

Negative cycles

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Abstract

Crosslinguistically, negatives change in a cyclical fashion. A particular negative weakens and is renewed by another element. In this article, I provide examples of two distinct negative cycles, one using an indefinite phrase and the other a verbal head as renewal. The examples are taken from Indo-European, Uralic, Athabaskan-Eyak-Tlingit, Haida, Afro-Asiatic, and Chinese. I also provide an account of both cycles using phrase structures and economy principles as in generative grammar.

Keywords: *economy, grammaticalization, indefinite, linguistic cycle, negation, negative concord, negative verbs, syntax*

1. Introduction

Crosslinguistically, the negative cycle may be one of the most pervasive of cyclical changes,¹ even though Dahl (1979: 88) suggests that the universality of the negative cycle cannot be verified due to a “lack of information about the earlier stages of non-European languages”. In this article, I give examples of

1. An anonymous referee objects to my tacit assumption of a universality of negative cycles. S/he points to the article and map on negation in the *World atlas of language structures* (Haspelmath et al. (eds.) 2006). Of the over 1000 languages surveyed, only 66 are shown to have (what is there called) double negation. The use of multiple negative forms to express negation should be more common (e.g., Standard French *ne pas*) if languages are continually undergoing negative cycles. Looking at the map, however, I miss several negative agreement languages. The article justifies not including Standard French and Mupun since the second negative is optional, but I very much miss Navajo, Haida, Apache, Tanacross, and various Berber languages. These are all marked on the map as having a single negative element though I will show them to be different. The map and article were not really focusing on negative agreement and I will therefore not count the paucity of multiple forms on the map as evidence against the universality of the cycle.

(partial) negative cycles from Indo-European (Old Norse and Modern Scandinavian), Uralic, Athabaskan-Eyak-Tlingit, Haida, Afro-Asiatic, and Chinese. I provide examples to show that crosslinguistically there are two grammaticalization paths, one involving an indefinite phrase and the other a verbal head. Old Norse has good instances of the first cycle and Chinese of the second. Other languages mix the two, e.g., Sami and Finnish, Uralic, Afro-Asiatic, and Athabaskan.

Structurally, sentential negation involves full negative phrases or negative verbs or both. The full phrase can be accommodated in a Neg(ative)P(hrase) as the specifier and the verb as head. All elements in the NegP work together to form a single negative meaning. This is known as negative concord; the term “double negative” will be used only if the two negatives are independent and hence cancel each other out (as Horn 2001: 296 explains). I will show that a reanalysis of the specifier of the NegP as a head is responsible for one stage of one cycle; a reanalysis of one head as a negative head for a stage in another cycle. It will also become clear that negation is not placed in a single structural position in all languages. In some languages, it is in initial position, i.e., structurally quite high; in others it is placed more in the middle, i.e., structurally low; and in some languages more than one position is involved. The cyclical changes remain similar.

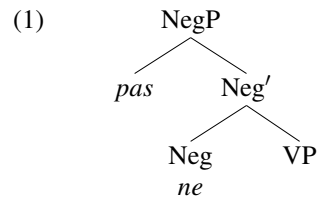
In Section 2, I provide a brief discussion of the two negative cycles and a possible explanation in terms of Economy Principles couched in the Minimalist Program. This is the most technical section. Sections 3 to 8 are more descriptive and the changes in the negative in a different language or family are discussed in relatively theory-neutral terms. In many cases, all we have evidence for are parts of cycles. When there is a lack of historical depth, I examine variation among different members of a language family.

2. Two cycles

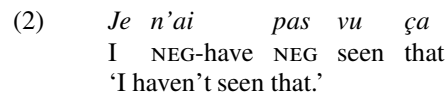
Van der Auwera (2008) credits Gardiner (1904) as being the first to identify cyclical changes in the negative in different stages of Egyptian, though Jespersen (1917) is most often given credit for it (see also van der Auwera & de Vogelaer 2008). Jespersen, as is well-known, shows how negation arises out of indefinite objects or adverbs. Using indefinites is certainly frequent in the Indo-European languages. Givón (1978: 89) adds a second source: “negative markers [...] most often arise, diachronically, from erstwhile negative main verbs, commonly ‘refuse’, ‘deny’, ‘reject’, ‘avoid’, ‘fail’, or ‘lack’”. Croft (1991) discusses a related cyclical development, namely how the negative and existential verb are merged together and used as a negative.

2.1. Indefinites

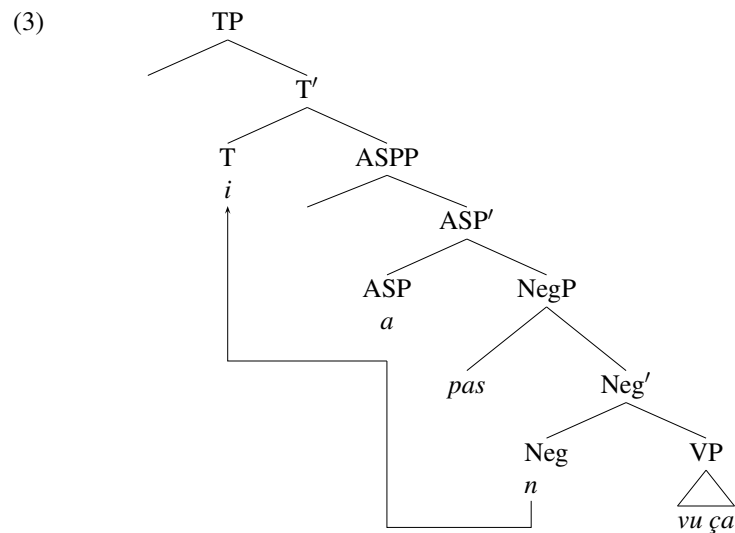
Pollock (1989), Ouhalla (1990), and others working in a generative framework have suggested the phrase structure for a typical negative as given in (1), e.g., for formal, standard French.



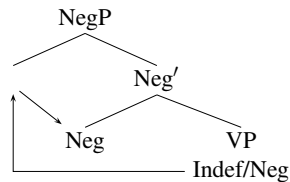
The *ne* is in the head position and attaches to the verb as the latter moves through on its way to a higher position above the NegP and the phrasal *pas* remains in the specifier position, as in (2).



As argued in Ouhalla 1990 and in more depth in Cinque 1999, the position of the NegP can be relatively high (just below the CP) or relatively low (just above the VP). A possible structure for Standard French (2) is given in (3) with the NegP relatively low.



Special polarity positions can also be argued for, as I will show below.

Figure 1. *The negative cycle*

Studying language diversity and change, one can see that the element in the head position, *ne* in (1), typically disappears, mostly via an affix stage (see (2)). The negative in the specifier position is then reanalyzed as a head which in its turn disappears. Before that happens, a fully lexical element gets utilized to express negation. Jespersen's Cycle can thus be accounted for by means of a reanalysis of the specifier as head, the subsequent renewal of the specifier position, and the disappearance of the head (to be explained below), as represented in Figure 1.

Negation in the history of English is perhaps the best-known example of the negative cycle. The original *ne* was often cliticized to the verb and was later reinforced by indefinite phrases such as *na wiht* 'no creature' or *na thing* 'no thing' that subsequently became heads such as *not* and were then cliticized again, as in *can't* and *don't*. A reinforcement of the negative by adverbs such as *never* is said to have been stopped for prescriptive reasons. However, early reinforcements occur, as in (4a), and many dialects use *never* or a negative nominal (such as *no clue*), as in (4b) and (4c) respectively:

- (4)
- a. *that the sonne dwellith therfore nevere the more ne lasse in oon signe than in another* (Chaucer, *Astrolabe* 665 C1)
 - b. *No, I never see him these days* (*British National Corpus*, A9H 350)
 - c. *You could have no clue of their passion for snooker* (*British National Corpus*, ECU 10)

Never could have weakened too, but there is a lot of discussion of the "vulgar" use of *ne'er* in the nineteenth century (see Trudgill & Cheshire 1998: 129). Horn (2001: 453–462) reviews some of the theories looking into why certain renewals took place, e.g., due to internal reasons such as word order changes. I won't go into those here. The reason the negative cycle is so pervasive is that there are always ready-to-be-recycled negative objects and adverbials and minimizers, such as *pas* 'step' in French and *a bit* in English.

2.2. Verbs

The above phrasal strategy is only one. Croft (1991) and Payne (1985) provide instances of languages where negative heads develop from verbal heads. Croft formulates a negative-existential cycle, where in one stage a negative particle marks both existential and non-existential predicates. Subsequently, a special negative-existential arises. This form is then used as the general negative, to be reinforced by another existential in existential sentences. Another verbal strategy is to use negative verbs such as 'to refuse', as in Beja, an Afro-Asiatic language, discussed in Section 6. Typical for the verbal strategy is that the negatives may be marked for aspect and mood, e.g., in the Athabaskan and Semitic families and in Chinese. That is a result of the grammaticalization path, first as a full verb, then as aspectual or mood marker retaining the negative feature. There may be structural reasons for the choice of the one over the other. For instance, polysynthetic languages such as Navajo lack quantifier arguments (see Baker 1995) and therefore may renew their negatives through verbs.

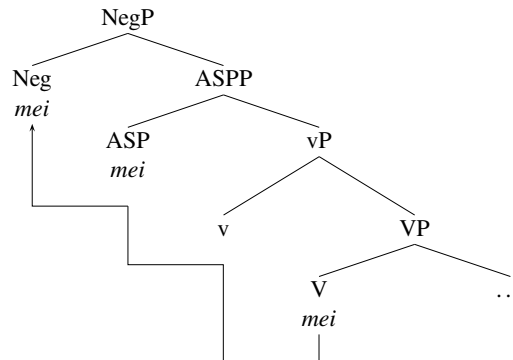
In Chinese, a language I come back to in Section 7, one of the negatives is *mei*, as in (5a). *Mei* is derived from a verb meaning 'to not exist, to die', as shown in (5b) from Old Chinese (*mo*) and (5c) from Early Mandarin (*mei*).

- (5) a. *wo mei you shu*
I not exist book
'I don't have a book.'
- b. *Yao Shun ji mo ...*
Yao Shun since died
'Since Yao and Shun died, ...' (Mengzi, Tengwengong B, from Lin 2002: 5)
- c. *yu de wang ren mei kunan, ...*
wish PRT died person not.be suffering
'If you wish that the deceased one has no suffering, ...' (*Dunhuang Bianwen*, from Lin 2002: 5–6).

According to Lin 2002, the transition from verb to negative proceeds via a perfective aspect stage, as in (6) from Early Mandarin. Since *mei* only appears in perfective contexts, it is assumed that it helps to express aspect. This change is shown in Figure 2 and is due to a reanalysis of *mei* in a higher position. The intermediate aspect stage is not crucial, however:

- (6) *dayi ye mei you chuan, ...*
coat even not PF wear
'He didn't even put on his coat ...' (Rulin Waishi, from Lin 2002: 8)

Thus, there are two strategies for changes in negatives: one is when an (indefinite) phrase is reanalyzed as a phrasal negative and then as a head; the other

Figure 2. *The negative head cycle*

when a negative head is replaced by a lower head. I will now suggest some reasons for these two negative cycles.

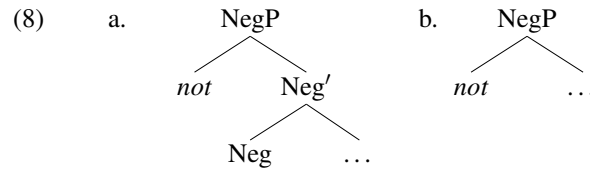
2.3. *Economy principles*

Chomsky (2007: 3) identifies three factors that are crucial in the development of language in the individual: “(1) genetic endowment, which sets limits on the attainable languages, thereby making language acquisition possible; (2) external data, converted to the experience that selects one or another language within a narrow range; (3) principles not specific to [the Faculty of Language]. Some of the third factor principles have the flavor of the constraints that enter into all facets of growth and evolution [...] Among these are principles of efficient computation”. In what follows I try to spell out the latter more.

