits coincidence as a semantic feature that is reflected in syntactic relations such as case and tense. Hale conceives of coincidence as a “theme” pervading Warlpiri grammar, and briefly and informally discusses the implications of analyzing it as a semantic feature. [\pm CENTRAL], in his scheme, licenses the valuation of temporal and modal features, as in (7).

(7) Licensing of TAM features by coincidence

Central coincidence	Tense	Aspect	Mode
[+CENTRAL]	non-past	imperfective	realis
[-CENTRAL]	past	perfective	irrealis

(Hale, 1986:248-251)

Hale also distinguishes centripetal non-central coincidence from centrifugal: the former exists when the figure approaches the ground, the latter when it recedes from it. He illustrates the distinction with the Warlpiri cases and directional enclitics. According

⁶ Hale uses “non-central coincidence” or “terminal non-coincidence” apparently interchangeably. I stick to the first for clarity.

to Hale, Warlpiri cases differ systematically according to whether they express central coincidence, centripetal non-central coincidence, or centrifugal non-central coincidence, as in (8).

(8) Warlpiri cases and coincidence

Central coincidence		Case
[+CENTRAL]		locative, perlative
[-CENTRAL]	CENTRIPETAL	allative
	CENTRIFUGAL	elative

Each of these cases also has a corresponding directional enclitic (Hale, 1986:240-241).

Hale discusses the Warlpiri complementizers as an additional piece of evidence for his coincidence distinctions. The Warlpiri complementizers “utilize the opposition [between central coincidence and non-central coincidence] to express a most fundamental semantic relation between a main clause and a finite adjoined, semantically dependent, clause” (Hale, 1986:242). He suggests that the complementizers (which in the Warlpiri system relate either two clauses or two NPs) express either central coincidence, where two events are seen as coinciding in space, time or identity, or non-central coincidence, where one event precedes, follows or is related causally to the other (Hale, 1986:243-244).

Importantly, Hale suggests that though Warlpiri offers unusually clear examples of the morphosyntactic effects of coincidence, it is a concept universal in human language.⁷ This characterization provides a tool for the analysis of cross-linguistic phenomena of the type

⁷ Hale cites English adpositions such as *in*, *at*, *during* as expressing central coincidence, while centripetal non-central coincidence is expressed by *to*, *toward*, *until* and centrifugal by *from*, *out of*, *since*.

that Hale documents in Warlpiri, a tool to which later treatments have added increased definition and formalism.

Demirdache and Uribe-Etxebarria (2000; 2004; 2007) combine Hale's terminology with Reichenbach's (1947) analysis of tense, refined by Klein (1995), which considers tense and aspect to be relators of three points in time: Speech Time, Event Time and Reference Time, which is an arbitrary time to which an utterance makes reference. Their theory makes the important contribution of casting Hale's informal treatment of the concept of coincidence, and Reichenbach's semantic analysis of tense, into formal syntactic terms within the mechanism of Spec-Head relations.

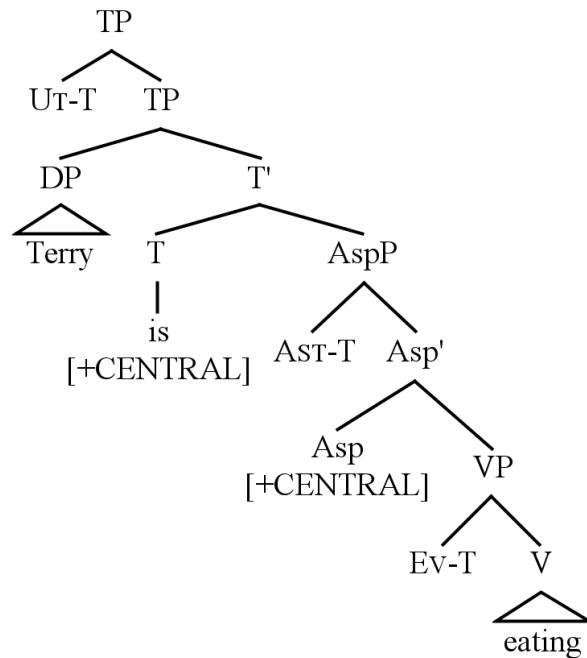
Although the concepts they describe are the same, there are differences in terminology as used by Reichenbach, Klein and Demirdache and Uribe-Etxebarria. Klein uses the term Topic Time rather than Reference Time; in Reichenbach's system, a Reference Time may be either the Event Time (EV-T) or a third time distinct from both Utterance Time and Event Time. Demirdache and Uribe-Etxebarria use the term Assertion Time (AST-T) to refer to such a distinct third time. Similarly, both Klein and Demirdache and Uribe-Etxebarria refer to Reichenbach's Speech Time as Utterance Time (UT-T). I will not detail the reasons for these terminological differences. This dissertation adopts the terminology of Demirdache and Uribe-Etxebarria, who bring the semantic notions of Reichenbach's three times into the realm of syntax. They consider the three Reichenbachian times to be arguments of the Tense and Aspect heads, which they analyze as predicates that take spatiotemporal arguments. Under their analysis, Tense takes Utterance Time as its external and Assertion Time as its internal argument, expressing a relation between them that is either central (present tense), centripetal (future) or centrifugal (past). They

articulate a theory of temporal syntax, unifying tense, aspect and temporal adverbial expressions and treating coincidence as a set of formal features, $[\pm\text{CENTRAL}]$, $[\pm\text{CENTRIPETAL}]$, where $[-\text{CENTRAL}]$ apparently licenses the valuation of $[\text{CENTRIPETAL}]$, although Demirdache and Uribe-Etxebarria do not say so explicitly. The tree in (9)b provides an example of how their system applies to the temporal analysis of (9)a.

(9) Demirdache and Uribe-Etxebarria's analysis of temporal syntax

a. Terry is eating.

b.



In (9), T bears the feature $[\text{+CENTRAL}]$ (central coincidence) which results in its external argument (the Figure, UT-T, in $[\text{Spec}, \text{TP}]$) being ordered WITHIN its internal argument (the Ground, AST-T, in $[\text{Spec}, \text{AspP}]$): that is, present tense, in which the Utterance Time is a Figure contained within the Ground of the Assertion Time. Similarly, Asp orders the Assertion Time WITHIN the Event Time, placing the Figure (the moment

about which the sentence makes an assertion) within the Ground (the time taken up by the event itself): imperfective aspect.

In Demirdache and Uribe-Etxebarria's system, [\pm CENTRAL] mediates only between temporal arguments of TAM heads. That is, there is a selectional restriction that arguments of TAM heads must be temporal: the internal argument of T is not its complement AspP, but the temporal content of that phrase, AST-T. Similarly, UT-T is not available to be a subject of V in (9), despite its presence in a clausal Spec position. Verbs select thematic subjects; UT-T is the external argument not of V, but of T.

Following Stowell (1995; 1996), for the bulk of their article they refer to the centripetal/centrifugal distinction using the ordering relations AFTER and BEFORE, both of which are licensed by the feature [-CENTRAL]. This system is necessary to differentiate between past and future tense and between perfective and prospective aspect: without it, both past and future, for example, would be simply [-CENTRAL], and Utterance Time and Assertion Time would lack any ordering relation.⁸

The licensing of relations under Demirdache and Uribe-Etxebarria's system appears in (10).

⁸ Demirdache and Uribe-Etxebarria make use of c-command relationships between UT-T, AST-T and EV-T to demonstrate (2000:180-182) that past tense and perfective aspect are instances of [-CENTRIPETAL] and therefore of AFTER, rather than [+CENTRIPETAL] and BEFORE.

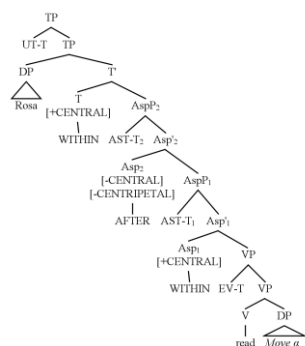
(10)

[CENTRAL]	[CENTRIPETAL]	relation	external arg	internal arg	TAM category
+		WITHIN	Ut-T	AST-T	present tense
			AST-T	Ev-T	imperfective aspect
-	+	BEFORE	Ut-T	AST-T	future tense
			AST-T	Ev-T	prospective aspect
	-	AFTER	Ut-T	AST-T	past tense
			AST-T	Ev-T	perfective aspect

Demirdache and Uribe-Etxebarria's system, importantly, allows a recursive AspP, as in

(11) (their (15)):

(11) (after Demirdache and Uribe-Etxebarria 2000)

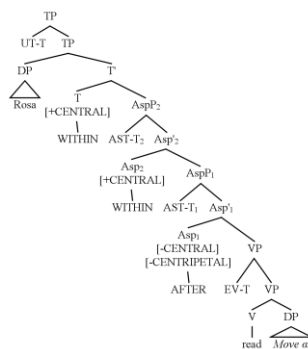


The tree in (11) is their proposal for the structure of *Rosa has been reading Move α*, which they analyze as containing two aspectual heads in addition to tense, producing a “perfect of a progressive” (present tense + perfective aspect + imperfective aspect).⁹

⁹ I regularize perfect and progressive to perfective and imperfective, respectively. The latter two terms are very widely used in linguistic theory to refer to the main opposition in viewpoint aspect. The perfect does not occur in Athapaskan languages, and while there is a progressive, it is more specific and constrained in its usage than the English progressive.

The mechanism articulated by Demirdache and Uribe-Etxebarria is powerful, and part of their 2000 article is devoted to constraining recursive aspect to prevent otherwise predicted but unattested forms. Their constraint takes the form of a prohibition on vacuous aspect: no aspectual head may focus a time interval that is not distinct from the time interval that exists in the absence of that head. Consider the tree in (12):

(12) (after Demirdache and Uribe-Etxebarria 2000)



This structure represents a sentence such as **Rosa is having read Move α*. The aspectual head Asp_2 orders $AST-T_2$ WITHIN $AST-T_1$, while $AST-T_1$ is ordered WITHIN EV-T. $AST-T_2$, however, “does not provide a new (distinct) viewpoint on the situation since the

time interval picked out by the additional Aspect (AST-T₂) is itself properly contained within – and, as such, is nondistinct from – the time interval already picked out by the lower Asp⁰ (AST-T₁)” (Demirdache & Uribe-Etxebarria, 2000:173).

That is, the ordering {[(UT-T WITHIN AST-T₂) WITHIN AST-T₁] AFTER EV-T} is semantically the same as [(UT-T WITHIN AST-T₁) AFTER EV-T]: the additional aspectual head contributes nothing to the interpretation. It might be asked whether this constraint applies to tense as well. However, as tense, under any Reichenbachian analysis, relates two times, one of which is Utterance Time, it is constrained by real-world facts: namely, that any utterance occurs at a unique UT-T and there is therefore no possibility of recursion. In fact, AST-T is the only one of the three temporal arguments in Demirdache and Uribe-Etxebarria’s system that is an artificial creation of the discourse; therefore, to have aspect alone be recursive is a plausible result.

Demirdache and Uribe-Etxebarria’s body of work demonstrates that coincidence, treated as a feature, can yield an analysis of temporal categories that has great predictive and explanatory power without being over-predictive. Their treatment of prospective and future as part of the aspect and tense systems respectively, however, creates the necessity to add [+CENTRIPETAL] to the featural analysis; Mezhevich’s work on Russian, reviewed below, dispenses with this feature while retaining analytic power.¹⁰

Mezhevich (2006) uses coincidence as a formal feature to analyze the Russian tense and aspect systems. Her theory confronts two intriguing facts about Russian temporal

¹⁰ These differences may be required by language-specific facts. If a language has more than two true tenses, for instance, a simple [\pm COIN] distinction will not be able to capture its tense system without an additional mechanism such as Mezhevich’s “recycling” (see below).

grammar. First, Russian aspectual morphology can give rise to both tense and aspect interpretation, even in the absence of specific tense marking. Second, the combination of perfective marking with the absence of past tense marking yields a future interpretation. A representation of Mezhevich's view of the Russian tense-aspect systems appears in (13). Mezhevich's solution lies in an analysis of all temporal categories – tense, aspect and mode – as dyadic, discarding [CENTRIPETAL]; the relations WITHIN and AFTER (or rather, NOT WITHIN) derive directly from the interpretation of the coincidence feature (which she calls [\pm COIN]) on different heads:¹¹

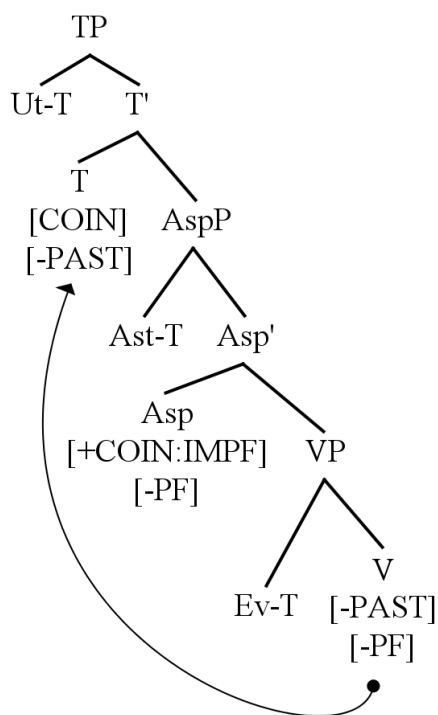
(13)

UT-T : AST-T	AST-T : EV-T	Relations	tense and aspect
[+COIN]	[+COIN]	UT-T WITHIN AST-T WITHIN EV-T	non-past imperfective = present
[+COIN]	[−COIN]	UT-T WITHIN AST-T NOT WITHIN EV-T	non-past perfective = future
[−COIN]	[+COIN]	UT-T NOT WITHIN AST-T WITHIN EV-T	past imperfective
[−COIN]	[−COIN]	UT-T NOT WITHIN AST-T NOT WITHIN EV-T	past perfective

¹¹ In this and subsequent chapters, I follow Mezhevich and Ritter and Wiltschko in using [\pm COIN] where Demirdache and Uribe-Etxebarria use [\pm CENTRAL] (distinguished from non-central, i.e., BEFORE and AFTER). I make this terminological decision on the grounds both that a binary opposition between coincidence and non-coincidence is sufficient to describe the TAM systems of the languages that I investigate, and that adopting Mezhevich's theory of mode renders a trinary opposition strictly unnecessary.

The interpretation of aspectual morphology as tense is explained by the mechanism of “recycling”, where the AGREE operation is invoked to allow $[\pm\text{COIN}]$ to be interpreted in more than one place in the clausal structure, as in (14).

(14) (after Mezhevich 2006)



In (14), the feature $[\text{PAST}]$ (licensed by $[\text{COIN}]$) on T probes its c-command domain to find a valued instance of the same feature on V; $[\text{PAST}]$ on T becomes $[-\text{PAST}]$, and thus imperfective morphology is interpreted as non-past tense marking. This mechanism, by which a single morphological marking may be interpreted as two different functional categories, can be seen as an option naturally available to a system in which Tense and Aspect are realizations of a single feature, coincidence, that may be interpreted at more than one point in the structure.

Mezhevich’s work dispenses with Hale’s distinction between centripetal and centrifugal non-coincidence: in Demirdache and Uribe-Etxebarria’s terms, she uses only

the relation WITHIN rather than BEFORE and AFTER, despite Russian having a future tense.¹² She deals with modal distinctions in the same way: irrealis modes, roughly, are non-centrally coincident with the real world.¹³ However, she analyzes this relationship as a dyadic temporal predicate, positing an Evaluation Time defined as “time relative to which the situation described by the utterance is evaluated” (Mezhevich, 2006:119). In realis mode, EVL-T is UT-T, while in irrealis, it is not: in irrealis mode, EVL-T exists in a possible world rather than the real world. By invoking EVL-T, Mezhevich thus reduces the modal (non-) coincidence of realities to a (non-) coincidence of times, unifying it with the other temporal dyadic predicates: aspect and tense.

Ritter and Wiltschko (2005; 2009; 2010) are the first to formalize Hale’s concept of coincidence in the other, non-temporal domains to which he also applied it. Hale saw coincidence in space and identity as being instantiated in Warlpiri locatives and complementizers; Ritter and Wiltschko demonstrate that morphological markings of spatial and identity relations are an important and perhaps obligatory part of clausal structure in Halkomelem and Blackfoot, respectively. In their analysis, the INFL and Asp heads relate two situations as a means of anchoring events to utterances. Temporality is one possible characteristic of situations that can be used for anchoring, exemplified by tense languages such as English (Ritter & Wiltschko, 2005:343). Halkomelem, by contrast, uses location, that is, spatial coincidence or non-coincidence, as an anchor, while Blackfoot uses identity of participants. In other words, the opposition expressible by

¹² Mezhevich considers the Russian future to have a semantic modal component, but not a syntactic one (Mezhevich, 2006:57).

¹³ Mezhevich cites previous work on this topic by Chung and Timberlake (1985) and Iatridou (2000).

INFL in English can be reduced to the question of whether the reference situation includes “now” or “not now”; in Halkomelem, the question is “here, or not here”; in Blackfoot, “us, or not us”.¹⁴ Similarly, Asp marks whether the reference situation (time, place or participants) coincides with the event situation.

The way that coincidence relates times, locations and sets of participants in Ritter and Wiltschko’s analysis may be seen in (15), where the first two columns indicate the value of the [COIN] feature on INFL and Asp respectively.

(15)

UT-SIT : AST-SIT	AST-SIT : EV-SIT	Relations	English	Halkomelem	Blackfoot
+	+	UT-SIT WITHIN AST-SIT WITHIN EV-SIT	UT-T WITHIN AST-T WITHIN EV-T	UT-L WITHIN AST-L WITHIN EV-L	UT-P WITHIN AST-P WITHIN EV-P
+	–	UT-SIT WITHIN AST-SIT NOT WITHIN EV-SIT	UT-T WITHIN AST-T NOT WITHIN EV-T	UT-L WITHIN AST-L NOT WITHIN EV-L	UT-P WITHIN AST-P NOT WITHIN EV-P
–	+	UT-SIT NOT WITHIN AST-SIT WITHIN EV-SIT	UT-T NOT WITHIN AST-T WITHIN EV-T	UT-L NOT WITHIN AST-L WITHIN EV-L	UT-P NOT WITHIN AST-P WITHIN EV-P
–	–	UT-SIT NOT WITHIN AST-SIT NOT WITHIN EV-SIT	UT-T NOT WITHIN AST-T NOT WITHIN EV-T	UT-L NOT WITHIN AST-L NOT WITHIN EV-L	UT-P NOT WITHIN AST-P NOT WITHIN EV-P

In the analysis of INFL in Blackfoot, Ritter and Wiltschko propose that a morpheme *-hp*, which marks clauses in which the verb has at least one first- or second-person argument, marks coincidence between UT-Participants and EV-Participants:

¹⁴ The availability of categories other than temporal ones for INFL and Asp is formalized by Ritter and Wiltschko as the Parametric Substantiation Hypothesis (PSH).

The order suffix *-hp* is used in root indicative clauses to signal that at least one participant of the reported event is also an utterance participant, i.e. a local (1st or 2nd) person. The absence of an overt order suffix in this type of clause indicates that none of the event participants is also an utterance participant. In other words, all event participants are ‘others’, i.e. 3rd person. (Ritter & Wiltschko 2010:12)

This suffix, in other words, is a marker of coincidence of identity. Consider the sentences in example (16) (Ritter and Wiltschko’s (10)).

(16) a. Kitsinóóhpoaawa

kit-ino-o-hp-ooawa

2-see-1:2-LOCAL-2PL

‘I saw you (PL)’

b. Kitsinóókihpoaawa

kit-ino-oki-hp-ooawa

2-see-2:1-LOCAL-2PL

‘You (PL) saw me’

c. Ana	póókaawa	inoयीwa	ani	imitááyi
<i>an-(w)a</i>	<i>pookaa-wa</i>	<i>ino-yii-Ø-wa</i>	<i>an-(y)i</i>	<i>imitaa-yi</i>
DEM-PROX	child-PROX	see-DIR- 3 -PROX	DEM-OBV	dog-OBV
‘The child saw the dog’				
(Ritter & Wiltschko 2010:13)				

In (16)a and (16)b, the local morpheme indicates coincidence between an utterance participant (the speaker or the listener) and the event participants, while in (16)c, the absence of this morpheme indicates non-coincidence.¹⁵ Expressing these relations in the set-theoretic terms from (5) gives us (17):

- (17) a. $UT-P = \{1, 2\}$ $EV-P = \{1, 2\}$ [+COIN]
 b. $UT-P = \{1, 2\}$ $EV-P = \{3, 4\}$ [-COIN]

In (17)a, there is coincidence between UT-P and EV-P, since UT-P is a subset of EV-P. (In fact, the two sets are identical, but the morpheme *-hp* is present if the matrix verb has either a first- or a second-person argument, regardless of whether it has an additional third-person argument (Ritter, pc, 2010). In (17)b, on the other hand, the verb has neither first- nor second-person arguments, and hence the utterance participants are not a subset of the event participants, a situation of non-coincidence marked morphologically by the absence of the *-hp* morpheme. These Blackfoot data constitute evidence that coincidence of identity is syntactically encoded, in contexts beyond those posited by Hale for Warlpiri.

¹⁵ Notice, however, that the *-hp* morpheme marks the presence of *one* of the event participants. That is, the set of utterance participants need not be wholly subsumed within the set of event participants for *-hp* to appear. Strictly, then, it may not be a marker of true central coincidence. However, as the INFL system of Blackfoot is peripheral to my own research, I do not investigate it here.

The question arises as to whether there are broader instantiations of the encoding of coincidence of identity. I propose that there are indeed. The copula, I suggest, is a marker of coincidence, one that is cross-linguistically as pervasive as tense. I develop this proposal in the next section.

2.1.3. Copulas as markers of coincidence of identity

The copula does not mark equation. That is, it does not encode a function expressing identity between two items. If it did – if it were the linguistic expression of the equality relation in mathematics – the items related by it could be exchanged without changing the interpretation:

- (18) a. $11 + 2 = 12 + 1$
 b. $12 + 1 = 11 + 2$
 c. $\{1, 4, 37\} = \{1, 4, 37\}$

The equality relation is symmetrical: (18)a and (18)b are mathematically equivalent expressions. The equality relation is the same in set theory as in arithmetic; the two sets in (18)c can be reversed around the equality relation without affecting the meaning of the expression.. However, the same is not true of most copular clauses, as we can see from (19)-(21).

- (19) a. Torontonians are Canadians.
 b. #Canadians are Torontonians.
 (20) a. A tiger is a cat.
 b. #A cat is a tiger.
 (21) a. Mary and Marie-Louise are Tł̥chq̣ people.
 b. #Tł̥chq̣ people are Mary and Marie-Louise.

The subject nominal and predicate nominals in (19)a-(21)a cannot be exchanged while preserving the interpretation; indeed, (19)b-(21)b are nonsensical unless understood in some metaphorical sense, a sense quite different from (19)a-(21)a. However, the subject and predicate nominals of (22)-(24) are indeed amenable to exchange without a change in interpretation.¹⁶

(22) a. Canucks are Canadians.

b. Canadians are Canucks.

(23) a. A mountain lion is a cougar.

b. A cougar is a mountain lion.

(24) a. Nicholas is Nick.

b. Nick is Nicholas.

To explain the difference between copular clauses of the types represented by (19)-(21) and (22)-(24), Mikkelsen (2005) noted that the subject and complement of a reversible copular clause must be of the same semantic type; they must both be semantic predicates or both be referential. This appears to be true: in (21)a, for example, *Mary and Marie-Louise* is a (conjoined) referential DP of type *e*, while *Thịchọ people* is a predicate of type $\langle e, t \rangle$:

¹⁶ In this section, I use the term *predicate*, unmodified, to refer to a syntactic predicate: that is, the phrase whose properties are attributed to the subject of the clause. The term *semantic predicate* I use in the sense of expressions of type $\langle e, t \rangle$; that is, those that map an entity to a truth value. Thus, (24a) has a subject, *Nicholas*, which is referential (type $\langle e \rangle$) and a (syntactic) predicate, *Nick*, which is also referential; by contrast, the subject of (23a), *a mountain lion*, is a semantic predicate (type $\langle e, t \rangle$), as is the (syntactic) predicate, *a cougar*.

(25) $D_{\langle e,t \rangle}: F(x_e)[T\dot{h}ch\dot{o} \text{ person}(x)]$

And, indeed, we find that (21)a is not reversible. The examples in (22)-(24) further support Mikkelsen's characterization: both nominals in (22) and (23) are semantic predicates of type $\langle e,t \rangle$, while both nominals in (24) are referential (type e). But while Mikkelsen's requirement is sufficient to explain some infelicities, it does not explain others, such as (20)b. Both nominals in (20)b are semantic predicates of type $\langle e,t \rangle$:

(26) a. $D_{\langle e,t \rangle}: F(x_e)[cat(x)]$

b. $D_{\langle e,t \rangle}: G(y_e)[tiger(y)]$

What, then, renders (20)b infelicitous? This result is explained if the copula is a marker of coincidence of identity.

Recall the set-theoretic explanation of central coincidence of identity in section 2.1.1: central coincidence of identity consists of subsumption of the set denoted by the subject within the set denoted by the predicate:

(27) $F \text{ is } G \equiv F \subseteq G$

That is, F is G if and only if every member of the set denoted by F is also a member of the set denoted by G ; the reverse, however, need not be true. For the clause " F is G " to be reversible, F and G must denote identical sets:

(28) a. $F \subseteq G \equiv G \subseteq F \text{ iff } F = G$

b. $F \text{ is } G \equiv G \text{ is } F \text{ iff } F \text{ and } G \text{ denote the same set}$

The contention that the copula instantiates this subsumption relation is borne out by the reversible copular clauses in (22)-(24) where the two nominals in each clause denote identical sets (sometimes sets of just one member, as in (24)).

This observation is actually not new:

“Subsumption, not equation, is the function of the copula.” (Jespersen, 1924:154)

The observation that, to be reversible, copular clauses must have subject and predicate nominals that denote identical sets falls neatly out of Jespersen’s characterization of the copula as a marker of subsumption, a characterization that is also perfectly in line with the formalization by Ritter and Wiltschko of Hale’s notion of coincidence of identity.

Coincidence, then, is a semantic feature that has effects in the syntax; it is the expression of the semantic relation of subsumption. Coincidence as realized by tense is a subsumptive relationship between times; if Ritter and Wiltschko’s analysis of Halkomelem and Blackfoot is correct, these two languages use INFL to encode subsumptive relationships between locations and discourse participants, respectively; this section demonstrates that the copula, when it links subject and predicate nominals, is an expression of coincidence of the entities or semantic predicates denoted by those nominals.

There is a further implication of this conclusion. If coincidence is the fundamental relation of predication, as Hale claims, the copula is a tool that enables predication. Its function is to change arguments into predicates. Therefore, the distinction made between semantic and syntactic predicates is a significant one: syntactically, DPs are not and

cannot be predicates in and of themselves, but require a copula, with its [+COIN] feature, in order to form predicates.¹⁷

2.1.4. Other encodings of coincidence

If the copula is an expression of [+COIN] (subsumption), the conditions on reversibility demonstrated in the preceding section should apply to other encodings of [+COIN] as well. It should be impossible, in other words, to reverse a relation mediated by an encoder of coincidence unless the two items related by that encoder have identical interpretations. For example, where [+COIN] relates two spatial or temporal nominals, it should be impossible to reverse their respective syntactic positions except in the case where they denote the same spatial or temporal extent.

Hale (1986) considers spatiotemporal prepositions such as *in* to be instances of central coincidence. This approach is followed by Demirdache and Uribe-Etxebarria (2004, 2005). We find that the predictions about reversibility are confirmed:

(29) a. Sunrise, at seven o'clock, is when my ship sails.

b. Seven o'clock, at sunrise, is when my ship sails.

(30) a. Toulon, in France, is where it will arrive.

b. #France, in Toulon, is where it will arrive.

¹⁷ Some languages do not have copulas: in those languages, I maintain, either bare nouns are predicative (as Longobardi argues) or the coincidence feature is borne by predicative derivational morphology attached to the predicate noun (as is the case in many Salishan languages – Thomas Hess, pc, 2006) or by some equivalent syntactic means..

(29)a is reversible if and only if *sunrise* and *seven o'clock* refer to the same temporal moment, while (30)a is not reversible, since *France* and *Toulon* refer to different spatial extents, even though there is a relationship of [+COIN] in both cases. In Demirdache and Uribe-Etxebarria's terms, *Toulon* is WITHIN *France*, but the reverse cannot be true, since they do not denote the same spatial extent.¹⁸ Copulas, therefore, are sensitive to the unidirectionality of the coincidence relation.

This section has introduced the concept of coincidence of space, time and identity, and demonstrated that copulas encode the last of these.¹⁹ This is the basic theoretical machinery that will be developed in Chapter 3 to analyze the copulas of Tłchq Yatì. Before such an development can be undertaken, however, it is necessary to examine the syntactic structure of the Tłchq Yatì clause, which is the topic of the next section of this chapter.

2.2. Tłchq Yatì

Tłchq Yatì ([tʰĩ.ʈʰõ ja.tʰĩ:], aka Dogrib) is a language of the Athapaskan (Dene) family spoken by approximately two thousand people (Statistics Canada, 2006) in the communities of the Tłchq Government (Behchokò, formerly known as Rae-Edzo; Whatì (Lac La Martre); Gamètì (Rae Lakes); and Wekweètì (Snare Lakes) and in nearby

¹⁸ That *at* generally corresponds to simple subsumption [+COIN] while *in* corresponds to proper

subsumption is a question for further investigation. Karsten Koch (pc, 2012) points out that in addition, the semantics of *at* is more complex than that of *in*, allowing *breakfast, at 7:00*, but not *?7:00, at breakfast*.

¹⁹ Copulas also, in many languages including English, host TAM morphology, which, as we have seen, encodes coincidence between times or (by the PSH) locations or participants. Such morphology is common to all verbs in such languages, and is not a defining characteristic of copulas.

Yellowknife, Ndilq and T'èehdaà (Dettah), all located between Great Slave and Great Bear Lakes in the Northwest Territories. Typologically, Tłıchq Yatı̄ is a highly synthetic language whose verbs show agreement in person and number with both subject and object. Viewpoint aspect, mode and gender agreement are also obligatorily marked on the Tłıchq verb, while nouns show no inflection except for possession (Ackroyd, 1982:31-35; Saxon, 1986:6-10; Tłıchq Community Services Agency, 2007:39-40, 45-48).²⁰, ²¹ Verbal morphology is overwhelmingly prefixing: a verb, therefore, consists of a root at the right edge, to which are appended numerous prefixes, including, in addition to the inflectional categories already mentioned, inflection for causative or passive as well as incorporated nouns and postpositions.^{22,23}

Tłıchq Yatı̄ constituent order is SXOV (Saxon, 1986:3), where X is an oblique object or adjunct, and constituents are generally head-final, as in (31).²⁴

²⁰ In an earlier stage of the language, plural nouns bore a suffix *-ke* (Leslie Saxon, pc, 2007 Petitot, 1876:lvi). Morphological plural marking is not a productive process in the modern language.

²¹ Gender is a less productive category than in some other languages of the family. Agreement is only consistently marked with “areal” subjects or objects, which constitute a semantically defined class of nouns denoting broad spatial or temporal extent. Agreement with these nouns is marked on the verb with the prefix *go-/ho-* (Ackroyd, 1982:130).

²² Derivational suffixes exist, however, that create nouns and adverbs from verbs (Saxon, 2000). I do not consider these under verbal morphology.

²³ When a postposition is incorporated into the verb word, its complement is either the direct or the indirect object of the verb. For discussion and examples, see Ackroyd (1982:154-159).

²⁴ Modifier and modified in NPs, however, can occur in either order, with differences in interpretation. See Saxon (2000) for word order in relative clauses.

- (31) a. Whaà, t'eeke edemq gha
 [[whaà,] [t'eeke [ede-mq gha]
 long.ago girl REFL-mother for
 dzèh k'ageeʔà ɣlè...
 dzèh k'a-gee-ʔà ɣlè]]
 gum THM-PFV.3PL.SBJ-chew PAST
 'Long ago, girls chewed gum for their mothers...' ²⁵

(TCSA 2007)

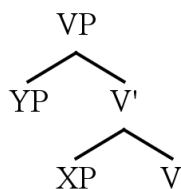
- b. T'akwe whaà done k'1 t'à
 [[t'akwe whaà] [done [k'1 t'à]
 before long.ago person birchbark with
 elà gehtsɿ ɣlè
 elà geh-tsɿ ɣlè]
 boat IPFV.3PL.SBJ-make PAST
 'Long ago people used to make boats with birchbark.'

(TCSA 2007)

We see that verbs follow their complements ((31)a, b) and that the adpositions *gha* ((31)a) and *t'à* ((31)b) likewise follow their complements. The structures of these constituents are illustrated in (32)a, b.

²⁵ The first and fourth lines of these examples are from the *Tł̥chq̓ Yatı̀ Multimedia Dictionary* (Tł̥chq̓ Community Services Agency, 2007). The morphological breakdowns and glosses (second and third lines) are my own.

(32) a.



b.



XP, in (32)a, is the complement of the verb and YP is the subject.²⁶

Tł̥chq̣ Yatì is a pro-drop language: pronominal subjects and objects are normally omitted, since the rich system of agreement mentioned above renders them semantically superfluous (Saxon, 1986:49ff.).

The verb, like the verbs of other Athapaskan languages, is often described as morphologically discontinuous (Ackroyd, 1982:62-63). For the great majority of verbs, the root at the right edge is obligatorily accompanied by “thematic” prefixes leftward in the verb word.²⁷ Inflectional affixes appear between these thematic prefixes and the root. An analogy exists with phrasal verbs such as *look up* in English, where inflection for tense (*-ed*), aspect (*-ing*) or person (*-s*) occurs between the two lexical elements. A minority of verbs lack thematic prefixes; among them is the copular verb *ts’uł̥*.²⁸ Verb roots themselves often show paradigmatic variation with viewpoint aspect and mode: the

²⁶ I abstract away from vP in (32)a.

²⁷ Some other Athapaskan languages have TAM suffixes that appear rightward of the verb root. Tł̥chq̣ Yatì does not, but has TAM-marking auxiliaries, some of which are identical to forms of the copulas and are likely historically derived from them (Welch, 2008:104).

²⁸ I cite Tł̥chq̣ Yatì verbs in the first person plural imperfective, following the practice of the *Tł̥chq̣ Yatì Multimedia Dictionary* (Tł̥chq̣ Community Services Agency, 2007). It should be noted that this form can also be interpreted as an impersonal one, with the interpretation ‘one’ or ‘someone’ rather than ‘we’.

roots of the two copulas, for example, are *-l̥* and *-t'e* in the imperfective, but *-l̥è* and *-t'è* in the perfective and optative (T̥ch̥o Community Services Agency, 2007; Welch, 2008:20-24). Viewpoint aspect and mode are therefore often doubly marked, both by inflectional affixes and by verb stem variation.

2.2.1. Clause structure in T̥ch̥o Yatì

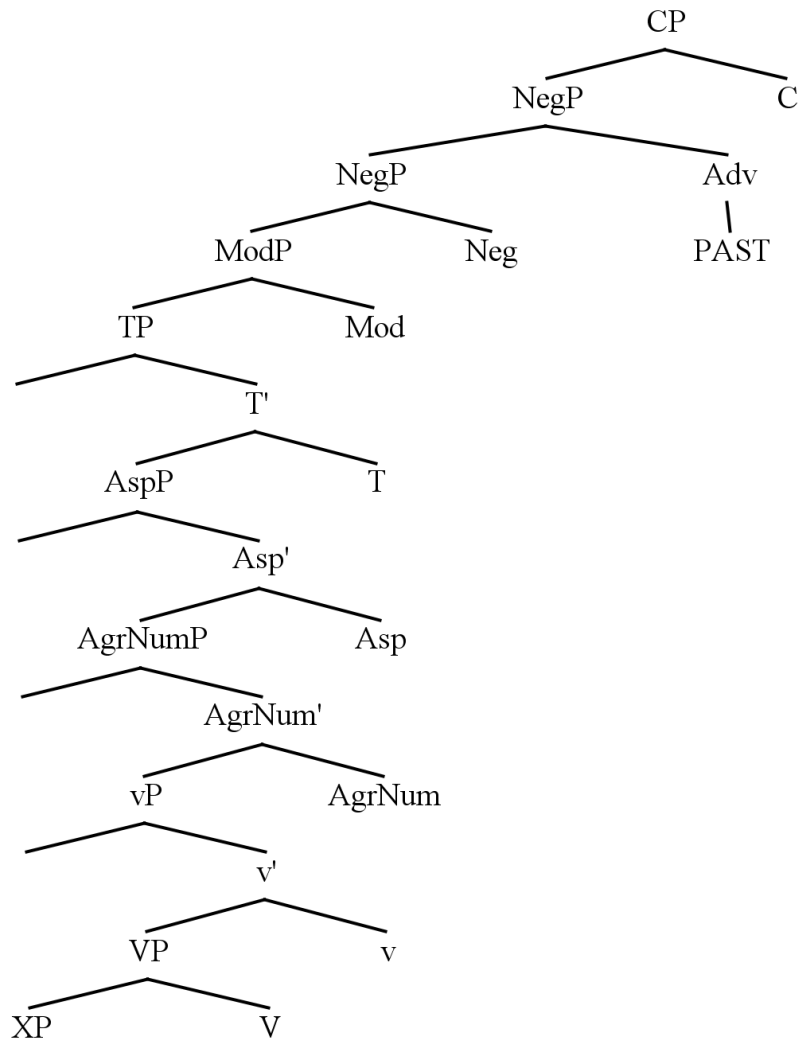
The following sections are devoted to detailing the syntactic structure of clauses. A word or two is in order about background assumptions. In keeping with the framework of Principles and Parameters (Chomsky & Lasnik, 1993) and more specifically Minimalism (Chomsky, 2000, 1995b), I assume a clause structure that includes the projections CP, TP, vP, and so forth.²⁹ Given the head-final syntax and root-final verb structure already discussed, I assume that items that follow the verb are functional heads in the clausal spine, unless there is evidence to the contrary.

