

# *Copular clauses in Dene languages: Argument structure and interpretation*

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## ***Abstract***

A widely accepted assumption in both the syntactic and semantic literature is that copulas lack semantic content. A consequent question is how to explain the existence in certain languages of two copular verbs that give rise to different interpretations. Such is the case in numerous languages of the Dene family (formerly known as Athapaskan). We explain this situation with the hypothesis that the copulas realize an underlying three-copula system differing in argument structure. Differences between the interpretations of copular clauses in these languages originate in the compositional semantics of these structures, not in any lexical semantic differences. This hypothesis successfully predicts the distributional differences between the surface forms of the Dene copulas, such as their compatibility with adjuncts of time and intentionality, interactions with accusative case, and semantic *lifetime effects*.

**Keywords:** copula, Dene, syntax, semantics, argument structure

## ***Résumé***

Une hypothèse largement acceptée dans la littérature syntaxique et sémantique veut que les copules n'ont pas de contenu sémantique. Si c'est le cas, comment expliquer l'existence

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dans certaines langues de deux verbes copulatifs qui donnent lieu à des interprétations différentes, comme c'est le cas dans de nombreuses langues de la famille dénée (anciennement l'athapaskan) ? Nous expliquons cette situation grâce à l'hypothèse que les copules réalisent un système sous-jacent à trois copules se distinguant par leurs structures argumentales. Les différences entre les interprétations des clauses copulatives dans ces langues trouvent leur origine dans la sémantique compositionnelle de ces structures, et non dans des différences sémantiques lexicales. Cette hypothèse prédit avec succès les différences de distribution entre les formes de surface des copules dénées, telles leur compatibilité avec les adjoints de temps et d'intentionnalité, leurs interactions avec le cas accusatif, et les effets sémantiques de durée de vie associée à chaque copule.

**Mots-clés :** copule, déné, syntaxe, sémantique, structure argumentale

## 1. COPULAS IN DENE LANGUAGES

The great majority and perhaps all languages of the Dene family of North America have at least two copular verbs.<sup>1</sup> In at least two languages of this family, these two copulas yield clauses with different interpretations: broadly, Copula 1 appears with individual-level predicates, while Copula 2 appears both with stage-level predicates and with individual-level predicates of animate subjects. We propose that this distributional difference arises from a structural difference: Copula 2 is the realization of a syntactic configuration that includes at least one external argument, which is absent from the configuration realized by Copula 1. This external argument can be either a Davidsonian spatio-temporal argument (Kratzer 1995, and a large subsequent literature), or an external subject (experiencer or agent).

## 2. COPULAR STRUCTURES

Since the advent of Generative Grammar in the 1950s, there has been vigorous debate over the precise structure of copular clauses. In fact, this debate has far older roots, in the two definitions of the copula proposed in classical antiquity by Aristotle, who viewed it as merely an exponent of verbal tense, and in the medieval period by Pierre Abélard (Jacobi, 1986), for whom the copula was the sign of predication. In syntactic theory, the first view appears in the work of Moro (1997), who considers the copula to be the morphological realization of syntactic features such as tense

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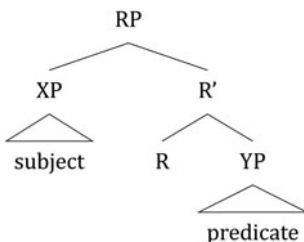
<sup>1</sup>The existence of two copular verbs is attested in the following Dene languages: Tłı̨cẖ Yatı̨ (or Dogrib) (Welch 2012), Tsüüt'ınà (Cook 1978), Ahtna (Kari 1990), Dena'ina (Tenenbaum 1978), Koyukon (Jetté et al. 2000), Slave (Rice 1989), Dënesų́tné (Cook 2004), Dene Dzage (or Kaska) (Moore, 2002; Welch 2008), Tsilhqot'in (or Chilcotin) (Cook 2013), Southern Carrier (Morice 1932), Witsuwit'en (Hargus 2007), Mattole (Li 1930), Navajo (Young et al. 1992), San Carlos Apache (de Reuse and Goode 2006). For Hupa, Golla (1970) describes only one copula. Nevertheless, this list indicates that two-copula systems are robust in all branches of this family. For the genetic relationships among Dene languages, see Jaker et al. (2019)).

and phi-agreement. Abélard's view is represented in modern syntactic literature by Bowers (1993) and den Dikken (2006), who view copulas, respectively, as instantiations of a Pred head or of a Relator, a predication operator that can be instantiated as various syntactic heads.

Cross-linguistic evidence exists to support both these views of the copula. Moro makes an excellent case for copulas as the realization of tense and agreement features, using data from Indo-European languages. However, there is plentiful evidence from other languages for copulas as predicators (Welch 2016a,b). To sum up the facts of some Dene languages: grammatical agreement appears only between verbs and their animate subjects, while agreement affixes on verbs with inanimate subjects produce ungrammaticality; adjectives may be bare predicates of inanimate subjects, but require copulas when predicated of animate subjects. So far, these facts support the Aristotelian view of the copula as a realization of tense or agreement features, since the (inflected and agreeing) copula appears only with adjectives in the same contexts in which verbs show inflectional agreement. Yet in these same languages, nominal predicates require copulas with both animate and inanimate subjects. It is evident that in sentences with nominal predicates, these copulas are not merely hosting agreement features, since inanimates do not trigger agreement. Adjectival predicates may also appear without tense or aspect inflection, indicating that the morphological realization of temporal features is not obligatory. By elimination, we arrive at the apparent function of the copulas: to realize the predicative relation itself.

Therefore, we adopt without further discussion the position that copulas in at least some Dene languages can be inserted to realize predication. In particular, we take the Dikkenian view that copulas can instantiate a Relator, a functional element realizing the relation between subject and predicate. This element, which cross-linguistically can be of various categories, is evidently verbal in Dene languages: copulas have verbal inflectional paradigms. At the same time, since they are verbal, they can also host morphosyntactic features for tense, aspect and phi-agreement in the sense of Moro, when these features are present. We assume therefore the representation of predication of den Dikken (2006, 11), where R represents the Relator (i.e., the copula), XP the subject, and YP the predicate:

(1) Copular clauses



In Dene languages, such as Tłı̨chǫ Yatı̨, spoken in several communities between Great Slave and Great Bear Lakes in the Northwest Territories, copulas are

morphologically verbal, as evident from examples such as (2), where they inflect for agreement and grammatical aspect.<sup>2</sup>

(2) Inflected copulas in Tłı̨chʔ Yatı̨tłı̨<sup>3</sup>

- a. S<sub>1</sub> nàzèè-dqò a-h-t'è  
 1SG hunter COP<sub>1</sub>-IPFV.1SG.SBJ-COP<sub>1</sub>  
 'I am a hunter.'
- b. Eya-ne-lè nı̨?  
 sick-PFV.2SG.SBJ-COP<sub>2</sub> QN  
 'Have you become sick?'

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Because of this property, we conclude that copulas in this language, and in other Dene languages, are of category V, or, since they are essentially functional elements lacking rich semantic content, *v* (Chomsky 1995, Kratzer 1996). Since copulas in Dene languages allow nominal elements to be predicates, the latter category makes sense: one of their core functions is to verbalize these non-verbal syntactic items, making them a species of verbalizer, or categorizing *v* in the sense of Embick and Noyer (2004) and Marantz (2013). Welch (2019) argues that Dene copulas, while morphologically verbs, are semantically empty instances of *v*, as their only function is to spell out predication, argument structure, and agreement. Evidence for this can be summarized as follows. In most languages of the Dene family, third-person verbal agreement is only grammatical with an animate subject. Adjectives, which are noninflected verblike words (Rice 1989, Welch 2016b), require a copula in order to be predicates of animate subjects, but have no such requirement for inanimate subjects (Welch 2016a), a fact that suggests that copulas are inserted to realize inflectional agreement. Nevertheless, nominal predicates, without exception, require a copula to be grammatical, even with inanimate subjects.

The role of the copula in such cases cannot be merely to realize inflectional agreement, since if it were, inanimate subjects, which do not require such agreement, would be as licit with bare nominal predicates as with bare adjectival predicates. The conclusion is that adjectives and verbs are inherently predicational categories, while nouns are not, requiring a minimal verbal element to act as predicates. Copulas thus

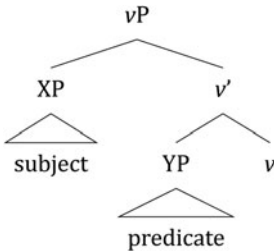
<sup>2</sup>We present sentences in Dene languages in their local practical orthographies. Most letters have their IPA values, except that the difference between pairs such as *p*, *b* is one of aspiration rather than voicing. Other differences from IPA include the following: *ch* = [tʰ]; *j* = [tʃ]; *ts* = [tsʰ]; *dl* = [tʃ]; *kw* = [kʷh]; *wh* = [w]; *dz* = [ts]; *ł* = [ʃ]; *y* = [j]; *gh* = [x]; *sh* = [ʃ]; *zh* = [ʒ]; *gw* = [kʷ]; *łł* = [tʰ]. A grave accent (à) signifies a lexical low tone, an acute accent (á) a high tone, and an ogonek (ą) a nasal vowel.