Many have tried to identify “third factor principles”, e.g., Rizzi (2004) for locality. I see third factor principles as general, cognitive, innate constraints on how we perceive and interact with the world. Van Gelderen (2004) proposes two principles of efficient computation that account for language acquisition and change, the Head Preference and Late Merge Principles. The former can be formulated as (7), and this is probably a more general cognitive principle, a third factor principle, “analyze something as as small as possible”:

- (7) Head Preference Principle (HPP):
Be a head, rather than a phrase.

This means that an (English) learner and speaker will build structures such as (8a) rather than (8b) if given evidence that is in principle compatible with either:



The evidence for something being a specifier/phrase is that it can be expanded, e.g., ‘completely not’ is a possible negative in languages such as Dutch or German and hence a full phrase like (8a). A head is not expandable in such a way and can be adjoined to by a head, e.g., *ne* in Standard French, as in (1).

The Head Preference Principle is relevant to a number of historical changes, as listed in Table 1: whenever possible, a word triggers a head status rather than a phrase one.

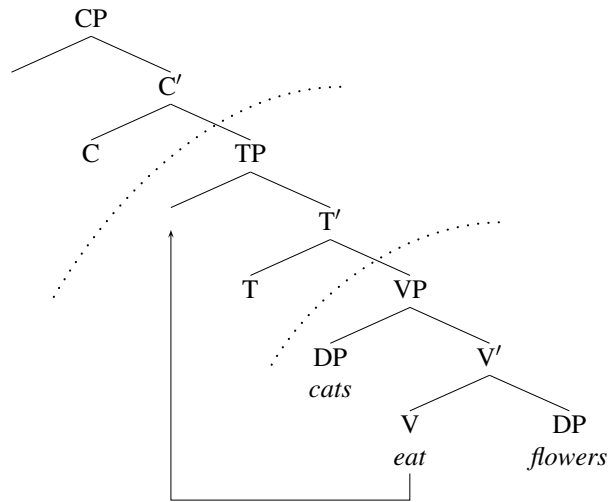
Table 1. *Examples of the Head Preference Principle*

Spec > Head	Spec > Head
Demonstrative pronoun <i>that</i> > complementizer	Demonstrative pronoun > article
Negative adverb phrase > negation marker	Adverb phrase > aspect marker
Adverb phrase > complementizer	Full pronoun > agreement

Thus, pronouns change from emphatic full phrases to clitic pronouns to agreement markers, and negatives from full negative arguments to negative adverb phrases to heads. This change is, however, slow since a child learning the language will continue to have input of a pronoun as both a phrase and a head. For instance, coordinated pronouns are phrases and so are emphatic pronouns. If they remain in the input, phrases will continue to be triggered in the child’s grammar. It is also possible for prescriptive tendencies in the particular society to reinforce the older forms, thereby slowing down the change.

Within Early Minimalism, there is a second economy principle (see, e.g., Chomsky 1995: 348) and for this one we need to consider the derivation of a sentence. To construct a sentence, we need to select lexical items from the lexicon and to put them together. This is done in the form of a tree structure, starting at the bottom of the tree. The verb and the nominals are first merged in the VP and this layer represents the argument structure of the sentence. Above the VP, there are grammatical layers (e.g., the Tense Phrase) and layers showing the type of sentence (e.g., the Complementizer Phrase) to accommodate topic/focus and type of clause. Some items from the VP are moved into the higher layers for reasons of Case assignment or to indicate the topic or focus. The three main layers are shown in (9).

(9)

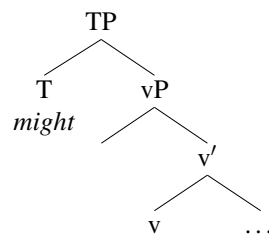


In Early Minimalism, Merge of the elements in the VP “comes ‘free’ in that it is required in some form for any recursive system” (Chomsky 2004: 108) and is “inescapable” (Chomsky 1995: 316, 378), but movement of the elements from VP to TP through Move requires additional assumptions. This means that it is less economical to merge early (in the VP) and then move (to the TP and CP) than to wait as long as possible before merging (either in the TP or CP layer). This is expressed in (10):

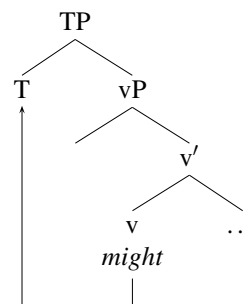
- (10) Late Merge Principle (LMP):
Merge as late as possible.

The LMP works most clearly in the case of heads. Thus, under Late Merge, the preferred structure would be (11a) with the auxiliary base generated in T, rather than (11b) with the auxiliary base generated in a lower position and moving to T.

(11) a.



b.



The LMP accounts for the change from lexical to functional head or from functional to higher functional head so frequently described in the grammaticalization literature (e.g., Heine & Kuteva 2002). Where negatives are concerned, the LMP would reanalyze a verb that is functioning both as a verb in VP (responsible for argument structure) and as a means to express negation above VP as one just expressing negation. This reanalysis would involve merging the element directly outside VP, in NegP.

The question can be asked which lexical items are “prone” to a reanalysis under the LMP? Phrases that can be interpreted as either arguments or adverbials can wait to merge outside the VP. If, for instance, a negative (Theme) argument is used with a transitive verb, it could be reanalyzed as a grammatical marker of negation in an intransitive sentence. The same is true for a verb whose semantic features include future, since it can be (re)analyzed as a higher modal. Likewise, a preposition (e.g., *to*, *for*, and *of* in Modern English) can be analyzed as having fewer semantic features and the Preposition Phrase of which it is the head as therefore less relevant to the argument structure. As a result, the PP will tend to merge higher (in TP or CP) rather than merge early (in VP) and then move. In (12a), we see how the PP (*æfter his fæder*) is part of the VP, but in the same Late Old English text, it also occurs in preposed position (to fulfill two functions) (*æfter þon*) and that leads the way to a reanalysis as a conjunction (*after*), as in the Middle English (12c), taken from the *Oxford English dictionary*:

- (12) a. *He hæfde twegene sunu Ermenred & Ercenberht.
& þer Ercenberht rixode æfter his fæder*
‘He had two sons Ermenred and Ercenberht and Ercenberht ruled after/following his father.’ (*Chronicle A*, entry for the year 640)
- b. *Her forðferde Wulfstan diacon on Cilda mæssedæge 7 æfter þon
forðferde Gyric mæsse preost.*
‘In this year died Wulfstan deacon . . . and after that died Gyric the mass-priest.’ (*Chronicle A*, entry for the year 963)
- c. *After thei han slayn hem thei spryngen the blood upon the ydole*
‘After they have killed them, they sprinkle the blood upon the idol.’ (1366 Mandeville 174)

How does the LMP work in practice? Assuming a lexicalist hypothesis in which a lexical entry “contains three collections of features: phonological [...], semantic [...], and formal” (Chomsky 1995: 230), a Lexical Item such as the light verb *go* might have semantic features of [motion, future, location] that are specified in the lexicon or in the interaction with the encyclopedic knowledge (i.e., knowledge of the world). If *go* occurs in the numeration with another verb, e.g., *bring*, just one of the semantic features of *go* can be activated, in this

Table 2. *Examples of the Late Merge Principle*

<i>On</i>	from P to ASP	VP Adverbials > TP/CP Adverbials
<i>Like</i>	from P > C (<i>like I said</i>)	Negative objects > negative markers
Modals	v > ASP > T	Negative verbs > auxiliaries
<i>To</i>	P > ASP > M > C	PP > C (<i>for something to happen</i>)

case [future] rather than all. In that case, a biclausal structure can be avoided as well. Other examples are listed in Table 2.

It is also possible to reformulate Late Merge in terms of feature change and loss. As we will see, this will also account for the stage where a head disappears, a stage neither the LMP nor the HPP includes. From Chomsky 1995 on, grammatical features are divided in interpretable (relevant at Logical Form) and uninterpretable (only relevant to move elements to certain positions). Interpretable features are acquired before uninterpretable ones, as argued in Radford 2000, but can later be reinterpreted as uninterpretable ones, triggering the functional/grammatical system. The same reanalysis happens in language change. For instance, changes in negatives can be accounted for by arguing that their (initially) semantic features are reanalyzed as interpretable ones connected to the specifier of the NegP and then as uninterpretable ones, as in (13), connected to the head. Changes connected to the negative cycle occur because the interpretable negative features of an indefinite negative are reanalyzed as uninterpretable. The uninterpretable features function as probes that need to connect with something that is negative through semantic or interpretable features:²

- (13) Feature Economy
- | | | | | |
|----|------------------|---------------------|----------------|-------|
| a. | Adjunct/Argument | Specifier (of NegP) | Head (of NegP) | affix |
| | semantic | > [iF] | > [uF] | > - |
| b. | Head | > (higher) Head | > 0 | |
| | [iF] / [uF] | [uF] | | |

The changes in (13) mirror changes in acquisition and language change and also account for the need for renewal, which the LMP and the HPP do not do on their own. After a semantic feature is reanalyzed as interpretable and then as uninterpretable, the latter is not enough and will trigger a renewal. Roberts 2007, Ouali 2006, and Zeijlstra 2004 have somewhat similar accounts of certain negatives as having uninterpretable features looking for other negatives to check with.

2. This view of negation is also compatible with recent probe-based accounts of negative concord, as in Roberts 2007: 69 and to some extent in Zeijlstra 2004, where the negative element to the left bears uninterpretable features checking them with the element on the right that bears interpretable features.

An example of a negative cycle comes from the history of English of course. An Early Old English *no*, as in (14a), has interpretable features, a later Old English *n(e)* (14b, c) has uninterpretable ones, and these need to be checked by something with semantic negative features, *nan heafodman* in (14b), or by the interpretable features of *noht* in (14c):

- (14) a. *No hie fæder cunnon*
 NEG they father know
 ‘They don’t know their father.’ (*Beowulf* 1355, Klaeber (ed.) 1941)
- b. *Æt nyxtan næs nan heafodman þæt fyrde*
 At last NEG.was no headman who force
gaderian wolde
 gather wanted
 ‘In the end there was no chief man who would gather a force.’ (*Peterborough Chronicle*, a1010, Thorpe (ed.) 1861: 265)
- c. *Næron 3e noht æmettize, ðeah ge wel ne*
 NEG.were you not unoccupied though you well not
dyden
 did
 ‘You were not unoccupied, though you did not do well.’ (*Pastoral Care*, Cotton, Sweet (ed.) 1871: 206, from the *Oxford English dictionary*)

Once *ne* disappears and *not* weakens to *-n’t*, one expects other elements with semantic negative features to appear, and this happens, as discussed in the early part of this section.

Having briefly discussed two cycles of negation and some possible explanations, I provide some more concrete evidence for the first type of cycle in the next section.

3. From Early Old Norse to Modern Scandinavian

In Early Germanic, the negative element *ne/ni* precedes the verb (as in other Indo-European languages). In this section, I first give a few examples of Gothic negation and then show that Old Norse *ne* is phonologically very weak and that it is strengthened by *a(t)*. Later both are replaced by *eigi* (originally from ‘no one’). In its turn, *eigi* becomes *ikke* in Norwegian and changes from phrase to head in the modern period, as predicated by the Head Preference Principle and is renewed by another indefinite *aldri* ‘never’.

In Gothic, a long extinct East Germanic language, there is both an independent negative adverb (*ni*), shown in (15a), as well as a marker that occurs before the verb and is contracted, as in (15b).

- (15) a. *ni nunu ogeiþ izwis ins; ni waiht auk ist*
 NEG therefore fear you them NEG thing indeed is
gehulip
 covered
 ‘Fear them not therefore because nothing is hidden (that shall not be revealed).’ (Matthew 10.26, van Hamel 1931: 214)
- b. *n-ist siponeis ofær laisarja*
 NEG-is disciple above teacher
 ‘The disciple is not above his master.’ (Matthew 10.24, van Hamel 1931: 214)

In Old Norse, North Germanic and later than Gothic, an independent *ne* survives, e.g., in the *Poetic Edda*, composed between the tenth and thirteenth centuries and preserved in a thirteenth century manuscript.³ It appears either alone immediately preceding the finite verb, as in (16a), or with a verbal suffix *-a(t)*, as in (16b). In the main clause the negated verb often appears in sentence-initial position.