The structure I propose for the T̥ch̥o Yatì clause is illustrated in (33).³⁰

²⁹ I use the term TP rather than IP because, unlike Blackfoot or Halkomelem (Ritter & Wiltschko, 2005, 2009, 2010), but like Russian (Mezhevich, 2006), T̥ch̥o Yatì has an obligatory tense distinction, as will be demonstrated in this section.

³⁰ Specifier positions are left as blank nodes where they are generally filled by subjects, and left out where not.

(33)



As mentioned previously, I assume CP, TP and vP . The projections NegP, ModP, AspP and AgrNumP, being more cross-linguistically variable (and less universally accepted in the literature), will be discussed and justified in the following sections, along with vP , which, although widely assumed to be cross-linguistically universal, is central to the hypothesis advanced in Chapter 3 of this dissertation, and hence deserves detailed treatment.

2.2.2. vP and AgrNumP

The structure of the VP has already been illustrated. Above the VP I assume a light verb phrase, vP. This is a projection that under various names has been introduced to account for a number of different but conceptually related phenomena. Larson (1988), under the name “VP-shell”, proposed it in order to explain word-order facts in English double-object constructions. Under Larson’s system, the light verb is a projection, realized phonetically in some languages but not in others, that introduces transitivity as well as the external argument that acts as an agent or a cause of the predicate. Under the name Voice, a light verb was proposed by Kratzer (1996) as the introducer of the external argument as well as the event argument that distinguishes between eventive and non-eventive predicates. Chomsky (2000) uses the term *v* for a functional head above VP that has both event and external arguments in specifier positions and the VP as its complement. Pylkkänen (2002) argues for multiple functional heads above V, introducing causatives, applicatives, transitives, and their arguments. Folli and Harley (2005) propose “flavours” of *v*, rather than multiple heads: in their scheme, *v* has more than one possible instantiation, each with its own argument structure, accounting for the differences between agentive and non-agentive arguments and between the kinds of predicates that take those arguments.

The common thread that unites these various approaches is change. The light verb projection is the locus of the semantics of change and dynamism. Proposed to explain unexpected syntactic data, its properties nevertheless display this semantic commonality.

Agentivity, causation, transitivity: all these properties relate to the ability to cause change.³¹

If *v* is a universally present projection, or even if it is simply universally available, we might expect to find instantiations of it in Tl̥chq Yatì. There is compelling evidence that this is so. One instantiation of *v* that is widely agreed upon in the field is the causative. There exist morphological causatives in Tl̥chq Yatì, marked by an *h*- prefixed to the verb stem, as in (34)b and (35)b:

(34) a. ełààts'ede

ełàà-ts'e-de

THM-IPFV.1PL.SBJ-die

'die'

(TCSA 2007)

b. ełààts'ehde

ełàà-ts'e-**h**-de

THM-IPFV.1PL.SBJ-CAUS-die

'kill'

(TCSA 2007)

³¹ Or to undergo it; unergatives (agentive but intransitive clauses such as *Michel ran*) are generally analyzed (beginning with Larson (1988)) as underlyingly causative, where the subject is both the agent and the theme of the event of running.

- (35) a. Goht'q tɬ'ɪ k'e **egq**.
 goht'q tɬ'ɪ k'e Ø-gq
 clothes string on IPFV.3.SBJ-dry
 ‘Clothes are drying on the line.’

(TCSA 2007)

- b. Dq hazhò ehgwàa ha hwe **gehgq**
 dq hazhò ehgwàa ha hwe ge-**h**-gq
 person all dryfish for fish IPFV.3PL.SBJ-CAUS-dry

gɬwq.

gɬ-wq

IPFV.3PL.SBJ-want

‘Everybody wants to dry a lot of fish for dryfish.’

(TCSA 2007)

While causatives formed with a morphologically independent verb, such as English *make*, might be susceptible to a biclausal analysis, with the causative verb taking a CP/TP complement, this kind of analysis is problematic for morphological causatives such as that in (34)b and (35)b. I suggest, following Kratzer (1996) and Chomsky (2000), that causative morphology is introduced at the light verbal projection, v , and external subjects at its specifier, as below, where (36) illustrates the v P structure of the embedded clause in (35)b:³²

³² I abstract away from subject agreement and from the adjunctive PP *ehgwàa ha* ‘for dryfish’ and assume a control structure in which the subject of the embedded clause is a null PRO.

(36)



I further assume, again following both Kratzer and Chomsky, that v introduces external arguments in general, and that it distinguishes predicates of external subjects (that is, those that are agents, animates, or causers) from predicates where the subject is an internal argument. Rice and Saxon (2005) adduce evidence for multiple subject positions in Athapaskan languages, including both VP-internal and -external positions. Among these positions is [Spec, NumP], which, in their analysis, hosts third-person subjects that are “discourse topics, animate, or agentive”. The last two characteristics have also been proposed for v (Folli & Harley, 2005; Kratzer, 1996). Only animate subjects trigger subject number agreement on the verb, which accounts for Rice and Saxon’s positing Num as a functional head.³³ I suggest that such subjects are introduced at [Spec, v P], and that only such subjects can then rise to positions where agreement is checked.³⁴

³³ Rice and Saxon used the term Num for this projection, rather than Agr or AgrNum, presumably to avoid confusion, since their clause-structure proposal already includes both an AgrS and an AgrO. Nevertheless, unlike the Num that often appears in literature on the nominal domain, it is an agreement head rather than the introducer of an intrinsic number feature. For this reason (and because I do not assume AgrS or AgrO) I refer to it henceforth as AgrNum.

The need for an AgrNum projection in Tɬɬchɔ Yatɬ arises from the facts of subject agreement:

Subjects in Slave and Dogrib: Human agentive subjects must occur in [Spec, NumP] while inanimate, nonagentive subjects must occur in the VP-internal subject position. Other subjects may occur in either position. (Rice & Saxon 2005:713)

Why should this be the case? First of all, number agreement is barred absolutely when the subject is inanimate, as in (37).

(37) a. **Mɬ** **taɪ** wha k'e dawhela.

mɬ **taɪ** wha k'e da-whe-Ø-la.

net three pole on up-CONJ-IPFV.**3.SBJ**-be.located.plural/ropelike.objects

‘Three nets are hanging on the pole.’

(TCSA 2007)

b. ***Mɬ** **taɪ** wha k'e dagela.

mɬ **taɪ** wha k'e da-ge-la.

net three pole on up-3PL-IPFV.**3PL.SBJ**-be.located

(Intended: ‘Three nets are hanging on the pole.’)

(MS 2010)

³⁴ If *v* is a phase, as is proposed by Chomsky (2001), this result is expected: only subjects at the phase edge (Spec, *v*P) are available to movement operations.

- c. Eyɪ bebiə weghòò dɪ xàɰhshɔ.
 eyɪ bebiə we-ghòò dɪ xà-ɰh-shɔ
 DEM baby 3-tooth four out-PFV.3.SBJ-grow
 ‘Four of the baby’s teeth have grown through.’
 (TCSA 2007)

- d. Ke nàke àila.
 ke nàke ài-Ø-la
 shoe two THM-IPFV.3.SBJ-remain. plural/ropelike.objects
 ‘There are two shoes left behind.’
 (TCSA 2007)

In (37) we see that even when the subject includes an explicit numeral, only verbs unmarked for plural ((37)a, c) are acceptable: morphological plural agreement on the verb is ungrammatical ((37)b). Even when the verb stem itself is one that can only be used with semantically plural subjects ((37)a, d), no morphological plural marking appears if the subject is inanimate.

However, with a plural animate subject, plural agreement is normal ((38)a, b), though not mandatory ((38)c), even when the subject includes an explicit numeral ((38)d). It is of course barred with singular animate subjects ((38)e).

- (38) a. Chekoa sɪlài yàgehka.
 chekoa sɪlài yà-geh-ka
 child five THM-IPFV.3PL.SBJ-jump around
 ‘Five children are jumping around.’
 (MS 2010)

b. Chekoa yàgehka.

chekoa yà-**geh**-ka

child THM-IPFV.**3PL.SBJ**-jump around

‘Children are jumping around.’

(MS 2010)

c. Chekoa yàʔehka.

chekoa yà-ʔ**eh**-ka

child THM-IPFV.**3.SBJ**-jump around

‘The/a child is jumping around/(The) children are jumping around.’

(MS 2010)

d. Chekoa sɪlài yàʔehka.

chekoa sɪlài yà-ʔ**eh**-ka

child five THM-IPFV.**3.SBJ**-jump around

‘Five children are jumping around.’

(MS 2010)

e. *Chekoa ɬè yàgehka

Chekoa ɬè yà-**geh**-ka

child one THM-IPFV.**3PL.SBJ**-jump around

(‘Intended: one child is jumping around.’)

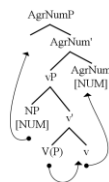
(MS 2010)

On the basis of these data, I assume that AgrNum licenses animate subjects: that without an AgrNum projection, number agreement cannot be marked, and animate subjects, which bear a [NUM] ϕ -feature, cannot check this feature; any derivation that

includes an animate subject will crash ((39)a). When AgrNum is present, on the other hand, this feature may be checked and animate subjects are allowed ((39)b).³⁵

(39) a.

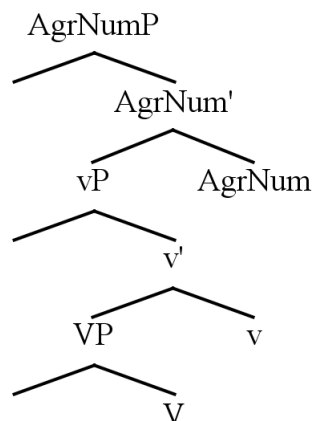
b.



So far, then, the map of Tɬɬchɔ Yatɪ clause structure includes a vP and an AgrNumP above the VP, appearing as follows:

³⁵ Note that in this analysis the [NUM] feature must be realized, but plurality [NUM:PL] need not be, as semantically plural animate subjects do not necessarily trigger plural number agreement (38c, d). I am assuming that [NUM] can be valued as [\pm PL], with [-PL] interpreted as general number (either singular or plural). This matter is dealt with in more detail in chapter 5.

(40)



2.2.3. AspP

Verbs in Tł̥chq Yatı̄ bear obligatory aspect marking, as demonstrated in (41).

(41) (repeated (31)b)

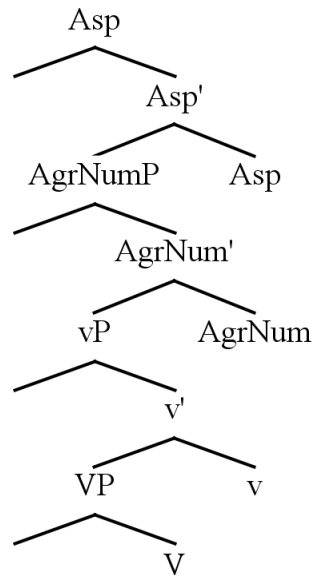
T'akwe	whaà	done	k'ı	t'à	elà	gehtsı	ı̄lè.
[[t'akwe	whaà]]	[done	[k'ı	t'à]	elà	geh-t्सı]	ı̄lè]
before	long	person	birchbark	with	boat	IPFV.3PL.SBJ-make	PAST
‘Long ago people used to make boats with birchbark.’							

(TCSA 2007)

Aspect is marked separately from tense, as is apparent in (41), where the morphological aspect marking on the verb is separate from the past marker *ı̄lè*.³⁶ This suggests that Asp is a separate functional head, as in (42):

³⁶ This past marker is identical to, and likely historically derived from, the third-person singular perfective form of Copula 1.

(42)



2.2.4. TP, ModP, and CP

Although the verb is the only obligatorily overt sentential constituent, and the constituent order is SOV, sentences in Ṭḥcḥq̣ Yaṭi are often not verb-final, as there are numerous post-verbal auxiliaries marking categories such as evidentiality, mood and tense. A selection of these auxiliaries appears in (43)-(51).

(43) le (negative marker)

- a. K'acḥḷ ḍɔkẉɔ̣ neḍɛ-le
 k'acḥḷ ḍɔ-kẉɔ̣ ne-ḍɛ-le
 again person-flesh IPFV.2SG.SBJ-eat-NEG

‘Do not eat human flesh again!’

(Wiebe, Zoe, Siemens, & Beaulieu, no date:10)

- b. Dahdja t'asadi-le.
 dahdja t'asa-Ø-di-le
 sandpiper something-IPFV.3.SBJ-say-NEG
 'The sandpiper doesn't make a sound.'
 (Wiebe et al., no date:14)

(44) ni (interrogative marker)

- a. Bò nezɪ ni?
 bò nezɪ ni
 meat IPFV.3.SBJ-good QN
 'Is the meat good?'
 (TCSA 2007)
- b. Tleekwoo hɪ nɛɛwɔ ni?
 tleekwoo hɪ nɛɛwɔ ni
 butter too IPFV.2SG.SBJ-want QN
 'Do you want butter too?'
 (TCSA 2007)

(45) nɔ̀ (evidential marker)

- a. K'omoòdɔ ekw'ɔ̀ ta tɬweè wheda nɔ̀.
 k'omoòdɔ ekw'ɔ̀ ta tɬ-we-è whe-da nɔ̀.
 morning bone among dog-death-PNS PFV.3.SBJ-lie EVID
 'In the morning, a dead dog, it seemed, lay among the bones.'
 (Football, 1972:22)

b. Th̩ yɪɪʔà ɟlè nɔ̀.

th̩ yɪɪ-ʔà ɟlè nɔ̀

dog 4.OBJ.PFV.3.SBJ-eat PAST EVID

‘Obviously the dog ate it.’

(TCSA 2007)

(46) sò̀ (prohibitive marker)

a. Naɪkw'ɪ sò̀.

na-ɪ-kw'ɪ sò̀

THM-OPT.2SG.SBJ-fall PROHIB

‘Be sure you don’t fall.’

(TCSA 2007)

b. welè sò̀

we-lè sò̀

OPT.3.SBJ-COP1 PROHIB

‘don’t let it happen, don’t allow it’

(TCSA 2007)

(47) ha (future marker)

a. Ekɔ̀ echo neʔì ha.

ekɔ̀ echo ne-ʔì ha

there monster IPFV.2SG.SBJ-see FUT

‘That way, you will see the monster.’

(Wiebe et al., no date:12)

- b. Neʒɪ ha.
 neʒɪ ha
 IPFV.3.SBJ.good FUT
 ‘It is going to be good.’
 (TCSA 2007)

(48) ɣlè (past marker)

- a. Dɪɪ ekwò nets’q hq̣t’e ɣlè.
 dɪɪ ekwò ne-ts’q ha-ɣ-t’e ɣlè
 DEM caribou 2SG-belonging to IPFV.3.SBJ-COP2 PAST
 ‘This caribou was yours.’
 (MS 2010)

- b. Shèts’etɪ-le ɣlè.
 shè-ts’e-tɪ-le ɣlè
 THM-IPFV.1PL.SBJ-eat-NEG PAST
 ‘People were not eating.’
 (MLBW 2009)

(49) welì/wɪlì/lì (possibility marker)

- a. Ekwò ghq̣ sègeze welì ahxq̣.
 Ekwò ghq̣ sè-ge-ze welì ahxq̣
 caribou from THM-IPFV.3PL.SBJ-eat POSS maybe
 ‘They might eat caribou.’³⁷
 (LM 2011)

³⁷ This verb and some others meaning ‘eat’ require an oblique object.

b. Ayì dats'ìlà wìlì?

ayì dà-ts'ì-là wìlì

what how-PFV.1PL.SBJ-do POSS

‘What can we do?’

(TCSA 2007)

(50) welè (jussive marker)

a. Amì sets'q elà deʔì sì,

amì se-ts'q elà de-Ø-ʔì-μ sì,

who 1SG-belonging.to boat THM-IPFV.3SG.SBJ-steal-NML FOC

eyaelì welè!

eya-Ø-lì welè

sick-IPFV.3.SBJ-COP1 JUSS

‘Whoever steals my boat, let him be sick!’

(MS 2010)

b. Amì wedziì gòhlì sì eèhk'q welè.

amì we-dziì gòh-lì-μ sì eèh-kw'q welè

who 3-ear AR.IPFV.3.SBJ-COP1-NML FOC IPFV.3.SBJ-hear JUSS

‘Whoever has ears, let them hear.’

(CBS 2003: Matthew 13:9)

(51) hq̣t'e (emphasis marker)³⁸

a. Kwe ghàts'eeda hq̣t'e.

rock IPFV.1PL.SBJ-look EMPH

‘We are looking at the rock.’

(TCSA 2007)

b. Tsoòhkwì zq̣ t'à sahcho ełàèwì hq̣t'e.

woodchips only with grizzly IPFV.3.SBJ-die EMPH

‘With only woodchips the grizzly is dying.’

(Wiebe et al., no date:22)

The order of these auxiliaries can be used to determine the higher fields of the clause structure of Ṭḥcḥq̣ Yatì. The future *ha* precedes the modal auxiliaries *welè* (jussive) and *weli/wili* (possibility), which precede the negative marker, *-le*, as demonstrated in (52):

(52) a. ...hanikò naxìxè sìghà hòzq̣ **ha welè**

hanikò naxì-xè sìghà hò-Ø-zq̣ **ha welè**

but 2PL-with well THM-IPFV.3.SBJ-exist **FUT JUSS**

dehwhq̣.

de-h-wq̣

THM-IPFV.1SG.SBJ-want

‘...but that you may live in a right way.’ (Lit., ‘but I want that it will be well with you.’)

(CBS 2003: 1 Corinthians 7:35)

³⁸ This word is identical to, and likely derived from, the third-person singular imperfective of Copula 2.

b. Edahxq neghq nahoele **ha** **weli.**

edahxq ne-ghq nahoe-Ø-le **ha** **weli.**

maybe 2SG-for THM-IPFV.3.SBJ-forgive **FUT** **POSS**

‘... in the hope that he may forgive you.’ (Lit., ‘maybe he might be going to forgive you.’)

(CBS 2003: Mark 4:13)

c. K’achɿ jìecho wɿɿzɿ nek’e dehshe **welè-le.**

k’achɿ jìecho wɿɿzɿ ne-k’e deh-she **welè-le**

again fruit at.all 2SG- on IPFV.3.SBJ-grow **JUSS-NEG**

‘May no one ever eat fruit from you again.’ (Lit., ‘may no fruit at all grow on you again.’)

(CBS 2003: Mark 11:14)

The negative marker *-le* in turn precedes the past marker *ɿlè*:

(53) ... hanikò kèhqìwo gots'q hanì hòʔq-**le** **ɿlè.**

hanikò kè-ho-ì-wo go-ts'q hanì hòʔq-**le** **ɿlè**

but THM-AR-PFV.3.SBJ-begin AR-from thus exist-NEG **PAST**

‘... but it was not this way from the beginning.’

(CBS 2003: Matthew 19:8)

The place of the past marker is cross-linguistically unusual and unexpected. Assuming that both the future marker *ha* and the past marker *ɿlè* are merged at T leads to a contradiction, since, as we have seen, the modal markers occur between them. Furthermore, the future and past markers can co-occur, with a past deontic interpretation:

- (54) a. Sekò gok'eehtì **ha** **ɿlè.**
 se-kò go-k'ee-h-tì **ha** **ɿlè**
 1SG-house AR-around-IPFV.1SG.SBJ-sweep **FUT** **PAST**
 'I was supposed to be sweeping my house.'
 (TCSA 2007)

- b. Nezì **ha** **ɿlè.**
 ne-Ø-zì **ha** **ɿlè**
 THM-IPFV.3.SBJ-be.good **FUT** **PAST**
 'It should have been good.'
 (TCSA 2007)

The co-occurrence of these two temporal markers falsifies the hypothesis that they are instances of the same functional head. Furthermore, if we assume a standard model with ModP dominating TP, we find that the future *ha* fulfills expectations by preceding the modal markers *weli* and *welè*, but the past *ɿlè* remains in an unexpected position.

The picture becomes clearer when we examine the properties of *ha* and *ɿlè* with respect to obligatoriness. We find that the former is obligatory for a future interpretation (55). The latter, however, is not obligatory for a past interpretation; clauses lacking an explicit past marker can be interpreted as either present or past (but not future), as in (56).

- (55) a. Dìì dzèè edza. Hatsò agòhì **ha.**
 dìì dzèè edza hatsò a-gò-h-ì **ha**
 DEM day cold tomorrow THM-AR-IPFV.3.SBJ-CLAS-COP1 **FUT**
 'Today is cold. Tomorrow is going to be the same.'
 (LM 2011)

b. #D₁₁ dzeḗ edza. Hatsq agòhḷ.

d₁₁ dzeḗ edza hatsq a-gò-h-ḷ

DEM day cold tomorrow THM-AR.IPFV.3.SBJ-CLAS.COP1

??‘Today is cold. Tomorrow is (already) the same.’ / *‘Tomorrow will be the same.’

(LM 2011)

c. D₁₁ dzəṭanḷ dè setà nàzè ha.

d₁₁ dzəṭanḷ dè se-tà nà-Ø-zè ha

DEM afternoon when 1SG-father THM-IPFV.3.SBJ-hunt FUT

‘My father will go hunting this afternoon.’

(LM 2011)

d. ??D₁₁ dzəṭanḷ dè setà nàzè.

d₁₁ dzəṭanḷ dè se-tà nà-Ø-zè

DEM afternoon when 1SG-father THM-IPFV.3.SBJ-hunt

‘My father is (already) hunting this afternoon.’ (very odd sentence)

(LM 2011)

The interpretation of (55)a is explicitly future; that of (55)b, which lacks the future marker, cannot be future. Similarly, removing the future marker from the explicitly future (55)c yields (55)d, which is infelicitous if not ungrammatical, unlike the English translation: *my father is hunting this afternoon* is perfectly acceptable in English with future reference. Contrast this situation with that of (56).

(56) a. Eyɪ bò ɣht'e.

eyɪ bò ɣht'e

DEM meat raw

‘That meat is/was raw.’

(MLBW 2009)

b. Tooghàà hòtl'ò hqetse.

tooghàà hòtl'ò hq-e-tse

all night hard THM-IPFV.3.SBJ-cry

‘All night he cried loudly.’

(Football, Wedzin, Siemens, & Mantla, 2009)

c. Shèts'etɪ-le ɣlè.

shè-ts'e-tɪ-le ɣlè

THM-IPFV.1PL.SBJ-eat-NEG PAST

‘Somebody was not eating.’/ *‘Somebody is not eating.’

(MLBW 2009)

d. ɣxèɛ setà nàzè.

ɣxèɛ se-tà nà-Ø-zè

yesterday 1SG-father THM-IPFV.3.SBJ-hunt

‘Yesterday my dad went hunting.’

(LM 2011)

b. D₁₁ ha₁wa gots'ò edek'edats'eedi₁

d₁₁ ha-ɬ-wa go-ts'ò ede-k'e-da-ts'ee-d₁-m̀

DEM thus-IPFV.3.SBJ-be.long AR-to REFL-around-THM-IPFV.1PL.SBJ-defend-ADV

ats'ed₁ dahwhò ɬlè nì?

a-ts'e-d₁ de-aah-wò ɬlè nì

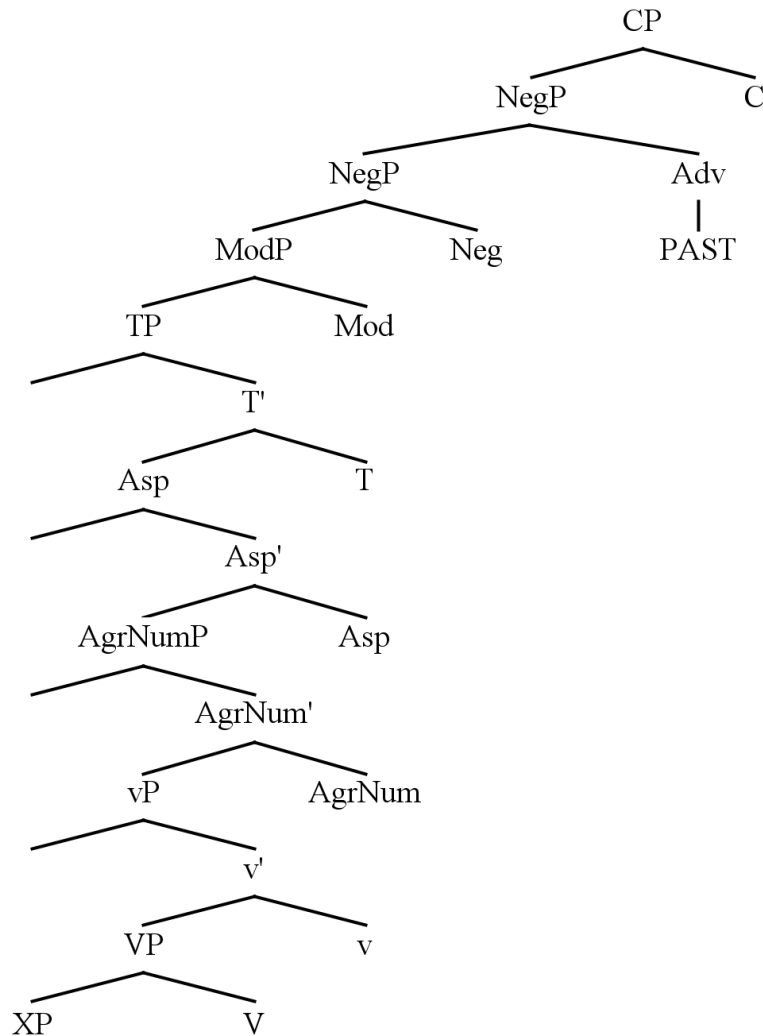
THM-IPFV.1PL.SBJ-say THM-IPFV.2PL.SBJ-think PAST Q

‘Have you been thinking all along that we have been defending ourselves to you?’

(CBS 2003: 2 Corinthians 12:19)

The full picture of the clause structure, first presented in (33), is repeated in (59).

(59) (repeated 33)



In this structure, the past marker is adjunctive, merged at NegP. The latter is dominated by CP, which in matrix clauses contains evidential and interrogative information as its categorial content; this again is a cross-linguistically typical result.

2.3. Conclusions

In this chapter we have introduced the concept of coincidence as a semantic formal feature with effects that can be seen in syntax. We have seen a review of the literature in which coincidence is applied to the analysis of syntax. Coincidence has proven to be a

fruitful concept for the description of TAM categories; interestingly, such categories have been argued to encode all three coincidence relations: space (in Halkomelem), time (in English, Russian and other tense languages) and identity (in Blackfoot). Other encodings of coincidence have appeared as well, particularly spatiotemporal adpositions.

A proposal introduced in this chapter is that copulas are an encoding of coincidence of identity. Central to this proposal is the demonstration that Jespersen's characterization of copulas as markers of subsumption produces identical set-theoretic relations to those of central coincidence. Further evidence in support of this analysis is the reversibility of only those copular clauses in which both subject and predicate refer to identical sets: this fact is entirely congruent with the facts of subsumption in set theory, or central coincidence as proposed by Hale for grammar.

In this chapter we have also had a brief tour of Tł̥chq̣ Yatì clause structure. We have seen that Tł̥chq̣ Yatì can be analyzed as having a clause structure that is cross-linguistically typical, with the exception of separate functional projections for aspect (marked morphologically) and tense (marked periphrastically) and for number agreement. This last difference is a consequence of the difference between animate and inanimate subjects; the former trigger number agreement and the latter do not.⁴¹

One cross-linguistically unusual characteristic of Tł̥chq̣ Yatì is that its tense opposition is apparently future/non-future rather than past/non-past, past marking being adjunctive rather than obligatory.

Having outlined the evidence and assumptions concerning clause structure, we will now examine the properties of the copulas, and the consequences of their potential place

⁴¹ This difference will be critical evidence for the analysis of adjectival predication in Chapter 5.

or places in this structure. The next chapter outlines the paradox of the interpretation of the two Tɬchɔ Yatì copulas and proposes two hypotheses to explain it, based upon differences in syntactic structure and in lexical semantics, respectively. It presents evidence in favour of a syntactic explanation: that one copula projects *v* and the other does not.

which these predictions are borne out by the facts of the behaviour of the copulas with NP complements. It demonstrates that the distribution of the two copulas is best explained by a model in which both copulas are of category V, with Copula 1, but not Copula 2, projecting a light verb (*v*).⁴³ Both copulas mark coincidence of identity; their differing interpretations arise, in this model, from the differences in the structure that they project. Evidence for this analysis includes differences between the two copulas with respect to compatibility with temporal adverbials, agentive subjects, and imperatives.

3.1. The paradox of interpretation

The two copulas of T̥chq̥ Yat̥i yield clauses that are interpreted differently, despite each copula having, according to the theory presented in Chapter 2, apparently little semantic content beyond marking central coincidence. That they are markers of central coincidence is apparent from the fact that copular clauses in T̥chq̥ Yat̥i, as in English, are reversible only if their two arguments denote identical sets:

- (1) a. Madl̥ s̥i ts'èko h̥ot'e.
 Madl̥ s̥i ts'èko ha-ɬ-t'e
 Madeleine FOC woman THM-IPFV.3.SBJ-COP2
 'Madeleine is a woman.' / 'Madeleine is the woman.'
 (MLBW 2011)

⁴³ I use the term *v* in the sense of Chomsky (1995; 2008), as a functional head that introduces an external argument, as well as the event argument à la Kratzer (1996) ; I abstract away from the “exploded *v*” containing causative, applicative, and transitivity heads (Pylkkänen, 2002).

b. Ts'èko sɿ Madlɛ hɔt'e.
 ts'èko sɿ Madlɛ ha-l-t'e
 woman FOC Madeleine THM-IPFV.3.SBJ-COP2
 'The woman is Madeleine.' / # 'A woman is Madeleine.'⁴⁴
 (MLBW 2011)

Their absence from appositive constructions, as in (2), demonstrates that they have little semantic content.

(2) Madlɛ, ts'èko, dzɔ gha nàzè.
 Madlɛ ts'èko dzɔ gha nà-Ø-zè
 Madeleine woman muskrat for THM-IPFV.3.SBJ-hunt
 'Madeleine, a woman, hunts for muskrat.'
 (MLBW 2011)

That is, *ts'èko* 'woman' is semantically predicative in both (1)a and (2), as illustrated in (3)a and (3)b respectively.

(3) a. Madlɛ sɿ ts'èko hɔt'e. (rep. from (1)a)
 Madlɛ sɿ ts'èko ha-l-t'e
 Madeleine FOC woman THM-IPFV.3.SBJ-COP2
 'Madeleine is a woman.'
 $\lambda x.[WOMAN(x)](Madeleine)$

⁴⁴ The interpretation 'a (specific) woman is Madeleine' is felicitous, but 'a (generic) woman is Madeleine' is not.

b. Madlɛ, ts'èko, dzɔ gha nàzè. (rep. from (2))

Madlɛ ts'èko dzɔ gha nà-Ø-zè

Madeleine woman muskrat for THM-IPFV.3.SBJ-hunt

‘Madeleine, a woman, hunts for muskrat.’

$\lambda x. \lambda y. [\text{WOMAN}(x) \wedge [\text{MUSKRAT}(y) \rightarrow \text{HUNT}(x, y)]]$ (Madeleine) (y)

The clause in (3)a (repeated from (1)) returns a truth-value for the simple predicate ‘x is a woman’, applied to the entity Madeleine; this predicate is introduced by Copula 2, *hɔt'e*. The copula is absent from the appositive in (3)b, where the simple juxtaposition of *Madlɛ* and *ts'èko* is enough to yield the same semantic function, which is part of the complex predicate that may be paraphrased ‘x is a woman and x hunts for y if y is a muskrat’. The presence of the copula in (3)a produces the same semantics as its absence produces in (3)b: its semantic content is thus difficult to detect, to say the least.

In spite of the apparent minimal semantics of copulas, in (4), we see that predicates formed with Copula 1 and a NP complement have different interpretations from those that are formed with Copula 2 and the same NP complement:

(4) a. Ekwò elɪ.

ekwò Ø-lɪ

caribou IPFV.3.SBJ-COP1

‘S/he/it is a caribou.’ (in an ephemeral, non-characterizing sense, e.g., in a play)

(MS 2007)

b. Ekwò hq̣t'e.

ekwò ha-ɬ-t'e

caribou THM-IPFV.3.SBJ-COP2

‘It is a caribou.’ (in a permanent, characterizing sense)

(MS 2007)

c. Yamoòzha wets'èke tsà elɬ.⁴⁵

Yamoòzha we-ts'èke tsà Ø-lɬ.

Yamoòzha 3SG-wife beaver IPFV.3.SBJ-COP1

‘Yamoozha’s wife is a beaver.’ (temporarily, because of transformation)

(MS 2009)

d. Yamoòzha wets'èke tsà hq̣t'e.

Yamoòzha we-ts'èke tsà ha-ɬ-t'e

Yamoòzha 3SG-wife beaver THM-IPFV.3.SBJ-COP2

‘Yamoozha’s wife is a beaver.’ (in a permanent, characterizing sense)

(MS 2009)

This distinction is recognizable as that of stage-level ((4)a, c) versus individual-level predicates ((4)b, d), as defined by Carlson (1977), a distinction whose syntactic effects have been analyzed by Kratzer (1995) and others (Arche, 2006; Gonzalez-Vilbazo & Remberger, 2005; Jäger, 2001; Musan, 1997; Ogawa, 2001). Roughly, stage-level predicates (SLPs) express “transitory and accidental” properties while individual-level

⁴⁵ Yamoòzha the Lawgiver is a hero of Tł̥chq̣ oral history (Andrews, 2011:77-79).

predicates (ILPs) express “permanent and essential” properties (Jäger, 2001:83; Kratzer, 1995:125).⁴⁶

The stage-/individual-level distinction in nominal predicates formed with copulas in Tḥchq Yatì is well attested. This distinction leads to the interpretation of (5)a but not (5)b as imperative.⁴⁷

⁴⁶ This is a simplification: it is surprisingly difficult to arrive at a satisfactory semantic definition of the stage-/ individual-level predicate distinction. It is not exclusively a distinction of transience: *young* patterns with ILPs syntactically, while *alive* patterns with SLPs, despite life lasting longer than youth. Escandell-Vital and Leondetti (2002:160) attempt to solve this issue: they depart from the Carlsonian tradition in defining the distinction as classificatory. In their definition, ILPs, but not SLPs, “refer to those properties that characterize an individual as belonging to a specific class.” This definition also has issues, however. A class, or a set, may be permanent or fleeting: an individual may be a member of the class of spectators for the duration of a sporting event, for example. While Escandell-Vital and Leondetti’s definition has intuitive appeal, it is thus difficult either to formalize or to frame in a way that is satisfactorily watertight. For the purposes of the present work, I assume a definition in the tradition of Carlson and Kratzer, with a proviso first articulated in earlier work of mine (Welch, 2008:98) to the effect that an individual-level predicate is one that, for the pragmatic purposes of the discourse, is assumed to be timeless: one for which association with any given time is irrelevant. Thus, *Madeleine is young* is timeless for the practical purposes of the immediate discourse: while discourse participants are of course aware that Madeleine will someday no longer be young, this knowledge does not negate her membership in the class of young people for the discourse. This view owes something to the work of Musan (1997), who argues that the semantics of the SLP/ILP distinction derive primarily from context. It is important to emphasize that in this view, the SLP/ILP distinction is primarily syntactic and secondarily pragmatic: it does not map perfectly to lexical semantics.

⁴⁷ Imperative and indicative mood are not distinguished morphologically in Tḥchq Yatì, imperatives being expressed with the second-person imperfective (Ackroyd, 1982:197).

(5) a. Yamoòzha nel̩.

Yamoòzha ne-l̩

Yamoòzha IPFV.2SG.SBJ-COP1

‘You be Yamoòzha!’ / ‘You are Yamoòzha.’ (temporarily, as in a play)

(MS 2009)

b. Yamoòzha anet’e.

Yamoòzha a-ne-t’e.

Yamoòzha THM-IPFV.2SG.SBJ-COP2

‘You are Yamoòzha.’ / *‘You be Yamoòzha!’

(MS 2009)

The two interpretations of (5)a arise from the stage-level status of the predicate: if the subject is centrally coincident with Yamoòzha, but in a non-characterizing way, a possible interpretation is imperative: a command to the subject to (start to) be Yamoòzha. The individual-level status of the predicate in (5)b renders an imperative interpretation infelicitous.

We come to the conclusion that although the presence or absence of copulas makes little if any difference to the semantics of a clause, the undeniable fact is that choosing one copula or the other in T̥ɬchɔ Yat̩ alters the interpretation of the clause.⁴⁸ We are

⁴⁸ As it also does in other languages with multiple copulas: copulas in other Athapaskan languages, Romance languages, and some Semitic languages display similar properties. The analysis of copular differences in these languages, and their similarities and differences with respect to the T̥ɬchɔ system, will be discussed in Chapters 3 and 6.

faced with a paradox: two things that both seem to equal zero nonetheless apparently do not equal each other.

