The Morphology-Syntax Interface in American Sign Language

1. Introduction

Sign language morphology introduces a new hurdle for theories of morphosyntax to beat: the ability of sign languages to have a large number of simultaneous processes of morphology in addition to the sequential morphology in spoken languages (Aronoff, Meir, Sandler et al. 2005: 301). This poses a problem for concatenative theories of morphosyntax, as simultaneous morphology is not the concatenative adding of affixal phonological material, such as adding a marker on a noun to mark it as the agent of the sentence, but is rather changing the phonological form already present, such as altering where the movement of a verb sign starts in space to indicate which noun is the agent of the sentence. Thus, concatenative theories must attempt to describe how morphological processes where the original material is changed instead of adding affixal material occur. While sign languages such as American Sign Language (ASL) have some sequential morphology, this is rare and confined to derivational processes (Aronoff, Meir, Sandler 2005: 302). Simultaneous morphology, on the other hand, is productive, deals largely with inflectional morphology, and includes processes by which grammatical features are realized by "altering the direction, rhythm, or path shape of the base sign," instead of sequentially adding new segments (Aronoff, Meir, Sandler 2005: 309). What exactly are the unique morphological and morphosyntactic structures present in ASL, and how could different theories of morphosyntax account for them? In this paper I will focus on four phenomena within ASL morphology: sequential morphology, verb agreement, nominalizing reduplication, and negation. For each I will give a brief overview of how they operate in ASL, and then turn to different morphosyntactic theories to give an idea of how they might approach these phenomena.

2. Sequential Morphology

American Sign Language has two main forms of sequential morphology: affixation and compounding. Sequential affixation is rare in ASL, with only about five affixes having been identified in the language (Aronoff, Meir, Sandler 2005: 313). One example of an affix in ASL is the agentive suffix, descended from an independent ASL word meaning 'person' (Aronoff, Meir, Sandler 2005: 329). This does not have the same distribution as the English *-er* agentive, as in ASL the verb OPERATE is combined with the agentive to form a word meaning 'person who operates,' but the word with the same meaning in English is *surgeon*, not **operater* (Aronoff, Meir, Sandler 2005: 329). ASL affixes such as the agentive operate as an identifiable affix being added to the beginning or end of a base sign. In the example of TEACH + agentive 'teacher' in Figure 1, the agentive is clearly identifiable as an affix added onto the base sign TEACH (Aronoff, Meir, Sandler 2005: 312).

Figure 1
ASL suffixed sign: TEACH + agentive

In sign languages, what researchers call a sign syllable is generally taken to be a hand configuration spanning a location-movement-location (LML) sequence (Aronoff, Meir, Sandler 2005: 309). The ASL suffixed sign TEACH + agentive above consists of two of these LML syllables, each with its own hand configuration and place of articulation. Some affixed signs further reduce to a monosyllabic structure, but the complex structure like in the sign in Figure 1 is clearly different from the simultaneous morphology found in ASL (Aronoff, Meir, Sandler 2005: 311).

The sequentially affixal morphology in ASL works well within concatenative frameworks such as Distributed Morphology. In Distributed Morphology, they would most likely model affixes such as the agentive by having the phonological material associated with the agentive (the hand configuration and LML sequence) be associated with a set of features in a list of Vocabulary Items (VIs), while TEACH would be stored as a Root √TEACH, associated with the semantic meaning of the verb. Both the Root and the VI would then be inserted into nodes, where the VI has a subset of the node's features. Since this process is concatenative and yields a non-idiosyncratic meaning, this poses no problem for DM. The only problem is that the agentive suffix does not attach to every verb, which DM could tackle through restricting the roots the agentive VI could combine with, as in English plurals, where the VI *-en* can only combine with a select number of roots such as √CHILD and √OX.