<sup>3</sup>Abbreviations: ANT: anterior; AR: areal agreement; COP: copula; DU: dual; FOC: focus marker; NEG: negative; FUT: future; ipfvimperfective; OBJ: object; PFV: perfective; PL: plural; PRS: present; QN: question marker; SBJ: subject; SG: singular; VN: verbal noun. COP<sub>1</sub>-[INFLECTION]-COP<sub>1</sub> indicates the morphological structure of Copula 1, which, like the great majority of verbs in Dene languages, consists of a lexically discontinuous prefix-root combination surrounding the inflectional affixes. In the case of Copula 1, the prefix derives diachronically from an element meaning “thus”, but is semantically empty synchronically. Speakers’ names are used to identify examples contributed during fieldwork or other consultation; one speaker who chose anonymity is credited as Anon.

play a multifaceted role as realizers of agreement, argument structure, and the predicational relation itself.

Dene copulas are raising verbs (Stowell 1981) realizing the Dikkenian predicational structure as follows:<sup>4</sup>

(3) Copular structure in Dene languages



We propose that the predicative structure is realized by two copulas in Tłı̨chʼo Yatı̨, but that one of the copulas realizes additional structure which depends on the presence of additional arguments. We further suggest that the apparent difference between the two copulas, with their differing phonological forms, hides an actual system of three syntactic copulas, distinguished by the number and position of their arguments. The interpretations of copular clauses in Dene languages come entirely, in our proposal, from these differences in structure and arguments.

### 3. SEMANTICS AND DENE COPULAR STRUCTURES

It is commonly assumed that copulas lack semantic content, either partly or entirely. There are languages in which copulas are not employed in forming non-verbal predicates, in which the simple juxtaposition of two nouns serves to indicate a predicative relationship, as illustrated in Sinhala (Indo-European):

(4) Sinhala copular clause

Meewa ambə  
 these mangoes  
 ‘These are mangoes.’

The assumption that copulas are semantically empty is generally expressed in statements like the following: “When a [count noun is] in predicate position, a semantically empty verb ‘be’ is added,” (Carlson 1977: 105) or “The most salient feature of the copula is that it makes no independent contribution to the meaning of the sentence” (Hengeveld 1992: 32). When combined with the hypothesis that copulas are added as hosts for tense and agreement (Moro 1997), a question naturally arises: why do multiple-copula systems exist? Why is it that in languages with such systems, the interpretation of copular clauses varies according to the presence of one

<sup>4</sup>Note that Dene languages show an SOV constituent order, reflected in the verb-final tree in (3).

copula rather than another? If copulas add nothing to the meaning of sentences, their effects in these languages should not be possible. Yet the difference between clauses formed with Copula 1 and Copula 2 is evident from the sentences in T̥h̥çq̥ Yatì in (5) and from a related Dene language, Tsùt'ínà, spoken in southwestern Alberta in (6):

(5) Copulas in T̥h̥çq̥ Yatì

- a. Ekw̥ h-o-t'e.  
 caribou COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 'It's a caribou.' (in a definitional sense)
- b. Ekw̥ e-lì.  
 caribou IPFV.3.SBJ-COP<sub>2</sub>  
 'He/she/it's a caribou.' (in an ephemeral sense, such as a role in a play, or a transformation)  
 Marie-Louise Bouvier White

(6) Copulas in Tsùt'ínà

- a. Nùwí xànitì á-Ø-t'à  
 DEM buffalo COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 'That is a buffalo.' (in a definitional sense)
- b. Síní xànitì ist-**hín** a à.  
 1SG buffalo IPFV.1SG.SBJ-COP<sub>2</sub> FOC  
 'I'm a buffalo.' (in an ephemeral sense)  
 Violet Meguinis

This type of interpretational change between pairs of utterances can be observed also in the formation of idioms, as in (7), where substituting one copula for the other changes the sense:

(7) Idioms in T̥h̥çq̥ Yatì built on copular distinctions

- a. Madl̥ ts'èko h-q-t'e.  
 Madeleine woman COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 'Madeleine is a woman.'
- b. Madl̥ ts'èko e-lì.  
 Madeleine woman IPFV.3.SBJ-COP<sub>2</sub>  
 'Madeleine is having her period.'  
 Marie-Louise Bouvier White

Carlson (1977), deals with the difference between such temporary, or *stage-level* predicates, and definitional, or *individual-level* predicates, by proposing that copular clauses across languages are built on one of two copulas, which in languages like English are homophonous. One of these two copulas, in his analysis, is semantically null, while the other connects a predicate with a temporal slice, or stage, in the lifetime of the subject. Kratzer (1995, 2002), however, explains the difference between stage- and individual-level predicates by means of their argument and predicate structure: one of the copulas introduces a spatio-temporal argument and the other does not. Though we part company with both Carlson and Kratzer in that we propose a threeway distinction in copular clauses, we adopt Kratzer's basic hypothesis in our analysis: differences in interpretation among copular clauses arise from a *compositional* semantic distinction pertaining to structural differences, not from lexical differences between

the copulas. One copula is a simple sign of predication (in the sense of Abélard, Bowers and den Dikken); other copulas spell out additional structure.

#### 4. EVIDENCE OF A STRUCTURAL DISTINCTION

Several types of evidence point to a structural difference giving rise to the distributional differences between Dene copulas: the expression of eventive interpretations, the compatibility of spatio-temporal and agentive adverbials, and the possibility of object agreement. These are all possible with Copula 2, but not with Copula 1. Finally, so-called *lifetime effects* are observable with Copula 1, but not with Copula 2.

##### 4.1 Eventivity and predicate type

If a distinction in eventivity characterizes the difference between copular clauses, we should observe its effects even in languages that have only one copula, since both temporally bound and non-bound clauses are logically possible in all languages. For example, consider the sentences below:

- (8) Temporally bounded and non-bounded copular clauses in English
- a. Madeleine is happy. (individual-level predicate: she is a happy person)
  - b. Madeleine is happy. (stage-level predicate: she is happy at the moment)

Even in single-copula languages like English, it is possible to express both individual- and stage-level non-verbal predicates. For instance, the utterance ‘Madeleine is happy’ can have more than one interpretation: it can assert that she is generally happy (8a), or that she is happy now (8b) without commenting on whether this is generally the case. In other words, the first sentence describes an attribute of Madeleine’s, and the second an eventuality or state that she is currently experiencing.<sup>5</sup> We can conclude that, in these languages, eventivity is not realized by a specific copular form, even though different interpretations exist of certain utterances. Stage-level predicates are associated with a spatio-temporal argument which individual-level predicates lack, regardless of a language’s morphological marking of such an argument-structural distinction. We can therefore use the predicate distinction itself as a diagnostic of eventivity: we should expect spatio-temporal adjuncts to modify only stage-level eventualities, not individual-level properties:

- (9) Spatio-temporal adverbials and eventivity
- a. (On Tuesdays, /In Edmonton,) Madeleine speaks English.
  - b. (#On Tuesdays, /#In Edmonton,) Madeleine knows English.

In (9a), the stage-level predicate, being an eventuality, is compatible with a spatio-temporal prepositional phrase, but in (9b), the same phrase yields infelicity with an

<sup>5</sup>States, in the sense of Vendler (1957), are not often considered eventive; however, a distinction can be drawn between temporary states and permanent properties. We consider the former to be characterized by a spatio-temporal argument, and thus broadly eventive. We use the term *eventuality* to include both events in the strict sense and temporally bound states.

individual-level predicate. The infelicity triggered by the adjunct suggests that a silent spatio-temporal argument is present with the predicate *speak English* but not with the predicate *know English*.

But the situation is more complex. Recall the copular clauses in (5) and (6). If we believe that stage-level predicates are indeed the locus of spatio-temporal arguments, we should likewise believe that a spatio-temporal argument is present in (5b) and (6b), but not in (5a) and (6a). This is undesirable, since we would have to conclude that every possible non-verbal predicate, such as *caribou*, *buffalo*, and in fact every other noun and adjective, would have two homophonous lexical entries, one of which would project a spatiotemporal argument and the other not. Such a situation would have to obtain for every possible predicate.

One might be tempted to disagree. A predicate like (10a) is naturally interpreted as individual-level, and is infelicitous with a coerced stage-level interpretation (10b).

(10) Coerced stage-level interpretations<sup>6</sup>

- a. Madeleine is an Anglophone.
- b. #When Madeleine is an Anglophone, she wears her business suit.

As (10b) seems totally infelicitous, one might be tempted to think that predicates like *Anglophone* never introduce eventualities. But if that were the case, we would predict that (11) should be likewise unacceptable:

(11) Before each commute, Madeleine downloads her brain programming for English. And when she is an Anglophone, she wears her business suit.

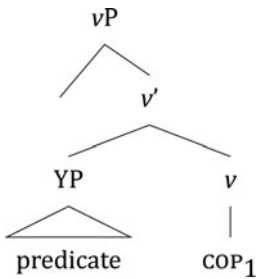
However, imagine a science-fictional setting in which people can download and install brain programming to acquire complete fluency in any language. Madeleine, a monolingual speaker of Tłı̨cẖ Yatı̨ who commutes each week by maglev train from her house in a Tłı̨cẖ community to her job as a lawyer in Edmonton, downloads and installs an English brain program before each trip and deletes it on her return home to save space in her head. In this context, she is only an Anglophone during her commutes and her time in Edmonton; in other words, (11) is felicitous, and a stage-level interpretation of (10a) is possible. Extrapolating, we can say that *any* non-verbal predicate should have both stage- and individual-level interpretations available given the right context, and thus an analysis in which the spatio-temporal argument is hosted predicate-internally should require dual homophonous entries for every single predicate.

