

Are there null arguments in Athabascan?

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The existence of null arguments in Athabascan languages, and other polysynthetic languages, is a debated topic. We argue that, if the agreement on the verb is the argument, the so-called Pronominal Argument Hypothesis, languages such as Navajo do not have null arguments in the traditional sense. We then outline the diachrony of Athabascan object marking on the verb (by looking at the various contemporary languages).

Keywords: Athabascan; pronominal argument; null argument; polysynthetic

1. Introduction

This paper was written for the 2011 ICHL Workshop on null arguments. In the Call for Papers of the original workshop, a connection was made between null arguments and non-configurality/polysynthesis (see also [Luraghi 2010, 2013](#)). However, the assumption that null arguments exist in Athabascan languages, and other polysynthetic languages, is a controversial topic. We argue they don't and that the agreement on the verb is the sole argument. We also look at the diachrony of Athabascan object marking on the verb (by looking at the various contemporary languages) and argue there is a change towards so-called pro-drop. In addition, we suggest a different way of looking at agreement features than is commonly done in Minimalism.

In this introductory section, we first briefly present the Athabascan language family and then discuss the occurrence of null arguments from a cross-linguistic perspective. According to [Lewis \(2009\)](#), there are 42 Athabascan languages, and together with Eyak and Tlingit, they form the Na-Dene family. Whether or not Haida is part of the Na-Dene family is controversial. If it is, Na-Dene consists of 46 languages. Most of these languages are spoken in the Northwest of the US (including Alaska) and the West of Canada. They are assumed to have spread from Alaska into Canada and the Pacific US and also to Arizona and New Mexico, in the case of Apache and Navajo.

The Athabascan languages are interesting to study since there is variation in how polysynthetic each is. It is a relatively conservative language family in that speakers of Navajo (in Arizona) have many words in common with, for instance, Tanana (in Alaska). On the basis of changes in the negative system, van Gelderen

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(2007, 62) sees a conservative northern group of languages that includes Ahtna, Koyukon, Lower Tanana, Sekani, Bearlake Slave, and Chipewyan and then a group consisting of the Pacific Coast, including Hupa and Mattole, and a group of languages of the Southwest, including Navajo and Apache. Languages of the Pacific Coast and the Southwest show innovative forms. The languages that moved east into Canada also show signs of renewal in the negative.

The changes in object polysynthesis described in this paper see the languages of the Southwest as the first to have obligatory object marking on the verb. In looking at this innovation, we will keep these groupings in mind. A map of some of the languages of Alaska and western Canada is given in [Figure 1](#).

Now, we turn to null arguments from a cross-linguistic point of view. Subjects are frequently left out and subject agreement is marked on the verb instead; see the data in *The World Atlas of Linguistic Structures* (Haspelmath et al., 2006), represented in [Table 1](#).

[Table 1](#) shows that approximately 20% of languages use a pronoun whereas 70% use affixes or leave the subject unmarked. The question is what the status of these apparent null subjects is.

Agreement with the object on the verb is quite frequent as well. [Table 2](#) shows that 51% of all languages mark two arguments on the verb. *The World Atlas of Linguistic Structures* doesn't provide data on null objects but one might expect these to appear relatively frequently as well. Again, the question would be what the status of these arguments would be.

Our first aim in this paper is to suggest that null arguments need not be postulated in Navajo, a polysynthetic language. In section 2, we therefore discuss competing accounts and give Minimalist representations for both positions. We provide the evidence for arguing that Navajo represents its arguments on the verb, mostly using arguments that are known from the literature. Our second aim is to look at the diachrony of null arguments. In section 3, we show how non-polysynthetic languages go through a reanalysis of pronouns as agreement that we will show to be different from polysynthetic ones. We formulate the changes taking place in Romance in terms of feature change. In section 4, changes in Athabascan object marking are provided and, in section 5, an account in terms of Minimalist features is given.

2. Null arguments in Navajo?

In this section, we first present two competing views in general terms. We then give some background on Minimalist features before giving an account of the competing views in terms of features. Finally, we provide the evidence that is typically used to argue that Navajo lacks null arguments.