3.2. Structure and interpretation

If the stage-/individual-level distinction between copular clauses based on Copula 1 and those based on Copula 2 owes little or nothing to the semantic content of the copulas themselves, where does it come from?

It is common knowledge that a difference in structure can yield different interpretations of identical phonetic strings. This is the phenomenon known as structural ambiguity: the clause *Kim waved at the police officer with the pistol* can leave the listener wondering whether the sequel involved the officer's waving back or, under another interpretation of the same sentence, arresting Kim for making threats with a firearm. What if the difference between the two copulas of Tɬɬɬɬ Yatɪ is that they project different structure? To see how this could be so, consider that the English sentence *Kim is happy* is, in a sense, ambiguous between an SLP and an ILP interpretation. Under the first, Kim is happy at a given moment, or happy at a given circumstance; under the second, Kim is characteristically happy: a happy person. That both these interpretations are available leads me to posit that the standard English copula is capable of projecting more than one possible structure; or, from another point of view, that there are two English copulas, which project two different structures despite being phonetically identical. If that is so, one might expect to find languages in which such clauses as *Kim is happy* are disambiguated by having two copulas that are phonetically as well as structurally different. It is my contention that Tɬɬɬɬ Yatɪ is such a language. I formalize this proposal as Hypothesis I, with the aim of testing it against Hypothesis II (the null hypothesis):

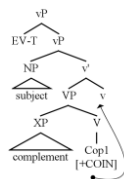
(6) a. **Hypothesis I:** The difference in interpretation between the two copulas of Tłıchq Yatı̄ arises from a difference in projected structure. Copula 1 is lexically specified to project v , and Copula 2 is not.

b. **Hypothesis II:** There is no difference in structure between the two copulas. The difference in interpretation presumably arises from subtle but differing semantic content. The lexical entry of Copula 1 includes the semantics of “transience”; that of Copula 2, “permanence”.

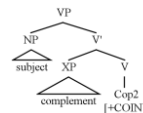
The syntactic structures of the two copulas according to Hypothesis I appear in (7); according to Hypothesis II, in (8). Recall that v is held to introduce the external subject and event argument.

(7) Hypothesis I

a.

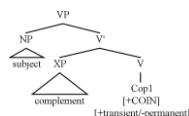


b.

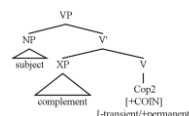


(8) Hypothesis II

a.



b.



In (7) we see the structures proposed under Hypothesis I. Copula 1 ((7)a) has a level of structure that Copula 2 lacks, including v with its specifiers hosting its external and event arguments. Copula 2, on the other hand ((7)b), has no event or external argument, and projects no v structure.

In (8) the structures of the copulas under Hypothesis II are identical. Whether either projects v or not is immaterial; the reason for the distributional differences between them resides in their lexical semantics. Whether the relevant semantic feature is formalized in the syntax as $[\pm\text{transient}]$ or $[\pm\text{permanent}]$, the difference is purely a lexical semantic one with no reflection in syntactic structure.

The remaining sections of this chapter will be devoted to weighing the evidence for and against Hypothesis I to determine whether it can be sustained or should be discarded. Hypothesis II will be considered in Chapter 4, in light of evidence from Tłchq Yatì, Tsùùt'ínà, and Navajo.

3.3. The category of the copulas

In hypothesizing a copular distinction that depends on the projection of v , we are proposing that both copulas are of category V. There are several reasons why this is necessary, having to do with the properties of the T̥chq Yatì copulas. Both strongly resemble lexical verbs in their paradigmatic morphology and their selectional properties; in addition, they are in complementary distribution with lexical verbs.

3.3.1. Possible and impossible merge points

At first glance, we might assume that the light semantic contribution of the copulas dictates that they belong to functional rather than lexical categories. After all, their role as apparently purely syntactic markers of coincidence makes them very similar to such categories as Tense, Aspect and Mode, as we saw in Chapter 2. The fact that they signal coincidence of identity rather than time does not necessarily make them lexical: recall that Ritter & Wiltschko (2005; 2009; 2010) argue that in Blackfoot, the content of INFL is coincidence of identity. Why then do we discard the functional categories of the middle field as merge points for the copulas?

This is not a trivial question. Roby (2009) analyzes the distinction between the two copulas of Spanish as a viewpoint-aspectual distinction: *estar* is [-perfective] in his analysis, while *ser* is [+perfective]. Since the T̥chq Yatì copula distinction is hauntingly similar to that of Spanish, could the T̥chq Yatì copulas be instances of Asp?⁴⁹

⁴⁹ Compare the two copular clauses in one of Arche's (2006:20) examples:

Pablo	no	es	nada	gracioso,	pero	está	muy	gracioso.
Pablo	not	<i>ser</i> -PRES-3SG	at-all	funny	but	<i>estar</i> -PRES-3SG	very	funny

'Pablo is not funny but he is being funny.'

The counter-evidence is strong enough to make such an analysis highly implausible. First, instances of Asp ought to be in complementary distribution with other instances of Asp. If one copula is a perfective Asp and the other an imperfective Asp, we should not see either co-occur with other markers of viewpoint aspect. This prediction, however, is immediately falsified: either copula can occur with either perfective or imperfective marking, as in (9). We see that Copula 1 can occur marked morphologically for perfective ((9)a) or imperfective aspect ((9)b); the same is true for Copula 2 ((9)c, d). Clearly neither of them belongs categorially to Asp.

- (9) a. John Behcho-dq̣ aɬt'è ɬlè.
 John Behcho-dq̣-μ̣ a-ɬ-t'è ɬlè
 John America-person-PNS THM-PFV.3.SBJ-COP2 PAST
 ‘John used to be an American.’

(MLBW 2009)

- b. Tsà eyits'q̣ dzq̣ agɬt'e.
 tsà eyits'q̣ dzq̣ a-**gɬ**t'e
 beaver and muskrat THM-**IPFV**.3PL.SBJ-COP2
 ‘They are beaver and muskrat.’

(MLBW 2009)

- c. Solomon wemq̣ Uriah wets'èkeè ɬlè.
 Solomon we-mq̣ Uriah we-ts'èke-μ̣ ɬ-lè.
 Solomon 3SG-mother Uriah 3SG-wife-PNS **PFV**.3.SBJ-COP1
 ‘Solomon’s mother had been Uriah’s wife.’

(CBS 2003: Matthew 1:6)

- d. Qhdaà gɪlɪ.
 qhdaà gɪ-lɪ
 elder **IPFV.3PL.SBJ-COP1**
 ‘They are elders.’
 (MLBW 2009)

Similarly, we can reject the possibility that either copula is an instance of AgrNum, since both co-occur with number marking: in (10)a we see a plural-marked Copula 1, and in (10)b, a similarly marked Copula 2.

- (10) a. Qhdaà gɪlɪ. (repeated from (9)d)
 qhdaà gɪ-lɪ
 elder **IPFV.3PL.SBJ-COP1**
 ‘They are elders.’
 (MLBW 2009)
- b. Goxɪ nàzèe-dq̃ ats’ɪt’e.
 goxɪ nà-Ø-zè-μ-dq̃-μ a-**ts’ɪ-t’e**
 1PL THM-IPFV.3.SBJ-hunt-NML-person-PNS THM-IPFV.**1PL.SBJ-COP2**
 ‘We are the hunters.’
 (MS 2010)

Whether or not Tense and Mode are nodes on the clausal spine in Tɬchɔ Yatɪ, it is clear that neither copula can belong to either of these categories, since both copulas can

co-occur with modal and tense markers.⁵⁰ In (11)a, b, we see Copula 1 co-occurring with the modal auxiliary *weli* and the past marker *ɪlə*, while (11)d demonstrates that Copula 2 can co-occur with the past marker as well; its marginality with the modal *weli* ((11)c) is, I believe, a result of conflicting interpretations, as noted in footnote 45.

- (11) a. Mishè Madlɛ wedqò elɪ **weli.**
 Mishè Madlɛ we-dqò Ø-lɪ **weli**
 Michel Madeleine 3-husband IPFV.3.SBJ-COP1 **POSS**
 ‘May Michel be Madeleine’s husband.’

(MS 2010)

- b. Mishè Madlɛ wedqò elɪ **ɪlə.**
 Mishè Madlɛ we-dqò Ø-lɪ **ɪlə**
 Michel Madeleine 3-husband IPFV.3.SBJ-COP1 **PAST**
 ‘Michel was Madeleine’s husband.’

(MS 2010)

- c. ??Mishè Madlɛ wedqò hqɔt’e **weli.**
 Mishè Madlɛ wedqò ha-l-t’e **weli.**
 Michel Madeleine 3-husband THM-IPFV.3.SBJ-COP2 **POSS**
 ‘May Michel be Madeleine’s husband.’

(MS 2010)

⁵⁰ Note that while all of the examples in (11) are grammatical, (11)c is of dubious semantic felicity: *hqɔt’e* (Copula 2) is “too factual”, according to Mary Siemens. I take this to mean that the individual-level interpretation of the copular clause is not compatible with the potential marking. Note that (11)b and (11)d are translated identically; the difference between them, if any, is very subtle. This unexpected finding is explained in Chapter 4 using evidence from Navajo and Tsùùt’ínà.

d. Mishè	Madlɛ	wedqò	hɔt'e	ɪlè.
Mishè	Madlɛ	wedqò	ha-ɪ-t'e	ɪlè
Michel	Madeleine	3-husband	THM-IPFV.3.SBJ-COP2	PAST
'Michel was Madeleine's husband.'				
(MS 2010)				

We can therefore dismiss the middle field as merge sites for the copulas, and conclude that whatever their categories may be, they are not T, Mod, Asp or AgrNum.

3.4. The case for V

My contention that both copulas are category V is in line with the view of copulas as verbs in traditional grammar; there is also solid empirical evidence for it. Both have morphological paradigms showing inflection for “mode”, person and number.⁵¹ These paradigms appear in (12) and (13).

⁵¹ “Mode”, in Athapaskanist literature, is defined by position in a templatic model of the verb. Morphemes marking viewpoint aspect in the Athapaskan verb share a templatic position with those marking optative mode (in the more usual sense of the term).

(12) ts'ɿɿɿ 'be' (Copula 1)		Person		
Mode	Number	1	2	3
Imperfective	Singular	ehɿ	nelɿ	elɿ
	Dual	dɿɿɿ/wɿdlɿ	aahɿ	gɿɿɿ
	Plural	ts'ɿɿɿ		
Perfective	Singular	ɿhlè/ɿlè	neelè	ɿlè
	Dual	wɿdlè/dɿɿlè	aahlè	gɿɿlè
	Plural	ts'ɿɿlè		
Optative	Singular	ɿhlè	wɿɿlè	welè/weli
	Dual	wɿɿdlè/dɿɿlè	waahlè	gɿɿlè
	Plural	ts'ɿɿlè		

(13) ats'ɿɿt'e 'be' (Copula 2)		Person		
Mode	Number	1	2	3
Imperfective	Singular	aht'e	anet'e	hɔt'e
	Dual	adiit'e awit'e	aaht'e	agɿɿt'e
	Plural	ats'ɿɿt'e		
Perfective	Singular	aɿht'è	aneet'è	aɿt'è
	Dual	awit'è/adiit'è	aaht'è	agɿɿt'è
	Plural	ats'ɿɿt'è		
Optative	Singular	aweht'è	awɿɿt'è	awet'è
	Dual	awɿɿt'è	awaahht'è	agɿɿt'è
	Plural	ats'ɿɿt'è		

Note on the paradigms: the dual in Ṭchq̣ Yatɿ exists as a distinct inflection only in the first person; in the second and third it is identical to the plural. The two forms of the dual reflect innovative and conservative usage, respectively (Ackroyd, 1982:102-103). The two optative forms of Copula 1 are translated 'let... be' and 'might be', respectively. The data in these paradigms are drawn from fieldwork with Mary Siemens and Marie-Louise Bouvier-White; the Ṭchq̣ Yatɿ Multimedia Dictionary (Ṭchq̣ Community Services Agency, 2007), the *Dogrib New Testament* (Canadian Bible Society, 2003), and personal communications from Leslie Saxon.

In having paradigms of this sort, the copulas are like lexical verbs but unlike all other syntactic categories in Tɬɬchɔ Yatɪ. While possessed nouns show inflection for the person and number of their possessors, and postpositions may inflect to agree with their complements, no other category inflects for all three of person, number and aspect/mode.

Another clue that both copulas are verbs is that neither takes a verbal complement. Though the verbs *k'èts'eezɔ* 'we know' and *làagɪt'e* 'they seem' can replace the copulas, as seen by comparing (14)a and (15)a with (14)b and (15)b, they cannot co-occur with either copula in either possible order without resulting either in an embedded-clause interpretation, as in (14)c, d and (15)c, or outright ungrammaticality, as in (15)d. The latter case is self-explanatory; the former involves a structure with two separate clauses, so that the two verbs are not truly co-occurring, as can be seen by examining (16).

- (14) a. Tɬɬchɔ ts'ɔ dɔ ats'ɪt'e.
 Tɬɬchɔ ts'ɔ dɔ a-ts'ɪt'e
 Tɬɬchɔ from people THM-IPFV.1PL.SBJ-COP2
 'We are people from Tɬɬchɔ.'
 (MLBW 2011)

- b. Tɬɬchɔ ts'ɔ dɔ k'èts'eezɔ.
 Tɬɬchɔ ts'ɔ dɔ k'è-ts'ee-zɔ
 Tɬɬchɔ from people THM-IPFV.1PL.SBJ-know
 'We know people from Tɬɬchɔ.'
 (MLBW 2011)

- c. Tɬɬchɔ ts'ɔ dɔ ats'ɬt'e k'ets'eezɔ.
 Tɬɬchɔ ts'ɔ dɔ a-ts'ɬt'e k'è-ts'ee-zɔ
 Tɬɬchɔ from people THM-IPFV.1PL.SBJ-COP2 THM-IPFV.1PL.SBJ-know
 'We know that we are people from Tɬɬchɔ.'

(MLBW 2011)

- d. ??Tɬɬchɔ ts'ɔ dɔ k'ets'eezɔ ats'ɬt'e.
 Tɬɬchɔ ts'ɔ dɔ k'è-ts'ee-zɔ a-ts'ɬt'e
 Tɬɬchɔ from people THM-IPFV.1PL.SBJ-know THM-IPFV.1PL.SBJ-COP2
 'We are the only ones who know people from Tɬɬchɔ.'⁵²

(MLBW 2011)

- (15) a. Ahxe gɬɬɬ.

ahxe gɬɬ-lɬ
 rich IPFV.3PL.SBJ-COP1
 'They are rich.'

(MLBW 2011)

- b. Ahxe làagɬt'e.

ahxe làa-gɬt'e
 rich THM-IPFV.3PL.SBJ-seem
 'They are like rich.' (i.e., not fully rich – MLBW)

(MLBW 2011)

⁵² I am unclear on the source of the 'only' interpretation in (14)d.

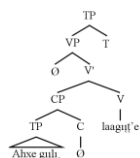
- c. Ahxe gɪlɪ làagɪt'e.
 ahxe gɪl-lɪ làa-gɪ-t'e
 rich IPFV.3PL.SBJ-COP1 THM-IPFV.3PL.SBJ-seem
 'They are acting rich/They seem to be rich.'

(MLBW 2011)

- d. *Ahxe làagɪt'e gɪlɪ
 ahxe làa-gɪ-t'e gɪl-lɪ
 rich THM-IPFV.3PL.SBJ-seem IPFV.3PL.SBJ-COP1

(MLBW 2011)

(16) (structure of (15)c)⁵³



In (16), the copula *gɪlɪ* and the lexical verb *làagɪt'e* are in different clauses: the former in the embedded clause, the latter in the matrix clause. The copulas cannot occur

⁵³ I abstract away from the fine details of clause structure in this example, concentrating on illustrating the facts of embedding. This clause is parallel to the English *They seem to be rich*, except that Tɬchɔ Yatɪ has no non-finite verb forms, as can be seen from the paradigms in (12) and (13). Note that both the matrix and embedded verb agree with the subject *they*; for more on long-distance agreement in Tɬchɔ Yatɪ, see Saxon (1984).

in a matrix clause together with *làagɪt'e* or *k'èts'eezɔ*: they are in complementary distribution with these two verbs, as they are with all lexical verbs.

Also like lexical verbs, both copulas occur with NP, AP and PP complements. In (17), both copulas appear with NP complements:

- (17) a. Ekw'ahtideè elɪ.
 ekw'ahtideè Ø-lɪ
 chief IPFV.3.SBJ-COP1
 'S/he is a chief.'
 (MLBW 2009)
- b. Tsà eyits'ɔ dzɔ agɪt'e.
 tsà **eyits'ɔ** **dzɔ** a-gɪt-t'e
 beaver **and** **muskrat** THM-IPFV.3PL.SBJ-COP2
 'They are beaver and muskrat.'
 (MLBW 2009)

In (18), both appear with AP complements:⁵⁴

⁵⁴ In Athapaskan languages, adjectives are typically a small, perhaps closed class. The Tł̨ch̨o Yatì Multimedia Dictionary (Tł̨ch̨o Community Services Agency, 2007) has thirty-two entries identified as adjectives, and some of these are dialectal variations or morphologically complex items built on other adjectives. Adjectives and APs, and their relationship with the copulas, will be explored in Chapter 5.

- (18) a. Eyɪ ts'èko sìi **ahxe** elɪ.
 eyɪ ts'èko sìi **ahxe** Ø-lɪ
 DEM woman FOC **rich** IPFV.3.SBJ-COP1
 'That woman is rich.'
 (MLBW 2009)

- b. **Maa** ats'ɪt'e gòqhwɬə.
maa a-ts'ɪt'e go-qh-whə.
smelly THM-IPFV.1PL.SBJ-COP2 1PL.OBJ-IPFV.3.SBJ-think
 'He thinks we are smelly.'
 (MS 2009)

In (19), both have PP complements:

- (19) a. ...dèè **gɪgha** elɪ ha.
 dèè **gɪ-gha** Ø-lɪ ha
earth **3PL-for** IPFV.3.SBJ-COP1 FUT
 '... they will inherit the earth.' (lit., 'the earth will be to them.')

(Canadian Bible Society, 2003:Matthew 5:5)

- b. Nòhtsɪ wets'ihʔə **Zezi-Kri** **wexè** aaht'e.
 Nòhtsɪ we-ts'ihʔə **Zezi-Kri** **we-xè** a-ah-t'e
 God 3SG-because of **Jesus-Christ** 3SG-with THM-IPFV.2PL.SBJ-COP2
 'Because of God you are with Jesus Christ.'
 (Canadian Bible Society, 2003: 1 Corinthians 1:30)

To sum up, we have the following evidence for the copulas being both of category V: they do not belong to any of the functional categories of the middle field, they have full morphological paradigms showing inflection for viewpoint aspect/optative mode and for subject person and number agreement, they are in complementary distribution with other lexical verbs, and they take NP, AP and PP complements. They are verbs.

3.5. The case for *v*

Hypothesis I states that the distinction between the copulas is that Copula 1 projects *v* while Copula 2 does not. Since we have established that both copulas are verbs, we must now turn to the distinction between verbs that do, and those that do not, project *v*.

What does it mean to project *v*? Beginning with Larson (1988), a program of research into verbal argument structure has endeavoured to explain agentivity, eventivity, causation and other phenomena by means of a light verb projection above V. Under various names – Voice (Kratzer, 1996), Pred (Bowers, 1993), *v* (Chomsky, 1995) – various versions of this projection have been held to introduce both the external argument and the event argument associated with a verb. The external argument, which is animate, agentive, causative, or otherwise a “changer”, is held to merge at [Spec, *v*P], while *v* itself is a head that hosts causativity, transitivity or other syntactic features. In some languages, *v* may have overt phonological form, while in others it is silent.⁵⁵

The question that must be answered at this stage is whether, and to what degree, these arguments are associated with Copula 1, and not with Copula 2.

⁵⁵ Under the little-*v* hypothesis, causativizing morphemes are the most widely agreed instances of *v*. An example of the Tłchq Yatı causative appeared in Chapter 2. English, on the other hand, has no overt instantiation of causative *v*: compare *jump over a fence* with *jump a horse over a fence*.

3.5.1. The event argument

The question of the event argument is quite straightforward. Verbs with event arguments are tied to a particular spatiotemporal locus, while verbs without them are not, and are held to apply in a ‘timeless’ or characterizing fashion. This is precisely the stage-/individual-level predicate distinction of Carlson (1977) and Kratzer (1995). A diagnostic for the presence of an event argument is whether spatiotemporal modification is possible:

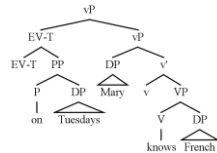
- (20) a. (on Tuesdays/in Quebec), Mary speaks French.
 b. (*on Tuesdays/*in Quebec), Mary knows French.

In (20)a, the SLP can be modified by a temporal or spatial adverbial; in (20)b the ILP cannot. If event arguments are introduced in Kratzerian fashion at [Spec, vP], the impossibility of modifying (20)b with spatiotemporal adverbials suggests that, as per Kratzer’s analysis, it lacks an event argument.

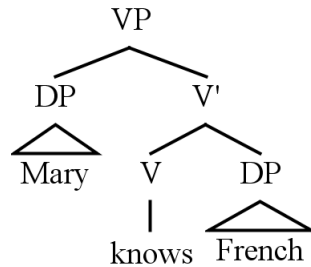
The implication of Hypothesis I is that not only Copula 1, but all verbs that introduce stage-level predicates project v, and those that introduce individual-level predicates do not.⁵⁶ If we adopt Demirdache & Uribe-Etxebarria’s treatment of temporal adverbials, we arrive at the following structures for the clauses in (21):

⁵⁶ Whether this broader implication is true is a question I leave to future research.

(21) a.



b.



In (21)a, we see that the temporal PP is headed by *on*, a preposition of central coincidence ([+COIN]) that expresses the subsumptive relationship between the EV-T of Mary's speaking French and the temporal DP *Tuesdays*.⁵⁷ However, in (21)b, there is no EV-T to be related (by [+COIN]) to the PP, resulting in infelicity.

When we examine the felicitousness of copular clauses where the predicate is in the scope of a temporal PP, we find that Copula 1 clauses are allowed while Copula 2 clauses are barred:

⁵⁷ It is Demirdache & Uribe-Etxebarria's contention that *all* temporal adverbials contain a (sometimes silent) P expressing [\pm COIN].

In (22)a, “every Tuesday” is compatible with Copula 1, just as “today” is compatible with Copula 1 in (22)b; however, in (22)c, d, both are infelicitous with Copula 2.

- (22) a. Yamoòzha wets’èke **Nàkedzèè** **taàt’e** tsà **ehl̩.**
 Yamoòzha we-ts’èke **Nàke-dzè-μ̩** **taàt’e** tsà **Ø-l̩**
 Yamoòzha 3-wife **two-day-PNS** **every** beaver IPFV.3.SBJ-COP1
 ‘Yamoòzha’s wife is/becomes a beaver every Tuesday.’

(MLBW 2011)

- b. S₁ **du dzè** ekwò **ehl̩.**
 s₁ **du dzè** ekwò **h-l̩**
 1SG DEM **day** caribou IPFV.1SG.SBJ-COP1
 ‘Myself, I am a caribou today.’

(MLBW 2011)

- c. #Yamoòzha wets’èke **Nàkedzèè** **taàt’e** tsà **hòt’e.**
 Yamoòzha we-ts’èke **Nàke-dzè-μ̩** **taàt’e** tsà **ha-l̩-t’e**
 Yamoòzha 3-wife **two-day-PNS** **every** beaver THM-IPFV.3.SBJ-COP2
 (Intended: ‘Yamoòzha’s wife is/becomes a beaver every Tuesday.’)

(MLBW 2011)

- d. #S₁ **du dzè** ekwò **aht’e.**
 s₁ **du dzè** ekwò **a-h-t’e**
 1SG DEM **day** caribou THM-IPFV.1SG.SBJ-COP2
 (Intended: ‘Myself, I am a caribou today.’)

(MLBW 2011)

It is clear that event arguments are part of the structure of Copula 1 but not of Copula 2.

3.5.2. The external argument

Another difference between the SLP and the ILP in (21) concerns agentivity. Speaking French, in (21a), is an act that requires agency, or at least permits it. Knowing French, on the other hand, in (21b), does not allow the possibility of agency. This highlights the finding of the research program on the light verb projection that *v* introduces external arguments, and that a verb that does not project *v* should have only internal arguments.

An external argument has, or may have, several characteristics that internal arguments lack. Semantically, it may, as above, be agentive; an internal argument never is. An external argument may be the cause of a secondary event or state; or it may itself undergo a change of state.⁵⁸ The common thread that unites external arguments is the capacity to undergo or to be an agent of change.

Agency and change of state clearly distinguish subjects of Copula 1 from those of Copula 2. Consider the examples in (23) with respect to agentivity. All involve agentive coincidence of identity – that is, being something as a result of intention. We see by comparing (23)a, b with (23)c, d that such clauses are only felicitous with Copula 1:

⁵⁸ Folli & Harley (2005) posit three “flavours of little *v*” to account for these three types of external arguments: DO, CAUSE and BECOME. Their analysis points to the existence of multiple instantiations of other syntactic categories, and argues on the basis of evidence from English and Italian that a single instantiation of *v* is insufficient to explain the observed data.

- (23) a. Axqdiì ekwò dọ eh.
 Axqdiì ekwò dọ Ø-lì
 intentionally caribou person **IPFV.3.SBJ-COP1**

‘The caribou is intentionally a person.’

(LD 2012)

- b. Axqdiì nàzèè-dọò ts’ɪlɪ.⁵⁹
 axqdiì nà-Ø-zè-μ-dọ-μ ts’ɪ-lì
 intentionally THM-IPFV.3.SBJ-hunt-NML-person-PNS **IPFV.1PL.SBJ-COP1**

‘We are intentionally hunters.’

(LD 2012)

- c. # Axqdiì ekwò dọ hqt’e.⁶⁰
 axqdiì ekwò dọ ha-ɪ-t’e
 intentionally caribou person **THM-IPFV.3.SBJ-COP2**

(Intended: ‘The caribou is intentionally a person.’)

(LD 2012)

⁵⁹ Lena Drygeese, who provided these examples, said that (23)b is fine as far as intentionality goes, but that *ts’ɪlɪ* sounds odd with the NP *nàzèè-dọò*, as if ‘they’re just wannabe hunters.’

⁶⁰ Lena Drygeese said that (23)c “sounds like it’s been like that forever and ever, which doesn’t make sense.”

b. Mishè	dechɪɲɪ	nàzè	nɪdè,
Mishè	dechɪɲɪ	nà-Ø-zè	nɪdè
Michel	bush	THM-IPFV.3.SBJ-hunt	if
du	gòdaat'ɸ	wekò	hɔt'e.
du	gòdaat'ɸ	we-kò	ha-ɪ-t'e
DEM	beautiful.place	3SG-home	THM-IPFV.3.SBJ- COP2

‘If Michel hunts in the bush, this beautiful place is his home.’

(MS 2009)

Imperatives, as we have seen, assume agency on the part of the subject, and example (5) showed a minimal pair where a predicate complement of Copula 1, but not Copula 2, was amenable to an imperative interpretation. This is a general pattern, as the further examples in (25) illustrate:

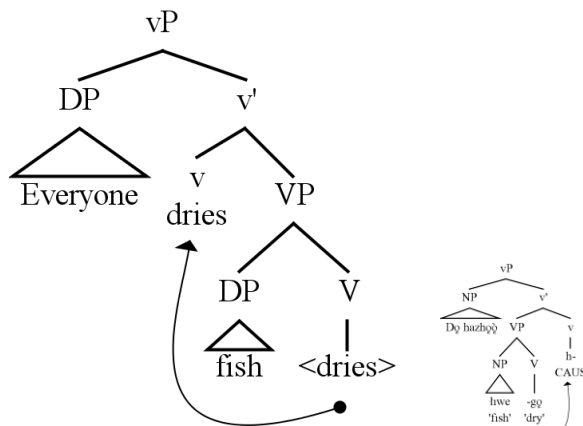
- (25) a. Dɔgòò nelɪ.
 dɔ-gòò ne-lɪ
 person-new IPFV.2SG.SBJ-COP1
 ‘You are a new person. /Be a new person.’
 (MS 2007)

- b. Dɔgòò anet'e.
 dɔ-gòò a-ne-t'e
 person-new THM-IPFV.2SG.SBJ-COP2
 ‘You are a new person. /*Be a new person.’
 (MS 2007)

below. In the English example (26)a, the word-order difference between *fish dries* and *everyone dries fish* is obvious. However, in (26)b, the difference is morphological only: *hwe egq* ‘fish dries’ and *dq hazhqò **hwe gehgq*** ‘everyone dries fish’ differ in that the latter contains (aside from the *ge-* plural agreement) the causative morpheme *h-*. The NP *hwe* ‘fish’, unlike its English equivalent, does not occupy a node linearized between *v* and *V*, and when the verb moves, no word-order difference appears:

(26) a.

b.

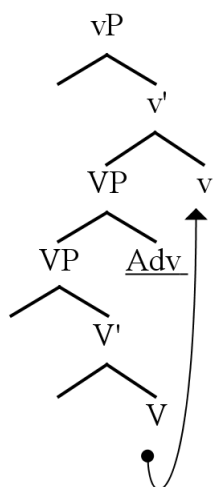


Other diagnostics of the presence of *v* have been developed for SOV languages such as Korean and Japanese. A non-finite complement of a control verb is assumed by Jung (2011) to be a constituent smaller than TP, and therefore a likely candidate for a bare *vP*. Unfortunately, this diagnostic also does not work for Tłchq Yatı̨l, since Athapaskan languages have no non-finite verb forms: even nominalizations, contra Marantz (1997), must be built on finite verbs fully inflected for aspect, person and number:

- (27) goghòò ta k'etl'its'eeht'iì
 go-ghòò ta k'e-tl'i-ts'ee-h-t'i-μ
 1PL-tooth through around-string-IPFV.1PL.SBJ-CAUS-stretch-NML
 'dental floss' (Lit., 'string that we pull around through our teeth'
 (TCSA 2007)

Adverbials may play a role in word-order effects. An adverbial right-adjoined directly above VP would expose movement from V to v:

(28)



However, alternations of this kind do not occur, since V-level adverbs are left-adjoined (29).

- (29) a. Eyì done sùì ʔehjɔ.
 eyì done sùì Ø-h-jɔ
 DEM person really PFV.3.SBJ-CLAS-become old
 'That man is really old.'
 (TCSA 2007)

- b. Hòtlo ʔeghàlaenda.⁶¹
 hòtlo ʔeghàla-e-nda
 hard THM-IPFV.3.SBJ-work
 ‘She works hard.’

(Ackroyd, 1982:171)

- c. Yazea whek’ò.
 yaze-a whe-k’ò.
 a little-DIM THM-cold
 ‘It’s cool.’

(Ackroyd, 1982:171)

The implication of these facts for Hypothesis I is that truly syntactic tests are exceedingly difficult to apply. There is one that does give a result, however. By Burzio’s Generalization, if Copula 1, but not Copula 2, has an external argument, it should be able to check Case: this is also in line with current theory that says that accusative Case is checked at *v*. We should expect to find instances of Copula 1 that check accusative Case.

Arguably we do find such instances. The verb meaning ‘be born’ is derived from the existential, which is based upon the Copula 1 stem with an areal agreement marker.⁶² It shows object agreement, indicating that its complement bears non-nominative case:⁶³

⁶¹ TCSA (2007) lists this adverb as *hotl’ò*, *hòtl’òò* or *hòtl’òò*, all of which have the second consonant as an ejective rather than an aspirate.

⁶² The areal marker is a gender agreement marker that surfaces on verbs whose subject or object is of spatiotemporal extent. Its appearance on the existential is eerily parallel to the existential use of spatiotemporal words in Indo-European existentials: compare English *there is* and French *il y a*.

- (30) a. Dechini segòhł.
 dechini se-go-ì-h-lı
 bush 1SG.OBJ-AR-IPFV.3.SBJ-CLAS-COP1
 ‘I was born in the bush.’
 (TCSA 2007)
- b. Zezi kòta Bethlehem wegòhł.
 Zezi kòta Bethlehem we-go-ì-h-lı
 Jesus town Bethlehem 3.OBJ-AR-IPFV.3.SBJ-CLAS-COP1
 ‘Jesus was born in the town of Bethlehem.’
 (CBS 2003: Matthew 2:1)

By contrast, there are no instantiations of Copula 2 that show similar object agreement. In sum, syntactic evidence for Hypothesis I is elusive due to the structure of Tḥchq Yatıi syntax. However, the existence of forms of Copula 1, but not Copula 2, that show morphological object agreement constitute tentative syntactic evidence in favour of Copula 1 alone being a possible locus for the checking of accusative Case, which is the situation we would expect to find if it alone projects *v*.

3.7. Weighing the hypotheses: An interim conclusion

It is clear (Section 3.5.1) that Copula 1 but not Copula 2 can merge an event argument; moreover, the semantic evidence, and what syntactic evidence is available, is strongly in

⁶³ It is not absolutely conclusive that this Case is accusative, however: the object agreement affixes also surface when the object bears other non-nominative Cases.

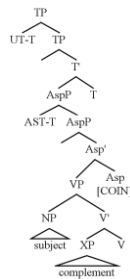
favour of the thematic subject of Copula 1, but not Copula 2, being an external argument.

So far, it seems, we find that Hypothesis I is robust and sustainable.

3.8. Lifetime effects with Copula 2

A prediction of Hypothesis I is that Copula 2, projecting no ν , will have no event argument. This prediction was explored in Section 3.5.1. A consequence of the lack of an event argument is that Asp cannot relate AST-T to an EV-T, as illustrated below:

(31)



In (31), the aspect head, which ordinarily expresses coincidence or non-coincidence between AST-T and EV-T, is “stranded” as it were, with an external but no internal temporal argument. This implies that when Copula 2 (or any individual-level predicate) is

inflected for perfect aspect, the result will not be a simple temporal displacement. This prediction is in fact borne out, as we will now see.

A well-known phenomenon associated with individual-level predicates is the lifetime effect: the change of interpretation that occurs when such predicates are inflected for non-present tense or non-imperfective aspect. Consider the English examples below.

- (32) a. Michel is T_hch_q.
 b. Michel was T_hch_q.
 c. Michel has black hair.
 d. Michel will have black hair.

The interpretations of (32)a, c are individual-level present, of which we have seen numerous examples before now. However, (32)b, d each have two possible interpretations. One is a change of state: that Michel has changed his citizenship (or, less plausibly, his ethnicity!) ((32)b), and that he is planning to dye his hair ((32)d).⁶⁴ The other is that the time the sentence is uttered lies outside of Michel's lifetime: that Michel has died, but that during his lifetime he was T_hch_q ((32)b), and that he has yet to be born ((32)d), but that he will be black-haired during his lifetime. In other words, individual-level predicates respond to temporal displacement by receiving either a stage-level interpretation (change of state) or a displacement of the lifetime of the individual. This applies even when the individual is inanimate:

- (33) a. The sun is a star.
 b. The sun was a star.

⁶⁴ Or that he does not yet have hair, but that it will be black when it comes in.

Sentence (33)b can only be uttered if the sun has somehow ceased to be a star (stage-level) or ceased to exist (individual-level).

Musan (1997) argues that lifetime effects originate in the absence of a “situation time of the predicate” (p. 276).⁶⁵ When a normally individual-level predicate is marked for non-present tense, the situation time can be supplied from context, producing a stage-level interpretation, or equated to the life of the individual, yielding an interpretation where the individual does not exist at the time of utterance.

Musan’s argument is semantic rather than syntactic. She proposes that a contextual stage-level interpretation of an individual-level predicate depends upon the temporal interpretation of “temporally unspecific” elements in the clause.⁶⁶

I propose that especially in temporally unspecific contexts, when there is no better candidate around for assigning values, elements whose denotation does not directly provide a time interval are able to supply values for *C*. In particular, I want to argue that noun phrases can play this role by providing the time of existence of the individual they denote. (Musan, 1997:290)⁶⁷

⁶⁵ This corresponds to EV-T in the terminology that I am using.

⁶⁶ Or in the discourse as a whole, since Musan illustrates (p. 273ff., 287) that the contextual information often lies outside the clause in question.

⁶⁷ Musan refers to noun phrases rather than determiner phrases; there is evidence that this may be an important distinction with respect to lifetime effects. The composition of, for example, *my late grandmother* or *the late Prime Minister* (rather than **late my grandmother*, **late the Prime Minister*) indicates that the lifetime interpretation occurs at the NP rather than the DP level. However, this may be a language-specific restriction: in Romanian, one may refer to Michael Jackson, *regele târziu* de Rock (Lit. ‘Michael Jackson, king-the late of rock’) (<http://www.qkshare.com/thread449077.html?language=ro>, accessed August 2011).

I suggest that TAM heads express coincidence or non-coincidence between the now-familiar UT-T, AST-T and EV-T, or between one of these and the lifetime of a NP. To understand how this is possible, consider the following.

Events, as we have seen, have timelines. So do individuals: every individual has a bounded existence in time, coming into being and ceasing to exist within temporal bounds. I call this timeline of existence LF-T, and propose that it is accessible to syntax.