However, if spatio-temporal arguments are introduced by the functional projection *v*, as is widely accepted since Kratzer (1995, 1996), there need not be multiple homophonous versions of each predicate. Rather, copulas can be seen as spelling out instantiations of *v* with or without spatio-temporal arguments, and it is the multiple versions of copulas that are homophonous in languages like English but have differing phonological spellouts in languages like Tłı̨cẖ Yatı̨ or Tsúùt'ınà:

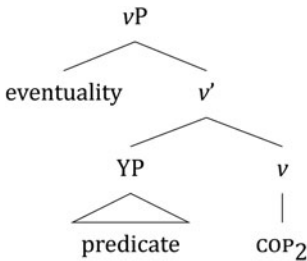
<sup>6</sup>We use the following notations for grammaticality: \* = ungrammatical; # = infelicitous, or only felicitous in a different context.



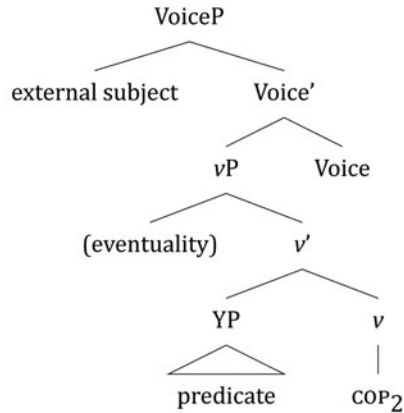
(12) Copula 1:



(13) Copula 2a:



Copula 2b:



We propose that at least Tłı̨çq̣ Yatı̨ and Tsúút'ınà, and perhaps all Dene languages, have at least two copulas of category *v*, of which one, whose unmarked form is *həte* in Tłı̨çq̣ Yatı̨ and *at'à* in Tsúút'ınà, spells out the structure (12) and the other, with the Tłı̨çq̣ Yatı̨ and Tsúút'ınà forms *elı* and *ilı*, the structures in (13).<sup>7</sup>

## 4.2 Imperatives

Imperatives are possible only with Copula 2, as demonstrated in (14b) and (15b); imperative interpretations of Copula 1 are ungrammatical, as in (14a) and (15a).<sup>8</sup>

(14) Imperative copular clauses in Tłı̨çq̣ Yatı̨

- a. Yamoðzha a-ne-t'e.  
 Yamoðzha COP<sub>1</sub>-IPFV.2SG.SBJ-COP<sub>1</sub>  
 'You are Yamoðzha.' \* 'Be Yamoðzha.'

<sup>7</sup>Dene verbs have no infinitive form; third-person forms are generally used in dictionary citations (Saxon 2014), as they tend to be morphologically unmarked.

<sup>8</sup>In Dene languages in general, second-person imperative forms double as imperatives.

- b. Yamoòzha ne-**l**<sub>1</sub>.  
 Yamoòzha IPFV.2SG.SBJ-COP<sub>2</sub>  
 ‘You are Yamoòzha.’ / ‘Be Yamoòzha.’ Anon

(15) Imperative copular clauses in Tsùt’ínà

- a. Xànítì a-nís-**t’â**, John!  
 buffalo COP<sub>1</sub>-IPFV.2SG.SBJ-COP<sub>1</sub> John  
 ‘You are the buffalo, John!’ \*‘Be the buffalo, John!’
- b. Xànítì ni-**lí** John!  
 buffalo IPFV.2SG.SBJ-COP<sub>2</sub> John  
 ‘You are the buffalo, John!’ / ‘Be the buffalo, John!’ Violet Meguinis

The individual-level predicates in (14a) and (15a) cannot be interpreted as imperatives, as an imperative clause cannot make reference to a defining property of an individual, as demonstrated also by the English examples in (16).

In fact, even if we attempt to coerce such an interpretation of an individual-level predicate, the utterance must necessarily refer to a change of state:

(16) Infelicity of defining imperatives in English

- a. #Be old!  
 b. #Have brown eyes!  
 c. #Be rich!

In fact, even if we attempt to coerce such an interpretation of an individual-level predicate, the utterance must necessarily refer to a change of state:

- (17) a. Be a man!  
 b. Be altruistic!

In other words, the predicates in (17) do not express permanent properties of manliness or altruism, but only temporally bound states: the hearer is urged to *develop* the desired qualities. Individual-level predicates are incompatible with imperatives. This is the phenomenon we find in Ṭḥcḥ Yatiì and Tsùt’ínà, where the hearer is urged to develop the qualities of, act like, or become Yamoòzha or a buffalo.<sup>9</sup>

### 4.3 Spatio-temporal adjuncts

The prediction that spatio-temporal adjuncts in Dene languages are only acceptable with Copula 2 is borne out by the examples in (18) and (19): the spatio-temporal adjuncts *every Tuesday* and *today* make the Copula 1 clauses in (18a), (18c) and (18b) ungrammatical, while the corresponding Copula 2 clauses (19a), (19-c) and (19b) are fully acceptable:

<sup>9</sup>The last interpretation is pragmatically impossible without special context, as Yamoòzha is an ancient Dene cultural hero and, outside of stories, humans seldom become buffalo.

## (18) Copula 1 clauses with spatio-temporal adjuncts in Tłı̄ch̄o Yatı̀

- a. \*Yamòðzha we-ts'èke Nàkedzèè taàt'e tsà h-ǝ-t'e.  
 Yamòðzha 3-wife Tuesday every beaver COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 (Intended: 'Yamoozhà's wife is a beaver every Tuesday.')
- b. \*Sı̄ sho k'e ekwò a-h-t'e.  
 1SG show LOC caribou COP<sub>1</sub>-IPFV.1SG.SBJ-COP<sub>1</sub>  
 (Intended: 'Myself, I am a caribou in the show.')
- c. \*Dı̄ dzèè Mısè nàzèè-dòò h-ǝ-t'e.  
 DEM day Michel hunter COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 (Intended: 'Today, Michel is a hunter.') Marie-Louise Bouvier White

## (19) Copula 2 clauses with spatio-temporal adjuncts in Tłı̄ch̄o Yatı̀

- a. Yamòðzha wets'èke Nàkedzèè taàt'e tsà e-ı̄.  
 Yamòðzha 3-wife Tuesday every beaver IPFV.3.SBJ-COP<sub>2</sub>  
 'Yamòðzha's wife is/becomes a beaver every Tuesday.'
- b. Sı̄ sho k'e ekwò eh-ı̄.  
 1SG show LOC caribou IPFV.1SG.SBJ-COP<sub>2</sub>  
 'Myself, I am a caribou in the show.'
- c. Dı̄ dzèè Mısè nàzèè-doo e-ı̄.  
 DEM day Michel hunter IPFV.3.SBJ-COP<sub>2</sub>  
 'Today, Michel is a hunter.' Marie-Louise Bouvier White

The same situation obtains in Tsúùt'ınà, where a spatio-temporal adjunct cannot be used with Copula 1, as in (20a), but is grammatical with Copula 2, as in (20b).

## (20) Copular clauses with spatio-temporal adjuncts in Tsúùt'ınà

- a. \*Dıná a-ǝ-t'á dzinis it'ı́, it'ı́yá t'ı́ xànítı̄  
 human COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub> day when night when buffalo  
 xot'ish.  
 IPFV.3.SBJ-become  
 (Intended: 'He's a human by day; by night he is a buffalo.')
- b. Dıná i-ı̄n dzinis it'ı́, it'ı́yá t'ı́ xànítı̄  
 human IPFV.3.SBJ-COP<sub>2</sub> day when night when buffalo  
 xot'ish.  
 IPFV.3.SBJ-become  
 'He's a human by day; by night he becomes a buffalo.' Violet Meguinis

There is additional evidence that eventualities are only associated with Copula 2. Equative clauses, such as *Cicero is Tully* and *The morning star is the evening star* (Frege 1952), are only acceptable with Copula 1. With Copula 2 they are interpreted as assumed-identity clauses (Béjar and Kahnemuyipour 2017), in which, for example, a person claims to be someone else, or plays a theatrical role:

<sup>10</sup>In a traditional Dene story, Yamòðzha marries a woman who is actually a transformed beaver. However, even in this context, this sentence is ungrammatical with Copula 1.

(21) Equative clauses in Tłı̨cẖo Yatı̨

- a. Nick Nı̨golà h-ɔ-t'e.  
 Nick Nicholas COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 'Nick is Nicholas.'
- b. Nick Nı̨golà e-ı̨ı̨.  
 Nick Nicholas IPFV.3.SBJ-COP<sub>2</sub>  
 'Nick is pretending to be Nicholas.' / 'Nick is playing the role of Nicholas.'  
 \*'Nick is Nicholas.'

Marie-Louise Bouvier White

4.4 Accusative case

The appearance of Copula 2 with eventualities is compatible with a structure that includes an eventive little *v*. There is additional evidence for this conclusion in the form of asymmetries involving accusative case. By Burzio's Generalization (1986), a verb that assigns a theta-role to a subject (such as an experiencer or agent) should also allow an argument which receives accusative case. Burzio's Generalization is confirmed in Tłı̨cẖo Yatı̨. As in all Dene languages, verbs are head-marking, so that transitive verbs show agreement with objects as well as subjects. However, this object agreement is not normally found with Dene copulas, since they do not have objects in the strict sense. Nevertheless, there exists an extended use of Copula 2, and Copula 2 alone, with which object agreement appears. For example, with the Tłı̨cẖo verb *gò/hı̨* 'X is/was born' (literally 'There is/was X'), the subject is an invariant expletive and triggers the appearance of the agreement prefix *go-*, commonly referred to as *areal agreement* in the literature on Dene languages because it typically marks agreement with a subject that is either an abstraction or an entity of large spatial extent. The only thematic argument of this verb is the object, and it requires one of the following agreement prefixes:

(22) Object agreement prefixes

Person and number	Tłı̨cẖo Yatı̨
1SG	<i>se-</i>
2SG	<i>ne-</i>
3SG	<i>we-</i>
1DU	<i>naxe-</i>
1PL	<i>go-</i>
2DPL	<i>naxe-</i>
3DPL	<i>gl-</i>

The examples that follow demonstrate that object agreement occurs only on the verb *gò/hı̨* 'be born', based on Copula 2, as in (23a) and (23b), and not on Copula 1, as in the ungrammatical (23c).