- (16) a. *er hjör né rýðr*
 that sword not redden
 ‘that do not redden a sword’ (*Fáfnismál* 24)
- b. *bíta þreftönnum ef Gunnarr né kemr-at*
 bite teeth if Gunnarr not return-not
 ‘will bite with their teeth if Gunnarr doesn’t return’ (*Atlakviða*, 11)

The position and status of *ne* and *-at* are unclear at this point. They both look like heads, prompting Eyþórsson (2002) to say that *ne* is a verbal prefix and *-a(t)* is in the head position.

The reinforcement by *-a(t)* probably derives from the indefinite **ain* ‘one’ and its neuter indefinite **ainata* and this negative can also occur without *ne*, as (17) shows, though I have not been able to find this form on its own.

- (17) *Kemr-a nu Gunnarr kalli-g-a ek Högna se-kk-a ek*
 come-not now Gunnarr call-I-not I Hognna see-I-not I
siðan svasa bræðr
 again dear brothers
 ‘Now Gunnarr will not come and I will never call Hognna and I will never see my dear brothers again.’ (*Guðrunarkviða* III 8)

3. Unless otherwise noted all my references to the *Poetic Edda* are taken from <http://www.heimskringla.no/original/edda/gudrunarkvidaintridja.php>.

Since both *ne* and *at* markings are weak, a new strengthening comes in the form of indefinites with an enclitic *-gi* attached, as in *einugi* in (18a). *Eigi* does not, however, occur together in the same clause with any other negatives, as far as I have been able to determine, at least in the *Poetic Edda*. A few negatives with *eigi* ‘not’ are given in (18b) and (19), but there are also instances of *aldrigi* ‘never’ and *eitgi/ekki* ‘nothing’:

- (18) a. *er-at maðr svá góðr at galli né fylgi né*
 is-NEG man so good that blemishes not belong nor
svá illr at einugi dugi
 so bad that nothing is.fit.for
 ‘Nobody is so good that he doesn’t have faults nor so bad that he is not good for something.’ (*Hávamál*, 133)
- b. *Þat mæli ek eigi*
 that say.1SG I not
 ‘I am not saying that.’ (*Njalssaga*, 219, Faarlund 2004: 225)

Faarlund (2004: 225) states that the *-gi* suffix is no longer productive in Old Norse but rather that it is part of negative words. That means that *eigi* and other negatives in Old Norse are phrasal adverbs, as is obvious because they trigger V-second, as in (19).

- (19) *eigi em ek haftr*
 not am I bound
 ‘I am not bound.’ (*Fáfnismál* 8)

Eigi is first clearly in the specifier position, as in (19), but it may have also been in either specifier or head position, because of sentences such as (20), also from Old Norse, where the negative immediately precedes the verb:

- (20) *Heyr-ðu nú, Loki, hvat ek nú mæli er eigi veit*
 hear-you now Loki what I now say what not knows
jarðar hvergi né upphimins: áss er stolinn hamri
 earth nobody and.not heaven Ass is stolen hammer
 ‘Hear now Loki what I am telling you, what nobody on earth or in heaven knows: the hammer of the God Ass is stolen.’ (*Lay of Thrym* 2)

Old Norse *eigi* corresponds to Modern Norwegian *ikke* ‘not’ and between Old Norse and Modern Norwegian the negative is reanalyzed from specifier to head. For instance, Bondi Johannessen (2000) argues that Modern Norwegian *ikke* is a head. If this is true, an expected further change would be for the head to weaken phonologically and this is indeed the case as is fairly obvious from

sentences such as in (21) containing reduced forms such as *æ'kke*, *ha'kke*, and *måke*, very common according to native speakers of Norwegian.

- (21) a. *Men detta æ'kke et forslag som vi har interesse*
 but that is.not a proposal that we have interest
av
 in
 'But that's not a proposal we are interested in.' (Solstad 1977: 70)
- b. *Trøtt ... jeg? Ha'kke tid*
 tired ... me have.not time
 'Me, tired? I don't have the time' (<http://www.vg.no/pub/vgart.hbs?artid=9131849>; 14 June 2006)
- c. *Du måke komme her og komme her*
 you must.not come here and come here
 (<http://www.lyricsdownload.com/oystein-sunde-du-ma-kke-komme-her-og-komme-her-lyrics.html>, 14 June 2006)

Christensen (1985) in fact argues that *ikke* is a clitic. This is similar to the development in English with negative auxiliaries such as *don't*, with *n't* argued by Zwicky & Pullum (1983) to be a suffix.⁴ As mentioned, the reason that English does not reinforce the weakened *-n't* through another negative specifier may be a prescriptive one. Norwegian varieties may be freer from prescriptive pressures.

Many linguists have connected having a negative head to the possibility of a system of negative concord, e.g., Wood (1997) and Rowlett (1998). The intuition behind this claim is that once the negation is in the head position, it is weakened to the point where it no longer "interferes" with a second or third negative. If *ikke* is a head in varieties of Modern Norwegian, one would expect negative concord. This is indeed what may be occurring in certain varieties of Norwegian. Thus, Sollid (2002) argues that in the Northern Norwegian dialect of Sappen negative concord is starting to occur, as in (22), where *aldri* 'never' is optional.

4. The negative in Norwegian is probably not an affix since it is reported that it can be attached to a pronoun too, as in (i):

(i) *Har du ikke gjort det?* [harükə yurt dɛ]
 have you not done that
 'Haven't you done that?'

- (22) *Eg har ikke aldri smakt sånne brød*
 I have not never tasted such bread
 'I haven't ever tasted that kind of bread.' (Sollid 2002)

She argues this is under the influence of Finnish, which may well be the case. This would, however, not be possible if the grammar wasn't ready for this, i.e., if *ikke* weren't already a head, and negative concord a possibility. Jespersen (1917: 66) mentions that "cumulative negation" of *aldrig* and a negation is rare in Danish, but later he writes that reinforcement is "very frequent in Danish dialects" (1917: 73). Searching Norwegian websites brings up quite a number, as in (23a, b):

- (23) a. *Men det var nok ikke mye oppvartning de fikk, for jeg merket ikke aldri at noen hadde kjærestebesøk den tiden jeg jobbet der.*
 'But that wasn't much attention that they got, because I never noticed (= not never) that anyone had visits from loved ones the time I worked there.'
 (http://www.nkb.no/Nyheter/2004/Brunborg_1_04.htm)
- b. *USA bør ikke ALDRIG være et forbilde når det kommer til integrering.*
 'The US should never (= not never) be an example when it comes to integration.'
 (<http://www.superserver.no/invboard/index.php>; 21 June 2005)

Swedish shows similar tendencies (*inte aldrig* 'never; lit., not never'), as shown in (24a, b), from a Google search (19 May 2006). Most speakers of Swedish do not accept these, however. For them, preposing *inte*, as in (24c), is also possible showing it is still a full phrase:

- (24) a. *Det "fria" tänkandet har nog inte aldrig existerat*
 'Free thinking has probably never (= not never) existed.'
 (<http://www.filosoforum.com/phpBB2/viewtopic.php?t=872&start=0\&>)
- b. *En annan viktig tanke är att din utrustning och sättet du gör saker på inte aldrig ändras eller behöver läras om oavsett hur långt du går eller hur . . .*
 'Another important thought is that your outfit and the way [of diving] you are sure about never (= not never) is changed or needs to be learned . . . (from <http://www.dykarna.nu/storys/read.asp?storyId=19>)
- c. *Inte kan han prata med mamma heller.*
 not can he talk with mother either
 (<http://www.welaforlag.se/samaelutdrag.htm>)

Giannakidou (2006) says “[a]lthough there is a clear divide between languages that employ Negative Concord as a standard structure, and languages that do not, we should note that even languages that don’t have Negative Concord may allow it occasionally”. She continues that the latter “cases are admittedly quite marginal, and have a clear emphatic intonation”. This may include the Norwegian and Swedish in (23a) to (24b) or it might be the first step in a renewal. Colloquial (Southern) Dutch has similar constructions even though the regular negative *niet* is not yet a head:

- (25) a. *Ik zie hier nooit niemand / geen mens*
 I see here never nobody / no person
 ‘I never see anyone here.’
 b. *Ik zie hier niemand (*geen mens) niet*
 I see here nobody (*no person) not
 ‘I don’t see anyone here.’

The changes for *ne*, *eigi*, and *ikke* (though not *-a(t)*) can be summarized in Figure 3, where (a) and (b) represent Old Norse, (c) is Modern Norwegian, and (d) represents a variety such as Sappen Norwegian with the verb moving through the Negative head and negative concord being possible.

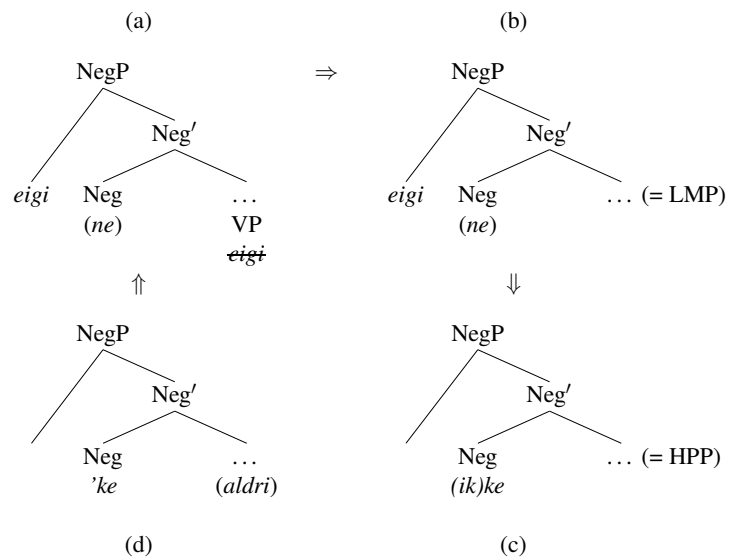


Figure 3. The negative cycle in Scandinavian (where the crossed through element indicates the pre-movement position)

Abraham (2003) and Jäger (2008) have used similar principles about a change from phrase to head (the HPP) to account for the negative cycle in German, and there are many other Indo-European languages where these principles (the LMP and HPP) could be applied, e.g., French (Simpson & Wu 2002) and Italian dialects (Parry 1998). For the Celtic languages, the data in Poppe 1995, Willis 1999, Willis (to appear), and Roberts 2005: 159 show that there may be a cycle from single pre-verbal marker *ny* in Middle Welsh, reinforced by (*d*)*dim* ‘at all/anything’ in contemporary Welsh, and then losing the original negative in spoken Welsh. Breton represents an older stage and still has a discontinuous negative *ne ... ket*.

Cowgill (1960) shows that the (Classical and Modern) Greek negative *ou* derives from **ne oiu k^wid* [not life anything] ‘not ever/not on your life’. It first loses *ne* and becomes *oiukid*, and then further weakens to *ouki* and *ou(k)* (see also Kiparsky & Condoravdi 2006). In the remainder of this article I examine other cycles or partial cycles in non-Indo-European languages, showing that the grammaticalization cycle is either as in Figures 1 or 2.

4. Uralic

Uralic is a family of approximately forty languages, among which the Finnic, Sami, Samoyed languages, Hungarian, and a few others. Uralic negation has received quite some attention. For instance, Tauli (1966: 172–178), Payne (1985: 215–221), Honti (1997), and Anderson (2006: 91–95) provide excellent overviews of negation in Uralic and some changes occurring here. Apart from Honti, none of these works focus on internal renewal, however. The negation is originally derived from verbs but indefinite adverbs may be a renewal option currently.