In inferential-realizational theories like Paradigm Function Morphology, the word 'teacher' may be stored in a cell as <TEACH, {agentive}> → teacher. The agentive suffix in ASL does not pose a problem for such theories. For those verbs to which the agentive suffix does not attach, there is simply no cell to refer to. In Lexicalist theories there may be lexical rules where in the Lexicon the phonological material associated with the agentive suffix is chosen because it makes a verb into an agent, and then is added to the verb TEACH to create the sign for 'teacher.' In Strong Lexicalist theories the ungrammatical forms where the suffix attaches to verbs it should not attach to may be blocked by something akin to the Filter (Siddiqi 2014: 348).

The other type of sequential morphology in ASL is compounding. Compounds in ASL can be distinguished from phrasal combinations in several ways: ASL compound signs cannot be interrupted with the insertion of other signs, compound signs have different rhythmic properties (for example, the first sign is commonly reduced and the transitions are abbreviated), and compound signs typically have idiosyncratic meaning (Bellugi & Newkirk 1981: 8-9). Compounding in ASL is used as a highly productive way of expanding the lexicon from existing lexical roots (lexical compounds), a way to express size and shape (referred to size-and-shape specifiers (SASS's), and a way to refer to superordinate concepts of a string of signs (coordinate compounds) (Bellugi & Newkirk 1981: 8-14). An example of a lexical compound is a compound formed of the signs BED and SOFT, meaning 'pillow' or 'mattress', glossed BED^SOFT (Bellugi & Newkirk 1981: 10). Lexicalized compounds tend to have a specialized idiomatic

meaning, which seemingly poses a problem for concatenative frameworks such as Distributed Morphology. This is because the combination of the two words yields a meaning that is not achieved from simply putting together the meaning of the two words. For example, with 'mattress,' the literal meaning gotten from the compound BED^SOFT might be 'soft bed,' and not 'mattress'. Since Distributed Morphology is concatenative, it needs an additional process that can assign a new meaning to a compound. Coordinate compounds also pose a problem for a similar reason, as they consist of a string of signs followed by the sign glossed as ETC., with the whole compound referring to superordinate concepts (Bellugi & Newkirk 1981: 14). An example of this is the sign for 'appliances', signed WASHER^DRYER^STOVE^ETC.

Distributed Morphology attempts to explain the problem of compounding by proposing that compounds are formed when Root-containing heads incorporate, which accounts for why compounds cannot be broken up and their unique phonological features (Harley 2009: 133). However, in Harley's analysis of compound formation in Distributed Morphology, all the compounds were compositional, in that their meaning was a sum of the parts. For example, in the compound *nurse shoes,* 'nurse' describes a type of shoes—shoes for nurses (Harley 2009: 139). But in compounds like BED^SOFT 'mattress', this is not the case. A mattress is not a soft type of bed, so it cannot be created the same way as the compounds Harley discusses. The non-compositional compounds found in ASL are hard to explain in Distributed Morphology because it is a purely concatenative theory. They could possibly be explained through "contextual allosemy," where words have multiple meanings that are chosen in different contexts (Marantz 2020). In this case, different meanings for either BED, SOFT, or both would be chosen that would combine to form the compound BED^SOFT meaning 'mattress'. In Lexicalist theories, derivational morphology such as compounding typically takes place in the Lexicon, with Halle's Strong Lexicalism theory positing that in the Lexicon there are Word Formation Rules (WFRs) which would form the compounds, and the Filter, which would both prevent ungrammatical compounds and assign idiosyncratic meaning to the compounds (Siddiqi 2014: 348). So, BED^SOFT would be formed through a WFR that combines BED and SOFT, and then the Filter would assign the meaning of 'mattress' to the compound.