The proposal that TAM heads can mediate between a temporal argument and the lifetime of an NP in the absence of another suitable temporal argument does have supporting evidence. Consider first the AFTER operator that expresses non-coincidence of temporal arguments in the syntax of time as analyzed by Demirdache & Uribe-Etxebarria (2000; 2004; 2007). There exist languages (most famously the Celtic languages) in which this relationship of non-coincidence is expressed identically whether the ground (in Hale's terms⁶⁸) is an adverbial adjunct, or a temporal argument of a TAM head:

(34) Welsh:

a. Glaniodd Iŵl Cesar ym Mhrydain ym mis Awst 55 C.C., ond ni lwyddwyd i oresgyn Cymru am fwy na chanrif **wedi hynny**.

‘Julius Caesar landed in Britain in August 55 B.C., but failed to overcome Wales for more than a century **thereafter**.’

(<http://cy.wikipedia.org/wiki/Cymru>; accessed August 2011)

The inner structure of DPs interpreted temporally in this way is in any case outside the scope of this dissertation.

⁶⁸ Though the theory of coincidence was first articulated by Hale, as described in Chapter 2, the terminology of figure and ground was introduced by Talmy (1972).

b. Yr ydwyf I **wedi ysgrifennu'r llythyr**.

‘I have written the letter.’ (Lit., ‘Am I **after writing the letter**.’)

(Comrie, 1976:106)

Further consider that in many – perhaps all – languages, the adposition corresponding to *after*, like other temporal adpositions, may take not only an event NP as its complement, but a non-event NP, and that in the latter case, a natural interpretation is ‘after the lifetime of the individual’.⁶⁹

(35) English:

a. **After Louis XIV**, the economy of France did not fully recover for a century.

b. The question for our energy-intensive society is how to survive **after oil**.

(36) Tḥchḳ Yatḥi:

a. kḳ tḥ'axḳḳ

kḳ tḥ'axḳḳ

house after

‘spot where a house was’

(Tḥchḳ Community Services Agency, 2007)

⁶⁹ An additional, possible, interpretation of *after noun* is ‘after noun’s period of prominence/activity’; for example, one may say ‘After Brian Mulroney, the Conservatives did not win an election until 2006’ implying not that Mulroney is dead, but merely that he is no longer Prime Minister. This is not strictly a lifetime effect, is highly dependent on context, and is dealt with extensively by Musan.

- b. Mqwhì tɬ'axqò, Jimmy Bɪnq kw'atideè whelɪ.
 Mqwhì tɬ'axqò, Jimmy Bɪnq kw'atideè whe-lɪ
 Mqwhì after Jimmy Bruneau chief PFV.3.SBJ-become
 'After Mqwhì, Jimmy Bruneau became chief.'
 (LM 2011)

In (35), the two PPs headed by *after* are interpreted in terms of lifetimes: (35)a refers to a time after the death of Louis XIV, (35)b after the disappearance of oil. In (36)a we have a lexical item that depends on this kind of lifetime interpretation: *kò tɬ'axqò* is a place where a house previously existed but no longer does, while (36)b refers to a time after the death of Chief Mqwhì.⁷⁰

Cross-linguistically, it is very common for markers of progressive aspect to arise diachronically from locative verbs and adpositions (Bybee et al., 1994:129); this is what we would expect if all are expressions of central coincidence. That markers of past or perfective exist that are derived from, or identical to, adpositions of non-coincidence, as in the Celtic languages, should likewise be unsurprising.

If we accept that NPs may be interpreted as temporal expressions of their lifetimes as outlined above, we have (38) as the proposed structure for (37), a lifetime-interpreted perfective ILP:

⁷⁰ Or his chiefdom; see footnote 23 above.

(37) **John** Behcho-dqò **aɪt'è**

John Behcho-dq-μ a-ɪ-t'è

John American-PNS THM-PFV.3.SBJ-COP2

(hanikò goghq while).

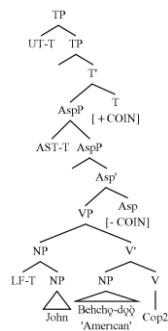
hanikò go-ghq while

but 1PL-from 3.SBJ.exist-NEG

‘**John was American** (but he died).’ (Lit., ‘but he’s gone from us’)

(MLBW 2009)

(38)



In (37)-(38), Copula 2, as proposed, lacks a ν P projection. In the absence of such a projection, the perfective, which normally expresses [-COIN] between AST-T and EV-T, cannot do so, since EV-T is likewise lacking. The only possible interpretation under this structure depends on Asp expressing instead a relationship of non-coincidence between AST-T and the nearest temporally interpretable argument c-commanded by Asp: that is, *John*, which originates as an internal argument of Copula 2 and is hence within Asp's c-command domain.⁷¹ Asp, then, rather than being an instance of [-COIN]{AST-T, EV-T} is instead [-COIN]{AST-T, *John*}, where *John* is then interpreted as 'the lifetime of John'.⁷²

Lifetime effects, then, arise out of the interaction of Copula 2, which lacks a ν P projection and therefore an EV-T, with Asp, which ordinarily expresses [COIN] between AST-T and EV-T. Perfective Asp (bearing [-COIN]) is interpreted with respect to the LF-T of the subject of the clause, rather than EV-T, by the ordinary relation of c-command. Imperfective Asp (bearing [+COIN]) is interpreted, in the absence of EV-T, with respect to the subject's LF-T as well, yielding the result that AST-T is taken to be coincidental with the lifetime of the subject. This, too, is consistent with the data, since individual-level predicates obtain only during the lifetime of the subject. We can see, therefore, that the presence or absence of a ν P projection not only can predict the classic stage-/individual-

⁷¹ The outer structure of the temporal grammar is included for the sake of completeness. However, AST-T cannot be absent under this analysis, not being an argument of ν , and UT-T cannot be absent by definition, since all utterances occur at some time in the real world. Therefore, it is only Asp, and not T, that is subject to lifetime effects. This implies that for languages in which tense and aspect are morphologically fused, as is the case in many Indo-European languages, lifetime effects provide a diagnostic for disambiguating T from Asp.

⁷² Arche (2006) makes a very similar syntactic argument for lifetime effects with the Spanish copula *ser*.

(40) a. #Michel is a hunter every Thursday.

b. ?Michel is a hunter in Whatì but a teacher in Yellowknife.⁷³

Similarly, profession predicates are non-agentive, and therefore incompatible with adverbials of intention, as in (41).

(41) a. #Michel is deliberately a hunter.

b. #Michel is a hunter on purpose.

On the other hand, there is intriguing evidence that points in the direction of predicates of profession being stage-level. Consider that imperatives are compatible only with stage-level predicates or changes of state:

(42) a. Be happy! (S-level)

b. Be available on Friday! (S-level)

c. #Be tall! (I-level)

d. #Be Canadian! (I-level)

While it is possible to use an imperative copula with a predicate that is normally interpreted as individual-level, such a use coerces a stage-level interpretation:

(43) a. Be a man! (S-level/*I-level)

b. Be altruistic! (S-level/*I-level)

⁷³ Under the interpretation where Michel is a hunter when he is in Whatì but a teacher when he is in Yellowknife, this sentence, for me, is marginally felicitous; under the other possible interpretation, where he is simultaneously a hunter in Whatì and a teacher in Yellowknife, it is of course infelicitous. It is also possible that the inferences from these English examples may not be applicable to Tł̥chq̣ Yatì.

In other words, the sentences in (43) are not exhortations to have the characterizing properties of manhood or altruism, but rather to display such properties for a time. Nevertheless, predicates of profession do not quite fit this pattern, as can be seen in (44).

(44) a. Be a hunter!

b. Be a singer!

Neither of the sentences in (44) is analogous to those in (43). While (43)a, b exhort the hearer to display certain (stage-level) properties, (44)a, b urge a change of state, and are equivalent to (45)a, b respectively.

(45) a. Become a hunter!

b. Become a singer!

In addition, predicates of profession are (self-evidently) restricted to animate subjects, suggesting that such subjects may be external arguments, despite being non-agentive.

3.10. Conclusion

The evidence is strong that Copula 1 has both an external argument and an event argument, but Copula 2 has neither. Copula 2 expresses simple coincidence between a figure (its first internal argument) and a ground (its second). Copula 1, however, tied to an event argument, expresses coincidence between the figure (its external argument) and the ground (its internal argument) at the time of the event argument, asserting nothing beyond the bounds of that event argument. We have seen evidence for this in the following facts:

A. Copula 1, but not Copula 2, is compatible with temporal adverbials.

B. Copula 1, but not Copula 2, is compatible with agentive subjects.

- C. Copula 1, but not Copula 2, has a change-of-state interpretation for inanimate subjects.
- D. Predicate complements of Copula 1, but not Copula 2, are open to imperative interpretations.
- E. Arguably, an instantiation of Copula 1, but not Copula 2, checks accusative Case.
- F. Copula 2 shows lifetime effects under non-imperfective aspect.

The conclusion to be drawn from these facts is that Hypothesis I is supported, and the structure proposed for the copulas is correct. The difference between the two is a structural difference: the projection of v by Copula 1 alone.

Whether predicates of profession are stage- or individual-level predicates, and what the source is of their freedom to be complements of either copula, is an issue that we will take up in the next chapter. For the moment it suffices to say that they are apparently an isolated outlier from the general and well established patterning of Copula 1 with stage-level predicates and Copula 2 with individual-level predicates. As such, they require explanation if Hypothesis I is to account for them. That explanation will draw on evidence from other Athapaskan languages as well as from Tł̥ch̥q Yatı̄.

Chapter 4. Beyond Tłchq Yatì: Evidence from Navajo and Tsùt'ínà

In the previous chapter, we saw that the two copulas of Tłchq Yatì produce differences in interpretation when they appear with NP complements: stage-level predicates are selected by Copula 1 and individual-level predicates by Copula 2. Chapter 2 presented a hypothesis to explain this difference: Copula 1 projects a light verb while Copula 2 does not:

(1) Copulas with NP complements	Predicate type	Structure
Copula 1	S-level	[_{VP} [_{VP} NP V] v]
Copula 2	I-level	[_{VP} NP V]

We saw evidence in favour of this hypothesis: Copula 1, but not Copula 2, is compatible with agentive subjects, temporal adverbials, and imperatives. Syntactic tests are difficult because of the nature of Tłchq Yatì clause structure; there are, however, instantiations of Copula 1 that show object agreement, suggesting that their NP complements may bear accusative Case, while there are no such instantiations of Copula 2. Furthermore, the hypothesis advanced in Chapter 2 correctly predicts the behaviour of Copula 2 when it is inflected for tense or aspect: the “lifetime effect” by which a non-present or non-imperfective individual-level predicate is interpreted as referring to an individual that does not exist at the time of utterance. The analysis in Chapter 2 suggests that these lifetime effects are as much a matter of syntax as of semantics: that in the absence of a temporal argument at [Spec, _{VP}], TAM categories take as an internal argument the lifetime (LF-T) of the next NP in their c-command domain, namely, the subject.

Although in Chapters 2 and 3 we found that we could account for the distributional patterns of Tḥchq Yatì copulas that co-occur with NP predicates, there remained one puzzling outlier. Predicates of profession occur with either copula in Tḥchq Yatì, although such predicates are generally considered to be individual-level:

(2) (repeated from (39), Chapter 2)

a. Nàzèe-dqò	gḥl	nì?
nà-Ø-zè-μ-dq-μ̀	gḥ-l	nì
THM-IPFV.3.SBJ-hunt-NML-person-PNS	IPFV.3PL.SBJ-COP1	QN
‘Are they hunters?’		
(MLBW 2011)		
b. Nàzèe-dqò	agḥt’e	nì?
nà-Ø-zè-μ-dq-μ̀	a-gḥ-t’e	nì
THM-IPFV.3.SBJ-hunt-NML-person-PNS	THM-IPFV.3PL.SBJ-COP2	QN
‘Are they hunters?’		
(MLBW 2011)		

Furthermore, although in Chapter 3 we amassed considerable evidence in favour of Hypothesis I (the claim that the distinction between the copulas results from Copula 1 projecting *v* while Copula 2 does not), the result was not a firm conclusion: rather, we found that Hypothesis I was highly plausible. While pleasing to some degree, this result is less than wholly satisfactory, as no evidence against Hypothesis II appeared (Hypothesis II being the null hypothesis, in which no structural difference was proposed, the distinction arising entirely from the lexical semantics of the copulas). Fortunately, there is

strong evidence from other Athapaskan languages that Hypothesis II is untenable, as this chapter will demonstrate.

In order to address the problem of predicates of profession, in this chapter we investigate the occurrence of the copulas in other Athapaskan languages, as the existence of two copulas with distributional differences, far from being limited to Tł̥chq̣ Yatì, is widespread within the Athapaskan family. It is my contention that Navajo and Tsùùt'ínà copulas pattern with those of Tł̥chq̣ Yatì with respect to predicates of profession, but whereas in Tł̥chq̣ Yatì this pattern is an outlying case, in Navajo and Tsùùt'ínà it is part of a larger system. This chapter advances the proposal that what is vestigial in Tł̥chq̣ Yatì is fully developed in the other two languages, and that even in Tł̥chq̣ Yatì, the behaviour of predicates of profession illuminates a property of *v*: that its projection can be motivated by an external subject, an external event argument, or both.

This chapter adduces evidence for this proposal based on the usage of the two copulas in two other Athapaskan languages: Navajo, (also known as Diné Bizaad) and Tsùùt'ínà (formerly known as Sarcee).⁷⁴ As a benefit, it demonstrates that a lexical-semantic explanation of the distinction between the two copulas cannot be sustained, enabling us to reject Hypothesis II in favour of Hypothesis I.

The chapter is divided into three sections. Section 4.1 deals with the copulas of Navajo. In 4.1.1 I present the copula paradigms and introduce the facts of their usage. In 4.1.2 I compare Navajo copulas to those of Tł̥chq̣ Yatì, concluding that although there are broad similarities between the two languages in this respect, there are also differences that need

⁷⁴ I have chosen these languages for the following reasons: for Navajo I have access to textual data, and for Tsùùt'ínà I have access to speakers for fieldwork.

to be accounted for. In 4.1.3 I discuss the application of my theory of a structural difference between Copula 1 and Copula 2, concluding that in Navajo as in Tłchq Yatì, Copula 1 projects a *vP* while Copula 2 does not. The difference in the distribution of the copulas between the two languages results from differences in the licensing of subjects. Copula 1 licenses external subjects, which can be animate or agentive, but need not be both, as well as external event arguments, while Copula 2 licenses neither type of external argument. Section 4.1.4 draws conclusions about the syntactic nature of the copular distinction in Navajo.

Section 2 examines the copulas of Tsùt'ínà in a similar fashion, with the paradigms and distribution discussed in 4.2.1, a comparison to both Tłchq Yatì and Navajo in 4.2.2, analysis in 4.2.3 and conclusion in 4.2.4.

Section 4.3 draws overall conclusions and makes predictions about copula distribution in the Athapaskan family as a whole.

4.1. Navajo

With estimates of 80,000 (Fernald & Perkins, no date) to 170,000 speakers (Shin & Kominski, 2010), primarily in the U.S. states of Arizona, New Mexico, and Utah, Navajo is by far the largest Athapaskan language, although the number of native speakers of primary-school age apparently dropped from 90% to 30% in the thirty years 1968-1998 (Lewis, 2009). Thanks largely to the efforts of Young and Morgan ((1987; 1992; 2000), it is unquestionably the best documented Athapaskan language and in fact the best documented of any language of North America.

Like all Athapaskan languages, it has a highly synthetic prefixing verb structure (Young & Morgan, 1987:99) with subjects and object agreement in both person and

number, along with inflection for viewpoint aspect and mode. Derivational prefixing is extensive as well, with the great majority of verbs consisting of one or more obligatory derivational prefixes (termed “thematic” in the literature) plus a stem: the whole is referred to as a verb theme. Inflection occurs largely between the derivational elements and the stem.⁷⁵

4.1.1. The Navajo copulas⁷⁶

In Navajo, the two copulas exist in the following paradigms, included here for comparison to those of Tł̥chq̣ Yatì (repeated from section 3.4) and to illuminate the morphological forms that appear in the examples in this chapter.⁷⁷

⁷⁵ As in Tł̥chq̣ Yatì, the verb stem occurs at the right edge of the word. Unlike Tł̥chq̣ Yatì, Navajo has some verbal suffixes that are appended to the root, the stem thus being equivalent to the root plus possible suffixes (Young, Morgan, & Midgette, 1992:841). In Tł̥chq̣ Yatì, which lacks verbal suffixes as such (Ackroyd, 1982), there is no need to distinguish between the verb root and stem: in Navajo there is.

⁷⁶ The Navajo forms in these paradigms are drawn from several sources (Binaltsoos, 1997; Young & Morgan, 1987; Young, Morgan, & Midgette, 1992; Young & Morgan, 2000).

⁷⁷ The citation form in these works is the first-person singular. Gaps in the tables represent gaps in the forms attested in the materials available to me, not necessarily in the paradigms themselves.

(3) nishłı́ ‘be’ (Navajo Copula 1)		Person		
Mode	Number	1	2	3
Imperfective	Singular	nishłı́	nılı́	nılı́/nılı́
	Dual	niidlı́	nohłı́	
	Plural	daniidlı́	danohłı́	daalı́
Perfective	Singular			ı́lı́
	Dual			
	Plural			daalı́
Future	Singular	deeshłeeł	díı́leeł	nılı́ı́ dooleeł
	Dual	diidleeł	dohleeł	nılı́ı́ dooleeł
	Plural	dadiidleeł	dadohleeł	dadooleeł
Optative	Singular			
	Dual			
	Plural			

ts’ı́lı́ ‘be’ (Tłı́chq̄ Yatı́ Copula 1)		Person		
Mode	Number	1	2	3
Imperfective	Singular	ehłı́	nelı́	elı́
	Dual	dı́ılı́/wı́dlı́	aahłı́	gı́ılı́
	Plural	ts’ı́lı́		
Perfective	Singular	ı́hlè/ılè	neelè	ılè
	Dual	wı́dlè/dı́ılè	aahlè	gı́ılè
	Plural	ts’ı́ılè		
Optative	Singular	ı́hlè	wı́ılè	welè/welı́
	Dual	wı́ı́dlè/dı́ılè	waahlè	gı́ılè
	Plural	ts’ı́ılè		

(4) ánisht'é 'be' (Navajo Copula 2)		Person		
Mode	Number	1	2	3
Imperfective	Singular	ánisht'é	ánít'é	át'é/ánít'é
	Dual	ániit'é	ánoht'é	
	Plural	ádaniit'é	ádanoh't'é	ádaat'é
Perfective	Singular			áyit'é'
	Dual			
	Plural			ádayit'é'
Future	Singular	deesht'eeł	díit'eeł	
	Dual	diit'eeł	doht'eeł	
	Plural	dadiit'eeł	dadoht'eeł	dadoht'eeł
Optative	Singular			
	Dual			
	Plural			

ats'ı́t'e 'be' (Tłchq Yatı́ Copula 2)		Person		
Mode	Number	1	2	3
Imperfective	Singular	aht'e	anet'e	hqt'e
	Dual	adiit'e awit'e	aaht'e	agı́t'e
	Plural	ats'ı́t'e		
Perfective	Singular	aı́ht'è	aneet'è	aı́t'è
	Dual	awit'è/adiit'è	aaht'è	agı́t'è
	Plural	ats'ı́t'è		
Optative	Singular	aweht'è	awı́t'è	awet'è
	Dual	awiit'è	awaaht'è	agiıt'è
	Plural	ats'ı́t'è		

Differences between the Navajo and Tłchq Yatì paradigms are immediately apparent. Most strikingly, the aspectual and modal markings in Navajo are richer than in Tłchq Yatì, including a morphologically marked future, and the paradigm is correspondingly more complex.⁷⁸ Secondly, whereas in Tłchq Yatì dual number as a morphologically marked category is restricted to the first person, being merged with the plural in the second and third, in Navajo it exists in the first and second persons, and is merged in the third not with the plural but with the singular.⁷⁹ Also apparent is that unlike Tłchq Yatì, both Navajo copulas show explicit marking for the imperfective: the *ni-* prefix that occurs in both of them (Young et al., 1992:853).

A final difference, not reflected in the tables in (3) and (4), is that the Navajo form cognate with the Tłchq Yatì first-person plural subject agreement prefix *ts'(e)-* is not used for the first person in Navajo. Rather, it is strictly an impersonal form, used when the subject is unknown or unspecified, as the pronouns *on* and *man* are used in French and

⁷⁸ Where verbs in general are concerned, there are in fact more complex paradigms than I have indicated, including marking for usitative, iterative and progressive categories; however, these do not occur with neuter (stative) verbs, which include the copulas. The precise TAM categories that are marked by this morphology have not yet been analyzed formally within the tradition of dyadic predicates; however, see Axelrod (1991) for an exhaustive semantic analysis of the TAM categories of Koyukon, an Athapaskan language with very rich TAM morphology.

⁷⁹ This is not simply a peculiarity of the copular verbs, but is the same for all verbs, although there are classificatory verbs showing stem variation according to subject number. Even in the case of the latter, however, the third-person singular and dual agreement markers are the same. Incidentally, this fact demonstrates the correctness for Navajo as for Tłchq Yatì of the characterization in Chapter 1 of the classificatory verb system as a semantic phenomenon rather than syntactic number agreement.

German. The Navajo form of this prefix is *ji-*, glossed in this chapter as IMPL. I have not found examples of it occurring with either copula.⁸⁰

However, the differences between Navajo and Tłıchq Yatı̀ copulas go beyond morphology, as their distributional properties make clear.

Young and Morgan describe the distributional differences between Copula 1 and Copula 2 in these terms:

Nishłı́ and ánisht'é both translate “to be”, distinguished at one time, perhaps, as “to be as the result of becoming”, in contradistinction to “to be in the sense of inherent quality”. Currently usage appears to dictate choice in given contexts, with át'é most common if the subject is non-human, and nlı́ if the subject is human. (Young & Morgan, 1987:660-661)

However, it does not appear, from the available data, that the distinction is quite as fluid as Young and Morgan describe it. As in Tłıchq Yatı̀, the two copulas show definite distributional differences. For example, it appears that an individual-level predicate of a non-human subject invariably occurs with Copula 2. In each of the examples in (5), a non-human subject is being identified – assigned to an (individual-level) class, and the copula that appears is Copula 2.⁸¹

⁸⁰ For an account of the differences between the distributions of this form in Tłıchq Yatı̀ and in other Athapaskan languages, see Saxon (1993).

⁸¹ The first line of each example in this chapter is in the orthography of the source material. In modern publications, this is the official Navajo orthography. In the case of material from Goddard or other early linguists, it is the transcription system that appears in their work. The morphological analyses, on the second line and third lines of each example, are my own, for which I have used the official Navajo orthography.

(5) a. Názbas **át'é.**

názbas á- Ø-t'é.

circle THM-IPFV.3.SBJ-COP2

‘It’s a circle.’

(Johnson, Martinez, Scott, & Thompson, 1999:S17)

b. Díí éí kq' bee niltsésí **át'é.**

díí éí kq' bee niltsésí á- Ø-t'é

DEM one fire extinguisher THM-IPFV.3.SBJ-COP2

‘This is a fire extinguisher.’

(Navajo Nation Language Project, 1997:217)

c. To **at'ela** djinní djín.

to á-t'é-la ji-ní ji-ní

water THM-COP2-discovery IMP.IMPL.SBJ-say IMP.IMPL.SBJ-say

‘ “It is water,” he said, they say.’

(Goddard & Reichard, 1933:16)

d. Dibé **át'é.**

dibé á-Ø-t'é

sheep THM-IPFV.3SG.SBJ-COP2

‘It is a sheep.’

(Young & Morgan, 1987:661)

By contrast, a stage-level predicate of an animate subject appears with Copula 1:⁸²

⁸² I am unable to determine the meaning of the suffix on the copula in (6)a, nor the apparent apocope on the second instance of *jini* in (5)c.

(6) a. Shí łíí' **nishłíí** doo.

shí łíí' ni-sh-lí-í doo

1SG horse IMP-1SG-COP1-SUF FUT

‘I will be the horse.’

(Navajo Nation Language Project, 1997:173)

b. t'ah cí' 'awe·' **ničłí·go**

t'ah shí' 'awéé ni-sh-lí-go

still 1SG baby IMP-1SG.SBJ-COP1-when

cimá 'ádin.

shī-má 'á-Ø-din

1SG-mother THM-IPFV.3.SBJ-be.dead

‘I was probably only a baby when my mother died.’ (Lit., ‘when I was still a baby, my mother was dead.’)

(Reichard, 1951:382)

c. Yínííłísh **níłí?**

yínííłísh ni-ni-lí

sorrow IMP-2.SBJ-COP1

‘Are you in a sorrowful state?’

(Binaltsoos, 1997:70)

The sentence in (6)a occurs in the context of a child pulling a wagon: i.e., “being a horse” for another child for a limited time, and as a result of agency. In (6)b we see an embedded clause under *when*, one of the classic tests for stage-level predicates since

- b. 'azee'íí'íní nishł́.
 'azee'íí'íní ni-sh-ĺ
 doctor IMP-1SG.SBJ-COP1
 'I am a doctor.'
- (Young & Morgan, 1987:661)
- c. Shísh éí ha'át'íí nishł́?
 shísh éí ha'át'íí ni-sh-ĺ
 clan one what IMP-1SG.SBJ-COP1
 'What is my clan?' (Lit., 'What clan am I?')
- (Binaltsoos, 1997:92)
- d. Shizhé'é ' nĺ.
 shi-zhé'é ni-Ø-ĺ
 1SG-father IMP-3SG.SBJ-COP1
 'He is my father.'
- (Young & Morgan, 1987:661)
- e. Diné 'ayóo ntsékeesii nishł́.
 diné 'ayóo ntsékeesii ni-sh-ĺ
 person very thoughtful IMP-1SG.SBJ-COP1
 'I am a very thoughtful man.'
- (Young & Morgan, 1987:661)

In these examples, we have not only predicates of profession ((8)a, b) but also clan membership ((8)c), a kinship term ((8)d) and a descriptive predicate ((8)e). It is clear that there is no ban on individual-level predicates with Copula 1. Nevertheless, these

predicates also occur freely with Copula 2, as the examples in (9) demonstrate. All three clauses in (9) form (near) minimal pairs with clauses in (8), the only difference being the presence of a different copula: (9)a forms a minimal pair with (8)d, (9)b a near minimal pair with (8)b, and (9)c a minimal pair with (8)e.

(9) a. Shizhé'é ' á-t'é.

shi-zhé'é á-Ø-t'é

1SG-father THM-IPFV.3SG.SBJ-COP2

'He is my father.'

(Young & Morgan, 1987:119)

b. 'azee'íí'íní á-t'é.

'azee'íí'íní á-Ø-t'é

doctor THM-IPFV.3SG.SBJ-COP2

'S/he is a doctor.'

(Young & Morgan, 1987:661)

c. Diné 'ayóo ntsékeesii ánisht'é

diné 'ayóo ntsékeesii á-ni-sh-t'é

person very thoughtful THM-IMP-1SG.SBJ-COP1

'I am a very thoughtful man.'

(Young & Morgan, 1987:661)

The predicates in these examples are definitely not stage-level, as is demonstrated in (10), where an eventive interpretation of a kinship term predicate is infelicitous:

- (10) Sarah 'azee'ííl'íní yitsi' niljigo atoo ólta' leh.
 Sarah doctor 3-daughter 3-be very 3-study usually
 'Sarah, being a doctor's daughter, studies a lot.'
 #'When Sarah is a doctor's daughter, she studies a lot.'
 (Fernald, 2000:61)

The enclitic *-go* is a complementizer (Young et al., 1992:938); in this case, the embedded clause can be interpreted felicitously as 'being a doctor's daughter', which is non-eventive, but an eventive reading of 'when Sarah is a doctor's daughter' is not available.

The remaining quadrant of the table in (7), stage-level predicates of non-human subjects, allows Copula 1, as illustrated in (11).

- (11) Díí jǫ 'at'ééké bikee' danlínígíí
 díí jǫ 'at'ééd-ké bi-kee' da-'ani-ni-Ø-lǫ-nígíí
 DEM now girl-PL 3-shoe DIST-worth-IMP-3.SBJ-COP1-REL
 doo da'ílǫgóó 'adaalyaa, jíní,
 doo da'ílǫgóó 'á-daa-l-yaa ji-ní
 cheaply THM-DIST.PFV.3PL.SBJ-CLAS-be.made IPFV.IMPL.SBJ-say
 kintahdi.
 kintah-di
 town-LOC
 'Girls' shoes are reportedly on sale today in town.'
 (Young & Morgan, 1987:661)

The picture that emerges of the copula distinction is tantalizingly different from that in Tł̥chq̣ Yatì:

(12)	Navajo:	Predicate		Tł̥chq̣ Yatì:	Predicate	
		S-level	I-level		S-level	I-level
Subject	Human	COP1	COP1/2	Human	COP1	COP2 ⁸³
	Non-human	COP1	COP2	Non-human	COP1	COP2

It appears that in Navajo, while stage-level predicates only occur with Copula 1, and individual-level predicates of non-human subjects only with Copula 2, the other possible combination – individual-level predicates of human subjects – allows either copula. Any analysis of Navajo copular clauses must make allowance for this fact.

4.1.2. Navajo and Tł̥chq̣ Yatì copulas

While Tł̥chq̣ Yatì copular clauses show a distinction between stage-level and individual-level interpretations, reflecting, in our analysis, an underlying distinction between the *v*-projecting Copula 1 and the non-*v*-projecting Copula 2, the situation in Navajo is clearly more complex.

There is nothing in the data so far to falsify the hypothesis that Copula 2 does not project *v*: however, Copula 1 has a wider distribution in Navajo than in Tł̥chq̣ Yatì, and its structure is not immediately apparent.

Although predicates of profession, in Chapter 3, remained a puzzling outlier in the picture of the Tł̥chq̣ Yatì copular distinction, in Navajo they are clearly part of a larger pattern. There is something about human subjects that allows even individual-level predicates with Copula 1. The next section will propose that in Navajo, *v* always selects

⁸³ With the exception of predicates of profession, as we saw in chapter 3.

an external argument, whether a thematic subject, an event argument, or both. It is the optionality of the event argument that accounts for the possibility of individual-level interpretations of predicates introduced by Copula 1.

4.1.3. Analysis of the Navajo copula distinction

This section is devoted to an analysis of the unexpected findings of the previous one. It proposes that human subjects of Copula 1, but not Copula 2, always merge as external subjects even when the predicate is individual-level. Section 4.1.3.1 argues for a special status for human subjects, 4.1.3.2 proposes a mechanism for the licensing of the external subject and event argument, and 4.1.3.3 examines the consequences of this analysis for Hypothesis I, concluding that event arguments may, but need not, merge with Copula 1.

4.1.3.1. The special syntactic status of human subjects

Recall from Chapter 1 that in Athapaskan languages, human subjects often get preferential treatment in syntax:

Subjects in Slave and Dogrib: Human agentive subjects must occur in [Spec, NumP] while inanimate, nonagentive subjects must occur in the VP-internal subject position. Other subjects may occur in either position. (Rice & Saxon, 2005:713)

and again,

[In Athapaskan languages] ...only humans or animates may be marked for number, and only these nominals may occupy [Spec, NumP]. (Rice & Saxon, 2005:710)

Humans have special status with respect to Navajo and Tłchq Yatì copulas. I formalize this status as the feature [+HUM], which licenses a merge in the external subject position; subjects merging in this position trigger the merge of Copula 1 with its *vP* projection.

That human subjects have the option of co-occurring with Copula 1 regardless of predicate type suggests that even when the predicate is individual-level, the subject is external. Before exploring this possibility further, it is worth reviewing what an external subject is.

4.1.3.2. Subjects of Copula 1

The term “external subject” is a syntactic one, referring to an argument of a predicate that merges in a Spec position outside of the predicate’s maximal projection (VP, in the case of Athapaskan copulas).⁸⁴ Since Larson (1988), research has connected this position with a number of semantic properties, as discussed in chapter 2: animacy, agentivity, causativity, and so on. Section 3.5 argued that externality depended upon the capacity to cause or undergo change.

Animate beings are inherently “changers”, able to act to change the world around them. Human beings add an additional ability: we can imagine our actions beforehand and perceive and understand the results.⁸⁵

⁸⁴ This definition comes from <http://www2.let.uu.nl/uil-ots/lexicon/zoek.pl?lemma=external+argument>, accessed 2012 07 07.

⁸⁵ The degree to which animals can do this as well is not germane to the argument here. We have direct evidence (through introspection) only of our own ability as human beings to experience and imagine change.

These abilities of animate and human beings, I maintain, are the conceptual basis for the licensing of copular subjects. Copula 1 obligatorily selects an argument that is external, a condition satisfied by the feature [+HUM]. Human subjects, therefore, can merge in [Spec, ν P]. If a [+HUM] subject is merged, Copula 1's external argument position is filled and no further merge is necessary; an additional merge of Ev-T is adjunctive (in a second Spec position).

If the subject is [-HUM], on the other hand it cannot merge in [Spec, ν P]. An external argument is required by ν : the last resort is to merge Ev-T in that position. Thus, a clause where Copula 1 is merged with a non-human subject must be eventive (stage-level), since Ev-T is the way to satisfy Copula 1's requirement for an external argument.

This structure predicts that there will be two kinds of Copula 1 clauses, those with an event argument and those without. This is true: predicates introduced by Copula 1, with human subjects, are ambiguous between stage-level and individual-level, as the next section will demonstrate.

4.1.3.3. The optionality of the event argument

We have assumed, following the literature, that external subjects and event arguments are both introduced at ν , while VPs lacking a ν P projection (individual-level predicates, that is) have no event argument. We have seen in this chapter that in Navajo, individual-level predicates can occur with Copula 1 if the subject is human:

(13) (repeated from (8)d)

Shizhé'é ' nlí.

shi-zhé'é ni-Ø-lí

1SG-father IMP-3SG.SBJ-COP1

'He is my father.'

(Young & Morgan, 1987:661)

If fatherhood is a biological relationship not subject to change, to assume an event argument for (13) is to abandon the very definition of individual-level predicates. The only other alternative is to conclude that event arguments are only optionally introduced by *v*. Another prediction is that individual-level predicates introduced by Copula 1 and those introduced by Copula 2 will not be synonymous, but subtly different, since the former will be ambiguous as to eventivity while the latter will be unequivocally non-eventive. There is evidence that in Tłıchq Yatı̄, this is so. Recall that predicates of profession in Tłıchq Yatı̄ may co-occur with Copula 1 or with Copula 2. Nevertheless, consultants often found a difference between the two kinds of clause:

(14) a. Kw'atı̄deè elı̄.

kw'atı̄deè Ø-lı̄

chief IPFV.3.SBJ-COP1

'He's a chief.'

(It sounds like he's become a chief now – MLBW 2011)⁸⁶

⁸⁶ Notice the similarity with Young and Morgan's characterization of Navajo Copula 1 as historically meaning "be as a result of becoming."

b. Kw'atɪdeè hɔt'e.

kw'atɪdeè ha-ɪ-t'e

chief THM-IPFV.3.SBJ-COP2

'He's a chief.'

(It sounds like he's been a chief for a long time – MLBW 2011)

(15) a. Nàzèe-dqò elɪ.

nàzèe-dqò Ø-lɪ

hunter IPFV.3.SBJ-COP1

'He's a hunter.'

(“It sounds like he's out on the land a lot.” – MLBW 2011)

b. Nàzèe-dqò hɔt'e.

nàzèe-dqò ha-ɪ-t'e

hunter THM-IPFV.3.SBJ-COP2

'He's a hunter.'

(“That's just what he is.” – MLBW 2011)

(16) a. Nàzèe-dqò ts'ɪlɪ.

nàzèe-dqò ts'ɪ-lɪ

hunter IPFV.1PL.SBJ-COP1

'We are hunters.'

(It sounds like it's now: we are hunters today – MRS 2012)

b. Nàzèe-dqò ats'ɪt'e.

nàzèe-dqò a-ts'ɪt'e

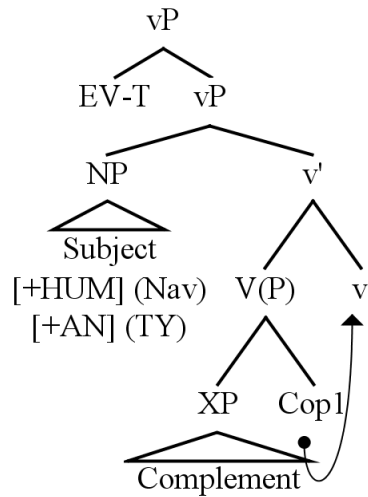
hunter THM-IPFV.1PL.SBJ-COP2

‘We are hunters.’

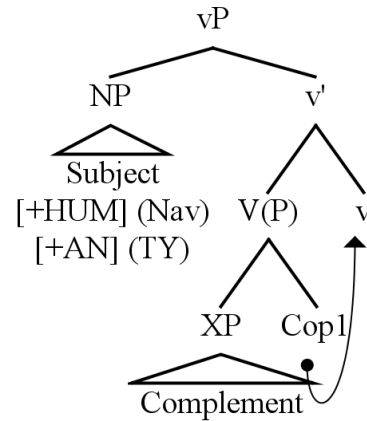
(It sounds more like each individual person is a hunter always – MRS 2012)

In each of (14)a, (15)a, (16)a, the predicate is perceived by the consultant as being open to an eventive interpretation, unlike (14)b, (15)b, (16)b. This is evidence that there is an adjunctive event argument when Copula 1 forms predicates of profession, and therefore that the two copulas are *not* synonymous. Copula 1 may, but need not, have an event argument. This is a situation that leads to ambiguity between eventive and non-eventive interpretation if the subject is human/animate ((17)a, (17)b). In (17)a, the event argument results in a stage-level interpretation, while its absence in (17)b results in an individual-level interpretation. Nevertheless, because the event argument has no overt exponent, these sentences are phonologically identical unless (17)a is disambiguated by adding a temporal adverbial or the like.