(23) Object agreement on Copula 2 in Tłı̨cẖo Yatı̨

- a. **Se-gò-h-ı̨ı̨** hò, sı̨-de we-ts'eke  
**1sg.obj-AR-VOICE-COP<sub>2</sub>** when 1sg-older.brother 3-wife  
 xè honı̨-Ø-da-tè.  
 with marry-3.SBJ-marry-ANT  
 'When I was born, my older brother had already married his wife.'

- b. Asìì Det'qcho Zaà **ne-gò-h-ì?**  
 QN eagle month 2sg.obj-AR-VOICE-COP<sub>2</sub>  
 'Were you born in March?' Anon and Marie-Louise Bouvier White
- c. \*Asìì Det'qcho Zaà **a-ne-gò-h-t'e?**  
 QN eagle month COP<sub>1</sub>-2sg.obj-AR-VOICE-COP<sub>2</sub>  
 (Intended: 'Were you born in March?') Anon and Marie-Louise Bouvier White

Although Tsùùt'ìnà's verb 'be born' is not formed on a copula, other languages of the family as far flung as Koyukon (Yukon and British Columbia) and Navajo (south-western United States) have similar verbs to T̥hçq̥ Yatì, formed on Copula 2, and similarly showing object agreement:

(24) Object agreement on Copula 2 in other Dene languages

- a. **be-hoo-laanh**  
 3.obj-AR-COP<sub>2</sub>  
 'he was born' Koyukon: Jetté et al. (2000: 378)
- b. **ho-se-líí'**  
 AR-1sg.obj-COP<sub>2</sub>  
 'I was born' Navajo: Young et al. (1992: 381)

In contrast, we can find no examples of object agreement on Copula 1 in these languages. It is clear, then, that not only is object agreement (marking a structural accusative case relation) grammatical only with Copula 2 in T̥hçq̥ Yatì, but that the evidence of (24) suggests that the pattern holds across at least several other languages of the family. Only Copula 2 can co-occur with accusatives, as we should expect if only Copula 2 allows an external argument.

#### 4.5 Lifetime effects

*Lifetime effects* (Kratzer 1995, Musan 1997) refer to the changes in interpretation that occur when non-present tenses are applied to individual-level predicates. In such cases, the utterance sets up a presupposition that it lies outside the time of existence of the subject, as shown in (25), where the natural interpretation in non-present tenses is that Madeleine is no longer, or not yet, in existence. Stage-level predicates do not exhibit lifetime effects, as demonstrated in (26).

(25) Lifetime effects with individual-level predicates in English

- a. Madeleine is intelligent. (no effect)  
 b. Madeleine was intelligent. (presupposition: Madeleine is dead)  
 c. Madeleine will be intelligent. (presupposition: Madeleine hasn't been born yet)

(26) Lack of lifetime effects with stage-level predicates in English

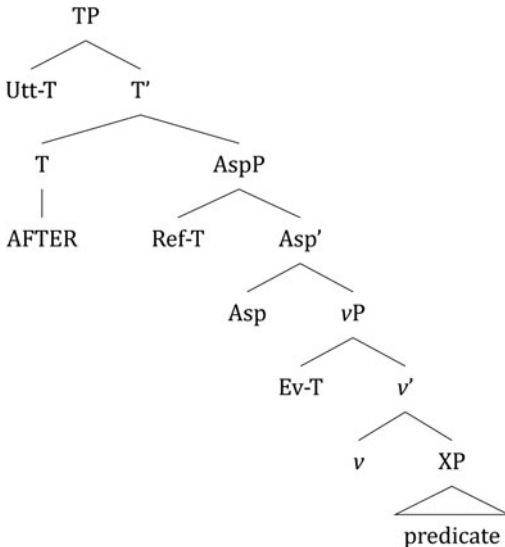
- a. Madeleine is sick. (no effect)  
 b. Madeleine was sick. (no effect: Madeleine may simply have recovered)  
 c. Madeleine will be sick. (no effect: Madeleine may be about to fall sick, or in danger of falling sick)

Recall that until now we have distinguished the two copulas structurally according to their differing properties with respect to little *v*: in the structure of Copula 2, *v* is eventive, which permits merging a spatio-temporal argument, while with Copula 1, *v* is non-eventive, rendering it impossible to merge such an argument.

Grammatical tenses and aspects, in a Reichenbachian analysis (Reichenbach 1947, Stowell 1996, Klein 2010), particularly that of Demirdache and Uribe-Etxebarria (2000, 2007, 2014) are seen as derived from the relations of three temporal arguments: utterance time (Utt-T), reference time (Ref-T) and event time (Ev-T), of which the last is clearly the same syntactic object as Kratzer's (1995) spatio-temporal argument. Past tense, for instance, realizes the relation Utt-T after Ev-T, and so forth, as below:<sup>11</sup>

In this system, past tense, for instance, is a relation whereby the utterance time is marked as being after the event time, since past tense sentences refer to events preceding the utterance:

(27) Past tense in the analysis of Demirdache and Uribe-Etxebarria (2000)



In such a system, the result of a structure like that of Copula 1, lacking an Ev-T, is that aspect and tense cannot relate Ref-T or Utt-T to an eventuality associated with the predicate. What result does this model predict?

A natural expectation is that if the temporal grammar cannot find an argument within the c-command domain of tense or aspect, the derivation will fail and be uninterpretable. But this is not the case: non-present instances of individual-level

<sup>11</sup>In a Reichenbachian system, tense strictly relates utterance time to reference time, and aspect relates reference time to event time. Nevertheless, tenses relate Utt-T and Ev-T indirectly by way of Ref-T, so that if Ev-T is absent, neither aspect nor tense can realize these relations, which is the crucial point in our analysis.

predicates are interpretable, but differently interpretable, showing lifetime effects as above, and as in the T̥ɪchɔ̄ Yat̥i sentences below, where in (28a) and (28b), the natural interpretation is that Michel and John are dead, and where an attempted coerced non-lifetime effect fails in (28c), resulting in ungrammaticality.

(28) Lifetime effects with Copula 1 in T̥ɪchɔ̄ Yat̥i

- a. Mishè Madlè we-dɔ̄-ɔ̄ h-ɔ̄-t' e ɪlè  
 Michel Madeleine 3-husband-PNS COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub> ANT  
 'Michel was Madeleine's husband.' (Apparently, he's dead.)
- b. John Behcho-dɔ̄ a-ɪ-t' e, hanikò eɫa-ɪ-wo.  
 John American-person COP<sub>1</sub>-PFV.3.SBJ-COP<sub>1</sub> but die-PFV.3.SBJ-die  
 'John was an American, but he's dead.'
- c. \*John Behcho-dɔ̄ a-ɪ-t' e, hanikò Canada  
 got'ɪɪ whe-ɪɪ.  
 John American-person COP<sub>1</sub>-PFV.3.SBJ-COP<sub>1</sub> but Canada  
 citizen PFV.3.SBJ-become  
 (Intended: 'John was American, but he's become a Canadian citizen.')

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These lifetime effects do not appear when similar non-present or non-imperfective sentences are constructed with Copula 2. In (29a), the predicate (John's husbandhood) could have come to an end rather than John himself. Similarly, (29b) and (29c) are both grammatical: John's ceasing to be American could be due either to the end of his citizenship or of his life.

(29) Absence of lifetime effects with Copula 2 in T̥ɪchɔ̄ Yat̥i

- a. Mishè Madlè we-dɔ̄-ɔ̄ e-ɪɪ ɪlè.  
 Michel Madeleine 3-husband-PNS IPFV.3.SBJ-COP<sub>2</sub> ANT  
 'Michel was Madeleine's husband.' (He could be dead, or divorced.)
- b. John Behcho-dɔ̄ ɪ-lè, hanikò  
 John American-person PFV.3.SBJ-COP<sub>2</sub> but  
 eɫa-ɪ-wo.  
 die-PFV.3.SBJ-die  
 'John was an American, but he's dead.'
- c. John Behcho-dɔ̄ ɪ-lè, hanikò Canada got'ɪɪ  
 John American-person PFV.3.SBJ-COP<sub>2</sub> but Canada citizen  
 whe-ɪɪ.  
 PFV.3.SBJ-become  
 'John was American,' but he's become a Canadian citizen.

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These lifetime effects offer a clue to the resolution of the temporal argument structure. The availability of alternate interpretations of structures without predicate eventualities supports the notion that grammatical tense and aspect can target other temporal arguments. We assume that these arguments are the lifetimes of subjects.

Events have temporal bounds, as do individuals. Each individual occupies an existence limited in time, existing within these temporal bounds. We refer to this temporally bounded existence as Lifetime (Lf-T), by analogy with the Reichenbachian system of Utt-T, Ref-T and Ev-T. We propose Lf-T as a formalization of the cross-linguistic generalization that individuals can be referred to in temporal terms, and as such, is syntactically accessible, like other Reichenbachian temporal arguments.