Most Uralic languages⁵ have a negative auxiliary which indicates negation and may mark person, number, tense (past and present), and very infrequently mood. The origin of the negative auxiliary ‘‘may well be related to the verb ‘is’ (*i-*)’’ (Simoncsics 1998: 594) and more precisely to a negative copula (Honti 1997: 173). The main verb is also marked as negative (connegative) but this is an original nominal form (see Honti 1997: 249). In Section 4.1, I will examine Sami and Finnish and focus on the cyclical aspect of the changes. In Section 4.2, data from Kamassian are given which are relevant in the light of Croft’s cycle discussed in Section 2.2, and in Section 4.3 some tendencies are summarized.

5. Selkup and Hungarian are exceptions where the former lost its inflected negative auxiliary due to Russian influence and the latter shows a ‘‘Neuerung’’ (Honti 1997: 81) through a particle *nem*.

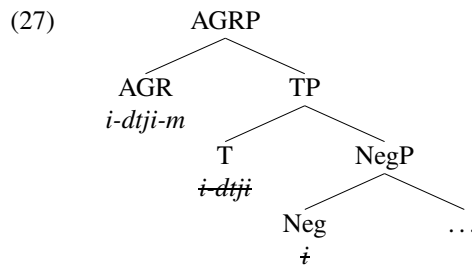
4.1. *Sami and Finnish*

The two main points in this section will be that (i) the inflection on the negative shows it is a head moving from a relatively low NegP, and (ii) the negative is reinforced through an adverb.

Sami, a collection of languages spoken in Northern Scandinavia, has a negative construction where the negative word is inflected for person, number, and tense, as shown in (26) from Southern Sami.

- (26) a. *Im* (manne) *daejrieh*
 NEG.PRES.1SG (I) know
 ‘I don’t know.’ (Bergsland 1994: 44)
- b. *Idtjim* (manne) *daejrieh*
 NEG.PST.1SG (I) know
 ‘I didn’t know.’ (Bergsland 1994: 44)

Using a structure with separate positions for agreement and tense, negation can be argued to be a head *-i*, moving to T and AGR, as in (27) (and to C since imperative and declarative have different forms).



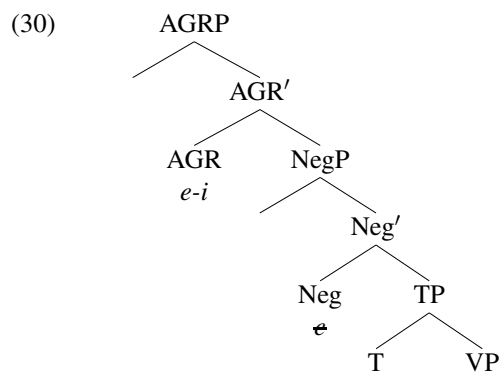
Very synthetic forms are prone to reanalysis, i.e., the negative in (27) is related to so many positions and one might therefore expect a reanalysis of the NegP in a higher position and a reinforcement of another negative element, and this is definitely true in Northern Sami, as (28) shows, and what we will also see happening below in related Finnish. I gloss this reinforcing element (*goassege*) as ‘never’ and consider it to work together with the negative auxiliary (negative concord) since the end result is a negative meaning:

- (28) *In* *leat* *goassege* *dahkan* *dan*
 NEG.1SG be never do.PART it.ACC
 ‘I have never done that.’ (Trond Trosterud, personal communication)

In Finnish, Sami’s linguistic relative, the negative is also inflected but only for subject agreement not for tense, as in (29). This shows the NegP is above TP since, if it moved through T, it would have tense inflection. Instead, the main verb agrees for tense:

- (29) *Liisa ei ostanut kirjaa*
 Liisa.NOM NEG.3SG buy.PST book.PRTV
 ‘Liisa did not buy a/the book.’

As in Sami, the negative is a head moving to a higher position, just AGR in this case to check the inflection. The tree differs from the one in Sami in the order of Neg and T:



The AGR in this tree probably needs to be split into number and person features. For instance, Savijärvi (1977: 286) says that in some dialects there is only person agreement, not number, on the negative. This suggests that the person features are higher than NegP in those varieties but not the number ones.

Honti (1997: 88) remarks that almost all negative verbs in Uralic show subject agreement, that many have tense, and that a few have mood, aspect, or definite object agreement. If the NegP is relatively high, only subject agreement will be marked; if it is lower, other inflection is too. A reanalysis of a category as a higher one is one of the cyclical changes emphasized in this article.

The negative can further move to C in questions, as (31) from Finnish shows, and as Holmberg et al.’s (1993) data show below in declaratives, probably to indicate the mood:

- (31) *E-i-kö Pekka ole kaupungi-ssa*
 NEG-3SG-Q Pekka be.PRES TOWN-INE
 ‘Isn’t Pekka in town?’ (Brattico & Huhmarniemi 2006: 12)

Holmberg et al. (1993) argue that the Finnish negative moves higher in declaratives as well. As evidence that the negative moves from a position below CP to a position above it, they provide (32) which only has the meaning indicated in its gloss. This indicates that the negative originates below *varmaan* since otherwise the negative could have scope over the CP adverb *varmaan* ‘surely’:

- (32) *Jussi e-i varmaan ole ostanut sitä kirjaa*
 Jussi NEG-3SG surely has bought that book
 ‘It is certain that Jussi didn’t buy that book.’ (Holmberg et al. 1993: 201–202)

This is different with TP or aspectual adverbs such as *aina* ‘always’, as in (33), showing that the Negative is merged above the TP:

- (33) *Jussi e-i aina ole pitänyt sinusta*
 Jussi NEG-3SG always has liked you
 ‘Jussi hasn’t always liked you.’ (Holmberg et al. 1993: 202)

Like in Northern Sami, the negative auxiliary or particle is reinforced with a negative adverb, as (34) shows, again resulting in one negative sense, i.e., in negative concord:

- (34) *En ole koskaan maistanut sellaisia leipiä*
 NEG have never tasted such bread
 ‘I have never tasted such bread.’ (from Sollid 2002)

In Finnish varieties, the auxiliary can be deleted if this adverbial is present (see Honti 1997: 164 who quotes Savijärvi 1977). This is of course expected if one considers a typical negative cycle.

Thus, the situation in Finnish and Sami is very similar to that shown in Figure 3 for Scandinavian. The negation is originally verbal (existential or copular) but since it is related to so many positions, it is prone to reanalysis. The replacement doesn’t come from another verb but from an indefinite adverb. As we will see next, Kamassian’s renewal had a different source.

4.2. *Kamassian*

Tauli (1966) shows how some negative auxiliaries in Uralic languages are tending towards becoming uninflected particles, based on the 3rd person singular form. For instance, (North) Estonian *ei* is invariant and so is *ej* in Kamassian, a Northern Samoyedic language in Siberia whose last native speaker died in 1989. This language developed a similar invariant form though this was probably due to external Russian influence. There was also a source of renewal more in keeping with what we know about grammaticalization paths.

Kamassian had an auxiliary for general negation, as in (35a), and one to negate existence and possession, as in (35b):

- (35) a. *(man) e-m nere-?*
 I NEG-1SG fear-CONN
 ‘I will not be frightened.’ (Künnap 1999: 25)

- b. *bilä kuza man naxa-m*
 bad man I NEG-1SG
 'I am not a bad man.' (Simoncsics 1998: 594)

Croft (1991) argues that it is typical for the existential negative to be generalized. Thus, the next stage might have been one where *naxa* became the general negative. This did not occur. Instead, probably because of influence from Russian, a newer (36) developed. The negative auxiliary is in a higher position, no longer moving via the position that has the agreement-features:

- (36) *oʔb-l ej moo-lja-m*
 collect-PART NEG AUX-PRES-1SG
 'I can't collect.' (Simoncsics 1998: 594)

4.3. *Tendencies*

In Sections 4.1 and 4.2, I have shown (using data from Sami, Finnish, and Kamassian) how the two negative cycles outlined earlier are relevant in the Uralic family. In Sami and Finnish, the negative shows signs of being reanalyzed in a higher position. As this happens, emphatic negation is expressed through an additional adverb and in some varieties the auxiliary is left out. In Kamassian, a negative existential could have been used to renew the older verbal form. Because of Russian influence, the adverbial was used instead.

I end this section with a speculation on Hungarian. As mentioned in Note 5, Hungarian is unlike its Uralic relatives in not having an inflected negative auxiliary. Honti (1997: 164) speculates that the negative particle *nem* possibly derives from a **n* and **ma* 'what, thing'. This would be in accordance with Jespersen's Cycle where an indefinite is reanalyzed as negative and something we will see is happening, e.g., in Arabic in Section 6. Most of the time, *nem* immediately precedes the predicate and seems a head if we take into account its occurrence with other negatives, e.g., *senki* 'nobody' in (37):

- (37) *senki nem olvas*
 nobody NEG read.3SG
 'Nobody is reading.'

5. Negatives in Athabaskan, Eyak, Tlingit, and Haida

5.1. *Introduction*

The Athabaskan languages, as well as Tlingit and Eyak, are considered members of the Na-Dene family, but it is controversial if Haida is related to them or is an isolate. I combine all of these languages in one section since, typologically, they have similar negative systems. I will show that there is evidence

for the two cycles discussed above, one based on an auxiliary, the other on a phrasal element.

Krauss says that it is “difficult to establish what the negative forms in Proto-Athapaskan were like” (1969: 73). As we will see, this is indeed the case, since the forms are very different from each other, making it an ideal family to study the negative cycle. Most varieties have an independent word that occurs before the verb complex and one or more affixes inside the verb complex. Rice (2001: 318) also shows that the negative affix is very variable across the languages: “[t]he variable position of the negative is allowed by the scope hypothesis: negation is always expressed by a syntactic suffix that has scope over the entire verb word”.

The most variable part is the negative word or particle that precedes the verb, so this is the most recent addition to the renewal. The position of the affix inside the verb word is also variable and it disappears in some variants. The general cycle seems to be one where the negative is incorporated in the verbal complex and then renewed by an element outside the verbal complex. Unlike Old Norse, Finnish, and Sami, the languages discussed in this section are generally polysynthetic. This is relevant to the cycle since indefinite arguments are rare in polysynthetic languages. There are, however, adverbs in these languages, for instance, *tahágóó* ‘a few places’ and *t’áá atch’íídtgo* ‘a little bit’ (Young & Morgan 1987: 13) that could be used as emphatic minimizers and then be reanalyzed.

In Section 5.2, I will start with a general description of negatives in Navajo, an Athabaskan language, focusing on their structural characteristics and then, in Section 5.3, I describe the variation in some other Athabaskan languages (Ahtna, Koyukon, Upper and Lower Tanana, Chipewyan) as well as in Haida, Eyak, and Tlingit. That section also provides some speculations on the historical spread of the Athabaskan languages and the repercussions for the negative cycle.

5.2. *Navajo doo da*

In this section, I look at the structure of negation in Navajo using a NegP. Negation in Navajo consists of two parts, a specifier *doo* and a head *da*. I provide frequent trees to show where negatives, and NegP, are situated in the Navajo sentence.

In (38), the pre-verbal *doo* and post-verbal *da* are shown:

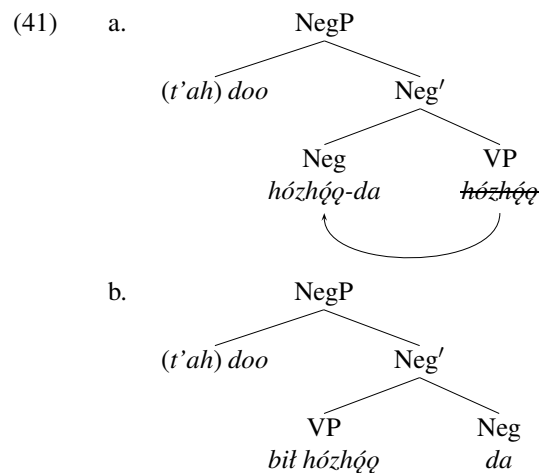
- (38) *doo dichin nishłíj da*
 NEG hungry 1SG.be NEG
 ‘I’m not hungry.’ (Young & Morgan 1987: 350)

Doo is a specifier since it forms a constituent with *t'áá* 'just' or *t'ah* 'ever', as in (39), and *da* is a head and is always immediately to the right of the verb:

- (39) *t'ah doo tónteel yiistséeh da*
 ever NEG ocean 1SG.see.PF NEG
 'I've never seen the ocean.' (Young & Morgan 1987: 710)

Assuming a head-initial structure, a possible structure for a regular negative in (40) is given in (41a), but a head-final one would be possible too, as in (41b).