3. Verb Agreement

Morphological verb agreement is the realization of the "universally agreeing syntactic indices, mediated by the partly arbitrary referential and classificatory morphosyntactic categories" of each individual language (Aronoff, Meir, Sandler 2005: 316). To understand how verb agreement works in ASL, it is first necessary to understand how R(eferential)-loci work, as in sign languages the referential indices are realized by means of these R-loci (Aronoff, Meir, Sandler 2005: 317). R-loci are used for anaphoric reference to the referents associated with them, and are regarded as the visual manifestation of the pronominal features of the nominals representing these referents (Aronoff, Meir, Sandler 2005: 317). These associations are often made by producing the sign for the nominal, then pointing to or gazing at a specific location in space. If the referent is present, the actual location of the referent determines its R-locus (e.g. for first person it would be the chest) (Aronoff, Meir, Sandler 2005: 317). While in spoken languages, nominals are categorized based on shared morphosyntactic features, with the pronominal reference to all members of a given category being made using the same pronoun, this is not the case in sign languages. In sign languages, each referent is paired with a unique location in space (its R-locus) and so it can be uniquely identified. A pronoun or agreement

marker directed toward or away from a specific R-locus uniquely refers to the referent associated with that locus (Aronoff, Meir, Sandler 2005: 317). Since the assignment of these R-loci does not involve classification, they are overt indices rather than gender classes, and so sign languages have agreement without gender (Aronoff, Meir, Sandler 2005: 318).

For verbs that have agreement in ASL, they have two open L(ocation) spots at the two end points of the verb, which are filled morphologically by copying the location specifications of the R-loci of the arguments of the verb into the slots. The R-loci determine the path movement of the verb: the verb moves from an R-locus associated with one argument to an R-locus associated with another (Aronoff, Meir, Sandler 2005: 318). For example, in the sentence 'I give the book to her,' the verb give moves from the R-locus for the subject 'I' which has an R-locus of the signer's chest to the R-locus for the object 'her' which would either have an R-locus of a specific point in space chosen by the signer or would have an R-locus of the person referred to if the person is present. However, not all verbs have agreement in ASL Sign languages have three verb classes: plain verbs, spatial verbs, and agreement verbs. Plain verbs have invariant beginning and end points, and the movement path does not vary with the R-loci of the arguments. Spatial verbs have beginning and end points that are determined by spatial referents, rather than by grammatical arguments (Aronoff, Meir, Sandler 2005: 321). Only agreement verbs agree with the arguments functioning as the syntactic subject and object (Aronoff, Meir, Sandler 2005: 321). For agreement verbs, the facing of the hands and the path movement are the two agreement mechanisms. As stated above, the direction of the path movement is determined by the thematic roles of the arguments: from the R-locus of the source argument to the R-locus of the goal argument. The facing of the hand(s) is determined by the syntactic role of the arguments: the hands face towards the object of the verb (or indirect object in the case of ditransitive agreement verbs) (Aronoff, Meir, Sandler 2005: 321-22).

The classification of verbs into these three categories is semantically determined: verbs denoting motion in space are spatial verbs, those denoting transfer are agreement verbs, and those that neither denote transfer nor motion are plain verbs (Aronoff, Meir, Padden et al. 2005: 28). While there are apparent counter-examples to these generalizations, they can be explained on phonological grounds. For example, some verbs denoting transfer fail to inflect for agreement because of constraints imposed by their phonological structure (Aronoff, Meir, Padden et al. 2005: 28).

The classification of the different types of verb seems like it would be ideal for a Distributed Morphology approach, as they are semantically determined. Each class of verb could be assigned a bundle of semantic features that represent that class of verb, and then verbs with those features would be inflected for agreement based on if they have the features of the plain, spatial, or agreement class of verbs. However, the R-loci pose a problem for Distributed Morphology. Distributed Morphology could explain the first-peron, as the first-person R-locus does not change (it is always the signer's chest). The Vocabulary Item associated with the first-person could then just be the phonological material representing pointing to one's chest. However, second- and third-person R-loci pose a problem. The R-locus for the second person (the place in space where the person the signer is conversing with is located) changes with where the person is positioned. There is a similar problem with third-person R-locus when the person/people being spoken about are present, as the R-locus would similarly be wherever the person/people are located, which is subject to change. If the person/people being spoken about are not present, however, the R-locus has no one place in space that is always the R-locus for the third-person. For the third-person where the people are not present, this could be adjusted for by