Extreme head-marking languages, represented by quite a few languages in [Table 3](#), have received several types of analyses. The Athabascan family is one such family of languages and one we will focus on (see [Tuttle n.d.](#) for an excellent overview). On the one side is the view that polysynthetic languages are

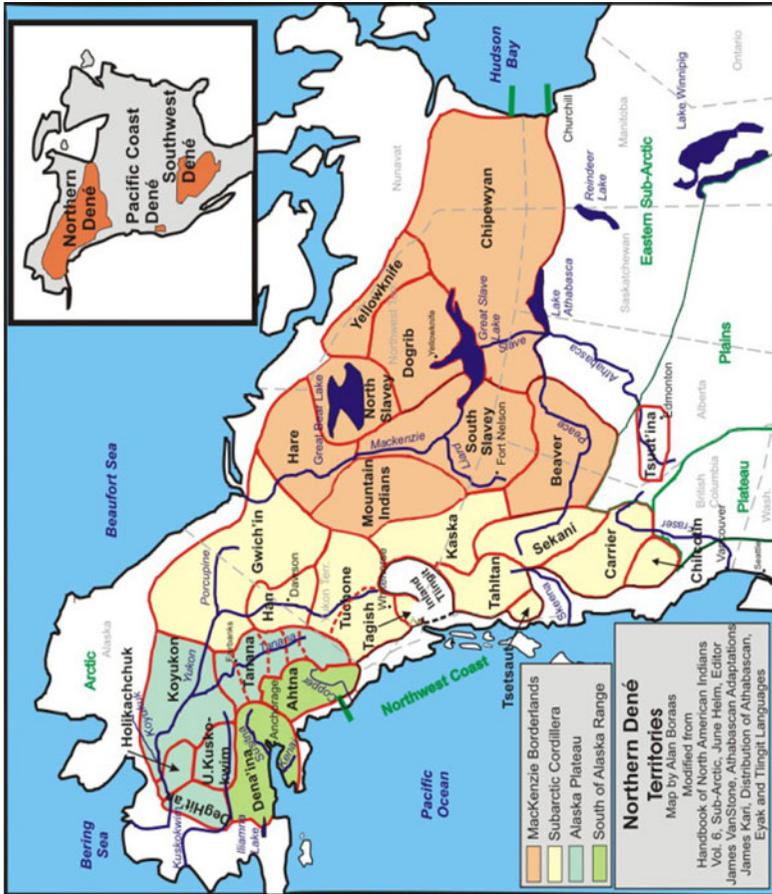


Figure 1. Northern and western Athabascan languages (~ ifash/pages/territory_pages/map_pages/northern_dene_map.html" >http://chinook.kpc.alaska.edu/ ~ ifash/pages/territory_pages/map_pages/northern_dene_map.html)

Table 1. The expressions of subjects (from Dryer 2011).

Pronominal subjects are expressed by pronouns in subject position	82 (11.5%)
Pronominal subjects are expressed by affixes on verbs	437 (62%)
Pronominal subjects are expressed by clitics with variable host	32 (4.5%)
Pronominal subjects are expressed by pronouns in a different syntactic position from full noun phrase subjects	67 (9.4%)
Pronominal subjects are expressed only by pronouns in subject position, but these pronouns are often left out	61 (8.6%)
More than one of the above types with none dominant	32 (4.5%)
	total: 711

Table 2. Marking on the verb (from Siewierska 2011).

No person marking of any argument	82 (21.7%)
Person marking of only the A argument	73 (19.3%)
Person marking of only the P argument	24 (6.3%)
Person marking of the A or P argument	6 (1.6%)
Person marking of both the A and P arguments	193 (51%)
	total: 378

very close to non-polysynthetic ones, with the person and number marking on the verb agreeing with null arguments (e.g. Speas 1990; Rice and Saxon 2005). On the other side exists the view that the person and number markings on the verb represent arguments and that (optionally present) full nominals are adjuncts (e.g. Hale 1983, 2001; Jelinek 1984; Willie 1991; Baker 1995, 2001a, 2001b; Faltz 1995). Mithun (2003, 275) is somewhere in the middle when she argues that the affixes are arguments but that “does not entail a specific syntactic status on the part of coreferential”.