This proposal is supported by empirical evidence. In most or perhaps all languages, temporal predicates can have arguments that are not explicitly temporal themselves. Examples from three unrelated languages (English, Hungarian and Tł̥chq̥ Yatì) illustrate this possibility. The English prepositions *before* and *after* and their Hungarian equivalents *előtt* and *után* appear in (30) with apparently non-eventive DPs, which are nevertheless interpreted temporally:

(30) Temporal interpretations of nominal in English and Hungarian

- a. **After Monfwi**, Bruneau was the chief of the Tł̥chq̥ people.
- b. Society may change significantly **after oil**.
- c. Orbán előtt job volt, és Orbán után job  
Orbán before better COP.3SG.PRS and Orbán after better  
lesz.  
COP.3SG.FUT

‘It was better before Orbán, and it will be better after Orbán.’

<https://hirklikk.hu/kozelet/orban-elott-jobb-volt-es-orban-utan-is-jobb-lesz/324727/>

The same is true in Tł̥chq̥ Yatì, as demonstrated below: *k̥ tʰaxq̥*, in (31a), is a place where a house used to exist, and *Mowh̥ tʰaxq̥* in (31b) refers to a time after the death or the chiefdom of Chief Monfwi.

(31) Temporal interpretations of nominal in Tł̥chq̥ Yatì

- a. **k̥ tʰaxq̥**  
**house after**  
‘place where a house used to be’ Tł̥chq̥ Community Services Agency 2007
- b. **Mowh̥ tʰaxq̥**, Jimmy Bino kwʰat̥deè whe-l̥.  
**Monfwi after** Jimmy Bruneau chief PFV.3.SBJ-become  
‘After Monfwi, Jimmy Bruneau became chief.’

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Across languages, it is very frequent for markers of tense and aspect to be derived diachronically from temporal adpositions (Bybee et al. 1994). It is well documented, for instance, in Celtic languages Ronan (2012), illustrated by the Welsh examples in (32), where (32a) shows *wedi* ‘after’ as a preposition with a DP object, while (32b) shows it as a tense or aspectual marker:



## (32) Prepositions and tense markers in Welsh

- a. Ianiodd Iŵl Cesar ym Mhrydain ym mis Awst 55 CC, ond ni  
landed Julius Caesar in Britain in month August 55 BCE but not  
lwyddwyd i oresgyn Cymru am fwy na chanrif **wedi hynny**.  
succeeded to conquer Wales for more than.INDEF century **after that**.  
'Julius Caesar landed in Britain in August 55 BCE, but did not succeed in conquer-  
ing Wales for more than a century after that.'

<http://cy.wikipedia.org/wiki/Cymru>

- b. Dw i **wedi** canu.

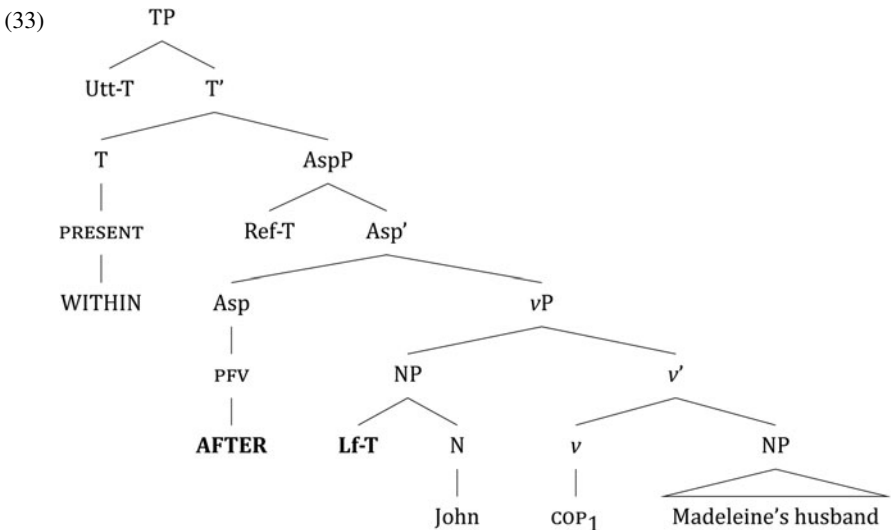
be.PRS I **after** singing.VN

'I have sung./I sang.', lit. 'I am after singing'

Ronan 2012

Therefore, it is not only possible for temporal predicates to interpret non-temporal arguments temporally, but for this phenomenon to give rise in some languages to grammatical markers of tense and aspect.

We suggest that lifetime effects arise from the reinterpretation of the lifetimes of subject nominals (Lf-T) as temporal arguments in the absence of other eventuality arguments. In the example in (33), which illustrates our proposed structure for (28b), perfective aspect, which ordinarily relates a reference time to an event time, cannot do so because of the absence of an eventuality in the structure of Copula 1. In its place, the perfective is interpreted as relating Ref-T to the lifetime of the subject, John: the predicate applies after the existence of John. This corresponds to the natural *Tŷchq* interpretation of the sentence, where John has died.



Lifetime effects therefore fall out naturally from the interaction of Copula 1, which lacks an eventuality argument, with grammatical tense and aspect, which normally express a relation between this argument and Ref-T or Utt-T. Temporal grammatical categories are interpreted in the absence of a predicate eventuality as a

relation of these times to the lifetime of the predicate's subject, placing them outside of (before or after) the subject's existence.

#### 4.6 Predicates of role

It is not only event arguments that contribute to the interpretation of eventivity expressed by Copula 2, but also external thematic arguments. In this area, there is an asymmetry in copula choice in Dene languages according to subject animacy. When the subject of a copular clause is inanimate, the choice of copula depends entirely on the type of predicate: Copula 1 appears with individual-level predicates and Copula 2 with stage-level. With an animate subject, on the other hand, the facts are different, and slightly more complex. Certain predicates that pattern largely as individual-level can appear with either Copula 1 or Copula 2, while stage-level predicates always appear with Copula 2, just as in the case of inanimate subjects. The examples below illustrate this asymmetry and the choice of copula according to the animacy of the subject. As discussed previously, Copula 1 is preferable with equative/identity clauses, as in (34a), while Copula 2 is strange, but acceptable if a stage-level interpretation is possible, as in (34b). In like manner, (34c) is somewhat bizarre because it seems to claim that the table is disguised as a bed; however, the example becomes acceptable if a stage-level interpretation is made clear in context, as in (34d).

(34) The effect of animacy: inanimate subject of copular clauses in T̥ich̥o Yat̥i

- a. D̥iɪ ladà se-ts'q̥ h-q-t'e.  
DEM table 1SG-of COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
'This table is mine.'
- b. D̥iɪ ladà se-ts'q̥ e-l̥ #̥(ha).  
DEM table 1SG-of IPFV.3.SBJ-COP<sub>2</sub> (FUT)  
'#This table is my table.' / 'This table will be my table.' (Judgement: The utterance makes more sense in the future, because in the present the word has to mean a table that I only have temporarily.)
- c. #D̥iɪ ladà daàhte e-l̥.  
DEM table bed IPFV.3.SBJ-COP<sub>2</sub>  
'This table is a bed.' (Judgement: It's a bit strange, because it seems that it's not a real bed.)
- d. Dzẽẽ n̥dè, d̥iɪ ladà se-ts'q̥ ladà e-l̥, eyits'q̥ too n̥dè,  
day when DEM 1SG-of table IPFV.3.SBJ-COP<sub>2</sub> and night when  
se-daàhte S̥iɪ e-l̥  
1SG-bed FOC IPFV.3.SBJ-COP<sub>2</sub>  
'During the day, this table is my table, and at night, it's my bed.'

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These constraints are present across the languages of the Dene family. The possible interpretations of these types of utterances in Tsùt'ínà are the same as in T̥ich̥o Yat̥i, according to copula choice:

(35) The effect of animacy: inanimate subjects of copular clauses in Tsùt'ínà

- a. Diyí ?ichí góh a-Ø-t'a  
DEM stick/tree spruce.tree COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
'This tree is a spruce tree.'

- b. \*Nùwí ichí góh a-Ø-t'a gùnàgùgiwátí.  
 DEM stick/tree spruce.tree COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub> play  
 (Intended: 'This stick is a spruce tree in the play.')(Judgement: It's not possible because it has to be a spruce tree all the time.)
- c. Nùwí ichí góh i-lí gùnàgùgiwátí.  
 DEM stick/tree spruce.tree IPFV.3.SBJ-COP<sub>2</sub> play  
 'This stick is a spruce tree in the play.' Violet Meguinis

The distribution of copulas with animate subjects is variable across Dene languages. In all these languages, Copula 1 appears only with individual-level predicates, as in (36a) and (36b); these cannot have a stage-level interpretation:

(36) Predicates of animate subjects with Copula 1 in T̥h̥çq̥ Yatì

- a. Se-ba h-o-t'e.  
 1SG-older.sister COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 'She is my older sister.' \*'She is playing the role of my older sister.'
- b. Nòda tits'aadì h-o-t'e.  
 lynx animal COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 'The lynx is an animal.' \*'The lynx is disguised as an animal.'

Marie-Louise Bouvier White

These properties are consistent with an analysis in which Copula 1 lacks an eventuality argument. With Copula 2, the situation is somewhat more complex. Predicates with Copula 2 are actually susceptible to receiving three sorts of interpretations: classic stage-level, as in (37a), changes of state, as in (37b), where the subject is seen as developing the qualities of the predicate, and *predicates of role*, where the subject is fulfilling a role denoted by the predicate. The last category appears in (37c), where the relative clause denotes not people who are elders by definition, but those who are mature: those who may fulfill the role of elders in a particular context.<sup>12</sup>

(37) Predicates of animate subjects with Copula 2 in T̥h̥çq̥ Yatì

- a. Nòda tits'aadì e-lí  
 lynx animal IPFV.3.SBJ-COP<sub>2</sub>  
 'The lynx is disguised as an animal.' / 'The lynx is acting like an animal.'