having this R-locus be an ‘elsewhere’ item, such that when the people being referred to are not present, this VI would be inserted. However, it would be difficult to define this VI in a satisfactory way, as the R-locus chosen varies not only signer to signer but from conversation to conversation. Additionally, if there are multiple third-person referents that are not present, the same ‘elsewhere’ item could not be introduced, as each referent would have a different point in space to serve as their R-locus. Theoretically, there could be a near-infinite number of third-person R-loci in a conversation, each with its own point in space to serve as its R-locus. This is a problem for using an ‘elsewhere’ item or any specific VI for the third-person referent since there is a possibility of needing multiple different R-loci for different absent third-person referents. Thus, trying to define the absent third-person R-locus with a single Vocabulary Item or even multiple Vocabulary Items will falls short since there needs to be a way to have a near-infinite number of R-loci to pick from for sentences with multiple absent third-person referents. The previous problem of second- and third-person R-loci when the referents are present poses a problem for DM as DM tries to avoid rules of referral, which seem like they would be key to verb agreement in ASL. The agreement of the verb depends entirely on where the person is situated in space, and based on that the verb either starts or ends there. It is difficult to see how DM would attempt to solve this problem as there are conceivably an infinite number of R-loci and therefore an infinite number of Vocabulary Items if the theory attempts to avoid rules of referral.

Verb agreement in ASL seems to be uniquely suited to any type of theory that uses rules of referral, such as Paradigm Function Morphology (PFM). The cell for <ASK, {from first-person to third-person}> could not have a simply stipulated realization, but instead be a function of the cell for the first- and third-person pronouns, where the location of the realizations of the cell for the first- and third-person pronouns are added to the verb ASK, with the verb beginning in the location for first-person and ending in the location for third-person. If the person being referred to is present, the realization of the cell for the third-person pronoun would be a function of the person’s location in space, with a pointed handshape facing that person’s location. In Weak Lexicalist theories, inflection takes place in the syntax, and so those theories would most likely fall into similar problems as DM if they did not use rules of referral. In Strong Lexicalism, however, the word-formation rules in the Lexicon could account for verb agreement in ASL. For instance, in the example discussed for PFM the rule for the verb ASK could be written as ASK + point to chest+ person’s location in space=ASK.1p.3p. This functions similarly to the cell in PFM except that it is written as a rule and not the realization of a cell. This rule could then be applied to other verbs, for example GIVE + point to chest + person’s location in space=GIVE.1p.3p. In this way, any theories of morphosyntax that use rules of referral and/or refer to the real-world location of a person and not be contained to the syntax or sets of features would be better at explaining verb agreement in ASL. The importance of referring to the real-world location of a person may indicate that ASL needs to access semantic interpretation at an earlier stage than spoken languages. This may be one reason as to why Distributed Morphology has difficulty explaining ASL morphology, as in DM the creation of the phonological form and the semantic interpretation of the sentence are separate from one another.

4. Nominalizing Reduplication

Part of ASL derivational morphology is nominalizing reduplication, a process though which verbs become nouns (Abner 2017: 317). This process is where an aspect of the movement

of the verb is reduplicated to produce the noun form. The reduplicated movement is characterized by a short spatial trajectory compared to the verbal form and increased muscular tension of the articulators (Abner 2017: 318). This process yields both concrete object-denoting and result-denoting outputs (Abner 2017: 318). For a verb whose denoted action is performed with an object or on an object, concrete object-denoting outputs express that object (Abner 2017: 321). An example of a concrete object-denoting output is the nominal [$_N$ SIT.NMLZ-RED] 'chair' that comes from the verb [$_V$ SIT] 'sit' (Abner 2017: 318). The reduplication process derives the object the action is performed on—one sits on a chair. Result-denoting nominals, on the other hand, are where the noun derived is the result of the verb, as is the case with [$_N$ DEVELOP.NMLZ-RED] 'development' from the verb [$_V$ DEVELOP] 'develop' (Abner 2017: 322). For both of these categories, the process of nominalizing reduplication is allomorphic. There are three types of these nouns, separated according to which component is reduplicated: movement, aperture change, and orientation (Abner 2017: 330). The class to which a noun formed through reduplication belongs is not semantically determined, but is phonologically predictable from the form of the verbal predicate (Abner 2017: 330).