Baker is careful to distinguish non-configurational languages from polysynthetic ones. Initially, non-configurational languages are defined as having free word order (e.g. Hale 1983, 1989), but later the emphasis shifts away from word order because Navajo has relatively strict word order (and languages with free word order such as German are not polysynthetic). Thus, there is structure to non-configurational languages. Here we will only be concerned with polysynthesis and define a language as polysynthetic if all arguments are marked on the verbal head. In this section, we concentrate on the second view, the Pronominal Argument Hypothesis (hence PAL) and argue, against Baker (2001b, 1437) and Luraghi (2010, 213), who generally work within the PAL framework, that pronoun-drop does not lie “at the heart of nonconfigurationality”. There may not be pro-drop.

Before looking at a representation of a PAL, we need to consider some background on features (see Chomsky 1995). Features can be interpretable, relevant for the semantic interpretation of the utterance, or uninterpretable, only relevant to the syntax. The case features on nouns and the agreement features on verbs are uninterpretable (in English) because they are not relevant for the interpretation. In English, sentences such as “Me sees him” are perfectly understandable but grammatically incorrect. That means the incorrect accusative case of *me* is not relevant nor is the incorrect agreement on the verb. The interpretable features include the tense of the sentence and the person and number features on nouns. These are relevant for the interpretation of a sentence: the [i-3S] in (1a) stands for interpretable third person and singular number features on the noun and the [u-phi] for uninterpretable, and as yet unspecified, person and number features on the verb. The latter are crossed out in (1b) after having been checked because they are not relevant for the interpretation. In (1), I just show the phi-features.

(1)		He	reads	books
a.	before checking	[i-3S]	[u-phi]	[i-3P]
b.	after checking	[i-3S]	[u-phi]	[i-3P]

An uninterpretable feature is called a probe and it needs an interpretable feature, i.e. the goal. An interpretable feature is independent of other features and we’ll see this is important for the changes in polysynthesis.

Now let’s turn to Navajo. A Navajo sentence like (2) can be analysed as (a) or (b); in (a), the *yi* and *ni* count as arguments, expressing theta-roles, but in (b) the null arguments, represented by *pro*, bear the theta-roles.

(2)	yiniitsá		Navajo
a.	yi-ni -l-tsá		
	it-you-CL-saw		
b.	pro pro	yi-ni -l-tsá	
	pro pro		
	“You have seen it”		

How are (a) and (b) different? The first view, represented by Jelinek (1984; Willie 1991, etc), has the agreement marker bearing the theta-role. Jelinek (1984), based on Hale’s (1983) ideas on Warlpiri, argues that languages have either lexical or pronominal arguments. In non-configurational languages “clitic Pronouns [are] Verbal Arguments” (Jelinek 1984, 43) and all nominals are adjuncts. Jelinek’s version of this difference/parameter is given in (3).

(3) **Configurationality Parameter**

- a. In a configurational language, object nominals are properly governed by the verb.
- b. In a [. . .] non-configurational language, nominals are not verbal arguments, but are optional adjuncts to the clitic pronouns that serve as verbal arguments. (Jelinek 1984, 73)

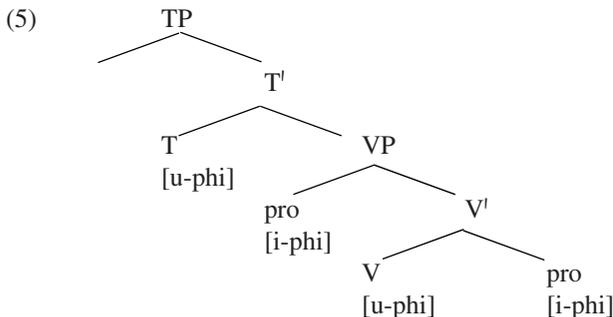
Baker disagrees that the agreement affixes are arguments, though he characterizes the properties of the languages in similar ways as Jelinek and also argues that the nominals are adjuncts. His approach is that “the morphemes on the verb do not *replace* conventional argument phrases . . . but . . . *reinforce* them” (Baker 1995, 15).