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- b. Naxi-ta amù t'asì deè e-lí ha  
 2PL-among who someone great IPFV.3.SBJ-COP<sub>2</sub> FUT  
 ni-Ø-wq-q sù naxi-gha eghàladaa-dòq̥ e-lí ha  
 want-IPFV.3.SBJ-want-NMLZ FOC 2PL-for servant IPFV.3.SBJ-COP<sub>2</sub> FUT  
 hq̥t'e.  
 FOC  
 'Whoever wants to be great among you, let him be your servant.'

DTC 2003: Matthew 20:26

<sup>12</sup>The category is summed up by Roy (2013, 46) as limited classes denoting essentially professions (*avocat* 'lawyer', *médecin* 'doctor', *pianiste* 'pianist'), titles and functions (*roi* 'king', *président* 'president', *Prix Nobel* 'Nobel Prize winner')...

- c. Ekò bò dezhi sù **dq** qhdah g<sub>II</sub>-l<sub>I</sub>-l sù g<sub>I</sub>gha  
 but meat solid FOC **people** elder IPFV.3PL.SBJ-COP<sub>2</sub>-NMLZ FOC 3PL-for  
 hòt'e.  
 COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 'But solid food is for mature people.'

DTC 2003: Hebrews 5:14

These predicates of role appear not to be linked to eventualities in the strict sense, in that, for instance, (37c) does not mean that solid food is for people who are being mature at a particular moment. As non-eventive instances of predication with Copula 2, they are therefore an apparent exception to the eventivity split between Copula 1 and Copula 2, as the table in (38) makes clear.

(38) Animacy, eventualities, and copula choice

Subject animacy	eventive	non-eventive
Animate	COP <sub>2</sub>	COP <sub>1</sub> /COP <sub>2</sub>
Inanimate	COP <sub>2</sub>	COP <sub>1</sub>

Predicates of role are often overlooked in the literature on stage- and individual-level predicates, typically being lumped in with the latter. Nevertheless, they differ from individual-level predicates in certain ways. Like stage-level predicates, they are compatible with Copula 2 and adverbials of intentionality under the right contexts, for instance: (39b) and (39c), which individual-level predicates are not (39a); when such an adverbial is present, Copula 1 is ungrammatical.

(39) Adverbials of intentionality in T<sub>h</sub>çq Yatù and Tsùt'ínà

- a. \*Axòdù d<sub>q</sub> a-ts'ù-t'e.  
 (Intended: 'We are deliberately people.')
- b. Axòdù nàzèe-dqò ts'ù-l<sub>I</sub>-h.  
 deliberately hunter IPFV.1PL.SBJ-COP<sub>2</sub>  
 'We are deliberately being hunters.' (Acceptable in a context  
 where the subjects are a hunting party.)
- c. Ádáyilag-í xàníù tsì diná i-lí.  
 purpose-ADV buffalo FOC person IPFV.3.SBJ-COP<sub>2</sub>  
 'The buffalo is being a human being on purpose.'

T<sub>h</sub>çq Yatù: Lianne Mantla

T<sub>h</sub>çq Yatù: Lianne Mantla

Tsùt'ínà: Vera Marie Crowchild

It is important to note that the same nouns may serve either as canonical individual-level predicates or as predicates of role. The only way they are distinguished morphologically is by copula choice. Thus a predicate noun like *chekoàghàetq* 'teacher' has three possible interpretations. It can be purely temporary, as in (40a), where Michel is doing the job of a teacher for a limited time; canonically individual-level, as in (40b), where the recently deceased Joseph is identified as a teacher; or as a predicate of role, as in (40c), where Madeleine's relationship with the speaker is described in terms of her role with respect to the speaker's family. The distinction

between the last two is that predicates of role *describe* their arguments in some way, while individual-level predicates *define* them. In Tɬɨçɔ Yatù, when a noun like ‘teacher’ defines an argument, it invariably occurs with Copula 1. When it describes a role played by an argument, whether or not that role is explicitly temporally bounded, it occurs with Copula 2.

(40) Three interpretations of ‘teacher’ in Tɬɨçɔ Yatù

- a. **Du dzèè** Mishè chekoaghàetɔ e-ɬ.  
 DEM **day** Michel teacher IPFV.3.SBJ-COP<sub>2</sub>  
 ‘Today, Michel is a teacher.’
- b. ɬxèè Sizè **ɛla-ɬ-wo.** Chekoaghàetɔ h-ɔ-t’e ɬlè.  
 yesterday Joseph **die-IPFV.3.SBJ-die** teacher COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub> ANT  
 ‘Joseph died yesterday. He was a teacher.’
- c. Madlè se-za ghɔ se-ts’ò go-Ø-de. G<sub>1</sub>-ts’ò  
 Madeleine 1SG-child 1SG-to about AR-IPFV.3.SBJ-speak 3PL-belonging.to  
 chekoaghàetɔ e-ɬ.  
 teacher IPFV.3.SBJ-COP<sub>2</sub>  
 ‘Madeleine is speaking to me about my children. She is their teacher.’

Marie-Louise Bouvier White

The subtle distinction between defining and describing arguments plays out in the ‘who/what’ question test. Predicates of role are felicitous as parts of, and answers to, ‘what’ questions about human subjects, while strict individual-level predicates of human subjects are only felicitous in the context of ‘who’ questions. As discussed by Roy (2013), *who* questions are compatible only with predicates that scope over the lifetime of an individual, which Roy terms *defining*, whereas *what* questions are compatible with predicates that do not. This diagnostic is employed to great effect by Roy (2013) to distinguish three types of predicate in Romance, Celtic and Slavic languages: *defining*, which corresponds to classic individual-level; *situation-descriptive*, or classic stage-level; and *characterizing*, a third class that seems to correspond closely to predicates of role.

(41) *Who* questions and copula selection in Tɬɨçɔ Yatù

- a. Amù h-ɔ-t’e? — Nàzèè-dɔɔ h-ɔ-t’e.  
 who COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub> — hunter COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 ‘Who is he? — He’s a hunter.’
- b. \*Amù e-ɬ? — Nàzèè-dɔɔ e-ɬ.  
 who IPFV.3.SBJ-COP<sub>2</sub> — hunter IPFV.3.SBJ-COP<sub>2</sub>  
 (Intended: ‘Who is he? — He’s a hunter.’)
- c. \*Ayù h-ɔ-t’e? — Nàzèè-dɔɔ h-ɔ-t’e.  
 what COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub> — hunter COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub>  
 (Intended: ‘What is he? — He’s a hunter.’)
- d. Ayù e-ɬ? — Nàzèè-dɔɔ e-ɬ.  
 what IPFV.3.SBJ-COP<sub>2</sub> — hunter IPFV.3.SBJ-COP<sub>2</sub>  
 ‘What is he? — He’s a hunter.’

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This asymmetry helps illuminate the structural distinction behind the different behaviour of predicates of role, as we will explain in the next section.

## 5. THE TWO FACES OF COPULA 2

Both classic stage-level predicates and changes of state involve eventualities. Individual-level predicates do not; whether predicates of role do is unclear. In her analysis of copular clauses and non-verbal predicate types, Roy (2013) divides non-verbal predicates into three classes: *situation-descriptive*, which correspond to classic (temporally bound) stage-level predicates, *defining*, corresponding to canonical individual-level predicates, and *characterizing*, which she describes as lacking both *density*, a property of stage-level predicates, and *maximality*, a property of canonical individual-level predicates. Unlike stage-level predicates, the properties that make characterizing predicates true do not necessarily hold consistently (densely) throughout the duration to which they apply. Rather, they allow temporal gaps within this duration. This property of non-density is used by Roy to explain the otherwise puzzling behaviour of (primarily) predicates of profession, but also some other nominal predicates in Indo-European languages: one may be a drunkard without being drunk continuously. Unlike canonical individual-level predicates, characterizing predicates are only true during the lifetime of their arguments. Her analysis neatly captures the split exemplified by (42):

(42) Three-way predicate splits in French

- a. Paul est            **un ivrogne.**  
 Paul 3SG.COP    DET **drunkard.**  
 ‘Paul is a drunkard.’ (defining predicate)
- b. Paul est            **Ø ivrogne.**  
 Paul 3SG.COP    **drunkard**  
 ‘Paul is a drunkard.’ (characterizing predicate)
- c. Paul est            **ivre.**  
 Paul 3SG.COP    **drunk**  
 ‘Paul is drunk.’

Roy 2013: 82

The predicate in (42a) is individual-level, and, in Roy’s terms, maximizing: it applies to Paul over his lifetime. Example (42b) is, strictly speaking, neither individual nor stage-level: it characterizes Paul, rather than applying only to a temporal stage of Paul’s, but it also allows for gaps when he is not drunk: one may be a drunkard without drinking continuously, just as a one can be a writer without writing continuously. The predicate in (42c) is stage-level: it applies only to a temporally bounded stage of Paul’s life, and is dense, in Roy’s sense of not allowing for gaps within that stage, during which he is not drunk.

### 5.1 Roy’s analysis and Dene copulas

The split between (42a) on the one hand, and (42b) and (42c) on the other, is interestingly parallel between the distribution of Copula 1 and Copula 2 in Dene languages.