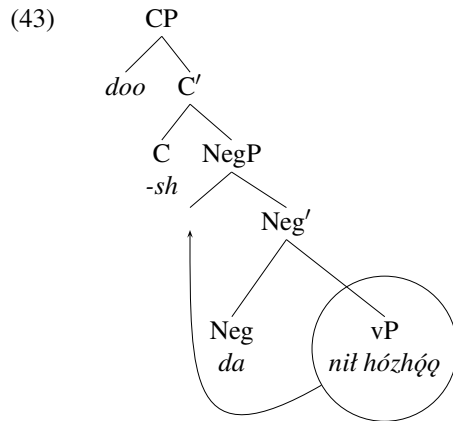
- (40) *doo (bił) hózhóq-da*
 NEG 3SG.with happy-NEG
 'He is not happy.'



There is, however, evidence that a position higher than NegP is involved in Navajo negation (as in other languages) since *doo* is often sentence-initial and interacts with the question marker as in (42). The interrogative marker is part of the CP layer:

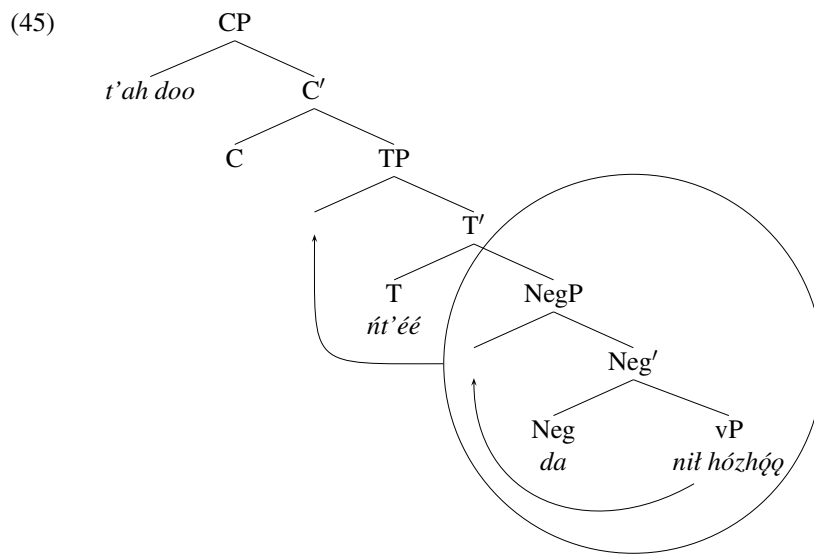
- (42) *doó-sh nił hózhóq-da*
 NEG-Q you.with happy-NEG
 'Aren't you happy.' (Wilson 1995: 84)

(42) may show that there is a polarity phrase to indicate whether the sentence is negative or not. Sentence (34) can be represented as in (43), but there are other possibilities; constituents that precede *doo* would be in the left periphery.



As to the position of other functional categories, (44) shows that the TP is higher than the NegP; and this could be represented as in (45):

- (44) *t'ah doo kwii nisháah da ní't'éé'*
 yet not here I.went not PST
 'I had never before been here.' (Young & Morgan 1987)



Looking at changes in other languages, one might expect for *da* to weaken at some point and for *doo* to become the head. Reichard (1951: 308) mentions that *da* is sometimes optional in Navajo but this seems not very accepted by native

speakers. In Apache, negatives are generally very similar, as the Western (San Carlos) Apache, as (46) shows, though here *doo* may be left out in fast speech (Willem de Reuse 2006: 59, personal communication):

- (46) *(doo) nchad da*
 NEG 2SG.cry NEG
 ‘Don’t you cry.’ (Bray 1998: 109)

Thus, Apache shows that rather than reanalyzing the specifier as a head, it can also be left out. If it is a fast-speech phenomenon, it makes sense to not use the specifier since that is less economical. In San Carlos Apache, *(ha)k’eh* ‘at all’ optionally follows *doo* (de Reuse 2006: 59), whereas in White Mountain Apache, another form of Western Apache, *-haa* ‘yet’ is attached to *doo*. This is interesting since it is the same form as the interrogative/indefinite base in Apache (see Greenfield 1995), therefore likely to be reinforcements. All this points to *doo* still being a fully phrasal specifier.

As mentioned earlier, if *doo* is a negative specifier, negative indefinites are not expected, and this turns out to be correct in Navajo. There are words such as *(t’áá) háiida* ‘anyone, noone’, as in (47a), *(t’áá) haa’ída* ‘anywhere, nowhere’, and *háadida* ‘anytime, never’ (Young & Morgan 1987: 817).⁶ Perkins & Fernald (to appear) say that, as negatives, they “can only appear within a negative frame or a limited number of other environments”, as in (47b):

- (47) a. *t’áá háiida bił hóólne’*
 just anyone 3.with tell
 ‘Don’t tell it to anyone.’ (Young & Morgan 1987, entry of T’áá háiida)
- b. *hastiin doo háágóóda oolbq̄sda*
 man NEG somewhere drive.NEG
 ‘The man isn’t driving anywhere.’ (Perkins & Fernald, Ch. 11)

6. Languages typically do not use double negation (when two negatives make a positive). In Navajo, as in (i), they are judged “confusing” by native speakers even though Reichard gives some examples:

- (i) *doo doo bił hózhq̄ da*
 NEG NEG 3SG-with happiness NEG
 ‘He is not angry.’ (Reichard 1951: 309)

If these are genuine examples, it is interesting to notice that only the specifiers are doubled, not the heads.

They appear infrequently, and are often rendered with what looks like a nominalized verb (48):

- (48) *doo nisini da*
 NEG want.NM NEG
 ‘I want nothing.’ (Young & Morgan 1987, entry for ‘nothing’)

Young & Morgan in their 1987 dictionary and grammar avoid translating these as negatives, i.e., they use them when free choice ‘any-’ is used in English, rather than with ‘no-’. If *doo* is a specifier, the absence of negative definites fits since negative concord would not be allowed but then indefinites are incompatible with a polysynthetic language too.

In conclusion, analyzing Navajo negation as a combination of a specifier *doo* and a head *da* seems obvious. If the stages of the cycle as represented in, e.g., Figure 3 are correct, *doo* is the newer specifier. In Section 5.3, I provide data from other related languages that show (possibly older) other negatives. I quote some Athabaskanists to the effect that the original negative is probably an aspectual verb. In Navajo and Apache and in some other Athabaskan languages, this negative is replaced by phrases such as *doo*.

5.3. *Negative adverbs, verbs, and affix(es) in Athabaskan, Eyak, Tlingit, and Haida*

I will now turn to some other Athabaskan languages and possibly related languages outside Athabaskan. I will first show the diversity in Section 5.3.1 and then suggest the origin of the older and newer negatives in Sections 5.3.2 and 5.3.3 respectively. Section 5.3.4 compares the structural characteristics.

5.3.1. *Variety.* Athabaskan negatives display an amazing variety which is noteworthy in a family that has retained many of its other characteristics. The data below show different stages of the negative cycle:

- (49) a. Kwadacha (Fort Ware Sekani)
Edna ?ədu Mary əʔi, h
 Edna NEG Mary she.see
 ‘Edna doesn’t see Mary.’ (Hargus 2002: 110)
- b. Chipewyan (Dëne Sųliné)
nəzú-híł
 be.good-not
 ‘It is not good.’ (Li 1946: 420)
- c. Lower Tanana
etlchoną
 NEG.rain.NEG
 ‘It’s not raining.’ (Frank et al. 2006: 6)

- d. Ahtna
 'ele' *k'est'aaze*
 NEG it.NEG.cut.NEG
 'He isn't cutting it.' (Kari 1992: 123)
- e. Hare (K'áshgot'ine)
du rágwe yíle
 NEG 3.stay NEG
 'S/he is not staying.' (Rice 1989: 24)
- f. Eyak
dik' dastəqahGtG
 NEG fall.NEG
 'He didn't fall.' (Krauss 1969: 72)
- g. Tlingit
łél wusgîd
 NEG fall.IRR
 'He didn't fall.' (Krauss 1969: 72)
- h. Haida
gam sangaay 'la q'wiid-ang-ang-gan
 not morning he be.hungry-ASP-NEG-PRES
 'He is never hungry in the morning.' (Enrico 2003: 41)

The data in (49) show some commonalities despite quite a diversity.

Two aspects that I will focus on are (i) the phrase-like elements such as *doo* in Navajo (40), *du* in Hare (49e), and *gam* in Haida (49h); and (ii) the *l*-shape auxiliaries such as the Chipewyan (49b), Ahtna (49d), and Hare (49e), to which the Kwadacha (49a) and Tlingit (49g) negative auxiliaries are possibly related as well. The pre-verb root negative affixes, e.g., the *tl* in (49c), the *s* in (49d), and the *l* in (50) below, are related to the verb's aspect, and are sometimes in complementary distribution with the aspect marker (whose origin may be verbal). This may mean that they are incorporated versions of the *l*-shaped auxiliaries. Givón (2000) in work on Tolowa Athabaskan argues that many of the Athabaskan prefixes are verbal in origin, e.g., the perfective ones.

In addition, there is the post-root *q* in (49c), *e* in (49d), and *ee* in (50), which are also clearly heads. The origin of these is less clear and I will not go into these in this article:

- (50) Koyukon Athabaskan
ghiiitenleeghtletene
 gh+t+n+l+gh+es+l+ten+ee
 QUA+FUT+QUA+NEG+3SG+1SG+CAUSE+ice+NEG
 'I won't freeze it solid.' (from Kari 1993: 55)

Having shown the diversity with negatives in Athabaskan, an otherwise relatively uniform language family, as well as in Eyak, Tlingit, and Haida, I will now look at the two main negative strategies.

5.3.2. *Negative l-forms and their origins.* In this section, I suggest that the *l*-negative in, e.g., (49d) above is verb-based. I also show that it is the more conservative.

Kari (1990) suggests that *'ele'* in (49d) is perhaps related to the verb *lae* 'to be'. Leer reconstructs a Proto-Athabaskan **-he* suffix, "originally an enclitic" (2000: 102), and a Proto-Athabaskan-Eyak-Tlingit particle **(ʔi)teʔ* (Leer 2000: 123). He writes that it "seems probable that the Tlingit negative particle *t* is by origin a contraction of the prohibitive interjectional particle *(ʔi)ti* 'don't' which is a phonologically perfect cognate with Pre-P[roto-]A[thabaskan] **(ʔi)teʔ*" (Leer 2000: 123–124). Willem de Reuse (personal communication) also suggests a link of the sentence-final prohibitive particles to this root. In Western Apache, for instance, there is *hela'* and in Navajo *lágo*, both meaning 'don't'.

The Pre-Proto-Athabaskan form **(ʔi)teʔ* may originally be a 3rd person negative of the verb 'to be' that was reanalyzed as a negative particle during Proto-Athabaskan-Eyak-Tlingit, cf. Tlingit *ʔéł* and Ahtna *'ele'*, as in this Ahtna example:

- (51) *'ele' ugheli ghi-leh*
 NEG good 3-PF.be.NEG
 'He is not good.' (Kari 1990: 272)

Rice (1989: 1108, Note 1) suggests that the negative *yíle* in Slave, e.g., Hare (39e) and Bearlake (52), "may historically be an auxiliary verb in the perfective aspect".

- (52) *bebí nedá yíle*
 baby 3.heavy NEG
 'The baby is light.' (Rice 1989: 1101)

(Hare, apart from having both *du* and *yíle*, can have either of these alone.) Chipewyan (49b) would fit this pattern with *-híle* as head. The Slave forms are therefore very similar to the pre-verbal negatives *'ele'* in Ahtna and *ʔéł* in Tlingit. A speculation might be that this pre-verbal auxiliary became phonologically too light (evidenced in frequent change from *yíle* to *-le* in Slave) so that the verb moved to its left.