(4) **The Polysynthesis Parameter**

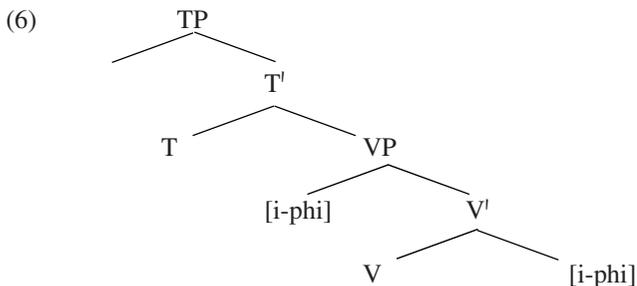
Verbs must include some expression of each of the main participants in the event described by the verb (the subject, object, and indirect object). (Baker 2001a, 111).

Baker (2001a, 148, 149) distinguishes between Subject and Object Polysynthesis. The approaches of Baker and Jelinek are similar in that they assume an adjunct status for the nominal. They differ, however, in how they approach agreement. We will rephrase the two approaches in terms of Minimalist agreement features (cf. Chomsky 1995) and indicate how each would account for language change.

In Baker’s approach, a tree for a transitive verb with a simplified VP might look like (5), with the null argument *pro*-elements in specifier and complement positions. The features have been added as if Navajo were English with T and V needing a nominal element with interpretable features to value their own uninterpretable ones. These empty arguments make polysynthetic languages very close to non-polysynthetic ones.



Jelinek’s basic tree would look like (6). Again, the features have been added; note the lack of uninterpretable features.



We will now provide some of the arguments given by Jelinek, Baker, Mithun, and others to show that affixes are arguments and independent pronouns and nominals are adjuncts. This means that the features are as in (6) and this means the feature system of the Minimalist Program will have to be adapted, as we do in section 5.

In polysynthetic/Pronominal Argument Languages, the following five characteristics are typical. (a) Nominals (DPs as well as independent pronouns) are optional, as in (7) and (9) from Navajo, but the affixes are not. (b) When subject or object pronouns are present, they are contrastive focus and have to be left-most, as the ungrammaticality of (8) shows. (c) The so-called agreement can be quite specific for (in)definiteness and genericity, as in (10). (d) There are no anaphors and non-referential quantified DPs. (e) There is minimal embedding and no infinitives.

- (7) Nanishté
na-ni-sh-té
around-you-I-carry.IMPF
“I am carrying you around”
- (8) *Diné bizaad shi yíníshta’
Navajo language 1S 3.1.study
- (9) (Shi) (diné bizaad) yíníshta’
1S Navajo language 3.1.study
“I am studying Navajo”
- (10) a. ji-ní
4-say
“people say”.
b. a-sh-á
unspec.O-1S-eat
“I am eating”

Characteristics (a) and (b) are expected if overt nominals are adjuncts and pronouns contrastive topics, left-most in the sentence; (a) and (c) if agreement is argumental.

Regarding (d), Baker (1995, 49f.) makes the point that anaphors such as “himself” would be adjuncts and hence outside the c-command domain of the real subject. Quantifiers have been argued to be adverbial (Faltz 1995; Jelinek 1995), as in (11).

- (11) má’ii **aftso** dibé baayijah Navajo
coyote all sheep 3-3-ran-away
“The sheep ran away from all the coyotes” or
“All the sheep ran away from the coyotes” (Jelinek 2001, 18)

Regarding (e), there is minimal embedding in Navajo. The reason is that the embedded clause has to be an adjunct and there is no argument that can take the clause's place on the verb. Most of the instances are as in (12) and here the main verb is quite restricted and particle-like.