- (17) a. Copula 1, external subject
and event argument merged

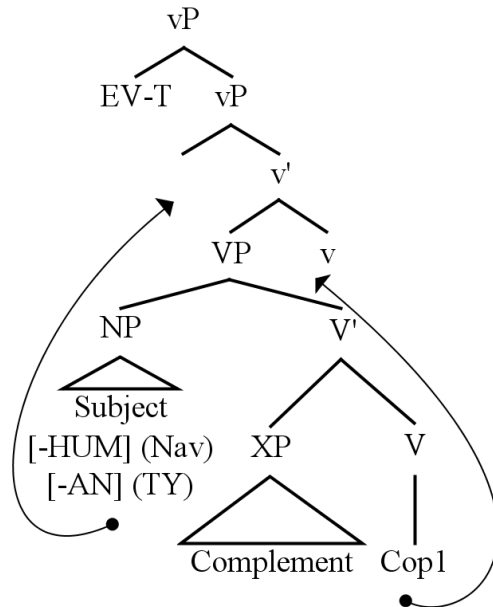


- b. external subject merged,
event argument not merged



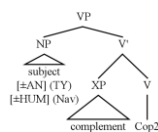
However, lack of an external subject necessitates the merger of an event argument, leading to an obligatory eventive interpretation ((18)).

- (18) Copula 1, internal subject and event argument merged



This structure results in an unambiguously stage-level interpretation. With Copula 2, there is no possibility of ambiguity, since no event argument can be present, and the subject, even if human, is not external:

- (19) Copula 2, internal subject merged,
event argument impossible



This prediction may be tested by determining whether Navajo clauses with Copula 1 and a human subject are ambiguous as to eventivity. If they are (as they are in Tł̥chq Yatì), that result would support the analysis in this chapter. This is a question that is not answered by Young and Morgan; nor is it apparent from the textual data that I have. Probably it cannot be resolved without fieldwork.

According to the theory developed in sections 4.1.3.1 - 4.1.3.3, Copula 1, whether in Navajo or in Tł̥chq Yatì, has an external subject, and may (but need not) also have an event argument. Therefore the sentences in (20)a-(23)a must be represented by the structures in (20)b-(23)b.⁸⁷

⁸⁷ I am assuming clause structures for Navajo and Tsùt'ínà similar to that of Tł̥chq Yatì. This is not unwarranted: Rice (2000) and Rice and Saxon (2005) describe a clause structure broadly similar for the entire Athapaskan family.

(20) a. Yíniílish **níí?** (repeated from (6)c) b.

sorrow IMP-2.SBJ-COP1

(Binaltsoos, 1997:70)

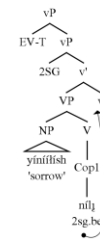
yíniílish

‘Are yo

(21) a. ’azee’íí’íní nishí. (repeated from (8)b) b.

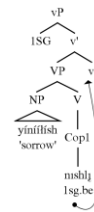
doctor IMP-1SG.SBJ-COP1

(Young & Morgan, 1987:661)



’azee’íí

‘I am a



(22) a. 'at'ééké bikee' danlínígíí (abbreviated from (11))

'at'ééd-ké bi-kee' da-'ani-ni-Ø-lǝ-nígíí

girl-PL 3-shoe DIST-worth-IMP-3.SBJ-COP1-REL

doo da'ílǝígóó 'ádaalyaa

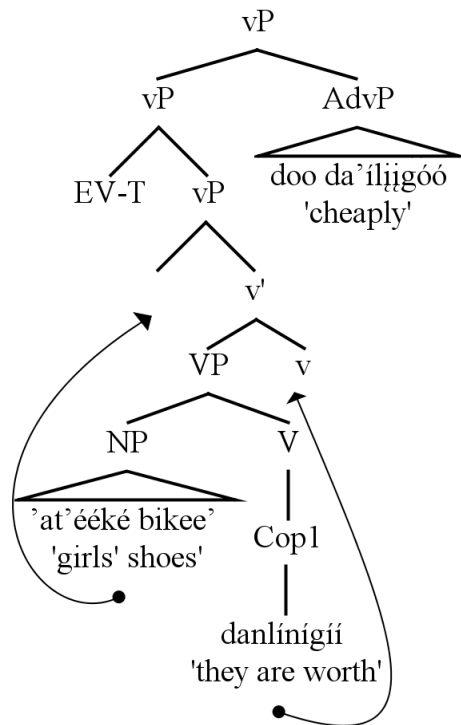
doo da'ílǝígóó 'á-daa-l-yaa

cheaply THM-DIST.PFV.3PL.SBJ-CLAS-be.made

'Girls' shoes are on sale.'

(Young & Morgan, 1987:661)

b.



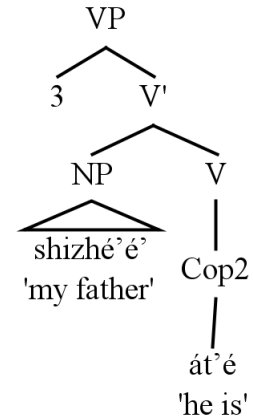
(23) a. Shizhé'é' át'é. (repeated from (9)a) b.

shi-zhé'é' á-Ø-t'é

1SG-father THM-IPFV.3SG.SBJ-COP2

'He is my father.'

(Young & Morgan, 1987:119)



4.1.4. Conclusions

We have seen that the unexpected behaviour of Copula 1 in Navajo is not incompatible with Hypothesis I. On the contrary, if Copula 1 projects a ν , its behaviour turns out to be similar to other, better documented instances of ν . The ability of human subjects to be external arguments is in line with the special status of human subjects in Athapaskan languages.⁸⁸ It has two consequences for present purposes. For Navajo, it means that there is in fact no synonymy between the two copulas, even when both relate individual-level predicates to animate subjects: Copula 1 predicates are ambiguous with regard to predicate type, while Copula 2 predicates are unambiguously individual-level. It also has a consequence for Tłıchǫ Yatıı. As there is evidence for a similar special syntactic status for human subjects in Tłıchǫ Yatıı as well as in Navajo, the problem of predicates of profession in Tłıchǫ Yatıı may be resolved. The prediction that comes out of this result is that individual-level predicates of human subjects should be acceptable, to some degree,

⁸⁸ It remains possible that in circumstances where non-human subjects are anthropomorphized, and human emotions or intellect attributed to them, they might pattern with humans syntactically. For extensive demonstrations of this phenomenon in Blackfoot, see Ritter and Rosen (2005), Johansson (2007) and Meadows (2010).

with Copula 1 as well as with Copula 2. This is apparently true of predicates of profession in Tł̥chq Yatì (see section 4.1.3.3); whether it is true of other predicates as well is a question for further investigation, though current data suggest that it may be:

(24) a. Qhdaà gɪlɪ. (repeated from chapter 2)

q̣hdaà gɪlɪ

elder IPFV.3PL.SBJ-COP1

‘They are elders.’

(MLBW 2009)

Normally, predicates referring to age are individual-level, as discussed in Chapter 3. If clauses like (24) can indeed be interpreted as individual-level predicates, it would be strong evidence that the structure of Copula 1 is the same in Tł̥chq Yatì as in Navajo.

Further evidence in support of this analysis comes from another Athapaskan language. The next section of this chapter examines the copulas of Tsúùt'ínà, concluding that their behaviour is similar in most respects to Navajo.

4.2. Tsúùt'ínà

The Tsúùt'ínà Nation lies on the western edge of Calgary, Alberta, in the foothills of the Rocky Mountains.⁸⁹ It is critically endangered: only around fifty speakers remain, all over the age of sixty (Bruce Starlight, pc; Violet Meguinis, pc). Revitalization efforts are underway, with classes in the language being taught by trainees and elders at the elementary and high school levels.

⁸⁹ The name “Sarcee/Sarsi”, for the ethnic group and the language, used by researchers from Sapir to Cook, is disfavoured, as it derives from a pejorative Blackfoot term.

Documentation of the language began with Sapir, who in 1922 made eleven volumes of fieldwork notes on Tsùùt'ínà; more recent work has been done by Cook (1984), and Starlight and Donovan (2008).

4.2.1. Copulas

The copulas of Tsùùt'ínà exist in the following paradigmatic forms (with Tłchq Yatì for comparison):

(25) <i>ĩstłí</i> ‘be’ (Tsuùt’ínà Copula 1)		Person		
Mode	Number	1	2	3
Imperfective	Singular	<i>ĩstłí(n)</i>	<i>nĩ(d)lí(n)</i>	<i>ʔĩ(d)lí(n)</i>
	Plural	<i>ʔĩsìi(d)lí(n)</i>	<i>ʔālí(n)</i>	<i>gĩ(d)lí(n)</i>
Perfective	Singular	<i>yĩstłà</i>	<i>yílà</i>	<i>yīlà</i>
	Plural	<i>yāàlà</i>	<i>yālà</i>	<i>gīyīlà</i>

<i>ts’ı́łı</i> ‘be’ (Tḥchq Yatı̀ Copula 1)		Person		
	Number	1	2	3
Imperfective	Singular	<i>ehłı</i>	<i>nelı</i>	<i>elı</i>
	Dual	<i>dı́łı/wı́dlı</i>	<i>aahłı</i>	<i>gı́łı</i>
	Plural	<i>ts’ı́łı</i>		
Perfective	Singular	<i>ı́hlè/ılè</i>	<i>neelè</i>	<i>ılè</i>
	Dual	<i>wı́dlè/dı́ılè</i>	<i>aahlè</i>	<i>gı́lè</i>
	Plural	<i>ts’ı́lè</i>		
Optative	Singular	<i>ı́hlè</i>	<i>wı́lè</i>	<i>welè/welı</i>
	Dual	<i>wı́dlè/dı́ılè</i>	<i>waahlè</i>	<i>gı́lè</i>
	Plural	<i>ts’ı́lè</i>		

Note on the paradigms: the Tsuùt’ínà paradigms are drawn from fieldwork with Violet Meguinis and from Starlight & Donovan (2008). As in Navajo, there is an impersonal verb inflection in Tsuùt’ínà, cognate with the first-person plural in Tḥchq Yatı̀ and represented by *ts’ı́(d)lı(n)* in the imperfective and *ts’ı́yılà* in the perfective.

(26) áñĩst'ā 'be' (Tsuùt'ínà Copula 2)		Person		
Mode	Number	1	2	3
Imperfective	Singular	ʔánĩst'ā	ʔáníst'ā	ʔát'ā
	Plural	ʔánāāt'ā	ʔánāst'ā	ʔágīt'ā
Perfective	Singular	ʔáyĩst'à	ʔayít'à	ʔáyīt'à
	Plural	ʔáyāāt'à	ʔáyāst'à	ʔágíyīt'à

ats'ı̣t'e 'be' (Ṭḥcḥq̣ Yatı̣ Copula 2)		Person		
	Number	1	2	3
Imperfective	Singular	aht'e	anet'e	ḥq̣t'e
	Dual	adiit'e awit'e	aaht'e	agı̣t'e
	Plural	ats'ı̣t'e		
Perfective	Singular	aiht'è	aneet'è	aịt'è
	Dual	awit'è/ adiit'è	aaht'è	agı̣t'è
	Plural	ats'ı̣t'è		
Optative	Singular	aweht'è	awı̣t'è	awet'è
	Dual	awı̣it'è	awaaḥt'è	agı̣t'è
	Plural	ats'ı̣t'è		

Note on the paradigms: the Tsuùt'ínà paradigms are drawn from fieldwork with Violet Meguinis and from Starlight & Donovan (2008). As in Navajo, there is an impersonal verb inflection in Tsuùt'ínà, cognate with the first-person plural in Ṭḥcḥq̣ Yatı̣ and represented by ʔáts'ı̣t'ā in the imperfective and ʔáts'ı̣yīt'à in the perfective.

As we saw with Navajo, there are differences between the Tsùùt'ínà and T̥chq Yatì paradigms.⁹⁰ First, the Tsùùt'ínà paradigms lack optative forms.⁹¹ Secondly, unlike both T̥chq Yatì and Navajo, dual number does not exist as a morphologically marked category in Tsùùt'ínà. The distributive, which in Navajo distinguishes plural from dual agreement marking, is in Tsùùt'ínà an optional element peripheral to the paradigm, and its absence is perfectly compatible ((27)a) with a plural interpretation.⁹²

(27) a. Dàgīt'ādā?

dà-gī-t'ā-dā

how-IPFV.3PL.SBJ-COP2-QN

‘How are they?’ (talking about a bunch of people – VM)

(VM 2012)

b. Dàdàgīt'ādā?

dà-dà-gī-t'ā-dā

how-DIST-IPFV.3PL.SBJ-COP2-QN

‘How are they?’ (more like ‘How are they all?’ – VM)

(VM 2012)

⁹⁰ I cannot identify the role of the *s*-affix in the second-person singular imperfective form Copula 2.

⁹¹ As in Navajo, other verbal paradigmatic categories exist, including marking for iterative and progressive; however, also as in Navajo, these do not occur with neuter verbs (Cook, 1984:216ff).

⁹² The first line of each example is in the official Tsùùt'ínà orthography, as is the gloss on the second line. As with the Navajo examples in the earlier sections of the chapter, the morphological analyses in the Tsùùt'ínà sections are my own, based on information in Cook (1984) and Starlight and Donovan (2008) as well as personal communications from Bruce Starlight and Violet Meguinis.

Both (27)a and (27)b contain explicit plural marking, which is all that is needed for a plural interpretation (as Violet Meguinis's comment on (27)a makes clear). The addition of distributive marking ((27)b) emphasizes the plurality, but is not required.

It is worth noting, for identificational purposes, a couple of morphophonological characteristics of Copula 1 that appear in the data in this section, but do not have an effect on the syntax. Tsùt'ínà lacks the nasalized vowels of Proto-Athapaskan (Cook, 1984:4), but at an underlying level some trace of them remains, in the form of a nasal consonant that surfaces to break up hiatus.⁹³ The consonant does not appear in utterance-final position in (28)a, c, but only in hiatus in (28)b, d.

(28) a. Dīná īstlí.

dīná s-lí

person IPFV.1SG.SBJ-COP1

'I'm a person.'

(VM 2012)

b. Dīná īstlíⁿ áʔà.

dīná s-lí áʔà

person IPFV.1SG.SBJ-COP1 EMPH

'I'm a person too.'

(VM 2012)

⁹³ Cook discusses the disappearance of nasal vowels and evidence that they may have remained in the language until the 1940s. He does not, however, mention their persistence as liaison consonants.

- c. Níní mīchàdīkòdí nīlí.
 níní mīchàdīkòdí nī-lí
 2SG beaver IPFV.2SG.SBJ-COP1
 ‘You will be the beaver.’
 (VM 2012)

- d. Tsúùt’ínà nīlín īlá?
 Tsúùt’ínà nī-lí īlá
 Tsúùt’ínà IPFV.2SG.SBJ-COP1 QN
 ‘Are you a Tsúùt’ínà?’
 (VM 2012)

That it is an underlying part of the Copula 1 stem is shown by its failure to appear in the corresponding environment with Copula 2, in (29).

- (29) Tsúùt’ínà áníst’ā īlá?
 Tsúùt’ínà á-ní-s-t’ā īlá
 Tsúùt’ínà THM-IPFV.2SG.SBJ-S-COP2 QN
 ‘Are you a Tsúùt’ínà?’
 (VM 2012)

Another morphophonological peculiarity of Copula 1 is apparent free variation between *l* and *dl* as its stem-initial consonant. Violet Meguinis produced both varieties; I do not know what the factors are that influence the variation:⁹⁴

⁹⁴ Leslie Saxon (pc, 2012) asks whether this alternation could be due to the D-Effect, a morphophonological phenomenon that results when an underlying /d/, such as in forms descended from the Proto-Athapaskan

- (30) a. àkínáàhí Tsúùt'ínà ʔìsīlí.
 àkínáàhí Tsúùt'ínà ʔìsīlì-lí
 both Tsúùt'ínà IPFV.1PL.SBJ-COP1
 ‘We are both Tsúùt'ínà.’
 (VM 2012)
- b. Àkínáàhí Tsúùt'ínà ʔìsī**dl**ín áʔà.
 àkínáàhí Tsúùt'ínà ʔìsīlì-lí áʔà
 both Tsúùt'ínà IPFV.1PL.SBJ-COP1 EMPH
 ‘We are both Tsúùt'ínà.’
 (VM 2012)
- c. Ìtɿ'íyá ìt'í, xànítìì ìlí.
 ìtɿ'íyá ìt'í, xànítìì Ø-lí
 night if buffalo IPFV.3.SBJ-COP1
 ‘When it is night time, he is a buffalo.’
 (VM 2012)
- d. Ìtɿ'íyá ìt'í, xànítìì ì**dl**í.
 ìtɿ'íyá ìt'í, xànítìì Ø-lí
 night if buffalo IPFV.3.SBJ-COP1
 ‘When it is night time, he is a buffalo.’
 (VM 2012)

first-person plural, coalesces with the stem consonant. If this is indeed its origin, it has apparently spread to other environments, since it also appears in non-first-person forms ((30)c, d).

The distributional patterns of the two copulas of Tsùt'ínà are essentially identical to those of the Navajo copulas. We see that individual-level predicates of non-human subjects appear with Copula 2, and that all stage-level predicates appear with Copula 1, whereas individual-level predicates of human subjects may appear with either copula:

(31)

		Predicate	
		S-level	I-level
Subject	Human	COP1	COP1/2
	Inanimate	COP1	COP2

Subjects of Copula 2 may be human ((32)a, b) or inanimate ((32)c).

(32) a. Níní Tsùt'ínà ánist'ā.

níní Tsùt'ínà á-nís-t'ā

2SG Tsùt'ínà THM-IPFV.2SG.SBJ-COP2

‘You are Sarcee.’

(VM 2012)

b. Nùwí sóó át'ā.

nùwí s-óó á-Ø-t'ā

DEM 1SG-mother THM-IPFV.3.SBJ-COP2

‘That’s my mother.’

(VM 2012)

- c. Nūwí dīmòdzí át'ā.
 nūwí dīmòdzí á-Ø-t'ā
 DEM circle THM-IPFV.3.SBJ-COP2
 'That's a circle.'
 (VM 2012)

However, Copula 2 is incompatible with stage-level predicates, regardless of the subject ((33)).

- (33) a. #Xànítiì át'ā ìt'í, tíyā yítlá.
 xànítiì át'ā ìt'í, tíyā yí-Ø-tlá
 buffalo THM-IPFV.3.SBJ-COP2 when fast THM-IPFV.3.SBJ-run

(Intended: 'When he is a buffalo, he runs fast.' The imaginary context is that there is a man who can become a buffalo at will.)

(VM 2012)

- b. #Nùwí ik'át'ísnò náásʔághà át'ā gùnàgùgīwátí
 nùwí ik'át'ísnò náásʔághà á-t'ā gùnàgùgīwátí
 DEM table house THM.IMP-COP2 play

(Intended: 'That table is a house in the play.')

(VM 2012)

When the intended interpretation is stage-level, only Copula 1 is grammatical, as can be seen when the instances of Copula 2 in (33) are replaced by Copula 1.

- (34) a. Xànítiì ìlí ìt'í, tíyā yítlá.
 xànítiì Ø-lí ìt'í, tíyā yí-Ø-tlá
 buffalo IPFV.3.SBJ-COP1 when fast THM-IPFV.3.SBJ-run
 'When he is a buffalo, he runs fast.'
 (VM 2012)

- b. Nùwí ik'át'ísnò náásʔághà ìlí gùnàgùgīwátí
 nùwí ik'át'ísnò náásʔághà Ø-lí gùnàgùgīwátí
 DEM table house IPFV.3.SBJ-COP1 play
 'That table is a house in the play.'
 (VM 2012)

Stage-level predicates are compatible with Copula 1 regardless of subject: in (35)a, the subject is human, while in (35)b, it is an inanimate object:

- (35) a. Ìtł'íyá ìt'í, xànítiì ìlí.
 ìtł'íyá ìt'í, xànítiì Ø-lí
 night when buffalo IPFV.3.SBJ-COP1
 'When it is night time, he is a buffalo.'
 (VM 2012)
- b. Dīyí ʔíchí gōh gūʔágī ìlí gùnàgùgīwátí.
 dīyí ʔíchí gōh gūʔágī Ø-lí gùnàgùgīwátí
 DEM stick spruce IPFV.3.SBJ-COP1 play
 'This stick is a spruce tree in the play.'
 (VM 2012)

Copula 1 is also compatible with individual-level predicates of human subjects, as in (36).

- (36) a. Gerald, Violet Tsúùt'ínà gīlí.
 Gerald Violet Tsúùt'ínà Ø-lí
 Gerald Violet Tsúùt'ínà IPFV.3PL.SBJ-COP1
 ‘Gerald and Violet are Tsúùt'ínà.’

(VM 2012)

- b. Nùwí sóó īlí
 nùwí s-óó Ø-lí
 DEM 1SG-mother IPFV.3.SBJ-COP1
 ‘That’s my mother.’

(VM 2012)

- c. Sīts’ā gōnīhīnà?ò īlí.
 sī-ts’ā gōnīhīnà?ò Ø-lí
 1SG-daughter teacher IPFV.3.SBJ-COP1
 ‘My daughter is a teacher.’

(VM 2012)

- d. Dīnā īstlín á?à.
 dīnā s-lí á?à
 person IPFV.1SG.SBJ-COP1 EMPH
 ‘I’m a person too.’

(VM 2012)

4.2.2. Comparison to Tłıchǫ Yatıì and Navajo copulas

The preceding section has demonstrated that the distribution of copulas in Tsùùt'ínà is virtually identical to that of Navajo, constituting further evidence that the Tłıchǫ Yatıì predicates of profession are remnants of a larger system that allows either a human subject or a stage-level predicate to trigger the appearance of Copula 1. The Tsùùt'ínà data thus add weight to the supposition that Copula 1 has external arguments while Copula 2 does not, since *v*, with its external subject and event argument positions, provides a predicted pattern of subject and predicate distribution that neatly fits Copula 1.

4.2.3. Analysis

The Tsùùt'ínà data closely parallel the Navajo data, but there is at least one difference: namely, in Tsùùt'ínà, not only humans but also animals may be external subjects of individual-level predicates created by Copula 1. Compare the identical patterns of grammaticality between human and animal subjects ((37)-(38)) with the different patterns that obtain for inanimate subjects ((39)). Human beings can be subjects of individual-level predicates with Copula 1((37)a) or Copula 2 ((37)b).

- (37) a. John sīzá ılín á?à.
 John sī-zá Ø-lí á?à
 John 3-son IPFV.3.SBJ-COP1 EMPH
 ‘John is my son.’

(VM 2012)

- b. John sīzá át'à.
 John sī-zá á-Ø-t'à
 John 3-son THM-IPFV.3.SBJ-COP2
 ‘John is my son.’
 (VM 2012)

However, so can animals, as in (38)a, b.

- (38) a. Dīyí mīchàdīkòdí līl.
 dīyí mīchàdīkòdí Ø-lí
 DEM beaver IPFV.3.SBJ-COP1
 ‘This is a beaver.’
 (VM 2012)

- b. Dīyí mīchàdīkòdí át'à.
 dīyí mīchàdīkòdí á-Ø-t'à
 DEM beaver THM-IPFV.3.SBJ-COP2
 ‘This is a beaver.’
 (VM 2012)

Individual-level predicates of inanimate subjects are grammatical only with Copula 2, not Copula 1, as in (39)a, c (a plant) and (39)b, d (a body part).

- (39) a. *Dīyí gō īlí.
 dīyí gō Ø-lí
 DEM spruce IPFV.3.SBJ-COP1

(Intended: this is a spruce tree.)

(VM 2012)

- b. Dīyí gō át'à.
 dīyí gō á-t'à
 DEM spruce THM.IMP-COP2

‘This is a spruce tree.’

(VM 2012)

- c. *Sīkà īlí!
 sī-kà Ø-lí
 1SG-foot IMP.COP1

(Intended: ‘That’s my foot.’)

(VM 2012)

- d. Sīkà át'à.
 sī-kà á-t'à
 1SG-foot THM-IPFV.COP2

‘That’s my foot!’

(VM 2012)

While Tsùt'ínà predicates map to the copulas in a manner identical to those of Navajo, the licensing of external subjects depends on animacy, not humanness. In this respect, Tḥchq Yatì patterns with Navajo, as (40) makes clear. Individual-level predicates of non-

human animate subjects are infelicitous with Copula 1 ((40)a), but acceptable with Copula 2 ((40)b).

(40) T̃hch̃q̃ Yat̃i:

a. #D₁₁ t̃ch̃'aàd̃i dz̃q̃ **el̃** **ñq̃q̃.**

D₁₁ t̃ch̃'aàd̃i dz̃q̃ **Ø-l̃** **ñq̃q̃**

DEM animal muskrat IPFV.3.SBJ-COP1 EVID

(Intended: 'That animal is a muskrat, apparently.')

(MLBW 2011)

b. D₁₁ t̃ch̃'aàd̃i dz̃q̃ **h̃q̃t̃'e** **ñq̃q̃.**

D₁₁ t̃ch̃'aàd̃i dz̃q̃ **ha-l̃-t̃'e** **ñq̃q̃**

DEM animal muskrat THM-IMP.3.SBJ-COP2 EVID

'That animal is a muskrat, apparently.'

(MLBW 2011)

In this way non-human animals pattern with inanimate ((41)a, b).

(41) a. #D₁₁ k̃q̃ dech̃k̃q̃ el̃.

d₁₁ k̃q̃ dech̃-l̃-k̃q̃ Ø-l̃

DEM house wood-house IMP.3.SBJ-COP1

(Intended: 'That house is a wooden house.')

(MLBW 2011)

- b. D₁₁ kò dech₁kò hq̄t'e.
 d₁₁ kò dech₁-kò ha-₁-t'e
 DEM house wood-house THM-IMP.3.SBJ-COP2
 'That house is a wooden house.
 (MLBW 2011)

We can sum up the differences in the subject licensing patterns of the copulas in the three languages as in 0.

(42) Licensing features for external subjects

Language		
	Tsùùt'ínà	Tł̣chq̄ Yatì, Navajo
Privileged subjects (shaded)	Humans	Humans
	Animals	Animals
	Plants and non-living objects	Plants and non-living objects
Licensing feature	[±AN]	[±HUM]

4.2.4. Conclusions

The behaviour of Copula 1 in Tsùùt'ínà is fully compatible with Hypothesis I, and contributes to the plausibility of the presence or absence of little *v* as the distinction between the two copulas in Athapaskan languages (or at least the three under investigation in this dissertation). While the copulas of the three languages behave

somewhat differently in some ways, namely in their paradigmatic morphology and the different ways they split the animacy hierarchy, the syntactic patterns are largely the same. In fact, the copulas of Tsùùt'ínà and Navajo illuminate the source of the behaviour of predicates of profession in Ṭhchq Yatì, which would otherwise be difficult to explain.

4.3. Overall conclusions

This chapter demonstrates that what appears at first glance to be an unexpected phenomenon in Ṭhchq Yatì, the behaviour of predicates of profession in allowing either Copula 1 or Copula 2, is in fact a wider pattern whereby sentient/animate subjects can merge as external arguments at [Spec, ν P]. The consequences of this result are significant for the hypotheses that were posed in Chapter 2. These hypotheses are reiterated below.

(43) a. **Hypothesis I:** The difference in interpretation between the two copulas of Ṭhchq Yatì arises from a difference in projected structure. Copula 1 is lexically specified to project ν , and Copula 2 is not.

b. **Hypothesis II:** There is no difference in structure between the two copulas. The difference in interpretation presumably arises from subtle but differing semantic content. The lexical entry of Copula 1 includes the semantics of “transience”; that of Copula 2, “permanence”.

The following sections assess the significance of the Navajo and Tsùùt'ínà data for these hypotheses.

4.3.1. Hypothesis I

Given that the projection of ν is triggered by the presence of either an event argument or an external subject, or both, and that [+HUM] subjects (in Navajo and Ṭhchq Yatì) and

[+AN] subjects (in Tsúùt'ínà) are external, as appears likely, the data from these languages are entirely consistent with Hypothesis I. In fact, they demonstrate that stage-level predicates, rather than being the defining mark of the Athapaskan Copula 1, are in fact better viewed as a derivative phenomenon – and not the only possible one – of the presence of *v*.

Nevertheless, it is not enough to prove that the data are consistent with Hypothesis I. Doing so, and leaving it at that, is tantamount to saying that Hypothesis I is plausible. Such a result may be pleasant, but it is hardly useful. The rejection of the null hypothesis is among the fundamental tools of scientific investigation, and Hypothesis II deserves to be examined to determine whether it is equally plausible.

The next section is devoted to showing that the Navajo and Tsúùt'ínà data do in fact enable us to reject Hypothesis II.

4.3.2. Hypothesis II

If there is no difference in structure between the two copulas, differences in interpretation must arise from differences in their lexical semantics. Such a result, if true, would be embarrassing, as the analysis of language has long treated copulas as semantically empty. Nevertheless, what has long been assumed is not therefore and necessarily right. In fact, Carlson (1977), who coined the terminology of the stage-/individual-level distinction, analyzed copulas in precisely this way: as distinguished by semantics alone. In his analysis, English has two homophonous copulas, one of which

applies predicates to temporal stages of subjects, while the other applies predicates to subjects in their entirety (individuals).⁹⁵

If the difference between the copulas were indeed limited to the stage-/individual-level predicate distinction, as initially appeared to be the case in Ṭḥcḥq̣ Yaṭi, Hypothesis II would be easy to sustain. Transience – that is, the property, in Carlson’s analysis, of applying to stages rather than individuals – would simply be a part of Copula 1’s lexical semantics:⁹⁶

$$(44) \text{ be}_1 - \lambda P^s \lambda x^i. \exists x^s (R(x^s, x^i) \wedge P^s(x^s))$$

(Carlson, 1977:108)

In Carlson’s formulation, Copula 1 is a function that maps stage-level properties (P^s) to stages of individuals (x^s), where a predictable relation R exists between those stages and the individuals themselves (x^i). Copula 2, on the other hand, is semantically empty:

$$(45) \text{ be}_2 - \text{no translation}$$

(Carlson, 1977:108)

although it could be expressed as a simple identity function re-mapping the predicate to itself, as below:

$$(46) \text{ be}_2 - \lambda P.P$$

⁹⁵ Such an analysis is problematic for other reasons than the ones we consider here, not least of which is that individual-level predicates are very often not permanent; see Chapter 2 for discussion.

⁹⁶ Carlson in fact refers to the stage-level copula as be_2 and the individual-level copula as be_1 . I depart from his terminology in my discussion in order to avoid confusion with my own from earlier chapters, which is the reverse of Carlson’s.

Alternatively, if we seek consistency in analyzing copulas as applying properties to individuals, as in (44), we could re-write the individual-level copula as the stage-level copula freed from its stages:

$$(47) \text{ be}_2 - \lambda P \lambda x^i (P(x^i))$$

Under a strict Carlsonian analysis, copulas that select stage-level and individual-level predicates pose no particular problem. Were we to adopt such an analysis for Tłchq Yatì copulas, ignoring predicates of profession, we would give the semantics of Copula 1 as the function in (44) and those of Copula 2 as in (47).

Nevertheless, we know now that the picture is not so simple. Copula 1 can also select individual-level predicates, as the predicates of profession demonstrate. Furthermore, this chapter has demonstrated that those predicates are part of a wider system which is fully developed in Navajo and Tsùùt'ínà, and allows individual-level predicates to merge with Copula 1.

These facts would force us to redefine Copula 1 as either mapping P to x , if x is animate, or else mapping a stage of P to a stage of x .⁹⁷ That is, we need homophonous Copula 1a and 1b:

- (48) a. Copula 1a – $\lambda P \lambda x^i ((P(x^i) \wedge \text{ANIM}(x)))$
 b. Copula 1b – $\lambda P^s \lambda x^i . \exists x^s (R(x^s, x^i) \wedge P^s(x^s))$
 c. Copula 2 – $\lambda P \lambda x^i (P(x^i))$

⁹⁷ In the discussion that follows, “human” may be substituted for “animate” for the languages that make that particular distinction (Tłchq Yatì and Navajo).

The function in (48)a maps a property P to an animate individual x^i , while that in (48)b maps a stage of P to a stage of that individual x^s , where the animacy of x is undetermined. There are several difficulties with this kind of analysis, of varying degrees of seriousness.

First is the circumstance of having a Copula 1 with two separate semantic entries that have a single phonological form. If the Athapaskan languages disambiguate copular semantics by having different phonological forms, it is unexpected that there would be only two phonological forms for three semantic entries ((48)a, b, c).

Another obstacle is the difficulty of easily deriving lifetime effects from (48). The application of tense to (48) merely results in P applying to x^i in the past or future: it says nothing about the boundaries of the existence of x^i . That is, it is the property P (or a stage of it), not the individual x^i , that is located in the past or future. No assertion is made about the existence of x^i in the present.

Thus this lexical-semantic approach fails to predict both the lifetime effects associated with Copula 2 ((48)c) and the ambiguity regarding lifetime effects that we observe with Copula 1 ((48)a, b).

Thirdly, (48)a, at least for Tsùt'ínà, must make explicit reference to the animacy of the subject of Copula 1. Animacy is a property whose effects are primarily syntactic rather than semantic, and whose boundaries, as we have seen in this chapter, are highly language-specific.⁹⁸ It is odd, to say the least, that a semantic formulation should have to make reference to it. Unlike most semantic predicates, such as *woman* ($\lambda x.WOMAN(x)$),

⁹⁸ For Tłchq Yatı and Navajo, this is less of a problem: $HUMAN(x)$, of course, does have an overt exponent in the lexicon. Also, humanness is not a syntactic property nor are its boundaries language-specific, for the most part.

animacy ($\lambda x \text{ ANIM}(x)$) would have no overt exponent: it would have no role except to define the input to the copula functions, raising the question of why it should be defined in the lexicon in the first place.

Finally, and most seriously, this account proposes a lexical meaning difference between Copula 1 and Copula 2, but the only difference between individual-level predicates introduced by Copula 1 and Copula 2 under this analysis is the difference between (48)a and (48)c: in other words, the difference is $\text{ANIM}(x)$. Yet if we re-examine the minimal pairs that distinguish Copula 1 from Copula 2, the difference between them is not one of animacy, or humanness, but of possible eventivity ((49)a) versus non-eventivity ((49)b). The subjects of both clauses are human.

(49) a. Nàzèe-dqò ts'ɿlɿ.

nàzèe-dqò ts'ɿlɿ

hunter IPFV.1PL.SBJ-COP1

‘We are hunters.’

(It sounds like it’s now: we are hunters today – MRS 2012)

b. Nàzèe-dqò ats'ɿt'e.

nàzèe-dqò a-ts'ɿt'e

hunter THM-IPFV.1PL.SBJ-COP2

‘We are hunters.’

(It sounds more like each person is a hunter always – MRS 2012)

Hypothesis II stands in clear contrast to Hypothesis I. Under the latter, Copula 1, projecting a single extra layer of structure, has syntactic positions for external and event arguments, neither of which need necessarily be filled. These arguments arise from the

lexical semantics of the predicate and subject themselves, or from discourse context: the copula itself is content-free, except for the coincidence feature. It is selected and merged depending upon the presence of external arguments, and its interaction with TAM categories produces the lifetime effects that are otherwise difficult to explain syntactically.

Hypothesis II, on the other hand, fails to predict lifetime effects, necessarily makes reference to the syntactic property of animacy, requires two homophonous entries for Copula 1 in order to square Hypothesis II with the facts of Navajo and Tsùùt'ínà, and makes a false prediction about minimal pairs with human subjects.

Out of Navajo and Tsùùt'ínà, therefore, has come evidence that not only reconciles Ṭhchq̣ Yatì predicates of profession with Hypothesis I, but allows us to reject Hypothesis II. The difference between the copulas, in Ṭhchq̣ Yatì, Navajo, and Tsùùt'ínà, is structural.

Chapter 5. AP complements: Copulas as inflectional support

Chapters 2, 3 and 4 have made the case that the copula systems of Tłchq Yatì, Navajo and Tsùt'ínà make a distinction based upon the presence of a light verb projection. Chapter 2 outlined the theoretical background to this claim and the clause structure of Tłchq Yatì. Chapter 3 demonstrated that there is both semantic and syntactic evidence for Copula 1, but not Copula 2, projecting *v*P. Chapter 4 addressed the outstanding issue of Tłchq Yatì predicates of profession, demonstrating that in Navajo and Tsùt'ínà, Copula 1 is acceptable with individual-level predicates, but only when the subject is animate. The Tłchq Yatì predicates of profession can be seen as a vestige of a wider system in the Athapaskan languages, in which Copula 1, with its projected *v*, may merge with either an external argument or an event argument, but not necessarily both.