So far, I have quoted Kari, Leer, and Rice that the *l*-like pre-verbal affix and the separate forms such as *'ele'*, *yíle*, *-híle*, and *ʔéł* are likely negative forms of the verb 'be', in accordance with what we know about one of the two negative cycles. Athabaskan languages have spread from an Alaskan "homeland" to the

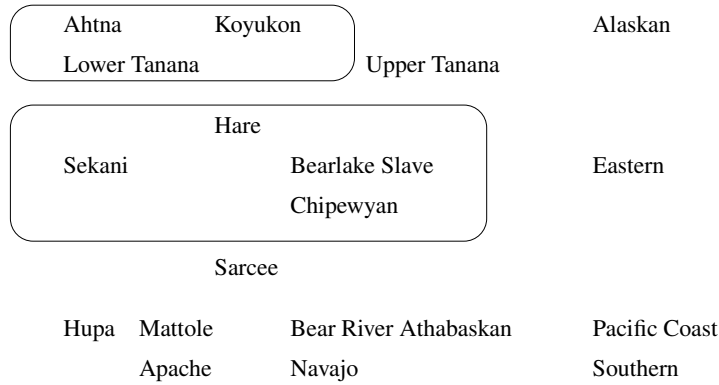


Figure 4. Geographical grouping of the *l*-form in Athabaskan

East and the South. If one looks at the geographical spread, as in Figure 4, one could argue that the *l*-form is an older one since the languages closer to Alaska have it.

Auxiliaries typically derive from full verbs and there is some evidence for this in Athabaskan. The Navajo *hóla* and Minto *kula* mean ‘is missing’ and Rice 1989 has many examples from Bearlake (*while*, (53)) and Hare with the same verb. These verbs are derivable from the reconstructed verb:

- (53) *n̄jhts’i while*
 wind absent
 ‘There is no wind.’ (Rice 1989: 1107)

As mentioned, I will not go into the origin of the post-verbal affix but continue with the possible origins of one of the phrasal renewals, namely the *doo* that we have seen in Navajo and Apache and that we will see in Bear River Athabaskan, Hupa, and Mattole, and the *dú/du* in Sarcee and Hare.

5.3.3. *A renewal: Doo, da, and k’aa.* In Figure 5, I have indicated the occurrence of *dool/du/dú* in Athabaskan in terms of geography, and it becomes clear that the Pacific Coast and Southern languages as well as some of the Eastern ones know this phenomenon. The distribution is very much the opposite of that in Figure 4. I will suggest this complementary distribution is due to a loss of the *l*-form and a renewal by *doo*.

In addition to the languages discussed above, the Pacific Coast languages Mattole (Li 1930), Hupa (Goddard 1905), as in (44), and Bear River Athabas-

In Navajo, *da* is indefinite, e.g., in *háágóóda* ‘some place’ and *da* introduces a yes/no question. In Ahtna (Kari 1990: 138), it is also an interrogative, as in (55).

- (55) a. *natidaas da*
back.2.go Q
‘Are you going back?’ (Kari 1990: 138)
- b. *nen da natidaas*
you Q back.2.go
‘Are YOU going back?’ (Kari 1990: 138)

Since interrogatives are positioned in the CP-layer, i.e., in the beginning of the sentence, both *doo* and *da* could have been reanalyzed as expressing negative polarity in the CP.

It is useful to compare Koyukon Athabaskan and Upper and Lower Tanana, several Alaskan Athabaskan languages, as Kari (1993) does. Kari shows that Koyukon (50) is rendered as (56) in the more conservative Lower Tanana (transcription as in Kari):

- (56) *tendhghaaghetltenę*
t+n+dh+gh+gh+es+l+ten+ęę
FUT+QUA+NEG+QUA+QUA+1SG+CAUSE+ice+NEG
‘I won’t freeze it solid.’ (from Kari 1993: 55)

The negative in (56) varies between θ/δ in Minto Tanana and δ/h in Salcha Tanana in non-perfective forms (see Tuttle 1998: 111). In many varieties of Lower Tanana, the prefix disappears and just the final *-q* appears (Siri Tuttle, personal communication).⁷ More drastically, in the more innovative Upper

7. The variant forms of the suffix in Koyukon Athabaskan depend on where they appear in the sentence: *-éé* [i:] is an emphatic, *-aa* [æ:] is used sentence finally, and *e* [ə] or zero appears in non-final position:

- (i) a. *etlkon-éé*
b. *etlkon-aa*
c. *etlkon-(e)*
raining-NEG
‘It wasn’t raining.’ (Jetté et al. 2000: 5)

Keren Rice (personal communication) notes that there is still a (zero) suffix in (ic) even if the ending is not visible. A comparison with the (different) nasal in (ii) shows this. The weakening is typical of heads. As the non-negative version in (ii) shows, there is also a negative prefix *l* or *l* in (i) in addition to the variable suffix (before another *l*, the two become *tl*):

- (ii) *etlkonh*
raining
‘It is raining.’ (Jetté et al. 2000: 299)

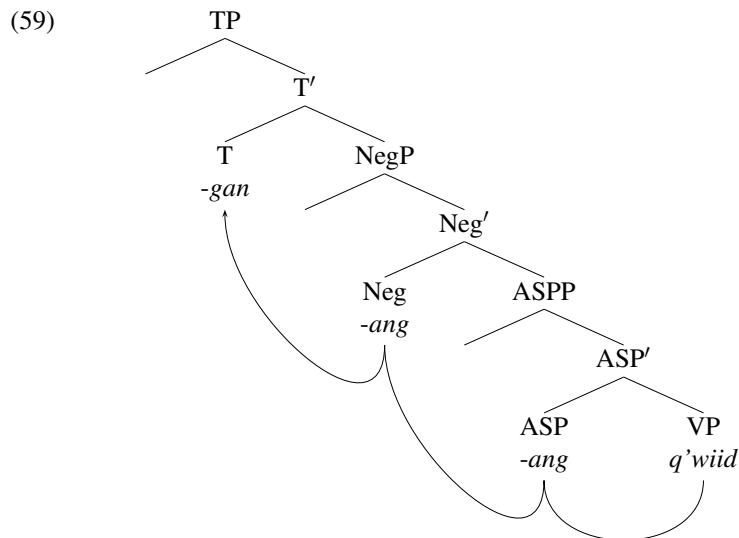
Tanana, the inner negative and suffix head are lost and the outside negative shows reinforcement, comparable to *dooldo*:

- (57) *k'aa tinaktän*
 NEG I.freeze.it.solid
 'I won't freeze it solid.' (from Kari 1993: 55)

The origin of Upper Tanana *k'aa* is unknown but may be related to the negative *k'ali'i/k'alii/k'ali'* in varieties of Ahtna. The first part *k'a* could be an emphatic and the second part similar to Ahtna *'ele'*. In Upper Tanana, only *k'aa* would be used.

5.3.4. *The cycles in Athabaskan, Eyak, Tlingit, and Haida.* The structure for Navajo suggested in (45) can be adapted for the other languages. For instance, in Ahtna (one of the more conservative Athabaskan languages), Eyak, and Haida, the situation is exactly the same as in Navajo, namely both the specifier and the head of the NegP are filled. Yet, the forms are very different suggesting there has been loss and renewal. Haida (49h), repeated here as (58), presents evidence for the NegP being lower than the TP, as in (59), similar to Navajo (44), with the verb moving leftward. The separate negative *gam* would, as in Navajo, be situated in the CP:

- (58) *gam sangaay 'la q'wiid-ang-ang-gan*
 not morning he be.hungry-ASP-NEG-PRES
 'He is never hungry in the morning.' (Enrico 2003: 41)



In languages such as Slave, a Canadian Athabaskan language, the future can follow the negative (Rice 1989: 1101, example (8)), indicating possibly a tree similar to (59), with TP above NegP. In Chipewyan (Cook 2004: 106, 109), past tense and aspect enclitics also follow the negative, as in (60):

- (60) *dëne tsqba dábetš'í híle kí ní*
 man money 3PL.have NEG ASP PST
 'People usually didn't have money.' (Cook 2004: 109)

I have argued that the variation in Athabaskan negation can be accounted for if we recognize two slightly different cycles in this family, one where indefinites renew the weakening negative and another where negatives derive from verbal sources. The Northern, more conservative, languages such as Ahtna, Koyukon, Lower Tanana, Sekani, Bearlake Slave, and Chipewyan show evidence of an original negative auxiliary whereas the Pacific Coast and Southwestern languages such as Hupa, Mattole, Bear River Athabaskan, Apache, and Navajo show replacement by an interrogative or indefinite. Of the Eastern languages, Hare has both and Sarcee shows the replacement. More research is needed especially regarding these languages.

What does the variation mean for the negative cycle in Athabaskan or Athabaskan-Eyak-Tlingit and Haida? There are three aspects that are relevant: (i) the variability of the negative specifier such as *doo* that precedes the verbal complex indicates that it is of more recent (possibly interrogative) origin; (ii) the loss of the suffix head is typical for the cycle; this occurs in Upper Tanana and is accompanied by the use of a new specifier *k'aa*; (iii) the origin of the inner affix, still present in Ahtna, Koyukon, and Lower Tanana, may have been verbal.

More work is needed on the possibility of negative concord in certain languages. The Navajo situation is as expected, with a specifier present, negative concord should not occur and that is in fact the case. The same is true for Hare (Rice 1989: 1105, example (40)). In Ahtna and Lower Tanana, the aspectual prefix is different depending on whether the sentence is negative or not. This aspectual marking may mean that, as Leer suggests, the negative was originally marked on a verb before it was incorporated into the verb complex.

6. Afro-Asiatic

In this section, I consider discontinuous negation in several Afro-Asiatic languages. Afro-Asiatic is usually divided into Berber, Semitic, Egyptian, Cushitic, Omotic, and Chadic, and many languages and varieties of these groups show multiple negatives agreeing to make one negative. The cyclical pattern is present in these languages too, namely a verbal head that is common in all but a phrasal specifier, derived from an indefinite, that is new. Many of these

languages display more than one of the stages; co-existence of older and newer patterns is to be expected when language changes. (Old) Egyptian has a single negation that is renewed by a different negation in Coptic (see Gardiner 1904), but I will leave that outside this discussion. In Section 6.1, data on Semitic languages, namely in Berber, Arabic, and Amharic, are provided and in Section 6.2 on Koorete (Omotic), Beja (Cushitic), and Hausa (Chadic). This division is for practical reasons only.

6.1. *Berber and Semitic*

All languages in this section have in common that there is a negative head and that, in some languages, there is an additional reinforcer. As in negative cycles in other languages, the head is the oldest.

Ethnologue lists at least twenty varieties of Berber, e.g., the Northern Tamazight, Tarifit, Taqbaylit (Kabyle), the Eastern Augila, and the Southern Tamazight (Tuareg). Mettouchi (1996) and Chaker (1996) review negation in Berber and the etymologies of the negative morphemes. They identify a pre-verbal *wer* (informally *ur*)⁸ with a possible source as negative verb, but other sources are possible, i.e., from *ara* ‘thing’. The second negative morpheme, one I will suggest is the renewal, is an often optional indefinite *ara*, *k(ra)*, *š(ra)*, etc. I will examine the contemporary dialects and show that the cycle is at work.