- (12) a. Shi-zhé'é kinłání-góó dee-sh-áál nízin Navajo
 my-father Flagstaff-to FUT-1-go 3.want
 "My father wants to go to Flagstaff" (Hale 1989, 300)
- b. doogáál ní
 3.arrive 3.said (disjoint reference)
 "He said that he arrived." (Willie 1991, 143).

Baker (1995, ch. 10) also says that polysynthetic languages avoid embedded arguments. Constructions such as (12) are rare in Navajo; the preferred embedding strategy is nominalization, as in (13).

- (13) honeesná-nígíí yoodlá Navajo
 3.win-NOM 3.believe (free reference)
 "He believes he won/he believes the winner." (Willie 1991, 178)

So far, in this section, we have shown there are two views on how to represent arguments in polysynthetic languages. We have also shown that polysynthetic languages can be analysed by having interpretable agreement features and given the traditional evidence for the view that nominals are adjuncts and verbal marking is argumental. This means that there are no null arguments and there is no necessary relationship between null arguments and polysynthesis.

The characteristics of Navajo discussed above indicate that the nominals are adjuncts. Most indicate a topic, as in (12a). If a more specific nominal appears first, as in (8), this results in ungrammaticality. Work by McDonough (2003) on the prosody of Navajo confirms that focus is not marked on the nominals by means of intonation. Jelinek argues focus is marked on a position in the left periphery instead, as shown in (14) and (15), where the particles indicate head positions.

- (14) Ma'ii **hanii** yiitsá.
 coyote FOC 3-saw
 "It wasn't a coyote that I saw" (Perkins 1978, 7)

- (15) Díí **ga'** chidí nizhóní
 this FOC car beautiful
 "The prettiest car" (Young & Morgan 1987, 369).

Languages mark three kinds of roles: semantic, grammatical, and pragmatic. The pragmatic roles in Navajo are marked on nominals, e.g. through *ga'/hanii*, and the semantic (thematic) roles are marked on the verb. How about the

grammatical roles in e.g. Navajo? The usual suspect to test the presence of the distinction between semantic and grammatical roles (in English) is the passive. A theme argument that is a grammatical object in a transitive becomes a grammatical subject in a passive.

Sentence (16a) is a Navajo transitive active with both arguments marked on the verb. The affix glossed as CL is a voice marker. This voice marker is different in (16b), which is passive, and only one argument is marked by a prefix used for subject in (16a). The object can also be marked in its original position, as (16c) shows. See Neundorf (2000) for more detail.

- (16) a. yilbéézh
 yi-0-1-béézh
 3O-3Su-CL-boil
 “s/he is boiling it.” (Young and Morgan 1987, 143)
- b. yilbéézh
 yi-0-l- béézh
 peg-3Su-CL-boil
 “It is being boiled” (Young & Morgan 1987).
- c. shi’doo’niid
 sh-‘-d-w-d-niid
 1-3-Q-mode-CL-tell
 “I was told (by someone).” (Hale 2001, 690)

So, the zero-morphemes in (6a) and (6b) mark the grammatical role of subject. These morphemes, as mentioned above, also mark the semantic ones together with the voice markers (and the suppletive number on the verb stems). Hence, the nominals have only pragmatic function and characterizing Navajo as an SOV language, which is frequently done, is not correct if S and O stand for grammatical function.

We’ll now shift focus and turn to the diachrony of null arguments. We’ll first look at the data in Romance and see how we can account for these changes in terms of features.

3. Changes in null arguments in non-polysynthetic languages

The role of agreement in a number of Romance languages is quite prominent as well. However, in these languages, there are relatively fast cycles of change with erstwhile pronouns being incorporated as agreement markers. We will argue that neither Spanish nor Italian dialects are being reanalysed as PAL, i.e. polysynthetic languages. “Real” polysynthetic languages are special in the choice of [i-phi] and they lack specifiers in the TP and VP which we discuss in section 4.

In Spanish and standard Italian, as shown in (17) for Spanish, subjects are optional and one could argue that the agreement is the argument, as it is in Navajo.