Copula 1, as we have demonstrated, occurs only with canonical individual-level predicates. Copula 2 occurs with canonical stage-level predicates and changes of state (both of which are spatio-temporally bounded) and with predicates of profession or role.

Roy's insight into the existence of a trifold division in predication rather than the simpler stage-/individual-level distinction is a major descriptive advance. She analyzes the division in terms of the structure of predicates themselves: that dense (i.e., canonical stage-level) predicates are bare Adjective Phrases, that non-dense (characterizing) predicates are Classifier Phrases, that maximal (defining, or canonical individual-level) predicates are Number Phrases, and that in languages with multiple copulas, such as Spanish and Irish, the copulas are conditioned allomorphs that spell out tense and agreement features in the context of these predicate structures.<sup>13</sup>

There are several reasons that a similar analysis is unworkable for the facts in T̥h̥ç̥ Yati̥ and Tsú̥t'ín̥à. First, it cannot be the case that dense predicates in Dene languages are Adjective Phrases. Examples like (35c), repeated below as (43), are both canonically stage-level, applying only within specific boundaries of place and time, and indisputably nominal:

- (43) Nùwí ichí góh i-lí gùnàgùgiwátí.  
 DEM stick/tree spruce.tree IPFV.3.SBJ-COP<sub>2</sub> play  
 'This stick is a spruce tree in the play.' Violet Meguinis

Adjectives are a small class in most Dene languages, and do not require copulas in order to serve as predicates of inanimate subjects, as here. Most property concepts are expressed with stative verbs, which, again, do not co-occur with copulas.<sup>14</sup>

Secondly, the compatibility of adverbs of intentionality with predicates involving Copula 2, but not Copula 1, as illustrated by (39), is problematic for an analysis like Roy's that depends wholly upon predicate-internal structure. Adverbs of intentionality are *v*P-level adjuncts, and their incompatibility with Copula 1 suggests a difference in structure at the level of *v* rather than at the level of the predicate proper (AP/CIP/NumP).

Thirdly, the property Roy attributes to characterizing predicates, that of allowing temporal gaps in which the properties they denote do not apply, is based upon comparisons between lexically different predicates. While it is indisputably true that one can be a teacher without teaching every moment, it is not clear that this means that the predicate TEACHER has temporal gaps. Notice the difference between (44a) and (44b):

<sup>13</sup>The SER-ESTAR distinction between the copulas of Spanish (along with Portuguese, and to some extent Catalan and Italian) has a vast literature that we cannot do justice to in this article (but see Carlson 1977; Luján 1981; Schmitt 1992; Escandell-Vital and Leondetti 2002; Maienborn 2005; Arche 2006, 2012; Gallego and Uriagereka 2009; Camacho 2012; Fábregas 2012; Zagona 2012). The Irish (and Scottish Gaelic) copula distinction is less discussed, but still well documented (Carnie, 1995, Doherty 1996, Adger and Ramchand 2003). The empirical facts are basically that in the Spanish system, predicates of role appear with SER (Copula 1), while in Irish they appear with *bí*.

<sup>14</sup>Dene adjectives, and their implications for copular clauses, are dealt with in depth in Welch (2016a,b).

## (44) Comparisons between different predicates

- a. She's a teacher, but she's not teaching at the moment.
- b. \*She's a teacher, but she's not a teacher at the moment.

The ungrammaticality of (44b) suggests that the predicate TEACH need not apply at every substage of the predicate TEACHER. But for Roy's analysis to apply strictly, (44b) should be grammatical. It is not, which indicates that temporal gaps may not be the best explanation of the behaviour of predicates of role.

Further evidence lies in the behaviour of inanimate nominalizations with respect to copula selection. In T̥h̥çq̥ Yatì, numerous words for tools or instruments are formed from nominalization of verbs. A few examples:

## (45) Inanimate nominalizations in T̥h̥çq̥ Yatì

- a. sats̥̈ð̥ ede-gha ee-Ø-t̥'è-e  
metal REFL-for write-IPFV.3.SBJ-write-NMLZ  
'computer', lit. 'metal that writes for itself'
- b. sats̥̈ð̥ nà- e-Ø-l̥-1  
metal ITER-sew-IPFV.3.SBJ-sew-NMLZ  
'sewing machine', lit. 'metal that sews'
- c. zhah-ka-k'e-Ø-kò-a  
snow-on-around-IPFV.3.sbj-slide-DIM  
'skidoo, snowmobile', lit. 'little thing that slides around on the snow'

T̥h̥çq̥ Community Services Agency 2007

All of the words in (45) are nominalizations of clauses based on intransitive verbs. The subjects of these verbs (overt in (45a) and (45b), silent in (5c)) are semantically akin to those of predicates such as TEACHER, with the exception of animacy. What is important is that the nominalizations in (45) allow temporal gaps just as readily as TEACHER. A computer, 'metal that writes for itself' is not always writing, nor even computing: sometimes it is turned off. Similarly, a sewing machine is not constantly sewing:

- (46) Ey̥ sats̥̈ð̥ nà- e-Ø-l̥-1 h-q-t'e, hanìkò dz̥  
DEM metal ITER-sew-IPFV.3.SBJ-sew-NMLZ COP<sub>1</sub>-IPFV.3.SBJ-COP<sub>1</sub> but now  
nà- e-Ø-l̥-le.  
ITER-sew-IPFV.3.SBJ-sew-NEG  
'That's a sewing machine, but it's not sewing now.'

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The grammaticality of (46) demonstrates that temporal gaps are indeed possible in inanimate nominalizations. This being so, they should, according to Roy's analysis, be strictly parallel to predicates of role, and should be grammatical as predicates with Copula 2. They are not: (47a) and (47b) are ungrammatical, in contrast not only to (47c) and (47d), in which predicates of role with animate subjects are entirely grammatical with Copula 2, but to (47e) and (47f), where inanimate nominalizations are completely grammatical as predicates with Copula 1:



## (47) Ungrammaticality of inanimate nominalizations with Copula 2

- a. \*Ey<sub>1</sub> satsò nà-e-Ø-l<sub>1</sub> e-**l<sub>1</sub>**, hanìkò dzò  
 DEM metal ITER-sew-IPFV.3.SBJ-sew-NMLZ IPFV.3.SBJ-COP<sub>2</sub> but now  
 nà-e-Ø-l<sub>1</sub>-le.  
 ITER-sew-IPFV.3.SBJ-sew-NEG  
 (Intended: 'That's a sewing machine, but it's not sewing now.')
- b. \*Ey<sub>1</sub> zhah-ka-k'e-Ø-kò-a e-**l<sub>1</sub>**, hanìkò dzò zhah  
 DEM snow-on-around-IPFV.3.SBJ-slide-DIM IPFV.3.SBJ-COP<sub>2</sub> but now snow  
 ka k'e-Ø-kò-le.  
 on around-IPFV.3.SBJ-slide-NEG  
 (Intended: 'That's a skidoo, but it's not sliding around on snow now.')
- c. Ey<sub>1</sub> dò chekoa-ghà-e-tò-ò e-**l<sub>1</sub>**, hanìkò dzò  
 DEM person child-to-IPFV.3.SBJ-teach-NMLZ IPFV.3.SBJ-COP<sub>2</sub> but now  
 ghà-e-tò-le.  
 child to-IPFV.3.SBJ-teach-NEG  
 'That person is a teacher, but s/he's not teaching now.'
- d. Ey<sub>1</sub> dò nà-Ø-zè-e-dòò e-**l<sub>1</sub>**, hanìkò dzò  
 DEM person hunt-IPFV.3.SBJ-hunt-NMLZ-person IPFV.3.SBJ-COP<sub>2</sub> but now  
 nà-Ø-zè-le.  
 hunt-IPFV.3.SBJ-hunt-NEG  
 'That person is a hunter, but s/he's not hunting now.'
- e. Ey<sub>1</sub> satsò nà-e-Ø-l<sub>1</sub> h-ò-**t'e**, hanìkò dzò  
 DEM metal ITER-sew-IPFV.3.SBJ-sew-NMLZ COP1-IPFV.3.SBJ-COP<sub>1</sub> but now  
 nà-e-Ø-l<sub>1</sub>-le.  
 ITER-sew-IPFV.3.SBJ-sew-NEG  
 'That's a sewing machine, but it's not sewing now.'
- f. Ey<sub>1</sub> zhah-ka-k'e-Ø-kò-a h-ò-**t'e**, hanìkò dzò  
 DEM snow-on-around-IPFV.3.SBJ-slide-DIM COP1-IPFV.3.SBJ-COP<sub>1</sub> but now  
 zhah ka k'e-Ø-kò-le.  
 snow on around-IPFV.3.SBJ-slide-NEG  
 'That's a skidoo, but it's not sliding on snow now.'

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These results are summarized below:

## (48) Temporal gaps, animacy, and copula choice in Tłı̄chʷ Yatı̄

<u>Predicate type</u>	<u>Allows temporal gaps?</u>	<u>Copula 1?</u>	<u>Copula 2?</u>
Predicate of role	yes	yes	yes
Inanimate nominalization	yes	yes	<b>no</b>

In other words, the possibility of temporal gaps appears to be irrelevant, or at least it does not successfully predict copula choice in Tłı̄chʷ Yatı̄.

## 5.2 Animacy, external subjects, and Dene copulas

However, there is another possible analysis of predicates of role that does not depend upon temporal gaps. As we have demonstrated, temporal gaps are entirely possible

with inanimate nominalizations, which are ungrammatical as predicates with Copula 2 but completely grammatical with Copula 1. The grammaticality of Copula 2 depends upon the presence of either spatio-temporal bounding of the predicate, as discussed in sections 4.1–4.3, or on an animate subject.