An additional problem for theories of morphosyntax to contend with in nominalizing reduplication is the fact that for a single output there may be some ambiguity with regard to the meaning. Some derived nominals can receive both a concrete object- *and* result-denoting interpretation, as in the case of MOVE-IN-AIR-BY-PLANE.NMLZ-RED, in which the sign PLANE.NMLZ-RED can be interpreted as either 'airplane' (concrete object-denoting) or 'flight' (result-denoting) (Abner 2017: 331). The absence of a classifier handshape does mitigate this, as if there is not a classifier handshape present, only a result-denoting interpretation is possible (Abner 2017: 331-33). However, if a classifier handshape is present, either a concrete object-denoting interpretation is taken or there is an ambiguous result—it could be either concrete object-denoting *or* result-denoting (Abner 2017: 333). Reduplication is a phenomenon present in many spoken languages as well, although reduplication in spoken languages is used more frequently for inflectional morphology—plurals, verb tenses, intensity, etc.—while in ASL nominalizing reduplication is a derivational process (Kauffman 2015).

Thus, theories of morphosyntax have two main issues to resolve with nominals derived in this way: the way they are formed and the ambiguity in their interpretation. In Distributed Morphology, the fact that the derivational process is not affixal but instead is repeating a part of the verb makes it difficult to fit within a purely syntactic framework without rules of referral, similar to verb agreement. DM may attempt to explain this by stating that, similar to ablative cases like 'sing'/'sang' in English, there is an affix added that does not have phonological material associated with it, but is realized through changing the material it affixes to. So, when the Vocabulary Item associated with nominalizing reduplication is inserted, it affects the node next to it by causing part of the phonological material in that node to reduplicate. There would need to be either three variations of this affix to account for the three different components that are reduplicated, or it simply surfaces in three different ways. With regard to the question of ambiguity, the reduplication morpheme that creates a concrete object-denoting output would most likely be stored as a separate morpheme from the reduplication morpheme that would create a result-denoting output. This, however, creates a problem since if these are two separate morphemes, there should be no ambiguity for whether a noun is concrete object-denoting or result-denoting. This could be explained by accidental homophony, where the morphemes happen to result in outputs that are the same sign, but have two different meanings, resulting in ambiguity due to the fact that they appear to be the same sign.

Paradigm Function Morphology would explain the derivation of these nouns through a process that copies a specific part of the root. For example, the realization of the cell <SIT, {nmlz}> would be realized through copying a piece of the root SIT. Which piece of the root gets copied would depend on the root. Since forming the word is a process, not the concatenative addition of morphemes, Paradigm Function Morphology has fewer problems explaining ASL nominalizing reduplication, since it is changing the phonological material already present through reduplication, and not adding affixal material.

For Lexicalist theories, there may be a rule in the Lexicon that states that to nominalize a verb, a specific part of that verb is reduplicated. They may posit that there are three rules, such that each rule specifies a different part of the verb to be reduplicated, which are based on the phonology of the verb. For the ambiguity, it may be that the result from the nominalizing rule is, in some cases, actually two results, which are stored as two separate units in the Lexicon. For instance, PLANE.NMLZ-RED would be stored both as 'airplane' and as 'flight'.