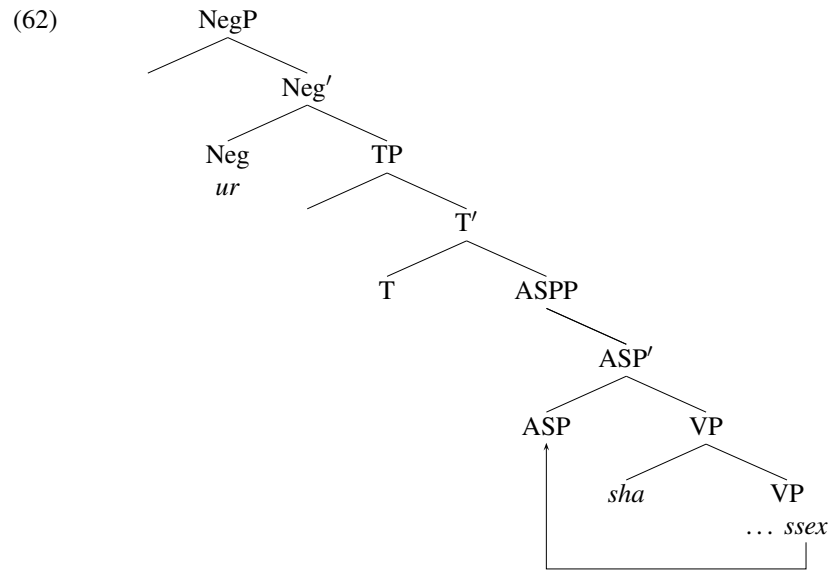
Ouali’s (2003: 3) examples in (61) show that all (Northern) Berber dialects have a pre-verbal negative element *ur/wer* and that most have an optional post-verbal element that is different in different dialects:

- (61) a. Tamazight
 ur ssex (sha)
 NEG drink.PF.1SG NEG
 ‘I don’t drink.’
- b. Taqbaylit
 ur kshimegh (ara)
 NEG entered.PST.1SG NEG
 ‘I didn’t enter.’
- c. Tarifit
 u-sn twshi (sha) arbii
 NEG-them give.PST.3SG NEG grass
 ‘She didn’t give them grass.’

Ouali (2003) argues that the pre-verbal negative element *ur* is base-generated as a Polarity-head, known from the previous section, and the second negative

8. Chaker (1996: 11) suggests that *wer* is the older form, and Sudlow (2001: 65) uses *wər* but says it can be contracted to *u(r)*.

as the specifier of NegP. It is also possible that *ur* is in the head of a high NegP and that the optional element is still lexical, with semantic negative features. This is in fact what Ouali (2006: 134) argues:



In Tamazight, the optional *sha* may precede *ur* as well. This means that *sha* is attracted to the Specifier of the NegP and may become reanalyzed as originating in that position:

- (63) *sha ur ssex*
 NEG NEG drink.PF.1SG
 'I don't drink.' (Ouali 2006: 131)

Chris Lucas (personal communication) reports that at least one variety, Augila Berber, has an obligatory post-verbal *sha*, expected if the indefinite is reanalyzed as the specifier of the NegP.

As also expected if *ur* is a head, a second negative *walu* 'nothing' or *agidge* 'no-one' is grammatical, as in (64) from Tamazight:

- (64) a. *ur as-wshi.x walu*
 NEG him-give.3SG nothing
 'I didn't give him anything.' (Ouali 2003: 4)
 b. *agidge ur iddin*
 no.one NEG go.PF.3SG
 'No one left.' (Ouali 2003: 12)

If both *sha* and *walu* are specifiers, the reinforcing negative *sha* of (61a) cannot co-occur with the quantifier in (64a) and this is the case.

Ouali's analysis and data fit with what we know about the negative cycle: the head *ur* is older than the specifier *sha* and hence the specifier, but not the head, varies across the different varieties and not all varieties have introduced one yet, e.g., Touareg (Heath 2005) and Tashlhit lack it. The specifier is also in complementary distribution with another indefinite. In Touareg, there is evidence that the negative is a head (clitics attach to it) and also that it soon will be reinforced. Notice (65):

- (65) *wər i-ja wəla əndərræn*
 NEG 3SG.M-be.done even little
 'Nothing happened at all.' (Heath 2005: 589)

I will now turn to Arabic. Much has recently been written about Arabic negation, e.g., Comrie 1991, Fassi Fehri 1993, Shlonsky 1997, and Benmamoun 2000. There is a lot of variation, also where co-occurrence with certain aspects is concerned. The oldest forms are probably the *l*-initial ones. Walker (1896: 233) speaks of the Semitic "common negative stem" *l*- and Lipiński (1997: 455) argues that it is related to the Berber form *wər/ur* mentioned above. More recent negative elements originate as interrogative pronouns, e.g., *ma* 'what' is used often in positive rhetorical questions, and as indefinites, e.g., *-sh* from *shay'un* 'thing'. *Ma* is no longer used as interrogative pronoun in modern varieties and has become the most general negative. In Classical Arabic, the negative pre-verbal elements are the heads *laysa*, *laa*, *lam*, *lan* (where *lam* and *lan* are marked for past and future respectively, *laysa*- bears agreement, and *la* is not marked), as in (66a), or the pre-verbal *maa*. The latter has become the general form in modern varieties of Arabic (Fischer 1982: 85), with a post-verbal *-sh*, as in (66b) in Moroccan Arabic:

- (66) a. *lam yuhibba Zayd ʔal qiraaʔ*
 NEG.PST 3SG.M.like Zayd the reading
 'Zayd did not like reading.' (Shlonsky 1997: 95)
 b. *Omar ma-kteb-sh l-bra*
 Omar NEG-write.PST.3M-NEG the-letter
 'Omar didn't write the letter.' (Benmamoun 2000: 81)

Thus, different stages of the cycle are represented. For instance, Benmamoun (2000: 69–70) says the pattern of (66b) also occurs in Egyptian, Palestinian, and Yemeni Arabic. The post-verbal negation can be on its own in certain dialects. Vanhove (1996) and Simeone-Senelle (1996) show for Yemeni dialects that either *maa* or *-sh* or both occur; *laa* is possible as well with an optional *-sh*. According to most accounts, the *-sh* is grammaticalized from Classical Arabic 'ayyu šay'in 'what thing', *maa* is older, and *l*- the oldest.

Based on the data presented in Fassi Fehri (1993: 165–166, 207), one could argue that *ma* is in a relatively high position, like *doo* in Navajo. It is not inflected, can be together with a question particle, as in (67) from Standard Arabic, and does not interact with other auxiliaries:

- (67) *ʔa-maa raʔay-ta r-rajul-a*
 Q-NEG saw-you the-man-ACC
 ‘Haven’t you seen the man?’ (Fassi Fehri 1993: 166)

This high position, possibly as head of a Polarity Phrase (PolP), fits with its origin as an interrogative pronoun *ma* ‘what’ (Rubin 2005: 50). This would have been an instance of *ma* in the specifier position being reanalyzed as a polarity head. Arabic has a positive emphatic, namely *qad*, which is in complementary distribution with *maa* (see Bahloul 1996: 41) and could be in the PolP as well. Shlonsky (1997: 16), following Benmamoun (1992: 68), argues that *ma* is the head and *-sh* the specifier, though in later work Benmamoun (1996: 50) states that the “status [of *sh*] is not clear”. It seems most plausible that *ma* has become a head in most varieties, but that the post-verbal suffix *-sh* still has specifier-like characteristics.

In Amharic, another Semitic language, the negative is formed with *al-* preceding the perfective verb as well as a suffix, as in (68) from Zway:

- (68) *hoytäñä al-agrägäb-o*
 again NEG-answer.3SG.M-NEG (*o = ä* 3SG.M + *u* NEG)
 ‘Again he didn’t answer.’ (Leslau 1999: 177)

In other aspects, the suffix is optional and another pre-verbal particle or affix is used, as in (69), and in the subordinate the suffix disappears:

- (69) *äyä ənku dämam-(u)*
 I not rich.1SG-NEG
 ‘I’m not rich.’ (Leslau 1999: 58)

The doubling occurs in other varieties of Amharic as well, e.g., that described in Leslau’s *Reference grammar* (1995). Here the suffix disappears in a subordinate clause (Leslau 1995: 292). As in Colloquial Arabic, it is hard to decide which is the head and which is the specifier:

- (70) *al-säbbärä-mm*
 NEG-break.3SG-NEG
 ‘He did not break.’ (Leslau 1995: 292)

So what does this mean for the cycle? In Standard Classical Arabic, there is a negative (verbal) head *l(a)-* that starts out as a Neg head and moves to a higher position, as in (66a). There are also reinforcements in many varieties, e.g., *ma* ‘what’ and *shay’un* ‘thing’ that in turn seem to be weakening.

6.2. *Omotic, Cushitic, and Chadic*

Negatives in Omotic, Cushitic, and Chadic show different stages of grammaticalization. In many, e.g., the Omotic language Koorete, there is evidence of a main verb being reanalyzed as a negative auxiliary. I will just list a few patterns of discontinuous negation without giving precise positions for the negatives. Such an analysis would need a detailed grammatical discussion.

Negation in Koorete, an Omotic language of Ethiopia, is expressed by means of a negative auxiliary *ba* ‘not exist’, as in (71a). As Binyam (2007)⁹ shows, there is still a lexical verb *ba* in Koorete with the meaning ‘disappear’, as in (71b).

- (71) a. *nen-i doro woon-do ba-nna-ko*
 you-NOM sheep buy-PF NEG-2SG-DECL
 ‘You didn’t buy sheep.’ (Binyam 2007: 1)
- b. *‘is-i ba-d-o*
 she-NOM disappear-PF-PST
 ‘She disappeared.’ (Binyam 2007: 7)

With habitual aspect, the negative element can be an affix as well, as in (72). This affix has, in related languages such as Maale, become the only acceptable form (cf. Amha 2001):

- (72) *‘is-i dana ‘ush-u-wa-nni-k*
 she-NOM beer drink-PRES-not.exist-3SG.F-FOC
 ‘She does (will) not drink beer.’ (Binyam 2007: 9)

There is also an emphatic negative, as in (73), using an extra adverbial *petto* ‘never’ indicating a renewal as we saw in Uralic:

- (73) *‘es-i keele petto han-g-u-waa-s-so*
 he-NOM Keele never go-IMP-F-PRES-not.exist-3SG.M-FOC
 ‘He will never go to Keele.’ (Binyam 2007: 18)

Binyam’s investigation is a preliminary one, and there are some puzzling aspects, e.g., why the negative auxiliaries are inflected but not the main verbs, as seen in non-negative sentences, as (71) shows. The grammaticalization is clear, however, and the form *ba* may be related to that in Chadic, discussed below.

9. When this article went in press, Binyam 2008 appeared. The sentences quoted here from Binyam 2007 remain the same though data on negative quantifiers is added. The latter’s source is an interrogative pronoun and inclusive marker.

Cushitic languages have interesting sets of negatives as well with similar patterns as the other languages of the Afro-Asiatic family. In Somali, the negative is expressed by *má* and a special form of the verb, as in (74a). *Má* is also used as an interrogative, as in (74b):

- (74) a. *ku má uu garánéyn*
 you not he understand-NEG
 'He didn't understand you.' (Saeed 1999: 186)
- b. *muu kúu dhiibay*
 Q.he [= *ma+uu*] you.to hand.PST
 'Did he hand it to you?' (Saeed 1999: 197)

From the data discussed above, we know that it is quite frequent for an indefinite or interrogative to be reanalyzed as a (high) negative. That makes *má* an innovation with a possibly earlier negative on the verb.

Hamid Ahmed & Vanhove (2002) discuss the regular negative, marked for aspect and mood in Beja, a relatively isolated Cushitic language. I will leave that outside the discussion here. Beja has developed a contrastive negative auxiliary from the verb *rib* 'to refuse', as in (75).

- (75) *yiinaa asni naat rh-at areb*
 days I.waited thing see-PART I.refused
 'I waited for days and could not see anything.' (Hamid Ahmed & Vanhove 2002: 9)

This is used in pragmatically highly salient situations.

Negation in Hausa, a Chadic language of the Afro-Asiatic family, is as in (76).

- (76) *bà kà kãwõ àbinci ba*
 NEG you bring food NEG
 'You didn't bring food.' (Kraft & Kirk-Greene 1973: 38)

The main restriction on word order is that *bà* immediately precede the subject pronoun with which it assimilates phonologically when relevant. This form is presumably a head that moves from the NegP to left-adjoin to *kà*. The second *ba* is movable and can be followed by an adverbial, as in (77).