A benefit of the findings of Chapter 4 is that they allow us to put to rest the supposition, formalized as Hypothesis II, that the difference between the copulas of Athapaskan languages lies in their lexical semantics. The Tsùt'ínà and Navajo evidence, demonstrating that the copular distinction is not solely stage-/individual-level, renders Hypothesis II extremely difficult to sustain, since it would need to accommodate not two but three lexical entries for copulas, two of which would be homophonous, and make explicit reference to syntactic animacy, highly unexpected as a component of lexical semantics. Furthermore, a lexical semantic solution on the lines of Carlson (1977) fails to predict the lifetime effects associated with Copula 2 and the ambiguous lifetime effects associated with Copula 1, while a syntactic structural solution (Hypothesis I) predicts them exactly. A lexical semantic solution that accounts for the facts of Navajo and Tsùt'ínà falsely predicts that clauses where Copula 1 forms an individual-level predicate

will differ in subject animacy from similar Copula 2 clauses. Chapter 4 thus enables a definitive rejection of a lexical semantic solution in favour of Hypothesis I.

The present chapter returns to Tɬɬɬɬ Yati, assessing whether AP complements are predicated in the same manner as NPs, and proposing that copulas appear with NP and AP predicates for quite different reasons. In my analysis, adjectives in Tɬɬɬɬ Yati resemble verbs syntactically, bearing a [+COIN] feature that NP predicates lack. Their lack of agreement morphology, however, necessitates the appearance of a copula (which does have such morphology) to realize their ϕ -features: specifically, number. I propose that all animate nouns bear a formal number feature, as well as other ϕ -features, while all inanimate nouns lack these features. Evidence for this analysis includes the lack of agreement on verbs with inanimate subjects and its appearance on verbs with animate subjects, obligatory copula support of AP predicates with animate subjects, barring of copula support of AP predicates with inanimate subjects, obligatory copula support of all NP predicates, and the ungrammaticality of constituents occurring between an adjective and copula. The chapter concludes that copulas with AP predicates function similarly to DO-support in English, occurring for purely syntactic reasons and merging to check the number feature of the subject. A secondary conclusion is that Tɬɬɬɬ Yati adjectives bear a [+COIN] feature, and thus resemble verbs in their ability to be bare predicates, whereas nouns lack this feature, and always require copulas for predication.

5.1. Adjectives

Thus far in this dissertation, we have looked only at copulas with NP complements. However, copulas occur with predicates of all lexical categories other than VP. Their behaviour with AP complements, however, differs from what we have seen with NP complements.⁹⁹

As mentioned earlier (chapter 3, section 3.4, footnote 54), adjectives are a small class in Tḥchq Yatù. Most concepts that in English are expressed with adjectives are expressed in Tḥchq Yatù with stative verbs. Tḥchq Yatù adjectives are distinguished from nouns and verbs by their lack of inflectional morphology: they inflect neither for possession, like nouns, nor for aspect/mode, subject or object agreement, like verbs.¹⁰⁰ Adjectives occur as complements of copulas ((1)a), verbs based on copula stems ((1)b), the verb *ats'ede* 'become, do' ((1)c), and the verb *ts'uwq* 'think/want' ((1)d), but are barred as complements of other verbs ((1)e).

- (1) a. Eyì ts'èko sìì ahxe elì.
 eyì ts'èko sìì ahxe Ø-lì
 DEM woman FOC rich/capable IPFV.3.SBJ-COP1
 'That woman is rich.'
 (MLBW 2009)

⁹⁹ The selectional properties of copulas with PP complements seem to be lexically specified. This dissertation does not analyze them.

¹⁰⁰ Adjectives are distinguished from the class of adverbs by occurring as complements only of copulas and similar verbs (i.e., verbs of becoming) and by taking complements of their own. Adverbs, by contrast, do not take complements and are not themselves complements of copulas.

- b. Computer ghq ezhne làah't'e.
 computer ghq ezhne làa-h-t'e
 computer about crazy THM-IPFV.1SG.SBJ-COP2
 'I'm crazy about computers.'

(MLBW 2009)

- c. ɬxɛɛ hqtsa sɬlà eya ajà.
 ɬxɛɛ hqtsa sɬ-là eya a-Ø-jà
 yesterday suddenly 1SG-hand sick THM-PF.3.SBJ-become/do
 'Yesterday my hand was sore suddenly.'

(MLBW 2011)

- d. Ahxe gòqhwhq.
 ahxe go-qh-wq
 rich/capable 1PL.OBJ-IPFV.3.SBJ-CLAS-think
 'He thinks we're rich.'

(MLBW 2009)

- e. *ɬizha wegaat'ɬ.
 ɬizha we-gaa-Ø-t'ɬ
 shy 3.OBJ-THM-IPFV.3.SBJ-see

(Intended: she looks shy.)

(MLBW 2009)

The following listing is drawn from my fieldwork and from the *Tɬichq Yatù Multimedia Dictionary*. It is almost certainly not exhaustive, but in any case, the number

of adjectives in the language is not large: (2) may be taken as accurate within an order of magnitude.¹⁰¹

Even a cursory examination of the adjectives in (2) will reveal that they do not constitute a readily discernible semantic class:¹⁰²

¹⁰¹ At least one adjective included here is bimorphemic: *ɣht'edɛ* 'naked' (*ɣht'e* 'raw' + PP *-dɛ* 'without'). I have included it because it patterns with attributive adjectives syntactically. To the best of my knowledge, none of the adjectives in this list are dialectal variants of a single lexeme. (By policy, TCSA 2007 lists dialectal variants (Leslie Saxon, pc, 2007; also see Saxon & Siemens (1996:xvii) and TCSA (Tł̥chq Community Services Agency, 2007:22-25)). I have also excluded comparative inflections (such as *denahk'e edza* 'colder'), adjective phrases, and some entries from TCSA 2007 that, in my judgement, are not adjectives according to the criteria at the beginning of this section.

¹⁰² The analysis in this chapter is based on a view of adjectives as basically verb-like, but without agreement morphology. Several facts support the theory that some Tł̥chq Yatì adjectives are indeed former verbs that have diachronically lost this morphology. First, there are some adjectives that have fully verbal cognates in closely related languages; the converse is also true. This fact implies divergence from a common verbal origin, with different verbs losing their morphology in different languages. Second, some Tł̥chq Yatì adjectives have final syllables whose phonetic shape recalls the operation of the D-Effect, a famous phonological process in Athapaskan verbs. (See section 4.2.1, footnote 94.) Third, the fact that bare adjectives may be predicated of inanimate subjects is parallel to the facts of verbal predication of the same kinds of subjects, since neither verbs nor adjectives show overt agreement in such cases, as discussed later in this chapter. If it is indeed true that adjectives are worn-out verbs, and their morphology has been lost for diachronic morphophonological reasons rather than semantic ones, the absence of a natural semantic class of adjectives is unsurprising, contra Baker (2003). Other adjectives may be nominal in origin (Leslie Saxon, pc, 2012). I intend to explore the historical linguistics of Athapaskan adjectives in a future paper.

(2) T̥hçq Yatì adjectives

<u>Adjective</u>	<u>Gloss</u>	<u>Adjective</u>	<u>Gloss</u>
ahxe	rich/capable	ɬkw'òq	skinny and long
edi	hot (weather, fever)	ɬlia	tightly packed
edza	cold (weather)	mąq	smelly
ehkw'ɪ	correct	nq̄q̄dea	youngest
eladɪ	different/foreign	nòq̄ht'ò	sharp-sided/wedge-shaped
eya	sick/painful	sɪdɪ	funny/strange
ezhne	crazy	sòò	cool/stylish
goèk'a	light/bright	sq̄q̄ɬɪ	original/authentic
ɬht'e	raw	wedeèdlɪ	pure/real
ɬht'ed̥	naked	weelɪ	fresh
ɬzha	shy/ashamed		

Though there is a pair of antonymic adjectives, *edi* ‘hot’ and *edza* ‘cold’, there are other adjectives that apparently have stative verbs as antonyms. Adjectives differ from verbs in lacking inflection for person, number or aspect. *ɬzha* ‘shy/ashamed’ and *ahxe* ‘rich/capable’ are adjectives ((3)a, (4)a), and inflectionless, requiring copulas to realize their subjects’ ϕ -features, but their antonyms, *hàhots'edi* ‘be proud’ and *etets'eèt'ɪ* ‘be poor, pitiful’ are inflected verbs marked for person and number: in ((3)b, (4)b) they bear first-person singular inflection.¹⁰³

¹⁰³ I rely on the judgement of consultants that these pairs are antonyms.

(3) a. Edegho òzha gùlì.

ede-gho òzha gù-lì

REFL-about ashamed IPFV.3PL.SBJ-COP1

‘They are ashamed of themselves.’

(MLBW 2009)

b. Sezha gigho hàhohdì.

se-zha gì-gho hàho-h-dì

1SG-child 3PL-about THM-IPFV.1SG.SBJ-be.proud

‘I am proud of my children.’

(MLBW 2009)

(4) a. Ahxe ts’ùlì.

ahxe ts’ù-lì

rich/capable IPFV.1PL.SBJ-COP1

‘We are rich.’

(MLBW 2009)

b. Etedeht'ɿ.

etene-**h**-t'ɿ

THM-IPFV.1SG.SBJ-be.poor

'I am poor.'

(MLBW 2009)

Evidence of adjectives' differing from stative verbs in aspect marking appears in (5). The contrast between (5)a and (5)b illustrates the lack of aspect marking: no morphology distinguishes *eya* in two temporally distinct interpretations. Without such morphology, the perfective sense of (5)b must be signalled by a perfective-marked verb, *ajà*. Similarly, the aspectual difference between (5)c and (5)d is marked not on the adjective *ìzha* 'shy, ashamed, embarrassed' but on the copula.

(5) a. Selakw'qò hazqò **eya**.

se-la-kw'qò hazqò **eya**

1SG-hand-bone everywhere **sick**

'My fingers are all sore.'

(MLBW 2009)

b. **ɪxèè** hqtsaa sɿlà **eya** ajà.

ɪxèè hqtsaa sɿ-là **eya** a-Ø-jà

yesterday suddenly 1SG-hand **sick** THM-PF.3.SBJ-do/become

'Yesterday my hand became sore suddenly.'

(MLBW 2011)

- | | | | |
|-----------|--|----------------------|-----|
| c. | Welɿ | wedagoèwhòo | gho |
| | we-lɿ-μ | we-da-go-dè-Ø-h-wò-μ | gho |
| 3-dog-PNS | 3.OBJ-speech-AR-noise-IPFV.3.SBJ-CLAS-be.noisy-NML | | for |

ìzha el.

ùzha Ø-l₁

ashamed IPFV.3.SBJ-COP1

‘He is ashamed of his noisy dog.’

(MLBW 2009)

- | | | | | | |
|----|--------|-------------|------------------------|------|-----|
| d. | ... dɔ | gɪk'èch'a | agedɪ | ɺlè | sɪ |
| | dɔ | gɪ-k'èch'a | a-ge-dɪ | ɺlè | sɪ |
| | person | 3PL-against | THM-IPFV.3PL.SBJ-speak | PAST | FOC |

edeghò ùzhagehlè.¹⁰⁴

ede-gho ìzha-geh-lè

REFL-for ashamed-PFV.3PL.SBJ-Cop1

‘... those who spoke against them were humiliated.’ (Lit., they were shy/ashamed of themselves)

(CBS 2003: Luke 13:17)

Bare adjectives, as in (6)a, c, below, cannot bear aspect marking at all; verbs ((6)b, d) can. Notice that the bare adjectives *eya* ‘sick’ and *ɪht’e* ‘raw’ ((6)a, c) are perfectly free of any aspect marking, and the clauses in which they occur can be interpreted as either imperfective or perfective. The verbs in (6)b, d, however, are marked for aspect, and their clauses are aspectually unambiguous (in these cases, perfective).

¹⁰⁴ CBS 2003 generally prints adjective and copula as a single word.

(6) a. Sɪla **eya**.

se-la **eya**

hand **sick**

‘My hand is/was sore.’

(MLBW 2009)

b. **Nènɛɛtsɔ**.

nè-nɛɛ-tsɔ

THM-PFV.2SG.SBJ-be.tired

‘You’re tired.’ (perfective)

(TCSA 2007)

c. Bò **ɪht’e**.

bò **ɪht’e**

meat **raw**

‘The meat is/was raw.’

(MLBW 2009)

d. Tɪàʔeh **elɛak’à**.

tɪàʔeh **elɛ-a-k’à**

pants **RECIP-PFV.3.SBJ-be.wrinkled**

‘The pants are wrinkled.’ (perfective)

(TCSA 2007)

Notice that adjectives frequently appear as the complements of copulas, as in (5)c, d, or bare ((5)a, (6)a, c). The distinction between these two types of construction is the topic of the next section.

5.2. The stage-/individual-level distinction: not applicable!

The stage-/individual-level predicate distinction that we have seen between the copulas when they take NP complements is not robust with AP complements. First of all, a subset of the adjectives in (2) only occur attributively and cannot be predicates, as in (7), where *sqòhli* ‘authentic, original, native’ is acceptable attributively ((7)a) but not predicatively ((7)b, c).

(7) a. *Seagiɔ si dɔ sqòhli aɣit’e.*

se-agiɔ si dɔ sqòhli a-ɣit-t’e

1SG-friend FOC person authentic THM-IPFV.3PL.SBJ-COP2

‘My friends are authentic people (native people).’

(MLBW 2009)

b. **Seagiɔ si sqòhli ɣili.*

se-agiɔ si sqòhli ɣil-lɪ

1SG-friend FOC original IPFV.3PL.SBJ-COP1

(Intended: ‘My friends are authentic.’)

(MLBW 2009)

- c. *Seagɪa sɪ sɔ̀ɔ̀lɪ aɣɪt'e.
 se-agɪa sɪ sɔ̀ɔ̀lɪ a-ɣɪ-t'e
 1SG-friend FOC original THM-IPFV.3PL.SBJ-COP2
 (Intended: 'My friends are authentic.')
- (MLBW 2009)

Fieldwork indicates that of the adjectives listed in (2), the following occur only attributively: *eladɪ*, 'different/foreign'; *goèk'a*, 'light/bright'; *ɪht'e*, 'raw'; *ɪht'edɛ*, 'naked'; *ɪkw'òq*, 'skinny and long'; *ɪha*, 'tightly packed'; *nɔ̀ɔ̀dea*, 'youngest'; *nòɔ̀ht'ò*, 'sharp-sided/wedge-shaped'; and *sɔ̀ɔ̀lɪ*, 'original/authentic'. As this study is concerned with the copulas and their role in predication, these attributive-only adjectives will not be considered further here.

Additionally, for some speakers of Tɬɬchɔ Yatɪ, Copula 2 with AP complements is barred. From (8) we can see that while Copula 1 freely takes AP complements ((8)a, c, e), if its place is taken by Copula 2 the result is not an individual-level predicate, but ungrammaticality ((8)b, d, f).

- (8) a. Edɪ ehɪ.
 edɪ h-lɪ
 hot IPFV.3.SBJ-COP1
 'I'm feverish.'
- (MLBW 2009)

b. *Edı aht'e.

edı a-h-t'e

hot THM-IPFV.3.SBJ-COP2

(Intended: 'I'm feverish.')

(MLBW 2009)

c. Ekq-le hàyats'ıhtı ts'ıhʔò,
 ekq-le hà-ya-ts'ıh-tı ts'ıhʔò
 wrong out-THM-PFV.1PL.SBJ-say because
 ɰzha ts'ılı.
 ɰzha ts'ı-lı
 ashamed IPFV.1PL.SBJ-COP1

'Because we say something wrong, we are embarrassed.'

(MS 2010)

d. ɰzha ats'ıt'e.

ɰzha a-ts'ıt-t'e

ashamed THM-IPFV.1PL.SBJ-COP2

(Intended: 'We are shy.')

(MS 2012)

e. Eya gılı.

eya gı-lı

sick IPFV.3PL.COP1

'They're sick.'

(MLBW 2009)

f. *Eya agɪt'e.

eya a-gɪt'e

sick THM-IPFV.3PL.COP2

(MLBW 2009)

(Intended: 'They're sickly/invalids.')

This finding demonstrates that the distinction between the copulas that we observed in Chapter 2 does not apply to copulas with AP complements. The following sections will demonstrate that AP predication is essentially different from NP predication, and that copulas appear in each for quite different reasons.

5.3. APs and animacy

Bare adjectives can function as predicates, as in (6)a, c, above; however, there is a restriction. Unlike verbs, which can be predicated of any subject, adjectives may only appear bare when predicated of an inanimate subject. If the subject is animate, on the other hand, the adjectival predicate must be the complement of a copula. These facts are demonstrated below. Body parts and weather, being inanimate, can be subjects of bare AP predicates, as in (9) a, c. However, when the subject is animate, as in (9) b, d, the AP must be selected by a copula.

(9) a. Sekwì **eya** dɪi.

se-kwì **eya** dɪi

1SG-head **sick** really

'My head is really sore!'

(MLBW 2009)

- b. **Eya ehɿ** zQ.
eya h-lɿ zQ
sick IPFV.1SG.SBJ-COP1 always
 ‘I am always sick.’

(MLBW 2009)

- c. **Dɿ dzɛɛ edɿ dɿ!**
dɿ dzɛɛ edɿ dɿ
 DEM day **hot** really
 ‘It’s extremely hot today!’

(MLBW 2009)

- d. **Edɿ ehɿ** zQ.
edɿ h-lɿ zQ
hot IPFV.1SG.SBJ-COP1 always
 ‘I am always feverish.’

(MLBW 2009)

As mentioned at the outset, the central proposal of this chapter is that copulas with AP complements occur for the sole purpose of realizing the number feature of animate subjects, just as *do* realizes the tense and ϕ -features of the subjects of negative and interrogative clauses in English. We have just seen the first evidence of this. Bare adjectives are perfectly capable of being predicates, but only if the subject is inanimate. This fact suggests that if the proposal that copulas are inserted to realize number is correct, inanimate subjects lack syntactic number. This is a strong claim, and requires strong

evidence in support. Fortunately, such evidence is readily available: not only adjectives but verbs fail to show morphological agreement with inanimate subjects.

5.4. Verbs and number agreement

Subject-verb agreement is marked morphologically in this language, as should be apparent by now from the numerous citations of paradigmatic copular forms. However, this is true only for animate subjects, with which verbs show agreement for person and number, as in (10).¹⁰⁵

- (10) a. Dzq eʔà, eyits'q tsà sɪ eʔà.
 dzq Ø-ʔà, eyits'q tsà sɪ Ø-ʔà
 muskrat IPFV.3.SBJ-eat and beaver also IPFV.3.SBJ-eat
 'The muskrat is eating something, and the beaver is also eating something.'
- (MS 2010)
- b. Dzq sɪlài geʔà, eyits'q tsà sɪlài sɪ geʔà.
 dzq sɪlài ge-ʔà, eyits'q tsà sɪlài sɪ ge-ʔà
 muskrat five IPFV.3PL.SBJ-eat and beaver five also IPFV.3PL.SBJ-eat
 'The five muskrats are eating something, and the five beavers are also eating something.'

(MS 2010)

¹⁰⁵ The morphological realization of third-person singular is zero for most verbs, as in (10a). The *e-* that appears on the verb in (10a) occurs in many Athapaskan languages and has been the subject of debate in the field. Though the question is not critical to my analysis, I assume, following Rice (1990; 2005) and my own work on Tł̥ch̥q Yatì (Welch, 2010) that this *e-* is epenthetic, since it only appears when the verb would otherwise be monosyllabic. However, Hargus & Tuttle (1997) put forward a well-argued analysis of *e-* as a tense marker.

The morphological differences between the verbal forms in (10)a, b are explicit and obvious. However, when the subject is inanimate, morphological agreement does not appear.¹⁰⁶ Though the explicit numeral makes clear that the subjects of (11)b and (12)b are plural, the verbs do not show plural marking: ‘(be) small’ and ‘grow’ show the same phonological form as in (11)a and (12)a. If explicit marking for plural subject is introduced, as in (11)c and (12)c, the result is ungrammatical:

(11) a. Mì ɬè wha k’e **dawhela**.

mì ɬè wha k’e da-**whe**-la

net one pole on up-IPFV-be.located

‘One net is hanging on the pole.’

(MLBW 2011)

b. Mì taɪ wha k’e **dawhela**.

mì taɪ wha k’e da-**whe**-la

net three pole on up-IPFV.**3.SBJ**-be.located

‘Three nets are hanging on the pole.’

(TCSA 2007)

c. *Mì taɪ wha k’e **dagela**.

mì taɪ wha k’e da-**ge**-la

net three pole on up-IPFV.**3PL.SBJ**-be.located

(Intended: ‘Three nets are hanging on the pole.’)

(MLBW 2011)

¹⁰⁶ No subject agreement morpheme appears in the glosses of verbs with inanimate subjects. This convention follows my analysis of inanimate nouns as lacking ϕ -features.

- (12) a. Ey₁ dech₁ nechà-le, hanikò dehse.
 ey₁ dech₁ ne-Ø-chà-le hanikò de-Ø-h-ze
 DEM tree THM-IPFV.3.SBJ-be.big-NEG but THM-IPFV.3.SBJ-CLAS-grow
 ‘That tree is small, but it’s growing.’

(MLBW 2011)

- b. Ey₁ dech₁ ta₁ **nechà**-le, hanikò **dehse**.
 ey₁ dech₁ ta₁ ne-Ø-chà-le hanikò de-Ø-h-ze
 DEM tree three THM-IPFV.3.SBJ-be.big-NEG but THM-IPFV.3.SBJ-CLAS-grow
 ‘Those three trees are small, but they’re growing.’

(MLBW 2011)

- c. *Ey₁ dech_i ta₁ negechà-le, hanikò gehse.
ey₁ dech_i ta₁ ne-ge-chà-le hanikò ge-Ø-h-ze
DEM tree three THM-IPFV.3PL.SBJ-big-NEG but IPFV.3PL.SBJ- CLAS-grow
(Intended: ‘Those three trees are small, but they’re growing.’)

(MLBW 2011)

Inanimate subjects never trigger morphological number agreement. Based on this fact, I assume that inanimate nouns do not bear a syntactic number feature, as discussed in the next section.¹⁰⁷

¹⁰⁷ Recall from the copula paradigms in Chapter 2 that Tɬɬɔ Yatɪ verbs can show singular, dual and plural number agreement. Dual number is only marked inflectionally in the first person, and I do not treat it here.

5.5. Tɬɬɬɬ Yatɬ number agreement: a theoretical conundrum

The behaviour of adjectives and copulas outlined above poses a challenge to current theories of agreement. In this section we will see that neither the standard Minimalist checking theory (Chomsky 1995) nor Pesetsky and Torrego's (2004) decoupling of valuation and interpretability are sufficient to explain the data.

Given that there is no interaction between inanimate subjects and number agreement, I assume that inanimate nouns lack a syntactic number feature, as in the table in (13).

(13) Animacy of noun Number feature

Animate	[NUM:]
Inanimate	

As the table illustrates, animate nouns bear a feature [NUM:]. Inanimate nouns lack this feature, and do not check number agreement.

This analysis is complicated by the facts of plural agreement, which is, first of all, optional rather than obligatory. That is, though semantically plural subjects may trigger plural morphology on verbs, they need not always do so: (14)a can be interpreted with either a semantically singular or plural subject. In (14)b we see an explicitly plural-marked verb, and the subject may only be interpreted as plural. This remains true in (14)c, where no numeral is present. In (14)d, however, we see that it is possible, if slightly unusual, for a verb without explicit number marking to be predicated of a subject that is

unmistakably semantically plural. The converse is not true, however: a plural-marked verb cannot be predicated of a singular subject ((14)e).¹⁰⁸

(14) a. Chekoa **yàʔehka.**

chekoa yà-ʔeh-ka

child THM-IPFV.3.SBJ-jump around

‘The/a child is jumping around/(The) children are jumping around.’

(MS 2010)

b. Chekoa sɪlài **yàgehka.**

chekoa sɪlài yà-geh-ka

child five THM-IPFV.3PL.SBJ-jump around

‘(The) five children are jumping around.’

(MS 2010)

c. Chekoa **yàgehka.**

chekoa yà-geh-ka

child THM-IPFV.3PL.SBJ-jump around

‘(The) children are jumping around.’

(MS 2010)

¹⁰⁸ In discourse, this system is slightly more complex. Dual agreement only exists in the first person, and plural is indeed limited to animate subjects. The higher the animacy of a subject, the more likely it is that it can trigger verbal number agreement. Inanimates never do so, humans and dogs often do (but see (14)a, d above), and between these two extremes there is more or less latitude for the speaker (Leslie Saxon, pc, 2009; Rice & Saxon, 2005). I assume for present purposes that these are pragmatic considerations without formal representation in the syntax.

d. Chekoa sɪlài yàʔehka.

chekoa sɪlài yà-ʔeh-ka

child five THM-IPFV.3.SBJ-jump around

‘Five children are jumping around.’

(MS 2010)

e. *Chekoa ɬè yàgehka

chekoa ɬè yà-geh-ka

child one THM-IPFV.3PL.SBJ-jump around

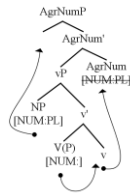
(Intended: ‘*One child are jumping around.’)

(MS 2010)

5.5.1. A standard Minimalist analysis

The optionality of plural number agreement in Tɬchɔ Yatì poses difficulties for the standard view of agreement presented in Chomsky (1995). If plurality is an uninterpretable feature on verbs (including the copulas), it should check against, and be valued by, its interpretable counterpart on nouns, and then delete, as in (15).

(15)



If the verb moves to AgrNum and is valued by the subject NP, as above, its [NUM:] feature should obligatorily have the value of its interpretable counterpart. For example, a plural noun should always trigger plural agreement on the verb; however, we have seen (in (14)a, d), that this is not correct: it is entirely possible for a non-plural-marked verb to be predicated of a plural noun. Furthermore, a number feature on the noun, being interpretable and valued, should not require checking against a verb: an adjective should be able to serve as a bare predicate of either an inanimate subject, without [NUM:], or an animate subject, with it. This also is not true: (16)b, where a bare adjective is predicated of an animate subject, is ungrammatical.

(16) a. Dɪɪ dzɛɛ edɪ dɪɪ! (repeated from (9)c)

dɪɪ dzɛɛ edɪ dɪɪ

dem day hot really

‘It’s extremely hot today!’

(MLBW 2009)

b. *Madleḡ edɪ dii!

Madleḡ edɪ dii

Madeleine hot really

(Intended: ‘Madeleine is extremely hot.’)

(MLBW 2009)

We see then that the standard model of agreement makes two false predictions about the number agreement system of TY: that plural agreement should be obligatory, and that bare adjectives should be able to be predicates of any noun.

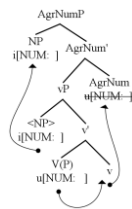
5.5.2. A valued-verb analysis

Pesetsky and Torrego (2004) posit a divorce of interpretability from valuation: for them, uninterpretable features (u[F]) are not necessarily unvalued, nor interpretable features (i[F]) valued. Rather, interpretability and valuation are independent variables. Under this framework, we might assume that the formal feature [NUM:] is interpretable, but unvalued, on nouns, and valued, but uninterpretable, on verbs, and that when it is present, it may be valued with [PL], which the system interprets as explicitly plural ([NUM:PL]), or without [PL] as general number ([NUM:0]), neither explicitly plural nor explicitly singular. Because valuation of the nominal number feature comes from the verb, all animate nouns are interpreted as general number until checking and valuation take place at AgrNum. Inanimate nouns, lacking the number feature, do not interact with the syntactic number system at all.

Below are the featural representations, before and after valuation, of a general-number animate noun ((17)a-b), a plural animate noun ((17)c-d), and an inanimate noun ((17)e-f).

By contrast, a verb without [PL] that checks against an animate noun will not end up valuing the noun's $i[\text{NUM:}]$ for plural, resulting in general number (which is usually marked morphologically by zero in Tɬɬchɔ Yatɪ). This is illustrated in (19).

(19)



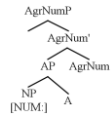
This system also neatly predicts the behaviour of AP predicates. An AP predicate of an inanimate subject will not need to check a number feature, since no number feature is present on the subject:

(20)



The simple structure of this tree contrasts with what happens when an AP is predicated of an animate subject. A bare adjective, without $u[\text{NUM:}]$, cannot value the $i[\text{NUM:}]$ feature on the subject, and will cause a crash:

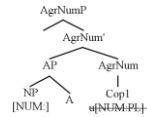
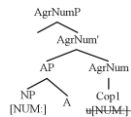
(21)



However, an copula inserted at AgrNum provides the necessary valuation by means of its u[NUM] feature, which can value the number feature of the subject, whether general ((22)a) or plural ((22)b)).

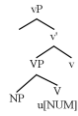
(22) a.

b.



Unfortunately, this system too has shortcomings. It predicts that a verb cannot be merged with an inanimate subject, since verbs bear a u[NUM:] feature, which will cause a crash since it cannot check against an i[NUM:] feature on the subject:

(23)



5.5.3. An optional-feature analysis

Nor will the case be helped much if we assume that the number feature is merged optionally on the verb. Such an assumption remedies the problem in (23), since it allows inanimate subjects to be merged with verbs lacking number agreement:

(24)

	features on		Operation
	N	V	
N [+AN]	i[NUM:]	u[NUM: 0]	Value N as general, check and delete u[NUM: 0]
	i[NUM:]	u[NUM:PL]	Value N as plural, check and delete u[NUM:PL]
	i[NUM:]	absent	No valuation of i[NUM:]: derivation crashes
N [-an]	absent	u[NUM: 0]	No deletion of u[NUM:0] : derivation crashes
	absent	u[NUM:PL]	No deletion of u[NUM:PL] : derivation crashes
	absent	absent	OK

Nevertheless, it creates another problem, since an optionally-merged number feature should apply to copulas just as to other verbs. In that case, it should be perfectly possible

to merge a copula without a u[NUM:] feature even when the subject is inanimate.

Therefore, clauses such as (25)b and (26)b should be grammatical, contrary to fact:

(25) a. **Sɿlà** eya.

sɿ-là eya

1SG-hand sick

‘My hand hurts.’

(MLBW 2009)

b. ***Sɿlà** eya **elɿ.**

sɿ-là eya Ø-lɿ

1SG-hand sick IPFV.3.SBJ-COP1

(Intended: ‘My hand hurts.’)

(MLBW 2009)

(26) a. **Du** **dzeɛ̀** edɿ.

du **dzeɛ̀** edɿ

DEM day hot

‘Today is hot.’

(MLBW 2009)

b. ***Du** **dzeɛ̀** edɿ **elɿ.**

du **dzeɛ̀** edɿ Ø-lɿ

DEM day hot IPFV.3.SBJ-COP1

(MLBW 2009)

In short, both the standard Minimalist model of feature-checking theory and Pesetsky and Torrego’s variant theory fail to predict the range of data that we see in the Tɿchɔ̀ Yatɿ

number agreement system. Nor is this failure a product of our assumption that it is number that drives the appearance of the copula. If it is animacy itself ([+AN]) that motivates the merge of the copula with AP predicates, we obtain the same results: under a Chomskyan analysis, the interpretable animacy feature on the noun will not require checking, and there will be no motivation for the merge of the copula ((27)a), and under a Pesetskyan analysis, where an uninterpretable but valued animacy feature on the verb values the interpretable animacy feature on the subject, verbs should be barred as predicates of inanimate subjects ((27)b). Both of these predictions, again, are contrafactual.

(27) a.



b.



What our investigation of AP predicates has revealed is that neither model of feature-checking is sufficient to explain the facts of Tł̥chq Yatı̄. It appears that checking theory needs a further modification if it is to be even descriptively applicable cross-linguistically.

Whatever the inadequacies of checking theory, it is clear that copulas appear with AP predicates in precisely the same environment in which number agreement morphology appears with VP predicates: that is, when the subject is animate. Furthermore, when an animate subject is plural, the copula merged with AP predicates bears optional plural agreement morphology just as other verbs do in VP predicates. Copulas, in other words,

are inserted to do what verbs can do, but adjectives cannot: provide a morphological hook on which to hang the inflectional realization of syntactic number, which is present on animate nouns, but not inanimate. This is simply a fact of the language, and theory must eventually evolve to encompass it.

5.6. A typology of predicate types

The question, however, still remains as to why APs can be bare predicates at all, while NPs cannot. Adjectives and verbs are alike in having no overt morphological agreement marking when they are predicated of inanimate subjects, but requiring such marking when predicated of animate subjects. In the case of adjectives, the agreement marking occurs on a copula instead of on the adjective itself. This commonality between adjectival and verbal predicates, though, stands in sharp contrast to NP predicates, which require copulas, regardless of the animacy of the subject. The clauses below, where NPs are predicated, are acceptable when copulas are present ((28)a, c) but not when they are absent ((28)b, d).

- (28) a. Ey₁ dech₁ sì₁ ts'iwà hq̣t'e.
 ey₁ dech₁ sì₁ ts'iwà ha-ɿ-t'e
 DEM tree FOC white.spruce THM-IPFV.3.SBJ-COP2
 'That tree is a white spruce.'
 (MLBW 2011)

b. *Ey₁ dech₁ sì₁ ts'ɪwà.

ey₁ dech₁ sì₁ ts'ɪwà

DEM tree FOC white.spruce

(Intended: 'That tree is a white spruce.')

(MLBW 2011)

c. Ey₁ k'oh eez₁₁ k'oò hq̣t'e.

ey₁ k'oh eez₁₁ k'o-μ̣ ha-ɿ-t'e

DEM cloud thunder cloud-PNS THM-IPFV.3.SBJ-COP2

'That cloud is a thunder cloud.'

(MLBW 2012)

d. *Ey₁ k'oh eez₁₁ k'oò.

ey₁ k'oh eez₁₁ k'o-μ̣

DEM cloud thunder cloud-PNS

(Intended: 'That cloud is a thunder cloud.')

(MLBW 2012)

Why are (28)b, d ungrammatical? Their subjects are inanimate, and we have already seen that bare adjectives can be predicated of inanimate subjects. Some account must be made of why bare nouns cannot be predicated in the same way. If APs predicated of animate subjects require copulas to realize the subjects' number feature, why do NP predicates require copulas for inanimate subjects as well? To put it another way: why do we have a threefold typology of predicate types with respect to copulas?

(29) Predicates and copulas	Predicate type		
	NP	AP	VP
Animate subject	copula	copula	no copula
Inanimate subject	copula	no copula	no copula

This classification offers us a window into the structure of Tł̥chq Yatì predication itself. I propose that predication in Tł̥chq Yatì requires two fundamental syntactic conditions. One is the presence of a coincidence feature, which, in my view, is the principal content of the copulas.¹¹⁰ This feature is borne by all verbs and adjectives, but not by nouns.¹¹¹ Without [+COIN], a predication relation cannot be established by Merge: the resulting structure will not be predication, but merely the juxtaposition of arguments, and the derivation will crash.

The second precondition for predication is the checking of the number feature of the subject. Both VP and AP predicates can be bare, without a copula being inserted, while both APs (if the subject is animate) and NPs require a copula. These two facts suggest that verbs alone bear a number agreement feature, as already proposed, and that nouns alone lack [+COIN]. Adjectives, lacking a number agreement feature, must have a copula inserted before they can license an animate subject. However, adjectives do bear [+COIN], and are capable of being bare predicates of an inanimate subject. Nouns, without [+COIN],

¹¹⁰ This part of the proposal follows Hale's (Hale, 1986) insight that coincidence is the fundamental relation of predication.

¹¹¹ An implication is that in languages that do allow bare nominal predicates, either nouns also bear a coincidence feature, or they bear morphology that does so, or they have a phonologically null copula.

absolutely require a copula in order to become predicates. Verbs, as we have seen, can be predicated of any subject, whether animate or inanimate, since they bear both [+COIN] and number agreement.

These features are summed up in (30).

(30)

	Predicate type		
	NP	AP	VP
	Features	[+COIN]	[+COIN]
			[NUM]

Note that on a copula that takes an AP predicate as an argument, the [+COIN] feature is semantically unnecessary, since adjectives themselves bear such a feature, as evinced by their capacity to be bare predicates of inanimate subjects.¹¹²

The [+COIN] feature on a copula that takes an NP predicate as a complement, however, makes a real syntactic contribution, since NP predication is not possible without it.

This feature system therefore correctly predicts the symmetries and asymmetries between the required structures of NP, AP and VP predicates, as shown in 0.

¹¹² This fact will be used in chapter 6 as evidence that the copulas that appear with AP predicates have undergone grammaticalization, and no longer bear a [+COIN] feature.

(31)		Structure		
		NP	AP	VP
Subject animacy	Animate	NP + copula + AgrNum	AP + copula + AgrNum	VP + AgrNum
	Inanimate	NP + copula	AP	VP

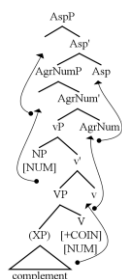
This analysis neatly explains several facts: the parallelism between verbal and adjectival predication, the possibility of bare adjectival predicates of inanimate subjects alone, and the optionality of plural marking on predicates of animate and semantically plural subjects. All of these are dependent upon the realization – or not – of the number feature. This analysis also explains the lack of aspect marking on adjectives. Subjects of verbs check their number features at AgrNum against those of their subjects. Adjectives and nouns bear no agreement features, so bare NP and AP predicates cannot raise. The result of this situation is twofold.

First, there is no way for the number feature borne by an animate subject to be valued by an adjectival predicate: that requires the presence of a copula, which, like other verbs, bears an uninterpretable number feature. Secondly, when the subject of an adjectival predicate is inanimate, there is no way for aspect marking to surface, since bare adjectives cannot raise. Both of these statements describe the facts of Tł̥chq̣ Yatì, as we have seen.

The differences between verbal and adjectival predication are illustrated in (32).¹¹³

¹¹³ I use [NUM] to signify the number feature in these trees, but remain agnostic on the specifics of the checking mechanism, since the two variants we have seen both make some contrafactual predictions.