5. Negation

ASL has two main avenues of negation: non-manual negation and manual negation. In ASL, non-manual negative markers consist of a side-to-side headshake as the primary negator, which is coupled with various facial expressions such as furrowed brows, the corner of the mouth down or a wrinkled nose, among others (Bembridge 2016: 2). The negative headshake is used in two ways: to negate a positive sentence, and to emphasize the negation of a negative sentence (Bembridge 2016: 2). It is important to note that the headshake can be the only indicator of negation in a sentence, or it can be used in conjunction with a negative lexical item such as NOT (Bembridge 2016: 2). If there is no lexically negative sign present, the negative headshake spreads over the entire verbal domain (Bembridge 2016: 2-3).

There are also a number of lexically negative manual signs (e.g. NEVER, DON'T), although Bembridge focuses on the negative lexical item NOT, formed by the thumb extended from a closed fist under the chin, with the hand moving quickly outward a few inches (2016: 3). Clausal negation can be indicated manually with a negative particle NOT. However, manual negation cannot exist without non-manual negation, as it results in ungrammaticality, as indicated in Figure 2 (Bembridge 2016: 3). For example, the lexical sign NOT must be accompanied by a negative headshake.

Figure 2
Manual and non-manual ASL negation

a. -----NEG
JOHN NOT BUY HOUSE

b. ----------NEG
JOHN NOT BUY HOUSE

c. *JOHN NOT BUY HOUSE
'John is not buying a house.'

ASL has another variety of manual negation: negation by negative incorporation or reverse of orientation. For a small group of predicates (e.g. KNOW, WANT, LIKE, HAVE, GOOD) they are customarily negated through a reverse in the orientation of hand or hands, for example a twisting outward or downward movement (Bembridge 2016: 3). This phenomenon has been termed *negative incorporation*, and is written as in Figure 3.

Figure 3
Negative incorporation in ASL

----------NEG
(INDEX$_1$) WANT$^{\rightarrow \text{REVERSE}}$
'I don't want it.'

----------NEG
(INDEX$_1$) LIKE$^{\rightarrow \text{REVERSE}}$
'I don't like it.'

The spreading of the non-manual negative marker over the entire verbal domain as in part (b) of Figure 2 poses a problem for Strong Lexicalist theories, which posit that inflectional morphology such as negation takes place in the Lexicon through WFRs. However, the non-manual marker spreads over a syntactic domain—the entire verb phrase—which cannot be modelled in a theory that only deals with the formation of individual words (or, in the case of idioms, phrases). They could attempt to explain this phonologically, that the non-manual negative marker spreads due to phonological reasons associated with the marker. However, since this is restricted to the verbal domain, this cannot be explained solely phonologically. So, it seems as if Strong Lexicalism would have a difficult time explaining this phenomenon. However, it would have a much easier time explaining the co-occurrence of the manual and non-manual markers as well as the negative incorporation. For the co-occurrence of manual and non-manual markers, the word-formation rules may add both the manual negative marker and the non-manual marker. There may also be another rule that adds a non-manual negative marker but not a manual negative marker. However, there would be no rule adding a manual negative marker without a non-manual negative marker. For negative incorporation, similar to nominalizing reduplication, there may be a word-formation rule or a set of rules that apply only to the verbs which are negated through negative incorporation. These rules would specify that a certain movement which is a part of the verb is reduced, thereby negating it (they would also add a non-manual negative marker).

In Paradigm Function Morphology, the spread of the non-manual marker also poses a problem as the realization of each cell is a single word. Aside from that, though, explaining ASL negation using Paradigm Function Morphology is fairly straightforward. For some words, the realization of the cell <VERB, {negation}> would be NOT+VERB, while for verbs like WANT it would be a function of the verb such that the motion of the verb is reversed.