The latter condition presents additional problems for an analysis of the Dene facts akin to Roy's on Indo-European languages. If copula choice depends merely upon temporal gaps, predicate-internal differences in structure can account for it. However, it is hard to see how a dependency upon properties of the subject could be accounted for under such a model, as subjects must by definition be outside the structure of the predicate proper.<sup>15</sup>

However, if our analysis of Copula 2 is correct, one in which it spells out additional argument structure compared to Copula 1, the availability of Copula 2 with predicates of role can be explained by further structure. What distinguishes predicates of role from their corresponding canonical individual-level predicates (*defining*, in Roy's terminology) is not simply the possibility of temporal gaps, but the agency and volition that allows such gaps to be possible in the first place. Predicates of role, in other words, reflect the availability of choice: whether or not one is actually a teacher, a hunter, or even a father, an animate actor may choose to fulfill or not to fulfill a role denoted by those nouns.

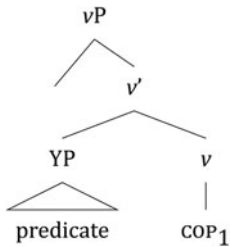
Extensive cross-linguistic evidence has been adduced for the existence of split-*v*P systems, in which the subjects of ergative, unergative and transitive verbs appear in [Spec, VoiceP], while subjects without agency appear in [Spec, *v*P] (Folli and Harley 2007, Pykkänen 2008, Coon and Preminger 2011, Woolford 2015, Harley 2017, among many others). In the Dene context, multiple types of evidence support the existence of several syntactic positions for subjects, with animacy a key determinant of subject position (Rice and Saxon 2005). If the subjects of predicates of role are external (that is, Agents or Experiencers, roles available only to animate entities), they would appear in [Spec, VoiceP] in such a split system.<sup>16</sup> The two copulas would then be morphological spellouts of three distinct configurations of a copular *v* head, where (49) represents the structure of predicates with Copula 1, and (50) those of canonical stage-level predicates (Copula 2a), and predicates of role (Copula 2b).

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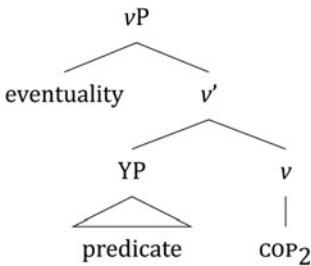
<sup>15</sup>This is also evidence against a semantic account such as that of Carlson (1977): if there are two copulas that differ in their lexical semantics, the semantics of Copula 2 would have to take account of its subject as well as the predicate; this is problematic, to say the least.

<sup>16</sup>An anonymous reviewer asks why subjects of adjectival predicates need be Experiencers rather than Holders. The answer seems to lie in differences of interpretation of certain adjectives that can take either animate or inanimate subjects. *Eya* is translated as 'painful/hurting' with an inanimate subject, but 'sick' with an animate. Similarly, *edi* is translated as 'hot' (weather) or as 'feverish', respectively. An arm may be painful, and be a Holder of the property of pain, and a day may be a Holder of the property of heat, but they cannot be Experiencers of that property because they are inanimate and lack mental states to experience things. Animate, on the other hand, *do* experience the properties predicated of them.

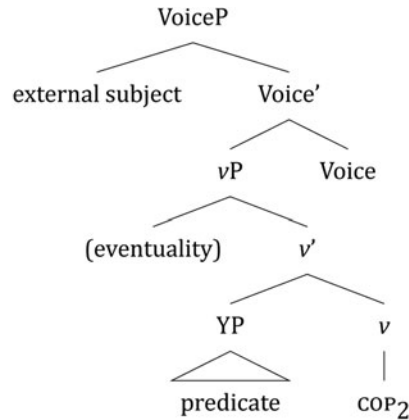
(49) Copula 1:



(50) Copula 2a:



Copula 2b:



These spellouts can be formalized in the framework of Distributed Morphology (Halle and Marantz 1993) as the following Vocabulary Insertion rules, where *e* represents an event argument and DP the nominal predicate:

- (51) a. COP<sub>2</sub> Category:  $v_{cop} / e \text{ DP } \_$   
 b. COP<sub>2</sub> Category:  $v_{cop} / \text{DP } \_ \text{ Voice}$   
 c. COP<sub>1</sub> Category:  $v_{cop} / \text{Elsewhere}$

This model successfully accounts for the combinatorial properties of Dene predicates with subjects of differing animacy, for the dual interpretations of Copula 2 predicates (either temporally bound or allowing volition), for the occurrence of the same nominal predicates with both copulas (since their varying interpretations are not linked to their syntactic category but rather to argument structure), and for the multiple interpretations of a single nominal predicate, for the same reasons.

### 5.3 Adjectival predicates

As mentioned in section 5.1, adjectives are a small class in most Dene languages. As documented in Welch (2016b), adjectival predicates in Tł̥ch̥q̥ Yatui require no copula

except when their subjects are animate (52a), in which case it is obligatory (52b). With inanimate subjects, adjectives may and must appear bare (52c); in this case copulas are ungrammatical (52d):

(52) Adjectival predicates in T̥ɬçq̥ Yatì

- a. D<sub>II</sub> chekoa edì e-ɬ.  
 DEM child hot IPFV.3.SBJ-COP<sub>2</sub>  
 ‘This child is feverish.’
- b. \*D<sub>II</sub> chekoa edì.  
 DEM child hot  
 (Intended: ‘This child is feverish.’)
- c. D<sub>II</sub> dzeḗ edì.  
 DEM day hot  
 ‘Today is hot.’
- d. \*D<sub>II</sub> dzeḗ edì e-ɬ.  
 DEM day hot IPFV.3.SBJ-COP<sub>2</sub>  
 (Intended: ‘Today is hot.’)

Welch (2016b) proposes that this phenomenon arises from a need for person agreement to be realized inflectionally. Adjectives in this language do not inflect; hence, agreement must be realized on a verb, and copulas, as semantically empty, can realize this agreement inflectionally while adding no semantics to the predicate.

Independent evidence strongly suggests that inanimate nouns in T̥ɬçq̥ Yatì lack Person as a formal feature, and that Number is dependent upon Person. Hence, animate subjects alone co-occur with a copula to realize inflectional agreement, since inanimates have no features to agree with.

The difficulty with this proposal is that when a copula occurs with adjectival predicates, it is always Copula 2. If copula insertion is a way to realize inflectional agreement with minimal change to the sentence, why is Copula 2, with its more complex structure, invariably the one that is inserted?

The analysis in the present article delivers the answer to this question for free. If animate subjects of adjectival predicates are Experiencers, and external arguments, the only copular structure that can allow them to merge is that of Copula 2b. We should never expect Copula 1 to appear with adjectives, since it has no space in its argument structure to allow such subjects.

## 6. CONCLUSION

Numerous types of evidence converge to indicate that the copulas of T̥ɬçq̥ Yatì realize three different structures, and that this difference resides in the presence of external arguments (spatio-temporal, thematic or both) with Copula 2, and their absence with Copula 1:

1. Copula 2, but not Copula 1, is compatible with spatio-temporal adjuncts.  
 Only Copula 2 can spell out the combination of an eventuality and a nominal predicate.

2. Copula 2, but not Copula 1, is compatible with adverbs of intentionality.  
Only Copula 2 can spell out the combination of a nominal predicate and Voice.
3. Copula 2, but not Copula 1, is grammatical with imperatives.  
Only Copula 2 can spell out the combination of a nominal predicate and Voice.
4. There exist instances of Copula 2 that bear object agreement; there are none of Copula 1 that do so.  
Only Copula 2 should be compatible with accusative case, given Burzio's Generalization.
5. In non-present and non-imperfective contexts, predicates introduced by Copula 1 show lifetime effects; the same is not true of Copula 2. As Copula 1 cannot spell out eventualities, any temporal relation must involve the nominal itself.
6. Predicates of human subjects with Copula 2 answer the question 'What is X?', while those with Copula 1 answer the question 'Who is X?'  
As demonstrated in Roy (2013), *what* questions are compatible with predicates that do not scope over the lifetime of an individual, and *who* questions are compatible only with predicates that do.

Although our data are scantier for Tsùt'ínà, a very severely threatened language, items 1, 2, and 3 above are confirmed for Tsùt'ínà as well, while item 4 is confirmed for Koyukon and Navajo.

For all these reasons, it is apparent that the structural explanation we have proposed in this article is correct. The difference between the copulas, in several widely-separated Dene languages, is neither lexical, nor a spellout of differing predicate-internal structures. Rather, it is a difference in the number and type of their arguments, and copulas are spellouts of predication and argument structure (see also Welch 2019).

The tripartite division we find in Dene copulas lends additional weight to the arguments (such as Roy 2013) against the classic stage-/individual-level predicate distinction. Somewhat unexpectedly, however, Dene predicates of role, which Roy analyzes as "non-dense", pattern with eventive predicates (Roy's dense predicates) in both co-occurring with Copula 2. This contrasts with patterns in Romance and Celtic languages, where they tend to pattern with classic individual-level predicates in terms of copula choice.

Further, Copula 2 predicates, including those predicates of role, can cooccur with adverbs of intentionality, vP-level adjuncts, while Copula 1 predicates cannot.

Together, these facts indicate, first, that languages have differing strategies for realizing the tripartite division, and secondly, that analyses of predicate distinctions that depend upon predicate-internal differences, such as Roy's dense/non-dense distinction, may need to be re-examined.

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