- (17) a. (Muchas tribus) buscaban la oportunidad de rebelarse Spanish
 many tribes sought-3P the opportunity to rebel
 “Many tribes sought to rebel.”
 b. (nosotros) buscá**bamos**
 “we sought”
 c. (vosotros) buscab**ais**
 “you sought”
 d. (ellos, ellas) buscaban,
 “they sought”

Ordóñez and Treviño (1999) argue that this is not so on the basis of pre-verbal overt subjects patterning with left-dislocated objects in ellipsis, extraction of quantifiers, and interpretation of preverbal quantifiers. This means that overt subjects still function as arguments in Spanish. So, Spanish has verbal agreement, null arguments, and frequent topicalized subjects, but its nominals still function as arguments.

The situation is similar in standard Italian, but there is an incredible diversity in the dialects. In Venetian Italian, full nouns and pronouns can be doubled; indefinites, however, cannot be doubled.

- (18) a. **Ti te** magni sempre Venice
 you you eat always
 “You always eat.”
 b. **Nissun** (*el) magna
 nobody he eats
 “Nobody eats.”
 (Poletto 2004)

In other varieties, especially Northern Italian ones shown in (19) and (20), all of these are grammatical, even the quantified one. That means the formerly topicalized nominal is a real argument, and that the null argument has disappeared.

- (19) a. **Nisun** l’ha dit niente Trentino
 nobody he-has said nothing
 “Nobody said anything.”
 b. **Tut** l’è capita de not
 everything it-has happened at night
 “Everything happened at night.” (Brandi & Cordin 1989, 118)

- (20) a. **Tuc i**panseva Albosaggia (Lombard N.)
 Everybody they thought.
 “Everybody thought.”
 b. **Vargù al** ruarà tardi
 Somebody he will-arrive late
 “Somebody will arrive late”
 (Poletto 2004)

- b. iðəɫɣɛ
 y-ð-0-ɫ-ɣɛ
 3SO-Q-3S-CL-kill
 “He kills it.” (Tuttle 1996, 106)

A similar complementarity between object and agreement marker occurs in Kaska and Dine Sułine, also northern languages. Because the verb cannot have the object marking when the nominal is present, the object marker and nominal have the same status. This means both mark theta-roles, i.e. play semantic roles.

Doubling of the object, a step towards object marking becoming inflectional, is possible in topicalization (Gunlogson 2001, 376). If the object is clearly topicalized, as in (26a), the object marker/pronoun appears on the verb, but not in the non-topicalized (26b).

- (26) a. **gah** tɫi nidhájá **te-ye**-déhnde Slave
 rabbit dog far 3-3-chased
 “The rabbit, the dog chased it a long way”.
- b. tɫi nidhájá gah **te**-déhnde
 dog far rabbit 3-chased
 “The dog chased the rabbit a long way.”
 (Rice 1989, 1198)

The same phenomenon occurs in Gwich'in, Slave, Kaska, and Tanacross. It can be explained as in other languages we considered: the pronominal object marker in (26a) may be reanalysed at some point as an argument.

Human plural objects (Slave) or definite objects (Babine-Witsuwit'en) also trigger the doubling and this may be the beginning of the change.

- (27) a. dini hida nilh'ën Babine-Witsuwit'en
 man moose at-3-look
 “The man is looking at **a moose**”
- b. hida **dini** yi-nilh'ën
 moose man 3-at-3-look
 “The moose is looking at **the man**”
 (Gunlogson 2001, 374).

Slave (28) shows that that is true when the object is human and plural, i.e. a typical topic.

- (28) dene-ke go-gháyeda Slave
 people-P 3P-3.see
 “S/he sees the people.” (Rice 1989, 1017).

Turning now to Navajo, a representative of Southern Athabascan, this language has optional nominals, as the counterparts of Slave (25) and Babine-Witsuwit'en (27) in Navajo (29a) show. The marker on the verb can never be left off, as the ungrammatical (29b) shows.