(32) a. VP predication

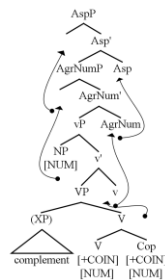


b. AP predication



This approach offers a reason why VP predicates do not co-occur with copulas. A clause in which a lexical verb co-occurs with a copula results in one of them having its features checked against the subject, leaving the other with un-deleted uninterpretable features, as in (33), resulting in a crash.

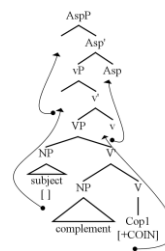
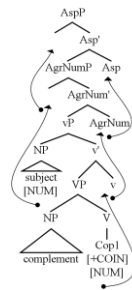
(33) *Lexical verb with copula merging in AgrNum



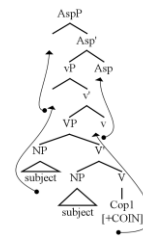
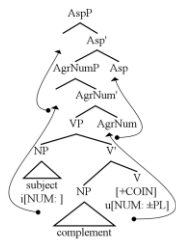
The behaviour of adjectives thus not only is explained by the nature of predication in general in Tḥçq Yatù, but also in turn helps to illuminate why NP predicates require copulas and why VP predicates bar them.

Finally, let us review the structures that we have posited for NP ((34)-(35)), VP ((36)) and AP ((37)) predicates, with animate (a) and inanimate (b) subjects:

(34) a. Animate subject, NP predicate, Cop1 b. Inanimate subject, NP predicate, Cop1

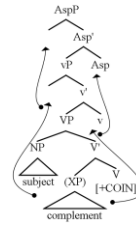
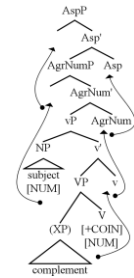


(35) a. Animate subject, NP predicate, Cop2 b. Inanimate subject, NP predicate, Cop2



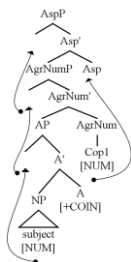
(36) a. Animate subject, VP predicate

b. Inanimate subject, VP predicate



(37) a. Animate subject, AP predicate

b. Inanimate subject, AP predicate



5.7. Remaining issues

There is a remaining issue awaiting explanation after this analysis. A possible difficulty with positing a complete lack of a number feature on inanimate nouns in T̥chq̣ Yatù is the existence of the famous Athapaskan “classificatory verbs”. In Athapaskan languages in general, verb stems bear a relationship to the semantic classes of their subjects and objects: animacy, along with other concepts, plays a major role, as in (38)-(39). The verb stem *-da* ‘sit, be located at’ semantically selects an animate subject, such as *ch̥ɪq̣* ‘bird’, the subject of (38)a. Verbs based on this stem create semantic infelicity when they are predicated of an inanimate subject as in (38)b.¹¹⁴

- (38) a. Ch̥ɪq̣ k’òò k’e dawheda.
 ch̥ɪq̣ k’òò k’e da-whe-da.
 bird willow on up-IPFV.3.SBJ-be.located.animate.SG
 ‘The bird is sitting up on the willow.’
 (TCSA 2007)
- b. #Bò ɣht’e ladà ka wheda.
 bò ɣht’e ladà ka whe-da
 meat raw table on IPFV.3.SBJ-be.located.animate.SG
 (Intended: ‘The raw meat is sitting on the table.’)
 (MLBW 2009)

In a similar manner, the verb theme *-zo*, which also means ‘sit, be located at’ selects an inanimate subject like *bò weel̥ɪ* ‘fresh meat’ ((39)a); however, this verb theme cannot select an animate subject, such as *th̥ɪ* ‘dog’ ((39)b).

¹¹⁴ Marie-Louise Bouvier-White commented that (38)b “sounds like the meat has come back to life!”

- (39) a. Bò weelì ladà ka wheʔɔ.
 bò weelì ladà ka whe-ʔɔ
 meat fresh table on IPFV.3.SBJ-be.located.chunky.object.SG
 ‘The fresh meat is on the table.’

(MLBW 2009)

- b. #Tɪ ladà ka wheʔɔ.
 tɪ ladà ka whe-ʔɔ
 dog table on IPFV.3.SBJ-be.located.chunky.object.SG
 (Intended: ‘A dog is on the table.’)

(MLBW 2009)

In addition to the verb stems restricted according to animacy in (38)-(39), there are also verb stems that are restricted according to the number of the subject or the object. These restrictions cross-cut those of animacy, as in (40)-(41). In (40)a, b, we see a distinction in subject number selection between two classificatory verbs; in (41)a, b, we see a different pair of verbs selecting a singular and a plural inanimate subject.

- (40) a. Jɔ whɪhda!
 jɔ whɪh-da
 here IPFV.1SG.SBJ-be.located.animate.SG
 ‘I am here!’

(TCSA 2007)

b. Ts'eèhkw'e

ts'eèh-kw'e

IPFV.1PL.SBJ-be.located.animate.PL

'We are here.'

(TCSA 2007)

(41) a. Sadzeè ladà k'e wheʔq.

Sadzeè ladà k'e whe-ʔq

clock table on IPFV.3.SBJ-be.located.chunky.object.SG

'The clock is on the table.'

(TCSA 2007)

b. Nàzediḡ kò, whe whaà gots'q whela

nàzediḡ kò, whe whaà gots'q whe-la.

store belt long.time AR.from IPFV.3.SBJ-be.located.objects.PL

'The belts had been in the store for a long time.'

(TCSA 2007)

If inanimate objects lack a syntactic number feature, it implies that the selection of singular or plural inanimate subjects by different verbs must be a semantic process rather than a syntactic one. Additional evidence for this assertion lies in the fact that there are other semantic dimensions beyond animacy and number that govern the relations between classificatory verbs and their subjects, as demonstrated in (42).

- (42) a. Eyɪ tɪ neçàa whehtɔ.
 eyɪ tɪ ne-çà-a wheh-tɔ
 there water IPFV.3.SBJ-be.big-C IPFV.3.SBJ-be.located.containerful
 ‘There was a large lake there.’

(TCSA 2007)

- b. Wek’e ts’ò whehtsih.
 we-k’e ts’ò wheh-tsih
 3-on to IMP-3.SBJ-be.located.cloth
 ‘There is a blanket over him.’

(TCSA 2007)

- c. Ejatɔ yɪ tɪ whetɬ’ɪ.
 ejatɔ yɪ tɪ whe-tɬ’ɪ
 jar in water IPFV.3.SBJ-be.located.liquid
 ‘There is water in the jar.’

(TCSA 2007)

- d. Goht’qɔ kw’à yɪ whehtɬe.
 goht’qɔ kw’à yɪ wheh-tɬe
 clothes basin in IPFV.3.SBJ-be.located.soggy.mass
 ‘The wet clothes are in the basin.’

(TCSA 2007)

Clearly we are not dealing here with formal syntactic features such as [\pm SOGGY], but with a semantic process.¹¹⁵

There exists considerable evidence, then, that syntactic number and semantic or “natural” number are two different characteristics in Tḥchq Yatì, just as are grammatical gender and natural gender in languages such as German or Swahili, and, just as in these languages, may operate in different dimensions, one syntactic and one pragmatic. In (43), we see that the German noun *Mädchen* ‘young woman’ bears a neuter gender feature (a consequence of the diminutive suffix *–chen*) and that the determiner agrees with its complement in gender. Nevertheless, the pronoun used to refer to the young woman is *sie*, the third-person singular feminine rather than neuter:

(43) (German)

Das Mädchen, **sie** ist schön...

das Mädchen **sie** ist schön

DET.NEUT young woman **3SG.FEM** 3SG.COP beautiful

‘The young woman, she is beautiful...’

(Grillparzer, 1851, accessed 2012 03 01 at [http://www.zeno.org/Literatur/M/](http://www.zeno.org/Literatur/M/Grillparzer,+Franz/Dramen/Die+Jüdin+von+Toledo;}})

Grillparzer,+Franz/Dramen/Die+Jüdin+von+Toledo;}}))

¹¹⁵ This claim implies that it should be semantically infelicitous, but not ungrammatical *per se*, to predicate a classificatory verb of the “wrong” sort of subject. It appears that this is correct: see (38) and footnote 112. Wilhelm (2008) argues that in Denë Sḥlné, closely related to Tḥchq Yatì, the difference between mass and count nouns is expressed not in terms of syntactic number but of atomicity, contra Chierchia (1998). My analysis agrees with hers in that we both posit more than one system in which semantic individuation can be encoded in the syntax.

Clearly, the choice of the pronoun in German is not determined by formal syntactic agreement but rather by semantic and pragmatic considerations.

It may well be that interpretations of subject individuation are coerced by the classificatory verbs themselves; it is common, after all, for predicates to coerce possible interpretations of subjects. Consider the following English examples:

- (44) a. The sheep gathered.
 b. The water dripped.
 c. The bank failed.
 d. The rubber ball shattered.

In (44)a, *sheep* must be interpreted as more than one entity due to the predicate *gather*. Similarly, in (44)b, *water* must be understood as individuated drops; this interpretation is coerced by the semantics of *drip*. This coercion applies to many distinctions beyond that of individuation: (44)c strongly favours an interpretation where the subject *bank* refers to a financial institution rather than the shore of a river, and in (44)d, *shatter* coerces an interpretation where the rubber ball is at an extremely low temperature, or brittle with age.

It seems clear, therefore, that the mechanics of classificatory verb subject selection, whatever they may be, are of an essentially different nature from the syntax of inherent number. The analysis of those mechanics is a question for further research.

5.8. PP predicates

The investigation of the copula distribution in Ṭḥcḥq̣ Yaṭị has been focussed on NP predicates (chapters 3 and 4) and AP predicates (the present chapter). Copulas also occur with PP predicates; however, a full investigation of the distribution of copulas with PP predicates has proven to be beyond the scope of this work, for the following reasons.

Most postpositional phrases in Tɬɨchɔ Yatɨ appear as complements only of Copula 2. Some can be complements of either copula, but the distribution is complex and not easily reducible to either a distinction of stage-level/individual-level predicate or subject animacy. The examples below illustrate the situation for the postposition *gha* ‘for’. These examples were deliberately constructed to allow either copula, if PP predicates were to pattern with NP predicates. The snowshoes that Michel is making are not yet completed, so we predict that either a stage-level predicate (Copula 1 in any tense) should be grammatical, or an individual-level predicate in the future tense (Copula 2, with a lifetime interpretation). What we find, however, is different. The PP is grammatical with a present-tense Copula 2 ((45)a), degraded with a present-tense Copula 1 ((45)b), and grammatical with a future-tense Copula 1 ((45)c):

- (45) a. Mishè dɨ ʔah Madlɛ gha yelè ha...
- Mishè dɨ ʔah Madlɛ gha ye-Ø-lè ha
- Michel DEM snowshoe Madeleine for 4OBJ-IPFV.3.SBJ-give FUT
- Wegha hɔt’e.
- we-gha ha-l-t’e
- 3-for T HM-IPFV.3.SBJ-COP2
- ‘Michel is giving Madeleine these snowshoes... They are for her.’
- (MLBW 2011)

b. ?Wegha el̩.

we-gha Ø-l̩

3-for IPFV.3.SBJ-COP1

‘They are for her.’

(MLBW 2011)

c. Wegha el̩ ha.

we-gha Ø-l̩ ha

3-for IPFV.3.SBJ-COP1 FUT

‘They will be for her.’

(MLBW 2011)

Conversely, if PP predicates were to pattern with AP predicates, we would expect to find animate subjects to be compatible with Copula 1, but inanimate subjects to be ungrammatical with a copula. What we in fact find is that the inanimate subject of (45) can occur with either copula, while the animate subject in (46) is incompatible with Copula 1 in the present tense, though it is grammatical with the future, just as in (45).

(46) a. Mishè d̩ t̩ wegha eh̩è ha...

Mishè d̩ t̩ we-gha h-lè ha

Michel DEM dog 3-for IPFV.1SG.SBJ-give FUT

Wegha h̩t’e/ag̩t’e.

we-gha ha-l̩-t’e/a-g̩t’e

3-for THM-IPFV.3.SBJ-COP2/THM-IPFV.3PL.SBJ-COP2

‘I’m giving these dogs to Michel... They’re for him.’

(MLBW 2011)

- b. *Wegha gɪlɪ
 we-gha gɪlɪ-lɪ
 3-for IPFV.3PL.SBJ-COP1
 (Intended: ‘They’re for him.’)
 (MLBW 2011)

- c. Wegha gɪlɪ ha.
 we-gha gɪlɪ-lɪ ha
 3-for IPFV.3PL.SBJ-COP1 FUT
 ‘They will be for him.’
 (MLBW 2011)

The table in (47) illustrates the number of occurrences in CBS 2003 of each copula with a selection of postpositions.

(47)

PP	Cop1	Cop2
yì/yì ‘inside’	0	1
tsqòhk’e ‘beside’	0	1
dɛ ‘without’	0	2
ta ‘among’	0	2
ghq ‘about/from’	0	3
xè ‘with’	0	39
t’à ‘with/because of’	1	3
gha ‘for’	2	22
ts’q ‘from/belonging to’	4	81
nahk’e ‘more than’	58	6

As mentioned above, many postpositions appear only with Copula 2, while none appears only with Copula 1. Any pattern in this distribution has yet to be discovered at this point, and must be reserved for future research.

5.9. Conclusion

This chapter has demonstrated that Copula 1 appears with AP predicates for one reason only: to provide a morphological frame on which to realize the number features of their (animate) subjects. The evidence for this conclusion is strong. First, copulas are apparently inseparable from the adjectives with which they co-occur; this fact is what we would expect, just as verbs cannot be separated from their own (internal) number-agreement morphology. Secondly, Copula 1 appears if and only if the subject of the AP predicate is animate. Thirdly, this distribution is parallel to that of number agreement morphology on VP predicates, which appears only in concert with animate subjects. This close parallelism suggests strongly that Copula 1 appears with AP predicates for the same reasons that number agreement appears with VP predicates – to realize morphological agreement with a number feature, which is impossible without a copula, since adjectives are morphologically invariant. Since neither number agreement on verbs nor (number-marked) copulas appear with predicates of inanimate subjects, the conclusion is that inanimate nouns bear no number feature. The fact that copulas are obligatory with AP predicates of animate subjects, but plural agreement is optional, suggests that the values of the number system oppose explicit plural to unmarked general number, interpretable as either plural or as singular, while number itself, as a syntactic feature, exists on animate nouns but not on inanimate nouns. We have also seen that this formal number feature differs from the number of real-world entities denoted by a subject: the former is limited to animate nouns, while the latter, of course, is a characteristic of all count nouns, and finds expression in the selectional relationship between subjects and classificatory verbs. Bare adjectives can be predicated of inanimate nouns, just as verbs (without number

agreement) can, but nouns cannot; they must have the support of a copula. This fact demonstrates that it is not the number feature, or indeed ϕ -features in general, that enable predication.

The conclusion is that it is coincidence that enables predication, since without the copula (a marker of coincidence of identity), NPs cannot be predicates.

The findings of this chapter suggest that an argumental category, like NPs, can be made a predicate by the introduction of a copula with its [+COIN] feature, while a category that already bears [+COIN], like APs, can be a bare predicate. The prediction is that PPs should pattern either with NPs or with APs. In fact, the distribution of copulas with PPs appears to be more complex, and further testing will require more research.

Another finding of this chapter is that standard versions of feature-checking theory are less than adequate either descriptively or explanatorily with respect to Tłchq Yatı̀ AP predicates. The theories of both Chomsky (1995) and Pesetsky and Torrego (2004) predict some, but not all, of the patterns of copula distribution with AP predicates.

In sum, this chapter has described the behaviour of AP predicates in Tłchq Yatı̀, and in proposing a theory to account for this behaviour, has provided an account of the mechanisms that govern Tłchq Yatı̀ predication in general and enabled us to make testable predictions about predicates of other categories, and has highlighted an area in which standard feature-checking theory needs to be modified.

Chapter 6. Beyond Athapaskan: Copulas in the languages of the world

The previous three chapters of this dissertation addressed the copular systems of the Athapaskan languages Tł̥ch̥ Yatì, Tsùùt'ínà, and Navajo in terms of the proposal that copulas are syntactic markers of the semantic relation of coincidence, a relation that lies at the heart of predication. Chapter 3 demonstrated that the copulas of Tł̥ch̥ Yatì, when they select NP predicates, show a distinction between stage-level (Copula 1) and individual-level predicates (Copula 2), with the exception of predicates of profession, which, despite being individual-level, can occur with either copula. It advanced the proposal that the distinction originates in Copula 1, but not Copula 2, projecting ν , and that the event argument at [Spec, ν P] is responsible for the stage-level interpretation of predicates that are complements of Copula 1.

Chapter 4 addressed the outstanding issue of Tł̥ch̥ Yatì predicates of profession, demonstrating that in Navajo and Tsùùt'ínà, Copula 1 is acceptable with individual-level predicates, but only when the subject is animate. The Tł̥ch̥ Yatì predicates of profession can be seen as a vestige of a wider system in the Athapaskan languages, in which Copula 1, with its projected ν , may merge with either a thematic subject or an event argument, but not necessarily both.

In Chapter 5, we saw that copulas appear with AP predicates for entirely different reason from those that motivate their occurrence with NP predicates. NP predicates lack a [COIN] feature and are of semantic type e , and therefore require the presence of a copula to mark their central coincidence with their subjects. AP predicates, on the other hand, do have this feature, and can appear without a copula. However, adjectives have no morphological agreement marking, in contrast to verbs, and hence a copula must appear

with an AP predicate of an animate subject, in order to value ϕ -features (specifically, number) borne by that subject. (Inanimate nouns in Tłıchq Yatı̄ bear no number feature, as evidenced by their failure to trigger number agreement on verbs.) Copulas with AP predicates therefore resemble DO-support in English: the fulfilment of a purely syntactic requirement. The surface appearance of the predicate types in (1) is the result of the interaction of this syntactic requirement with the licensing of predication by means of the copula's semantic [COIN] feature.

(1)

	Predicate category					
	NP		AP		VP	
subject animacy	Animate	Inanimate	Animate	Inanimate	Animate	Inanimate
copula	✓	✓	✓	✗	✗	✗
number agreement	✓	✗	✓	✗	✓	✗

The current chapter examines the implications of Hypothesis I for the languages of the world. Taking as a point of departure the finding that the difference between the two Athapaskan copulas is structural in nature, it makes predictions about possible and impossible structural differences between copulas, and tests these predictions against actually occurring copular systems in natural language.

Section 6.1 develops the ideas from Chapter 2 that there is more than one possible merge point for copulas, and that copulas may have differing argument structure. Section 6.1.1 proposes that there is a finite number of nodes in the clausal spine at which copulas

may merge, and 6.1.2 makes the further proposal that after Merge, copulas may differ in whether they Move to a higher functional head, depending upon their argument structure. Section 6.1.3 examines the predicted effects of each Merge node on copula behaviour, and Section 6.1.4 examines the predicted effects of head movement to higher functional heads.

Section 6.2 takes the theory developed in 6.1 and develops its implications. Section 6.2.1 makes predictions about copulas, suggesting that there are certain kinds of copula systems that we should expect to find in the languages of the world, while others should be impossible. Section 6.2.2 tests the predictions of 6.2.1 against known single-copula systems in the languages of the world. Section 6.2.3 tests the same predictions against multiple-copula systems. Section 6.2.4 takes a diachronic perspective, making predictions about copulas at various merge points seen as candidates for grammaticalization, and 6.2.6 tests these predictions against known examples of grammaticalizations that have their origins in copulas. Section 6.2.6 assesses the theory in terms of the typology of known copular systems, concluding that copulas' semantic lightness and flexibility in merge structure makes them ready candidates for reinterpretation as purely functional elements, explaining the very high cross-linguistic frequency of copula grammaticalization.

Section 6.3 draws general conclusions about copulas and their place in syntax and semantics.

6.1. Structural possibilities for copulas

The theory developed in chapters 2 and 3 consists essentially of the following claims:

1. Copulas are syntactic markers of coincidence between two arguments, expressed by a subject-complement relation. They consist primarily of a [COIN] feature that enables predication.
2. Different merge points are available for copulas.
3. Copulas may show differences in argument structure, but minimally have a subject and complement.
4. Differences in argument structure may involve differences in projected syntactic structure, like those between the Athapaskan Copula 1, projecting v with its external subject and event argument, and Copula 2 with neither.
5. These structural differences may result in interpretational differences, like the stage-/individual-level predicate distinction and the other effects of the Copula 1/2 difference in Athapaskan languages.

The following sections will outline the implications of these claims for a theory of copulas.

6.1.1. Merge points for copulas

Chapter 2 demonstrated that the copulas of Tł̥chq̣ Yatì both merge at V. Evidence for this included the categories of complements that they take, their paradigmatic morphology, their co-occurrence with the functional categories of the middle field, and their failure to co-occur with other verbs in the same clause. However, the effort expended to demonstrate this fact implies an assumption that other merge points are theoretically possible. Further, in many languages, copulas show morphosyntactic characteristics very different from verbs, suggesting that in those languages, they may not be verbs at all.

We will consider the possibility that copulas may merge into the clausal spine at sites from the root (V) upward: that is, at V, *v*, Asp, T, and C. The reason for considering these sites and not others is as follows.

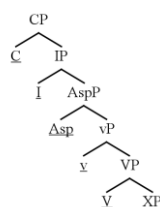
In languages that have copulas, they are markers of clausal predication. That is, they do not occur within the nominal (NP), adjectival (AP) or adpositional (PP) domains.¹¹⁶ They are thus only a subspecies of Relator (den Dikken, 2006), in that they mark predication only within a restricted syntactic domain. In den Dikken's analysis, adpositions such as French *à* are also Relators, but they are not clausal and this chapter is not concerned with them. Though it is entirely possible for non-clausal syntactic elements

¹¹⁶ There are other markers of predication within these other domains. Den Dikken views Relators as having other instantiations than copulas: he argues for the English preposition *of* being a "nominal copula", and semantically empty (2006:163-166), citing constructions like *a jewel of a village* or *an idiot of a doctor*, which he characterizes as inverse predication (that is, predication where the structural positions of the two arguments are reversed due to movement). I do not subscribe to this view. The range of functions fulfilled by *of* is very broad: attribution (as in den Dikken's examples above), kinship, part/whole relations, alienable possession, and so forth. It is obvious that not all of these involve a simple [COIN] relation: while *an idiot of a doctor* seems to bear a straightforward relation to *the doctor is an idiot*, the same cannot be said of *a father of a friend* and *a friend is a father*, nor *an arm of the sea* and *the sea is an arm*. Nor can [COIN] always be expressed with *of*: *A tiger is a cat* has no counterpart *a cat of a tiger*. The distribution of *of* thus overlaps with, but does not map directly to the distribution of copulas. It seems to be difficult to reduce nominal predication to the same semantics as clausal predication, and, as den Dikken's own examples demonstrate, there are also syntactic differences. For these reasons I restrict this investigation to clausal predication.

to become copulas diachronically through grammaticalization, the origins of copulas are not the focus of this study.¹¹⁷

The possible merge points for copulas are therefore those illustrated in (2).

(2) Possible merge points (underlined)



Two questions arise immediately from the decision to consider the heads on the clausal spine as Merge sites for copulas. The first is theoretical: is there any of these five heads that we can discard *a priori*? The second question is empirical: are copulas merged above V attested in natural languages?

The theoretical question may be answered quickly. Copulas connect a subject and a predicate in a relationship of coincidence of identity. In most languages, they take a range of arguments, but minimally allow nominal (NP or DP) subjects and complements. The examples below illustrate the argument range for the English copula:

¹¹⁷ For example, the Mandarin copula *shì* originated as a demonstrative (van Gelderen, 2011).

- (3) a. [Kim Campbell]_{DP} is [cuddler]_{AP}.
 b. [The one in the middle]_{DP} will be [for you]_{PP}.
 c. [Bigger]_{AP} is [better]_{AP}.
 d. [To know him]_{TP} is [to love him]_{TP}.
 e. [When the two images overlap]_{CP} is [when the sun has reached its zenith]_{CP}.
 f. [Whether to be or not to be]_{CP} was [the question]_{DP}.

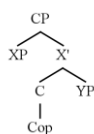
Coincidence of identity and flexibility of argument-taking are at the heart of what defines a copula. Regardless of where copulas merge, therefore, we should expect them to have these characteristics. That is, a copula that merges at T should take an XP complement, not an AspP; otherwise, it would be only a tense marker, not a copula in T. At the same time, such a copula will be in complementary distribution with tense markers. The difference is that a copula, as we saw in the introduction, encodes coincidence both between thematic arguments and (via TAM marking) between temporal arguments. A copula in T marks tense and also relates two thematic arguments.

In this context, of the syntactic nodes outlined in (2), there is one, C, that stands out as impossible as a copula merge site. Let us explore the reasons why.

First, a copula that merges at C will be higher in the syntactic structure than any situation arguments; any TAM morphology (assuming it had any) would not be able to relate such arguments, and hence a C-merged copula would create a clause that was

tenseless and aspectless: it will be unanchored (in the sense of Enç (1987)) .¹¹⁸ If Ut-T is indeed in a Spec position of TP, it will be missing from a clause with a C-merged copula:

(4)



This is a necessary consequence of our assumptions about copulas. If the copula in (4) has the selectional freedom we associate with copulas, its complement will not necessarily be a TP unless coincidence of the subject with a TP is being asserted, as in (3) above. Conversely, if a copula merged in C does not have such freedom, and can only take a TP complement, a further consequence follows. A tenseless, aspectless copula that merges in C and must take a TP complement would be featurally and selectionally identical to a complementizer, and there would be no reason to analyze it as a copula at all.

We arrive therefore at the following conclusions concerning C-merged copulas. If a copula merges at C and has selectional freedom, its clause will lack an Utterance Time: a contradiction in terms, and an impossibility. If it does not have such freedom, it will not

¹¹⁸ Although Enç's analysis proposes a Tense at C, more recent theories (Demirdache & Uribe-Etxebarria, 2000, 2004, 2007; Ritter & Wiltschko, 2005, 2009, 2010) place it in T/I. Under Enç's system, a copula at C would still be anchored.

be a copula. We can therefore *a priori* discard C as a merge site for copulas, and concentrate on the remaining sites: T, Asp, v and V.

The next section outlines the properties that copulas merged above V should have.

6.1.2. Predictions of copula properties: Merge points

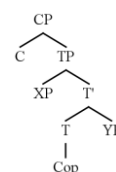
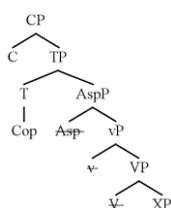
An instance of [COIN] that merges into the clausal spine should have effects and properties that depend, to some extent, on the merge point. Some of these are specific to particular syntactic nodes, while others can be generalized. Among the latter are the following.

We can assume that instances of a particular projection do not co-occur: thus Athapaskan copulas, being verbal, do not occur with other verbs. Likewise, we would expect not to find instances of T that co-occur with tense markers, and so on. A copula that merges at a particular head (as opposed to moving to it from a lower position) will not be in a position to check any agreement features at lower heads. For instance, if a copula merges at T, as in (5)a, it should not be able to check aspect features, and should therefore not show aspectual morphology, nor any features that are checked at v or V (5)b. Furthermore, in consequence of our assumptions about copulas in the previous section, these lower heads should not in fact be present at all.

(5) Heads unavailable for feature checking, for a copula merged at T

a.

b.



We have then a general prediction for copulas merged at a given head: the featural properties checked at lower heads will be absent from the copula. The featural properties checked at higher heads could still be present, of course, as feature agreement could be resolved by movement.

6.1.3. A further prediction: negative copulas

When [COIN] occurs in other domains such as aspect and tense categories, it commonly has both positively and negatively valued instantiations. In the domain of aspect, for example, imperfective marking encodes [+COIN](AST-T, EV-T), while perfective encodes [-COIN] between these times. This dissertation proposes that copulas are instantiations of [+COIN]; we should therefore expect to see instantiations of [-COIN] in the same domain: copulas that are equivalent to the English *not +be*.

The next sections will assess to what extent these predictions are borne out in natural language. We will see that copulas that merge above V can indeed be found in natural language, as can negative copulas.

6.2. Results

This section demonstrates that the predictions of the previous sections are borne out. Copulas that merge at different sites on the clausal spine are not only possible, but occur in the languages of the world.

6.2.1. Single-copula systems

A great many of the languages of the world have only a single copula (Pustet, 2003). English, Mandarin, and Korean, for example, are single-copula languages.

6.2.1.1. $V \rightarrow v$

English (Indo-European: Germanic) is an example of a system with a single copula that is decidedly verbal, merging at V and moving to *v*. The copula, *be*, exhibits a full morphological paradigm, with agreement for subject person and number. It inflects for aspect ((6)a) and tense ((6)b).

- (6) a. Kim has **been** a verderer for many years.
 b. She and Terry **were** elsewhere when the poachers struck.

The English copula allows both animate and inanimate subjects ((7)a, b) and selects both stage- and individual-level predicates ((8)a, b):

- (7) a. **Kim** is gleeful.
 b. **Her ex-boyfriend's car** is at the bottom of the Fraser River.

- (8) a. Sandy is **in Tashkent** this week.
 b. Iodine is **a halogen**.

These facts suggest that it is merged in V but moves to v , Asp and T, closely resembling the Athapaskan Copula 1; the external arguments of v , as we recall from Chapter 4, are optional, allowing the absence of an external thematic subject in (7)b and of an event argument in (8)b.¹¹⁹

The fact that the copula alone of all English verbs undergoes overt movement to T, and thus is available for inversion and other phenomena (9), is a fact that is not predicted by an analysis of it as a V that undergoes movement to v .

- (9) a. Is iodine a halogen?
 b. Is Terry annoyed?
 c. Sandy and Kim are not here.
 d. *Seems iodine a halogen?
 e. *Looks Terry annoyed?
 f. *Sandy and Kim stay not here.

We have posited that the copula shares the feature [COIN] with other verbs, and that it moves to v to merge an external argument, which other verbs also do. There seems no particular reason why the copula should behave differently. Diesing (1990) argues that the subjects of individual-level predicates (including copular ones) merge at [Spec, TP] and

¹¹⁹ Another way to view the dual role of the English copula is to posit two homophonous copulas, one projecting v and one not. I do not take this view, for reasons of economy: under such an analysis, every English verb that admits both stage- and individual-level interpretations (*have*, *sit*, *stand*, etc.) would have to have two homophonous forms.

are thus available for extraction; this proposal, however, runs into problems with over-prediction, as remarked by Doherty (1996): the subjects of non-copular verbs do not invert, even when their predicates are individual-level ((9)c), and copulas do invert, even when their predicates are stage-level ((9)b). I will not pursue this question here.¹²⁰

6.2.1.2. Higher projections

All single-copula languages that I have examined appear to have copulas that merge at V.¹²¹ The Mandarin (Sino-Tibetan: Chinese) copula *shì* and the Korean (isolate) copula -*ita* both exhibit morphosyntactic behaviour similar to other verbs. Both inflect for aspect,

¹²⁰ Ascribing a strong T-feature to the copula merely leads to the consequent question of why the copula alone has such a feature. One possibility is that the minimal semantic content of the copula is what allows it, and not other verbs, to raise to T: T-checked features are the only content the copula has, other than [COIN]. However, this also is problematical, since *have* also has near-minimal content (Ritter & Rosen, 1997) but in many dialects of English it does not move to T. Pollock's analysis (1989) accounts for movement to T by the lack of theta assigning by *be*. The difficulty with this account is that it seems to rule out the merging of subjects of *be* in [Spec, vP]: we have found in chapter 4, in Tł̥chq Yatì and Tsúùt'ínà, that such subjects tend to be human agents or experiencers, and this characterization is supported in English by such sentences as *She decided to be happy*. If *be* cannot check theta roles, it is hard to see how subjects in [Spec, vP] could be licensed.

¹²¹ The Korean copula has been argued to belong to the class of adjectives (Pustet, 2003:41, citing Sohn, 1994:79). Not only does this characterization face some challenges (the copula would be the only adjective with two arguments, for example), but Korean adjectives in general are a sub-class of stative verbs, with full inflectional morphology. In other respects, though, viewing Korean copulas as belonging to class A would be consistent with the theory presented in this dissertation, given that we have seen in Chapter 3 that adjectives can, in some languages, bear [+COIN] and be predicates. The Korean copula would then merge at A and rise to *a*.

and the Korean copula for tense as well. (Mandarin is a tenseless language (Smith, 2007).) Both select either individual- or stage-level predicates and either animate or inanimate subjects. The evidence suggests that they are verbs. In fact, considering the discussion of the properties of merge points in section 6.1.2, single-copula systems where the copula merges above v should not occur at all if the language has the capacity to express stage-level predicates.

For example, an AspP copula has an NP subject and an AST-T in [Spec, AspP], and an XP complement (that is, NP, AP, or PP, but not v P). Since EV-T is in [Spec, v P], a copula that merges in AspP will not be able to express coincidence between AST-T and EV-T, but only between Ast-T and the LF-T of its complement. It will thus give rise to lifetime effects, as we saw in chapter 3: there will be no way of encoding a predicate that is temporally bounded except by the lifetime of the subject. For this reason, we must view single-copula languages with a copula merged above v as unlikely.

6.2.2. The results: Multiple-copula systems

We have seen that in the Athapaskan languages, there are two copulas, both of which merge at V, with one of them rising to v to merge with an external thematic subject and an event argument, resulting in a distinction between predication of animate and/or changeable subjects versus those that are neither. As we have predicted, however, other systems exist.

6.2.2.1. V and $V \rightarrow v$

The system we saw in Athapaskan is a common one among the world's languages (Pustet, 2003:105-114, 143-145). There is considerable evidence that the copular systems

of the Romance (Indo-European) languages are of this type.¹²² In Spanish, famously, stage-level adjectival predicates ((10)a) are introduced by *estar* and individual-level ((10)b) by *ser*:

- (10) a. Nicolás está enfermo hoy.
 Nicholas *estar*.PRES.3SG sick today
 ‘Nicholas is sick today.’
 (SMCM 2012)
- b. Nicolás es Canadiense.
 Nicholas *ser*.PRES.3SG Canadian
 ‘Nicholas is Canadian.’
 (SMCM 2012)

Both *ser* and *estar* have full verbal paradigms and can both be marked morphosyntactically for tense, aspect and mode, placing them, according to our criteria, firmly in the V category. While there are some differences in their selectional properties (DP and NP predicates can only be introduced by *ser*),¹²³ both can select AP and PP

¹²² Specifically, Spanish, Catalan, Portuguese, Galician, Italian (to some degree), but not French or Romanian.

¹²³ This appears to be broadly true, although dialectal differences may play a role: compare (i) below, where the copulas (both judged to be acceptable) show the same stage-/individual-level predicate division as in (11) but where their complements are DPs:

- i. Justina es/está una fugitiva.
 Justina *ser/estar*.PRES.3SG DET fugitive
 ‘Justina is a fugitive (generally/now).’
 (ZMS 2012)

predicates, leading to minimal pairs such as the following, where the same adjective can receive a stage-level interpretation when it is introduced by *estar* and an individual-level interpretation when it is introduced by *ser*:

- (11) a. Nicolás está feliz.
 Nicholas *estar*.PRES.3SG happy
 ‘Nicholas is happy.’ (now)
 (SMCM 2012)
- b. Nicolás es feliz.
 Nicolás *ser*.PRES.3SG happy
 ‘Nicholas is happy.’ (generally)
 (SMCM 2012)

Locative copular clauses show revealing distributional differences within Romance. While in standard Castilian Spanish, such clauses can only contain *estar* (12), in Portuguese (as well as in some dialects of Spanish), they show an animacy distinction: locative PPs are predicated of animate subjects by means of *estar* (13)a, but of inanimate subjects by means of *ser* (13)b:

- (12) Spanish:
- a. Juan **está**/*es en Brasil
 Juan ***estar***/*ser*.PRES.3SG in Brazil
 ‘Juan is in Brazil.’
 (Arche, 2006:17)

- b. Londres **está**/*es en el Reino Unido
 London **estar**/ser.PRES.3SG in DET United Kingdom

‘London is in the United Kingdom.’

(Arche, 2006:17)

(13) Portuguese:

- a. O João **está** na Torre de Belém.
 DET.SG.MASC João **estar**.PRES.3SG DET.SG.FEM Tower of Belém

‘João is in Belém Tower.’

(Critica Revista de Filosofia, accessed 2012 06 25 from

<http://criticanarede.com/avfi.html>)

- b. Sua sede **é** em Nova Iorque...
 3SG.GEN seat **ser**.PRES.3SG in New York

‘Its seat is in New York...’

(Portuguese Wikipedia article on UNICEF, accessed 2012 06 25 from

http://pt.wikipedia.org/wiki/Fundo_das_Na%C3%A7%C3%B5es_Unidas_para_a_Inf%C3%A2ncia)

The locative predicate system of Portuguese is strongly reminiscent of the Athapaskan languages, where an animate subject merges at [Spec, ν P], the external subject position. Spanish locative predicates are somewhat more recondite, and I do not intend to analyze them here.¹²⁴ However, considering that we have a dichotomy between a copula that

¹²⁴ However, one possibility is that the locative PP, being a spatiotemporal expression, licences the merge of Ev-Sit and thus *estar*, with its ν projection, rather than *ser*, without it.

selects characterizing predicates ((10)b, (11)b, (13)b) and one that selects predicates that are non-characterizing ((10)a, (11)a), spatiotemporally linked ((12)a, b), or predicates of animate subjects ((13)a), we are dealing with systems that merge both copulas at V but raise one to *v*, as in the Athapaskan languages.