- (77) *bà zãn tàfi ba sai gõ`be*
 NEG 1SG.FUT go NEG till tomorrow
 'I won't go till tomorrow.' (Kraft & Kirk-Greene 1973: 187)

Negative polarity items occur, as expected, e.g., *tafà* in (78):

- (78) *matsalōlī bā` zā sù tabà kāre-`wā ba*
 problems NEG FUT 3PL ever.do end-PART NEG
 ‘The problems will never end.’ (Jaggar 2007: 5)

As Jaggar (2007) shows, there are many such negative polarity items and they derive from verbs, e.g., *tabà* ‘ever do something’, or PPs, e.g., *dàdai* ‘(not) once’ (= *dà* ‘with’ and *dāya* ‘one’), or DPs, e.g., *kō kàdan* ‘(not) even a bit’. According to Jaggar, there is quite a bit of variation in speaker judgments. For instance, some negative polarity items appear initially, sometimes with final *ba* and sometimes without:

- (79) a. *dàdailfāufau bàn gan shì ba*
 once/ever NEG.1SG.PF see 3M NEG
 ‘I’ve never once/ever seen him.’ (Jaggar 2007: 6)
 b. *dàdailfāufau bā nà yārdā*
 once/ever NEG 1SG.IMPF agree.VN
 ‘I will never ever agree!’ (Jaggar 2007: 6)

In conclusion, the Afro-Asiatic languages show discontinuous negation. In most cases, there is clear evidence for a head and a specifier. When the head is on its own, there is optional renewal.

7. Chinese

Negatives have changed a lot throughout the history of Chinese. Their development is different from that in the other languages in that they always derive from heads, as I have shown in Section 2 for *mei*. I will first say something about contemporary negatives and then look at their grammaticalization. Unless otherwise noted, Chinese stands for the Standard Mandarin variety.

There are many negatives in present-day Chinese, and their use is limited by the mood and aspect of the clause. The most general negative is *bu*, as in (80a), and *bie*, as in (80b):¹⁰

- (80) a. *wo bu jide ta*
 I not remember he
 ‘I don’t remember him.’ (Li & Thompson 1978: 415)
 b. *bie guan men*
 don’t close door
 ‘Don’t close the door!’ (Li & Thompson 1978: 415)

When the verb is *you* ‘exist’, the negative is *mei*, as in (81), repeated from Section 2:

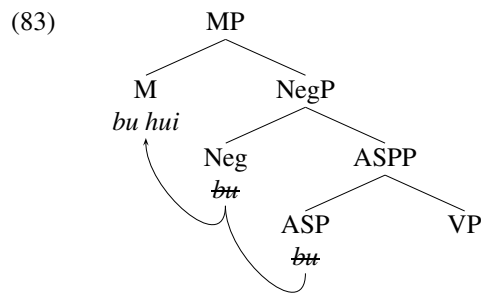
10. I omit tones. Wiedenhof (1993: 95) discusses differences between the variants *bú*, *bù*, and *bu*. The latter is very common at normal conversation speeds.

- (81) *wo mei you shu*
 I not exist book
 'I don't have a book.'

The latter form must also occur with certain aspect markers. Li & Thompson (1978: 421) argue that *bu* is the neutral negation, but that *mei(you)* negates the completion of an event. A number of interesting differences follow from this: *bu* negates states and auxiliaries, such as *hui* 'know', but not bounded events; *mei(you)* on the other hand marks boundedness, and is used for the perfective (as an alternative to *le*). Other analyses exist as well. It is relevant to Croft's Cycle discussed in Section 2 that with the negative *mei*, there is an optional *you* 'to exist'.

The syntactic analysis of the negatives is a matter of debate. Both *bu* and *mei* seem to be heads (as in Xu 1997: 111). This is not surprising since *mei* and *bu* originate as verbs, as we will see below, and both usually occur just before the verb or auxiliary. Ernst (1995), however, argues that *bu* is in a specifier position and (pro)cliticizes. Li & Thompson (1978: 340, 417) consider the negatives adverbs, since they occur in the typical post-topic position, and particles. I will assume that *bu* and *mei(you)* are generated in or move through an ASP phrase, explaining the complementary distribution with perfective *le* (but see Scurfield 1991: 43 about the meaning with "change of state" *le*). If the modal is higher than the Neg, a result might be representation (83) for (82a) where the negative adjoins to the left of the modal and has scope over the modal, unlike in (82b).

- (82) a. *wo bu hui tan gangqin*
 I not can play piano
 'I can't play the piano.'
 b. *ta keyi bu qu*
 he can not go
 'He is allowed not to go.' (Xu 1997: 130)



The tree in (83) can also account for the verb-doubling constructions around *bu*, as in (84), by having the modal *neng* in M coordinated with *bu neng*:

- (84) *ta neng bu neng pao de hen kuai*
 he can not can run PRT very fast
 ‘Can he run very fast?’ (Huang 1988: 286)

Many negatives develop into mood markers in C, in particular into interrogatives. Both *bu* and *meiyou* do, as chronicled by Cheng et al. (1996). On the basis of the latter’s research, it can be argued that a Mandarin Chinese negative can move further to the C position to express a question, as in (85a), though as expected not in the aspectually incompatible (85b) (perfective *le* and *bu* are incompatible, see above).

- (85) a. *ta chang qu bu*
 he often go not
 ‘Does he go often?’ (Cheng et al. 1996: 43)
 b. **ta qu-le bu*
 he go-PF NEG
 ‘Did he go?’ (Cheng et al. 1996: 53)

Taiwanese and Cantonese also mark interrogatives through negation but these can be said to be base-generated in C since they do not show the aspectual restrictions. In Cantonese, the only negative used in interrogatives is *mei*, as in (86).

- (86) *ngo hoyi ceot-heoi mei*
 I can go-out NEG
 ‘Can I go out?’ (Cheng et al. 1996: 54)

Taiwanese shows no aspect restrictions either, but here all (four) negative forms function as interrogatives. So, Cantonese and Taiwanese may have reanalyzed the negative that is occasionally moving to C as a C.

If the negatives are heads, negative concord should be possible though not necessary. As is well known, there is no negative concord in Chinese and the quantifiers *shei dou* and *shei ye* can mean ‘everyone’ or ‘anyone’ depending on whether a negative *bu* appears:

- (87) a. *wo shei dou xihuan*
 I who all like
 ‘I like everyone.’
 b. *wo shei dou bu xihuan*
 I who all not like
 ‘I don’t like anyone.’ (Li & Thompson 1978: 529)

If the tree in (83) is correct, it is not surprising that negatives and modals re-analyze as one unit and this indeed has happened a lot in the history of Chinese. For instance, the negative *bie* is a merged form of *bu* and *yao* ‘need’ and *beng*

'not have to' from *bu* and *yong* (see Xu 1997: 111). Zhang (2005) provides an example from Shaoxing Chinese, one of the Wu languages, of the negative of 'have' which is [nɿʔ], where [n] is the negative prefix, as in (88), as well as another negative [veʔ] 'not', used in [veʔʔiəŋ] 'don't want to', [veʔʔiəŋ] 'don't use', etc.

- (88) Shaoxing Chinese
 ŋo nɿʔ kē tciē
 I NEG-have look see
 'I haven't seen it.' (from Zhang 2005: 71)

These are certainly signs of grammaticalization. Let us look at some older forms now.

Old Chinese negatives are similarly numerous (see, e.g., Djamouri 1991: 8) and are usually divided into a stop (**p*-) and a nasal (**m*-) group depending on their initial consonants, though these may change. Pulleyblank (1995, Chapter 11) provides lists of the different negatives in each of the two groups: the modern and older form *bù*, and the older forms *fǒu* and *fú* in the stop group express simple negation, and *wú*, *wù*, *wáng*, *mò*, *miè*, and others in the nasal group express non-existence. Djamouri (1991) examines seven negative markers in the earliest Chinese and shows that *bù* is used with intransitive predicates or with adjectives whereas *fú* is used with transitives and functions as an adverbial. It is possible that *fú* is a specifier since it might be modified. Others have modal meanings, e.g., *wú* and *wù*.

Possibly apart from *fú*, these negatives are head-like and may derive from verbs. For instance, Sagart (1999: 84) suggests that negative *fú* is cognate with the verb 'to eliminate' and that the *m* may have been a prefix to mark deontics or imperatives. According to Pulleyblank, *wú* is the same as the verb 'not have', *wù* is an aspectual variant of *wú* (but see Djamouri 1996: 291), and *wáng* is a verb meaning 'to die, disappear' in the classical period. *Mò* modifies a subject and means 'no one', whereas *miè* is a negative particle or a verb meaning 'to destroy'.

The negative existential *mei* is said to have developed from the verb *mo* 'to die, to sink' as in Old Chinese (89) (see, e.g., Lin 2002):

- (89) Yao Shun ji mo ...
 Yao Shun since died
 'Since Yao and Shun died, ...' (Mengzi, Tengwengong B, from Lin 2002: 5)

In many languages (Payne 1985: 222), the negative develops from a verb meaning 'not exist', and 'to die' in Chinese probably had that step too, as (90) from Early Mandarin shows:

- (90) *yu de wang ren mei kunan, ...*
 wish PRT died person not.have suffering
 'If you wish that the deceased one has no suffering, ...' (Dunhuang
 Bianwen, from Lin 2002: 5–6)

Later, *mei* is also found, but always with the aspect marker *you*, as in (91). Both (90) and (91) are repeated from Section 2 above:

- (91) *dayi ye mei you chuan, jiu zou le chulai*
 coat even not PF wear then walk PF out
 'He didn't even put on his coat and walked out.' (Rulin Waishi, from
 Lin 2002: 8)

Mei, in this use, gradually replaces the Old and Middle Chinese negative existential *wu* in the Early Mandarin period.

In conclusion, the most common negatives in Chinese can be seen as (aspectual/negative) heads that derive from earlier verbs, probably through Late Merge.

8. Conclusions

In this article, I have provided descriptions of (partial) negative cycles in Old Norse, Modern Scandinavian, Finnic, Sami, Kamassian, Athabaskan, Eyak, Tlingit, Haida, Berber and Arabic dialects, Amharic, Koorete, Hausa, and Chinese. There are two main grammaticalization strategies, one is from lower head or phrase to a higher one (e.g., Chinese verbs to negatives), accounted for through Late Merge, and another is from specifier to higher specifier to head (e.g., Scandinavian negative indefinites or adverbs to negative heads). The first strategy is responsible for the fact that in many languages the form of negatives depends on the mood or aspect, as seen for Athabaskan and Chinese.

Parts of these two cycles can be accounted for in terms of the Head Preference Principle and Late Merge. The stage where the head disappears could be explained in a number of ways. I have argued that the changes involved in both complete cycles can be understood in terms of Feature Economy, as in (13) above.

I have also shown that speakers analyze their negatives in different positions in the sentence. The Uralic languages are good examples, in that in some the negative is inflected for tense as well as agreement and is lower (more to the right) than the negative inflected just for agreement. Arabic dialects and Hungarian show that indefinite *wh*-elements are reanalyzed as negatives too. This may in fact be the origin of the innovative *doo* in Athabaskan.

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
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Abbreviations: 1/2/3 1st/2nd/3rd person; ACC accusative case; AGRP Agreement Phrase; ASP aspect; ASPP Aspect Phrase; AUX auxiliary; CONNEG negative main verb marker; CP Complementizer Phrase; DECL declarative; DP Determiner Phrase; EMPH emphatic; F feminine; FOC focus marker; FUT future; HPP Head Preference Principle; i- interpretable; IMPF imperfective; INE inessive case; IRR irrealis; LMP Late Merge Principle; M masculine; MP Mood Phrase; NEG negation; NegP Negative Phrase; NM nominalizer; NOM nominative case; PART participle; PF perfective; PL plural; PRES present; PRT particle; PRTV partitive case; PST past; Q question; QUA qualifier; SG singular; TP Tense Phrase; u- uninterpretable; VP Verb Phrase.

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