- (29) a. ('atoo') yí-ní-dláá'-ísh Navajo
 soup 3S-2S-eat-Q
 "Did you eat the soup?"
 b. *ní-dláá'-ísh
 2S-eat-Q "Did you eat it?"
 (Jelinek 2001, 23)

Northern Athabaskan languages have Noun Incorporation, as in (30), from Hare. Rice (2008) shows that the most archaic Athabaskan languages, Ahtna and Koyukon, have retained noun incorporation, but Navajo, Apache, and the Pacific Coast languages have not.

- (30) léh-xu-de-k'a Hare
 together-tooth-CL-grind
 "S/he grinds her/his teeth" (Rice 1989, 650, 658).

Navajo lacks Noun Incorporation probably because of competition between the to be incorporated noun and the object marker. The trend in the Athabaskan languages is towards more object polysynthesis and less Noun Incorporation. As pronouns are reanalysed as the bearers of interpretable agreement features and nominal arguments as adjuncts, the nominals can no longer incorporate.

The Athabaskan family shows some differences in object polysynthesis. Slave has subject but not object polysynthesis; Navajo has both. As to the start of object polysynthesis, definiteness seems a factor in Babine-Witsuwit'en and animacy in Slave.

If arguments are listed on the verbal complex obligatorily, what happens to indirect objects? These too are obligatory though there is an adposition incorporated as well, as (31) and (32) show.

- (31) 'a:k'yiwilaw xo-wa:-0-n-e-'an Hupa
 book 3-P-3-PF-1S-move
 "I gave him a book" (Campbell 2011, 612).

- (32) bínabinishtin
 Navajo
 b-í-na-bi-ni-sh-tin
 3-against-around-3-Q-1S-handle-IMPF
 "I teach it to him" (Young & Morgan 1987, 223; see also Rice 2000, 94).

Adpositional objects are marked in most Athabaskan languages. These are often analysed as part of the verbal complex: *bí* in Navajo (32) and *beghá* in Chipewyan (33).

- (33) be-ghá-yé-n-i-ł-tj Chipewyan
 3S-to-3S-ASP-1S-CL-handle
 "I have given her to him" (Li 1967, 419).

Even with more adverbial-like objects, the pronominal marker is obligatory on the Navajo adposition, as (34) shows, but not on the Slave one in (35).

- (34) a. Béeso bi-k'é naashnish Navajo
 money 3-for 1S.work
 "I work for money"
 b. Bi-k'é naashnish
 c. *Béesok'é naashnish/ *k'é naashnish
- (35) a. Bee hé tádjhwee Slave
 knife with 2S.IMP.cut
 "Cut it with a knife"
 b. Behé tádjhwee
 c. *B. ee behé tádjhwee/ *hé tádjhwee
 (Saxon 1989, 388, as in Tuttle, n.d.)

The Northern languages show the same complementarity with possessive nouns.

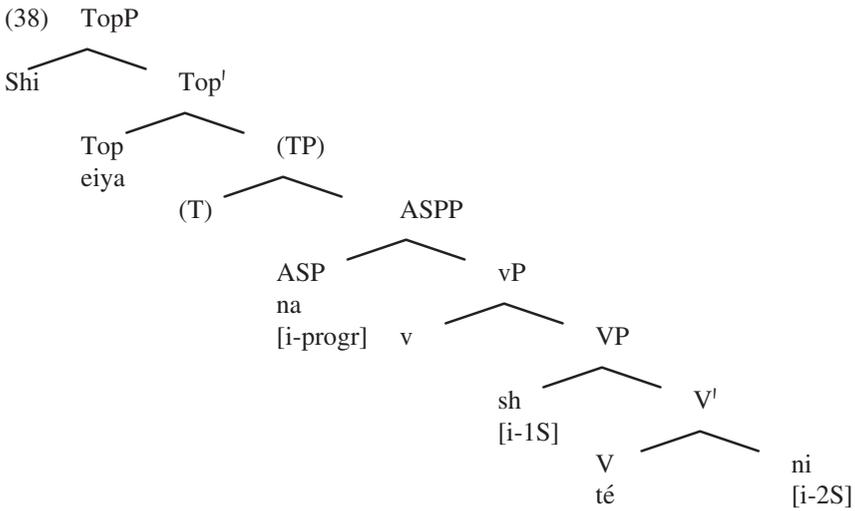
- (36) a. Charlie lǰé Slave
 Charliedog
 "Charlie's dog",
 b. be lǰé
 3 dog
 "his dog".
 c. *Charlie beǰé/ lǰé (Saxon 1989, 388)