6.2.2.2. T and V→*v*

In Irish (Indo-European: Celtic) we have a somewhat different system. There are two copulas in this language as well, but the distinction does not appear to be V/*v*. One copula completely lacks inflection for person and number agreement, though it inflects for tense: *is* (non-past) and *ba* (past) (Stenson, 1981:92-93). In (14) we see these two tense forms respectively.

- (14) a. Is lia é.
 Is surgeon he
 ‘He is a surgeon.’
- b. **Ba** lia é.
 IS.PAST surgeon he
 ‘He was a surgeon.’
- (Stenson, 1981:93).

The clauses in (15) demonstrate the lack of person and number agreement.

- (15) a. Is iad na daoine sin mo thuismitheorí.
 Is them DET-PL people that my parents
 ‘These people are my parents.’
-

b. Is mise an múinteoir.

IS I DET teacher

‘I’m the teacher.’

(Stenson, 1981:96).

The same form, *is*, appears in both first-person singular ((15)b) and third-person plural ((15)a), unlike other Irish verbs, in which these two forms are morphologically distinct, as we will see with *bí*, below.

Doherty (1996) proposes that *is* merges at T and takes an XP complement (i.e., not an AspP or a vP, but a predicate phrase, as argued for in Sections 6.1.1 and 6.1.2). He adduces its unique morphological characteristics in support of this argument. Unlike lexical verbs in Irish, *is* is defective in TAM marking, only distinguishing past (*is*) from non-past (*ba*), where other verbs also have future and conditional forms (Doherty, 1996:8-9), as well as progressive aspectual forms (Stenson, 1981:137-145). *Is* also behaves differently from verbs syntactically: its subject can be clause-final, the [Spec, TP] position in Irish. Subjects in this position at PF are normally barred in Irish, which does not have V-to-T raising and in which subject movement to [Spec, TP] is covert (Doherty, 1996:2, 21-24).

Furthermore, unlike Irish lexical verbs, but like inflectional particles, it apparently moves and adjoins to C, since in both embedded clauses and interrogatives it is replaced

by a suppletive form (Doherty, 1996:9-10).¹²⁵ In ((16)a) we see the former and in ((16)b) the latter.

- (16) a. Deireann Máire gur lia é.
 say Mary C. Is surgeon he
 ‘Mary says that he is a surgeon.’
- b. Ar lia é?
 Q. Is surgeon he
 ‘Is he a surgeon?’
- (Stenson, 1981:93)

All in all, Doherty’s evidence that *ís* is an instantiation of T is impressive. If his claim is correct, then by the prediction in section 6.1.2, the Irish copula should select only individual-level predicates. Merging at T, and taking an XP complement, it lacks a *vP* projection and therefore an external subject and an Ev-T. This prediction is correct: “The relationship between *is* and *bí* is sometimes likened to that between *ser* and *estar* in Spanish, and while there are certainly differences of usage, the analogy is roughly valid.” (Stenson, 1981:94)

“Only nominal predicates... are productive in copular sentences in the modern language. These consistently denote a permanent property.” (Doherty, 1996:36)

The other copula (traditionally called the “substantive verb *bí*” in the literature, selects nominative subjects, has an inflectional paradigm for person and number, and also

¹²⁵ McCloskey (1996) argues that there is no (overt) raising of verbs from I to C in Irish, but rather C-to-I lowering (covert I-to-C movement in Minimalist terms). Space does not allow me to take a position on this issue here, and it is not relevant to the claims made in this chapter.

inflects for tense (Stenson, 1981:94-95).¹²⁶ In (17)a we see the third-person singular present form, and in (17)b its past counterpart. The sentences in (17)c, d show its first-person singular and plural forms.

- (17) a. **Tá** sé ar meisce.
BÍ.3SG.PRES 3SG.NOM LOC intoxication
 ‘He is drunk.’

(Doherty, 1996:2)

- b. an fear a **bhi** breoite
 the man that **BÍ.3SG.PAST** ill
 ‘the man that was ill’

(Stenson, 1981)

- c. **Táim** láidir.
BÍ.1SG.PRES strong

‘I am strong.’

(Comhaltas: Danta, accessed 2012 07 02 from

<http://comhaltas.ie/education/comhra/danta>)

¹²⁶ Modern Irish verbs have lost most of the person inflections that were present in older stages of the language. However, first-person singular and plural forms are still distinguished morphologically from other personal forms. This is true of the “substantive verb *bí*” but not of *is* (Stenson, 1981:37-40).

d. **Táimid** go léir bródúil...

BÍ.1PL.PRES all proud

‘We are all proud...’

(Clair Aontaith, accessed 2012 07 02 from

http://www.taoiseach.gov.ie/attached_files/Pdf%20files/ClairAontaithe.pdf)

Moreover, unlike the copula *is*, the verb *bí* can show progressive aspect, as demonstrated below.

(18) Tá sé ag bheith seafóideach.

BÍ.3SG.PRES 3SG.M.NOM 3SG.NOM at BÍ.GER ridiculous

‘He is being ridiculous.’

(The Daltai Boards, accessed 2012 07 04 from

<http://www.daltai.com/discus/messages/13510/35277.html?1224924494>)

The ability of *bí* to be aspectually marked, its selection of nominative subjects, and its full morphological paradigm demonstrate that it is of category V. That it raises to *v* is evidenced by its ability to select stage-level predicates ((19)b), unlike *is* ((19)a):

(19) a. Is fear é.

IS man him.ACC

‘He is a man.’

b. Tá sé ina fhear (anois).

BÍ he in-his man now

‘He is a man (now).’

(Doherty, 1996:38)

In addition, lifetime effects appear with the copula but not with *bí*: Doherty states that the only interpretation of (20)a is that the subject is dead, whereas in (20)b he may have retired or changed jobs.

- (20) a. Ba dhochtúir Seán.
 IS.PAST doctor Sean
 ‘Seán was a doctor.’
- b. Bhí Seán ina dhochtúir tráth.
 IS.PAST Seán in-his doctor once
 ‘Seán was a doctor once.’
- (Doherty, 1996:39-40)

It is clear that the copular system of Irish includes one copula, *is*, that is merged at T and therefore morphologically defective, while the other, *bí*, is fully verbal, merging at V and moving to *v*. The properties that we predicted of such a system in section 6.1.2 are confirmed by the facts of the language.

The copular system of Arabic (Afro-Asiatic: Semitic) appears to be similar to that of Irish, but with some intriguing differences. There is a verbal copula, *k-n*, which has a full inflectional paradigm, showing agreement for number and gender and marking for tense/aspect.¹²⁷ It appears, however, only in the past ((21)a) and future ((21)b).

¹²⁷ “Number and gender, but not person, are morphologically marked on the verb” (Abdel-Ghafer, 2003:8).

Tense and aspect are difficult to separate in Arabic, both semantically and morphologically (Abdel-Ghafer, 2003:16-17; Kaye, 1987:682).

- (21) a. **Kana** al-jaww-u harr-an.
was.3SG.M the-weather-NOM hot-ACC
 ‘The weather was hot.’
- b. **Sa-takunnu** al-samaa?-u saafijat-an.
will-F.be.3SG the-sky-NOM clear.F-ACC
 ‘The sky will be clear.’
- (Abdel-Ghafer, 2003:8)

Its place in present-tense clauses is filled either by zero ((22)a, b), or by the “pronominal copula” *huwa* ((22)c), which inflects for person, number and gender, but not tense or aspect (Abdel-Ghafer, 2003:8-15).¹²⁸

- (22) a. Samir-un taalib-un
 Samir-NOM student-NOM
 ‘Samir is a student.’
- (Abdel-Ghafer, 2003:10)
- b. Samir-un latiif-un
 Samir-NOM nice-NOM
 ‘Samir is nice.’
- (Abdel-Ghafer, 2003:10)
- c. Samir-un **huwa** t-taalib-u
 Samir-NOM **3.M.SG** the-student-NOM
 ‘Samir is the student.’
- (Abdel-Ghafer, 2003:10)

¹²⁸ Rarely, a present-tense form of *k-n* may appear in a clause. (See below.)

The system is also sensitive to the stage-/individual-level predicate distinction. Zero-copula clauses can be interpreted as individual-level or stage-level ((23)a, b); a pronominal copula forces an individual-level reading ((23)c), while the present-tense form of *k-n* forces a stage-level reading ((23)d).¹²⁹

- (23) a. Samir-un taalib-un
 Samir-NOM student-NOM
 ‘Samir is a student.’
 (Abdel-Ghafer, 2003:10)
- b. Huwwa deef
 3.M.SG guest
 ‘He is a guest.’
 (Jelinek, 2002:98)
- c. Ana huwa t-taalib-u
 I 3.M.SG the-student-NOM
 ‘I am the student.’
 (Abdel-Ghafer, 2003:162)
- d. Yakuunu Samir-un taalib-un fis-sabah-i
 3.M.SG.is Samir-NOM student-NOM in.the-morning-GEN
 ‘Samir is a student in the morning.’
 (Abdel-Ghafer, 2003:36)

¹²⁹ Note that in (23)b, *huwwa* is the (pronominal) subject of the sentence, while in (23)c, *huwa* is the pronominal copula.

From these data, it appears that the verb *k-n* is merged at V and moves to *v*, like the Irish *bí*. Additional supporting evidence is that it checks accusative case on its complement ((21)a, b), which we predicted should be a possible property of copulas that move to *v*. However, its present-tense form alternates with a null copula which does not check the accusative.¹³⁰ The pronominal *huwa* is merged at T, much like the Irish copula *is*; lacking external arguments, it selects only individual-level predicates. Thus in Arabic, non-present copular clauses are ambiguous between stage- and individual-level interpretations, while present copular clauses can be disambiguated with either an explicit $V \rightarrow v$ copula or a pronoun merged at T.

6.2.2.3. Flavours of *v*

Another attested division of copula types seems to be between different instantiations of *v*. Bambara (Niger-Congo: Mande) has three copulas, which takes complements of different syntactic categories (Dumestre, 2003).¹³¹ *Ye* selects NPs ((24)a), *ka* APs ((24)b) and *bé* VPs ((24)c) and spatiotemporal locatives ((24)d, e).¹³²

¹³⁰ This fact implies that the null copula is a qualitatively different syntactic object from the verb *k-n*. I do not have an answer to this puzzle at the moment.

¹³¹ Bambara also has a copula *dòn* that selects focussed predicates of all categories (Dumestre, 2003:33-34; Schreiber, 2008:69). I do not attempt to analyze this phenomenon here; however, note that in Spanish and Portuguese, *estar* may select individual-level predicates if they are in focus (Maienborn, 2005:4). Information structure clearly can be a factor in copula choice: what this means for the view of copulas as instances of [COIN] at different syntactic nodes is an intriguing question.

¹³² Cann (2007:14) states in a footnote that Bambara has no copulas at all, merely predication markers. As I define copulas as markers of predication, I assume this to be a terminological issue.

- (24) a. Hawa **ye** kàlandan ye.¹³³
 Hawa **COP1.IMP** student COP1
 ‘Hawa is a student.’
- b. Hawa **ka** júgu.
 Hawa **COP2.IMP** naughty
 ‘Hawa is naughty.’
- c. Hawa **bé** jége sà̀n.
 1SG **COP3.IMP** fish buy
 ‘Hawa is buying a fish.’
- d. Hawa **bé** Segu.
 Hawa **COP3.IMP** Segu
 ‘Hawa is in Segu.’
- e. Séli **bé** síni.
 party **COP3.IMP** tomorrow
 ‘The party is tomorrow.’
- (Dumestre, 2003:34-43)

Some of these copulas can be marked for aspect with additional particles ((25)a); others have suppletive forms marking TAM distinctions ((25)b).

¹³³ Dumestre considers *ye... ye* to be the form of this copula, but considering that in the negative, only the first instance of *ye* is replaced by a negative copula ((26)a), it is possible that the second *ye* is a different syntactic item.

- (25) a. À káarilen **tùn** **dòn**.
 3SG generous **PF** **COP.FOC**
 ‘He was generous.’
- b. Hawa **yé** jégε sàñ.
 Hawa **COP3.PF** fish buy
 ‘Hawa has bought a fish.’
 (Dumestre, 2003:214-218)

Copulas that can be marked for aspect cannot be merged above Asp; copula-specific selectional properties imply different instances of *v* (or perhaps, instances of *v*, *a* and *n*, in a Marantzian view).

6.2.3. Negative copulas

Bambara also provides a good example of copulas that are instances of [-COIN], that is, expressions of a lack of subsumption of the subject within the predicate. In the examples below, the copula *tε* is the negative equivalent of *ye* and *bε* ((26)a, c, d), while the copula *mán* is the negative equivalent of *ka* ((26)b).

- (26) a. Hawa **té** kàlanden yé.
 Hawa **COP.NEG1** student COP1
 ‘Hawa is not a student.’
- b. Hawa **mán** sùrun.
 Hawa **COP.NEG2** small
 ‘Hawa is not small.’

c. Hawa **té** jégε sà̀n.

Hawa **COP.NEG1** buy fish

‘Hawa is not buying a fish.’

d. Hawa **té** Segu.

Hawa **COP.NEG1** Segu

‘Hawa is not in Segu.’

(Dumestre, 2003:34-43)

Copulas that instantiate [-COIN] clearly do exist.

6.2.4. Assessing the results

The findings of these sections support the predictions of the structural hypothesis. By applying the diagnostics developed in this chapter, Examples have been found of numerous languages where copulas merge at nodes on the clausal spine other than V.

The copula systems of the languages treated here behave as expected on the basis of those predictions. The ubiquitousness of copulas merged at V or *v* (albeit in an admittedly small sample of languages), seems to emerge from theoretical necessity, as mentioned in 6.2.1.1. Stage-level predicates must exist in all languages, since every language needs to be able to express changeable states. Under the assumptions about temporal grammar laid out in Chapter 2, stage-level predicates contain an event argument (EV-T), which is merged in [Spec, *v*P]. If these assumptions are correct, every language that has copulas requires a copula that contains the [Spec, *v*P] position. Therefore, it is a requirement that every such language should merge one copula either in V (with a move to *v*) or in *v* itself.

The preceding sections have predicted and tested copula properties from a synchronic standpoint. The next sections will make and test predictions about the diachronic grammaticalization of copulas.

6.3. Possible and impossible grammaticalization

“Grammaticalization is the recruitment, across time, of lexical elements for grammatical purposes” (Muysken, 2008:73).¹³⁴ There is a rich literature on the phenomena of grammaticalization, from Meillet (1912) onward. These phenomena, which are phonological, morphological, syntactic and semantic, tend to occur simultaneously and to include the following (based on Bybee et al., 1994):

1. Semantic bleaching or weakening, the reduction of lexical semantic content
2. Re-interpretation of lexical items (merged low) as functional items (merged higher)
3. Loss of selectional flexibility
4. Re-interpretation of syntactically separate words as clitics or affixes
5. Phonological reduction, including loss of segmental or suprasegmental elements

¹³⁴ “Grammaticalization”, “grammaticization” and “grammatization” have all been used to describe the diachronic re-interpretation of lexical items as functional items. However, the last has also been used for the synchronic presence of a grammatical encoding of conceptual categories (Wilhelm, 2006), a related, but separate concept. For this reason, and because “grammaticalization” has become the most common term for the diachronic process, I prefer it to the other two terms.

Copulas frequently result from grammaticalization, and also are common targets for it. This section proposes theoretical bases for the latter phenomenon: why should copulas commonly be grammaticalized into other categories, and what are they likely to become?

6.3.1. Copula lightness

The major contention of this dissertation is that copulas have little lexical semantics, being essentially markers of coincidence of identity with associated TAM features. As such, copulas are nothing more than bundles of [COIN] features that select phrasal and temporal arguments.

This being the case, copulas can be viewed as words that are minimally lexical. Their lexical semantic content is very low, and their purpose is to relate two arguments syntactically. They are already very close to being functional categories.

It is cross-linguistically true that when comparing semantically related words of a given category, it is those whose semantics is less specific that tend to undergo grammaticalization: “thus ‘come’ and ‘go’ are the motion verbs chosen most often for grammaticization, ‘do’ is the dynamic transitive verb, and ‘have’ and ‘be’ are the stative verbs” (Bybee et al., 1994:9). That is, it is far more likely that ‘come’ and ‘go’ will grammaticalize than ‘land’ or ‘abscond’, for example. The latter two verbs involve significantly more complex semantics: they are very particular kinds of coming and going. From this point of view, it is to be expected that copulas, being the lightest of all lexical words, should be the most likely to grammaticalize; the disappearance of the single [COIN] feature that relates phrasal subject and complement is a very small step.

6.3.2. Copula frequency

Closely related to the semantic lightness of copulas is their frequency. In languages that have copulas, they generally occur very frequently in speech. Frequently used words tend to be common targets of grammaticalization.¹³⁵ The frequent use of a phrase such as *going to buy food*, where *going* has its full verbal meaning, led easily to the re-interpretation of *going to* as a future marker.

For both these reasons – their lexical semantic lightness and their frequency – copulas are often grammaticalized. The next sections make predictions about the paths of copula grammaticalization and test those predictions against the facts of natural languages.

6.3.3. Predictions

Our overview of the process of grammaticalization in section 6.3 stated that grammaticalization involves a movement from low to higher merge points, consistent with a reanalysis of lexical items as functional items. Functional phrases tend to be extended projections of lexical phrases, as DP is of NP and TP of VP; therefore it is to be expected that a lexical to functional reanalysis would involve reanalysis as a higher syntactic category.¹³⁶

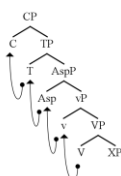
¹³⁵ See discussion in Bybee, Perkins and Pagliuca (1994:19-20).

¹³⁶ In this section, “movement” refers strictly to the diachronic process of the re-interpretation of a lower-merged item as a higher-merged one, and not to the synchronic syntactic operation Move. Since re-interpretation of a phonetic string does not need to follow synchronic syntactic rules, an item in a specifier position, for example, can undergo diachronic movement to a head position even though, in synchronic terms, it cannot Move to such a position. For more on this kind of process, see van Gelderen (2011:), especially pp. 128ff., which shed light on possible origins of copulas.

Since we have posited copulas at V, *v*, Asp and T, we can make a general prediction that they will be able to grammaticalize to *v*, Asp, T or C. That is, copulas may grammaticalize to instances of *v*, TAM markers or complementizers. TAM markers that originate as copulas can be seen as instances of [COIN] re-interpreted at higher nodes of the tree, so that a perfective copula bearing a [-COIN] feature will become a past marker if it is re-interpreted as being an instance of T, so that [-COIN] now relates Ut-T to Ref-T rather than Ref-T to Ev-T.¹³⁷

The diagram in (27) illustrates destinations of copula grammaticalization.

(27) Possible paths of grammaticalization of copulas



¹³⁷ If complementizers predicate an embedded clause of a matrix clause (a possibility to be investigated in future research), it is easy to see how a copula's [COIN] feature could be re-interpreted at C. It would then no longer be a copula, as discussed at the beginning of this chapter.

6.3.4. The results: Grammaticalization

Among the languages of the world, copulas are the most common source of TAM markers (Bybee et al., 1994:55-56; Hopper & Traugott, 2003:111). Bybee, Perkins and Pagliuca document the widespread development of perfectives from copulas with participial complements (1994:95-96), while future or modal markers often come from deontic constructions of copulas with “matrix verb” complements (Bybee et al., 1994:262-263).

The following examples illustrate tense (28)a, aspect (28)b and mode (28)c markers whose diachronic sources were copulas.¹³⁸

(28) a. Tucano (Tucanoan):

Yu'u pacó ojáco **niámo.**
 1SG.POSS mother write.F **{be.3SG.F}**
 ‘My mother wrote.’

(Bybee et al., 1994:96)

b. Finnish (Uralic: Finno-Ugric)

Hanna **ol-i** rakenta-nut talo-a.
 Hanna **{be-PAST.3SG}** build-PCP.PAST house-PART
 ‘Hanna had built a house.’

(Nelson, 1998:28)

¹³⁸ In these examples, curly brackets { } signify that the morphological breakdown is that of the full copula before grammaticalization. I make no claims on whether the same morphological structure obtains after grammaticalization.

c. Tɬɬchɔ Yatɪ:

Mɪshè satsɔ Madlɛ gha

Michel tomorrow Madeleine for

tsà ihk'è ha weli

beaver THM-IPFV.3.SBJ-shoot FUT {OPT.3.SBJ-COP1}

‘Michel really should shoot some beavers tomorrow for Madeleine.’

(MLBW 2011)

The examples in (28)b and c are particularly revealing, since they illuminate how the syntactic structure has changed post-grammaticalization. In (28)b, we see that the grammaticalized copula co-occurs with a matrix verb that has past tense marking, demonstrating that the copula no longer contributes past tense, but anterior aspectual meaning to the clause. (28)c is similar: the grammaticalized copular form occurs outside of the future marker, which we recall from Chapter 1 is an instance of T in Tɬɬchɔ Yatɪ. It has become a modal marker with a jussive interpretation.

6.3.4.1. A grammaticalization in progress?

The predication of adjectives in Tɬɬchɔ Yatɪ, which was the focus of Chapter 5, may illustrate a grammaticalization in progress. As mentioned in that chapter, there is evidence that the adjectives of Tɬɬchɔ Yatɪ originated as lexical verbs that diachronically lost their agreement and aspectual morphology.

Recall also that Chapter 4 argued that in the modern language, Copula 1 is inserted into the clausal structure to realize number agreement with an animate subject, animate nouns alone bearing syntactic number features; it also provides aspectual information that is not marked overtly on adjectives predicated of inanimate subjects.

We can hypothesize that a clause like (29)b, under these assumptions, originally looked like (29)a, putting aside diachronic morphophonological changes.¹³⁹

- (29) a. †Mishè òl-ɿ-zha.
 Michel THM-IPFV.3.SBJ-ashamed/shy
- b. Mishè òl zha elɿ.
 Michel ashamed/shy IPFV.3.SBJ.COP1
 ‘Michel is ashamed/shy.’

After adjectives lost agreement morphology, it became necessary to realize the number feature of the subject. Animate subjects are one of the triggers for the projection of *v*, as Chapter 5 demonstrated, and the realization of *v* with minimal semantic content is Copula 1. The final stage in the syntactic reanalysis would be the re-interpretation of Copula 1 as occupying AgrNum or Asp rather than *v*.

The three proposed stages are illustrated in (30)-(32).

¹³⁹ The hypothetical morphological breakdown in (29)a is based on *zha* originally being a verb stem and *ɿ* being an instantiation of third-person general number agreement, as it is in the modern language (Ackroyd, 1982).

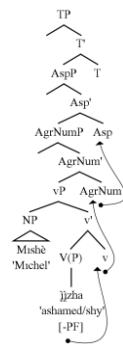
(30) Stage 1

a. †Mishè j̣j̣-zha.

Michel THM-IPFV.3.SBJ.ashamed/shy

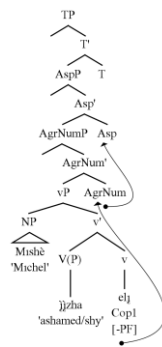
‘Michel is ashamed/shy.’

b.



(31) Stage 2

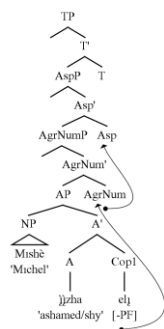
- a. Mishè j̣jzha el̩.
- Michel ashamed/shy IPFV.3.SBJ.COP1
- ‘Michel is ashamed/shy.’
- b.



(32) Stage 3

- a. Mishè jìzha elɿ.
 Michel ashamed/shy IPFV.3.SBJ.COP1
 ‘Michel is ashamed/shy.’

b.



If this conjecture is correct, the current role of Copula 1 in adjectival predication is an example of change in progress. In addition, it provides a diachronic explanation for the insertion of Copula 1 in AP predicates rather than Copula 2.

6.4. Conclusions

This chapter has demonstrated that testable predictions about copula typology can be based upon the structural theory of copula differences outlined in Chapter 2. Further, it has shown that these predictions are, in the main, correct. Examples exist, among the languages of the world, of copulas that merge at each of the heads predicted by the theory. The one possible exception is the Asp head, and this gap may be due to lack of data or difficulties of diagnosis.

Hypothesis I, which posits a structural explanation for the existence of two copulas in T̥ɬçq Yatì, and for their effects upon the interpretation of clauses, has stood up not only to language-specific testing, but has been strengthened by data from related languages (in Chapter 4) and been shown to have predictive power in defining a typology of copulas.

There are diachronic benefits as well. Hypothesis I, in combination with well-established general observations about the phenomena of grammaticalization, makes good predictions about the paths of grammaticalization that copulas are liable to follow. These predictions have also been confirmed, not only by data from within T̥ɬçq Yatì, but also from unrelated languages.

The chapter also raises questions about categorial content. If a copula can merge in T, as the data from Irish and Arabic appear to demonstrate, it has implications for both the classification of copulas and the content of T. Is a copula that merges at a functional head a lexical item or a functional one? If T can take an XP complement – nominal or adjectival, that is – rather than only an AspP, is it a purely functional head? Finally, the existence of sentences where a copula merges at T and takes an XP complement means that structure lower than T is not universal to all utterances. This suggests that the

anchoring function played by T categories may be a minimal requirement for a clause: that once a clause is anchored by T, any further structure is optional.

At this point it is useful to consider what tests might falsify the theoretical proposals in this chapter. Since a central contention is that copulas merged at a given head will not be able to check features merged below that head, the discovery of a copula whose characteristics suggested a merge at T but whose complement bore accusative case marking would falsify the claims of this chapter. Similarly, if a copula were found that selected stage-level predicates but was in complementary distribution with tense markers, this finding would falsify the theory, since we have predicted that copulas selecting stage-level predicates must have an Ev-T specifier and therefore must merge at ν (or V), not T.

This chapter has applied the structural theory of copula differences and reaped both synchronic and diachronic results, as well as raising non-trivial questions concerning sentence structure and syntactic categories. The final chapter will sum up the findings of the dissertation and outline a program of research to pursue the answers to the questions it has raised.

Chapter 7. General conclusions and future directions

This chapter concludes the dissertation. It summarizes its findings, identifies unanswered questions and outlines programs of research to resolve those questions.

7.1. Results of the study

This dissertation has presented strong evidence that a structure explanation is explanatorily adequate for the copula distribution patterns of Ṭchq̣ Yatì, Navajo and Tsùt'ínà. Positing a difference in merge structure for the two copulas correctly predicts the stage-/individual-level predicate distinction, the ambiguity between stage- and individual-level interpretations when the subject of Copula 1 is human/animate, and lifetime effects. It also makes predictions for natural languages in general, predictions that have yielded positive results. Additionally, it has shown that a lexical semantic explanation for the copula patterns is untenable, in that it fails to predict either the stage-/individual-level ambiguity or lifetime effects. These findings are additional evidence in support of the line of research that posits that syntactic structure can affect semantic interpretation of clauses (Becker, 2004; Folli & Harley, 2005; Hale & Keyser, 1993; Ritter & Rosen, 1993; Ritter & Rosen, 1997; Ritter & Wiltschko, 2010, among many others).

Chapter 2 developed the theory of coincidence and linked its Figure/Ground relational function (Hale, 1986; Talmy, 1972) to the mathematical relation of subsumption (first noticed by Jespersen, 1924). It posited that the coincidence feature is central to predication and has instantiations that relate spatiotemporal arguments and others that relate thematic arguments. It also built a model of Ṭchq̣ Yatì clause structure: the major contribution of this section was to map, using fieldwork data, the upper field of the clause,

detailing the respective structural positions of T, Mod, Neg, and C, and identifying the past marker *ɣlè* as not being part of the structural Tense system.

Chapter 3 found that a structural explanation can account for the distributional patterns of the two copulas of Tɬchɔ Yatɪ, with Copula 1 merging at V and moving to *v* and Copula 2 merging at V but not projecting *v*. The merge of copulas at different sites resolves the paradox of multiple-copula languages: copulas do have very little lexical semantic content (consisting minimally of the coincidence feature) but a merge or move of a copula into the light verb projection licenses external arguments, which affect the interpretation of the predicate.

Chapter 4 made two main contributions: it illustrated that the copula difference in Athapaskan languages goes beyond the stage-/individual-level predicate distinction, and it showed that a lexical semantic explanation for copula distribution fails to predict effects other than that distinction. It used data from Navajo and Tsùùt'ínà as well as Tɬchɔ Yatɪ to demonstrate that the V/*v* distinction allows certain subjects to merge in [Spec, *v*P], and that this difference accounts not only for the stage-/individual-level predicate distinction but for the potential for ambiguity, in all three languages, of predicates of privileged (human or animate) subjects. It outlined the inadequacies of a lexical semantic explanation, showing that it required a three-copula rather than a two-copula system at the lexical level, failed to predict predicate ambiguity or lifetime effects, and, in the case of Tsùùt'ínà, needed to make reference to syntactic animacy.

Chapter 5 found that copulas, in the strict sense, do not enable predication of APs in Tɬchɔ Yatɪ. Rather, they provide morphological support to realize a syntactic number feature that is valued for animate but not inanimate nouns. It added further evidence that

coincidence is the feature that licenses predication, explaining the patterns both of copula occurrence and of number agreement on verbs by showing that copulas are not necessary for VP or AP predication, but only for NP predication, suggesting that adjectives and verbs bear a coincidence feature but nouns do not.

Chapter 6 used the theory of copulas as instantiations of coincidence to make predictions about copula typology in the languages of the world. It demonstrated that according to the diagnostics arising from the theory, copulas merged in V and moving to *v* exist in many languages, including the three languages of study plus English, Spanish, Portuguese, Irish and Arabic; that copulas merged in T exist in Irish and Arabic; and that copulas representing different instantiations of *v* exist in Bambara, a language that also has negative copulas, instantiations of [-COIN].

7.2. Unanswered questions and directions for future research

There are several areas of investigation that arise from the findings in this dissertation and suggest future lines of research.

7.2.1. PP predicates

As discussed in Chapter 5, the distribution of copulas with PP predicates is complex and puzzling. The theory of predication developed in that chapter predicts that PPs should pattern either with NPs or with APs. They do not appear to pattern with APs, since both inanimate and animate subjects may co-occur with PP predicates and copulas, which would not be the case if postpositions bore a [+COIN] feature. It is not yet clear whether they pattern with NPs, and further testing of this prediction will require another study.

7.2.2. Copulas in other Athapaskan languages

The copular systems of Tł̥cḥo Yatì, Navajo and Tsùùt'ínà – three widely separated Athapaskan languages – are so similar that a natural question is whether similar systems exist throughout the family. Certainly, there is evidence for them in several other Athapaskan languages. Earlier work of mine (Welch, 2008) identified the copulas of Dene (Slave), a close relative and near neighbour of Tł̥cḥo Yatì, as having a nearly identical copula distribution; the same work suggested that the distinction between the copulas of Dene Dzage (Kaska) had disappeared; however, this finding needs to be re-evaluated in light of the evidence of Copula 1's grammaticality with individual-level predicates of animate subjects.

De Reuse and Goode's grammar of San Carlos Apache (2006:89-98) outlines a distribution that appears very similar to that of Navajo, although the existence of bare NP predicates, without copula, suggests that there are differences from the Navajo system relating to semantic type, another line of research detailed below.

7.2.3. Coincidence and semantic type

This dissertation treated bare nouns in Athapaskan languages as semantic objects of type *e*, but did not develop the idea extensively. However, the results of chapter 5 shed an interesting light on this assumption. That chapter argued that the differences in copula distribution with respect to NP, AP and VP predicates resulted from the presence of the coincidence feature on adjectives and verbs (including the copulas) but not on nouns. Given that APs and VPs are considered to be predicates (type $\langle e, t \rangle$) semantically, while my assumption has been that NPs are argumental (type *e*) and need to be complements of a copula in order to be predicated, it would appear that the coincidence feature is closely tied to the semantic type-shifting operation whereby arguments become predicates. This

suggests a line of investigation into the relationship between the syntactic expression of coincidence and semantic type-shifting. Adpositions have been characterized as encodings of coincidence in various domains (Hale, 1986); do they have the same connection to type-shifting that appears in copulas? In addition, if adjectives and verbs bear a coincidence feature, in what part of their morphosyntactic structure is it realized? If the category-forming theory of light projections (v , a , n) is correct (Marantz, 1997), it involves type-shifting; is the coincidence feature then located in these light projections?

7.2.4. Wider instantiation of the V/ v distinction

The finding of this dissertation that the difference between the copulas of the three languages of study is structural, and gives rise, among other effects, to stage- or individual-level interpretations of predicates, implies that other instantiations of the stage-/individual-level predicate distinction have their source in the same phenomenon. That is, non-copular stage-level predicates should result from a projection of v , and individual-level predicates should result from the lack of v , at least when the subject is not external. So for example, the following clauses should lack a v projection:

- (1) a. Ice covers Antarctica.
- b. Sand contains silica.
- c. Lead weighs more than iron.

There is evidence in favour of this claim: all three of the sentences in (1) allow lifetime-effect interpretation when non-present tense is applied.

- (2) a. Ice covered Antarctica.
- b. Sand contained silica.
- c. Lead weighed more than iron.

For instance, ‘Lead weighed more than iron’ can be interpreted either as a report of the results of an experiment to determine the relative density of the two metals (stage-level), or as a statement from a bizarre future in which lead has ceased to exist in the world (individual-level, lifetime effect).

If it is true that such clauses lack *v*, it implies a fundamental distinction between *v*-projecting and non-*v*-projecting verbs, a distinction that might shed light on such phenomena as unaccusativity and the minimal properties of verbhood.

7.2.5. Copula typology

There is a clear need for a larger typological study taking up where the investigations in chapter 6 left off. The clear evidence of copulas merged at different sites on the clausal spine raises the question of whether all heads on the spine can be merge sites for copulas. We might expect to find copulas merged at Mod in languages where that is a separate head from T and C; likewise, copulas might merge at Asp. In fact, since according to the predictions of chapter 6, copulas have more restricted syntactic properties the higher they are merged, we might expect copulas merged at Asp to be more common than those merged at T. If copulas at Asp are attested, however, they would be difficult to diagnose. The morphosyntactic fusion of Asp and T categories in many languages means that it is often difficult to separate these categories, and correspondingly difficult to detect whether a copula is merged in Asp or in T.¹⁴⁰ In further research on this question, it would be desirable to use fieldwork to disambiguate T from Asp and test copulas in multiple languages.

¹⁴⁰ It is possible that the Arabic pronominal copula is merged in Asp rather than T, considering the difficulty of separating the categories; see footnote 126 in section 6.2.2.2.

Under Minimalism, all movement is motivated by feature checking (Chomsky, 1995b). Therefore, any copula that moves to a higher node than its merge site must possess a feature checked at that site. The fact that lower-merged copulas can acquire features of higher heads by movement means that there are fourteen possible combinations of Merge and Move operations theoretically available to copulas, enumerated, with their properties, in (3).¹⁴¹

¹⁴¹ Impossible or trivial types including the copula moving to a lower node or to its merge node are shaded out. The checking of subject ϕ -features and Case is bracketed to reflect that whether these are checked at Asp or T may be a language-specific issue.

		Merge at			
		V	v	Asp	T
Move to	no move	internal argument only	complement ϕ /Case, external and event args	(subject ϕ /Case), no external argument	(subject ϕ /Case), Tense, no external argument
	v	complement ϕ /Case, all TAM, internal and external args			
	Asp	(subject ϕ /Case), Asp	(subject ϕ /Case), Asp		
	T	(subject ϕ /Case), Tense	(subject ϕ /Case), Tense	(subject ϕ /Case), Tense	
	C	Mode, Evidentiality, Interrogative	Mode, Evidentiality, Interrogative	Mode, Evidentiality, Interrogative	Mode, Evidentiality, Interrogative

When we examine the table in (3), we find that there are certain combinations of copula properties that are predicted not to occur. For example, the only copulas predicted to distinguish between external and internal subjects are those that either merge at or move to *v*. In other words, only these copulas will show differences between subjects that are animate/sentient, agentive or causers, and subjects that are none of these. Copulas at *v* are predicted to be categorially verbal and to have an event argument. Therefore, we should not find a copula that takes only external subjects but lacks agreement morphology that is present on lexical verbs. Similarly, we should not find a copula whose subject is external but which always lacks an event argument: in other words, one that occurs only with animate/agentive subjects and individual-level predicates.

We should not expect copulas merged at T to show a distinction between internal and external subjects. In fact, since copulas merged above *v* lack an Ev-T, single-copula systems where the copula merges at Asp or T should either not occur, or should have an alternative way of creating stage-level stative predicates: the use of adjectives and nouns bearing inflectional morphology and [COIN], for example, or alternative, non-copular, verbs.

An extensive typology of copulas should investigate all these possibilities; furthermore, the predictions made in this section constitute tests that could falsify the theory of copulas developed in this dissertation. A research program into possible copulas would thus have both empirical and theoretical benefits.

7.3. Final thoughts

For objects that are semantically light, copulas are powerful. They can change the semantic type of their complement, enable predication, and serve as carriers of otherwise unrealizable agreement. Their very lightness appears to give them great flexibility, both synchronically, in that they select a wide range of complements and can be interpreted at numerous points on the clausal spine with strong effects on the interpretations of clauses, and diachronically, in that they are easily reanalyzed as any of a number of functional projections. The lightness of being is indeed bearable.

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