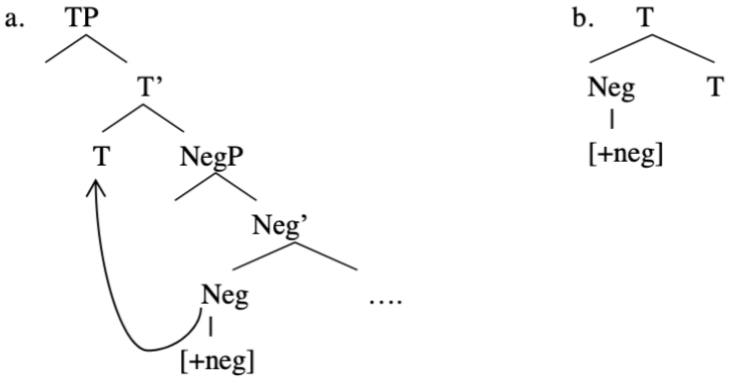
Bembridge gives an overview of a DM attempt to explain ASL negation using the framework of Distributed Morphology. She lays out the Vocabulary Items associated with ASL negation:

Figure 4
Vocabulary Items of negation in ASL

a. [NEG, ADV] ⇔ NOT
b. [T, NEG] ⇔ NEVER
c. [NEG] ⇔ --DON'T / V__ ; where V ∈ {like, want, know}
d. [NEG] ⇔ Ø

In ASL, there can be both NOT and NEVER, which Bembridge explains by claiming that NEVER is "base-generated in Neg^{o} and subsequently undergoes Neg-to-T movement to account for the distribution of NEVER" as in Figure 5 (Bembridge 2016: 15-16). Since Neg and T have been adjoined through head movement, they are said to have undergone Fusion, yielding a single node for Vocabulary Insertion (Bembridge 2016: 16).

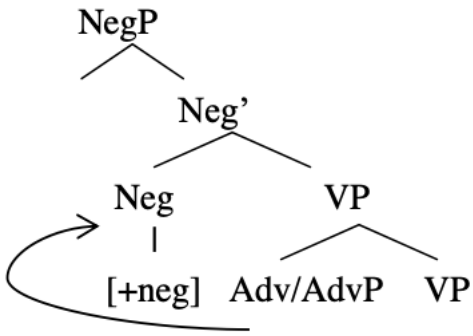
Figure 5
Context for insertion of NEVER



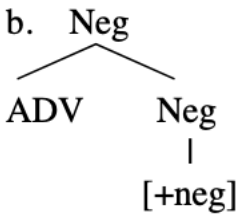
Since in ASL there can be a non-manual negator without NOT, but not vice versa, Bembridge claims that the features that dominate the NEG head are inherently negative, while NOT is not inherently negative (Bembridge 2016: 16). Bembridge likens ASL negation to French negation using Rowlett's analysis of French. In Rowlett's analysis of French, Rowlett argues that the negative *pas* is an adverb as it serves to modify something, and is inherently negative, so it licenses *ne* by "transmitting its [+NEG] feature to Neg^{o}, the locus of *ne*" (Bembridge 2016: 17). Similarly, Bembridge argues that the adverb licenses NOT, and is not necessary by convention, accounting for why only non-manual negation is necessary, since it is the only inherently negative element. The context for the insertion of NOT is created by the ADV head undergoing head adjunction to NEG, as in Figure 6.

Figure 6
Context for insertion of NOT

a.



b.



The third and fourth vocabulary items are representative of the allomorphy found depending on what the verb is. For verbs like WANT, where negation is marked by negative incorporation, the Vocabulary Item –DON'T is inserted, which represents that process. To me, it is still unclear how DM deals with the presence of a non-manual and manual, as in the case of [NEG, ADV] presumably only NOT would be inserted, and not the non-manual marker. While Bembridge shows the environments in which manual negative markers like NOT are inserted, she does not show examples of trees where both a non-manual and a manual negative marker are inserted, only likening it to how French negation works. One explanation is that there is another negative morpheme that operates on the clausal level (thus explaining the spread of the non-manual marker over the verbal domain), and that is where the VI for the non-manual marker is inserted. A restriction may then be imposed that in the case that it cooccurs with a manual negative marker, the non-manual marker is limited to that particular morpheme and will not spread across the clause.

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