In this section, we have shown that the northern Athabascan languages analyse the nominal and the verbal object marker on a par but that this is not true in Navajo. The possibility of Noun Incorporation is also typically northern. The next section will put some of the changes in a Minimalist picture.

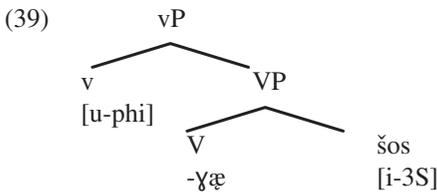
5. Athabascan features and change

The Minimalist Program sees features as crucial to language variation. Language acquisition involves a selection of the features as interpretable or uninterpretable. Thus, parametric variation resides in the lexicon.

In (6) above, repeated here with actual morphemes and with an ASP, we have given a tree for Navajo (7), representing it as a PAL. In Navajo, a pronoun comes with interpretable features and a T, if it is part of the Navajo lexicon at all, and little *v* lack uninterpretable features. We have added a topic to show the left periphery.



Hale (2001) has a proposal on how to derive the correct morpheme order [na-ni-sh-té] of (38). We will just concentrate on the features. In a non-PAL, the features relevant to the verb and object would be as in (39), for Salcha (25), with little *v* checking its features either with the nominal or with the pronoun.



The change towards object polysynthesis involves the loss of uninterpretable features, as in (23), on the little *v*. The difference between changes in Romance and Athabascan languages is that, in Romance, when the interpretable features are reanalysed as uninterpretable a new element is used to provide interpretable features. In Athabascan, it is not the interpretable features that are reanalysed but the uninterpretable ones are lost.

Table 3. Feature Macroparameters (from van Gelderen 2011).

Phi-features (for head-marking)		“Case” (for dependent-marking)	
yes	no	yes	no
u-F	i-F	Korean	Navajo
English	Navajo	English	

If (38) and (39) are correct, this has consequences for the universality of feature checking. There are many languages without agreement (e.g. Chinese) and they too show no evidence of uninterpretable features. A proposal for feature choices is given in [Table 3](#). Languages would differ in whether or not they include uninterpretable features.

6. Conclusion

In this paper, we have been critical about a link made in the Call for Papers of the original workshop, namely the connection between null arguments and polysynthesis. There are languages where pro drop is an intermediate stage in a cycle from pronoun to agreement marker (e.g. Italian and French varieties) but there are also languages that look like pro drop but that do not have arguments outside the verbal complex and hence have no null arguments.

Abbreviations

A	Agent role
APPL	Applicative
ASP	Aspect
C	complementizer
CL	Classifier, which is a Voice marker
FOC	Focus marker
FUT	Future marker
IMPF	Imperfect
NOM	Nominalizer
P	Patient role
PAL	Pronominal Argument Language
PF	Perfect
PST	Past
Q	Qualifier
T	Tense
1P	first plural etc.
3MS	third person masculine singular, etc
1S	first singular
2P etc	second plural
3O	third person object
1Su	first person subject

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Elly van Gelderen is a syntactician interested in language change. Her current work shows how regular syntactic change (grammaticalization and the linguistic cycle) can be accounted for by (Minimalist) Economy Principles that help a child acquire a language and analyze it in a different way from previous generations. Her 2011 book, *The Linguistic Cycle: Language Change and the Language Faculty* (Oxford University Press) shows how cyclical change is relevant for theories on the faculty of language. Her *Clause Structure* (Cambridge University Press, 2013) examines a number of current debates in theoretical syntax. Related interests are the evolution of language, biolinguistics, prescriptivism, authorship debates, and code switching.

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