UNDERSTANDING CONJUNCTIONS

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Abstract There is a long tradition in the linguistics literature of function words being historically derived from content words. This study examines one such evolution, concerning the ASL sign UNDERSTAND. This sign, with concomitant phonological, semantic, and syntactic shifts, results in the conjunction we call UNDERSTAND'. UNDERSTAND' is used to introduce qualifying adversarial clauses; it means, loosely, 'with the understanding that'. We show the nature of the shifts that occur in this derivation, and relate them to parallel ASL derivations. For example, the signs FINISH, WRONG, and SUPPOSE all have related derived conjunctions. We examine similar verbs in ASL such as INFORM and WARN, and show that they have not undergone these shifts; hence this process is not automatic. We discuss similar examples in spoken languages such as French and Niger-Congo, of function words being historically derived from content words. Finally, we propose tests for determining whether such conjunctions are co-ordinating or subordinating, and conclude that UNDERSTAND' is a sub-ordinating conjunction.

Introduction

In the course of investigating a variety of structures in American Sign Language (ASL), we happened upon a construction which we believe had not been previously discussed in the ASL literature. The construction involves the use of what looks on the surface like the verb UNDERSTAND, but which behaves differently from it phonologically, semantically, and syntactically. What we would like to do here is to describe what we found, and analyse it in relation to other phenomena in ASL grammar as well as to similar phenomena in other languages of the world.
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Consider the sentences in Examples (1) and (2):²

(1) 
hn
ME UNDERSTAND MEAN.
'I understand what (it) means.'

(2) 
ME GO-TO STORE NOW NIGHT, UNDERSTAND YOU WATCH MY CHILDREN, OK?
'I'll go to the store tonight provided that you babysit, ok?'

In Example (1), UNDERSTAND is being used in its regular verbal sense. It is uninflected, so there is only one movement to the sign. It takes a subject, ME, and has a core meaning of comprehension.

In Example (2), however, UNDERSTAND is being used in a very different way. Formationally, there are two shifts. First, the movement is repeated. Secondly, a special non-manual behaviour is associated with the sign, consisting of an eyebrow raise, chin thrust, lip raise, and eye widening. Semantically, as our translation suggests, the meaning of UNDERSTAND here is something like 'provided that'. Syntactically, UNDERSTAND in Example (2) does not seem to be functioning as a verb. We will call the UNDERSTAND used in Example (2) UNDERSTAND'. The notation UNDERSTAND' should be understood as a shorthand that includes the non-manual behaviours described above. Let us turn now to a deeper analysis of UNDERSTAND'.

UNDERSTAND'

When we look at further examples of UNDERSTAND', we find that some signers show a slight variation in the manual portion of the sign, in that the movement is not necessarily repeated. However, the non-manual characteristics remain relatively constant across signers.

Furthermore, we find a wider semantic range, even within signers. There seem to be three distinct uses. The first, closest in meaning to the use given in Example (1), is indeed something like 'provided that'. Further examples are given in Examples (3) and (4).

(3) ME GONE EUROPE, UNDERSTAND' FLY-THERE-DIRECTLY.
'I will go to Europe provided I can get a non-stop flight.'

(4) 
_t
ONE DAY ME MY HOME, ME WANT #WHAT? WALK IN CLOSET, UNDERSTAND' #ALL MINE!
'When I get my dream house, what I want most is a walk-in closet, as long as everything in it is mine, and only mine!'
The second meaning is something like 'contrary to expectation'. Examples are given in (5) and (6).

(5) ME GO-TO GALLAUDET UNDERSTAND' ME NOT MAJOR BUSINESS.
   'I'm going to Gallaudet, but not to major in business.'
   (The addressee knew that the signer was majoring in business at NTID.)

(6) ME GONE PARTY ALL-NIGHT, UNDERSTAND' NOT-YET DRINK ME.
   'I went to an all-night party, but it's not what you think — I didn't drink.'

The third meaning is a form of clarification. See Examples (7) and (8).

(7) th
   ME FINISH TOUCH TORONTO, UNDERSTAND' NOT-YET
   mm th
   SIGHT-SEE-LEISURELY##, ME NOT-YET.
   'I've been to Toronto, though I haven't had a chance to really see it.'

(8) BEFORE, CAN FIND CHICKEN CHEAP, BUT NOW ME CAN'T FIND.

Clearly, there is a semantic core in common, coming from something like 'I want you to understand'. However, even though that is the core meaning, the arguments 'I' and 'you' cannot be overtly expressed in the syntax. So, for example, Example (9) is ungrammatical with an explicit subject for UNDERSTAND'.

(9) YOU CAN BORROW MY CAR, (*/YOU) UNDERSTAND' MUST PUT-GAS SELF.
   'You can borrow my car, provided you gas it up yourself.'

UNDERSTAND' occurs between clauses, and seems to be introducing an adjunct clause. We also note that in these sentences, UNDERSTAND' cannot take a modal, as shown in Example (10).

(10) YOU CAN BORROW MY CAR, (*/MUST) UNDERSTAND' PUT-GAS SELF.
    'You can borrow my car, provided you gas it up yourself.'

These facts lead us to conclude that UNDERSTAND' is functioning as some kind of conjunction. We would like to suggest that UNDERSTAND' is yet
another example of a phenomenon that has been discussed extensively in the linguistics literature, namely of a function word being derived from a content word. In particular, we are suggesting that UNDERSTAND' is derived historically from a verb, but has mutated into a conjunction. We will first discuss similar examples from ASL and then turn to parallel examples from spoken languages.

Other examples in ASL

There are well-known examples in ASL of function words derived from content words. For example, there is an adverbial conjunction FINISH' derived from the verb FINISH (Fischer & Gough, 1972), as shown in Example (11). When FINISH' is used as an adverbial conjunction, both the entire preceding clause and FINISH' itself have associated distinctive non-manual behaviours. The non-manual behaviours associated with FINISH' include eye-widening, head tilt, and a pause. Furthermore, the manual portion of FINISH' differs from that of FINISH in that the movement is made more sharply and with a long final hold. Note that neither the non-manual behaviours nor the change in formation for FINISH and FINISH' is analogous to the change from UNDERSTAND to UNDERSTAND'.

(11) br 'finish'
YOU EAT FINISH', WE-TWO GO SHOPPING.
‘After you eat, we will go shopping.’

It has also been remarked that WRONG has a variety of functions, including a conjunction with adverbial content (meaning something like ‘but unexpectedly’). But in fact just as with UNDERSTAND' and FINISH', the WRONG that functions as a predicate is phonologically and syntactically distinct from the WRONG' that functions as a conjunction. Phonologically, WRONG' differs from WRONG in two ways: manually, WRONG' is signed with a slightly sharper movement; non-manually, WRONG' is accompanied by tense lips and a raising and straightening out of the body. Again, these changes are idiosyncratic; they differ from the changes involved in deriving UNDERSTAND' or FINISH'. Syntactically, WRONG', like UNDERSTAND', cannot take subjects or modals. (See Example (12).)

(12) STUDENT TYPE HER T-E-R-M PAPER TYPE. [aspref]
    'wrong'
     (*SHE) (*CAN) WRONG' ROOMMATE BOTHER-HER . . .
‘A student is typing her term paper, but her roommate pesters her . . .’

Other verb-conjunction pairs that pattern similarly to WRONG-WRONG', including having distinctive non-manual behaviours, are for example, SUCEED-SUCCEED' and HAPPEN-HAPPEN'. Here again, the phonological and semantic changes are idiosyncratic, although the syntactic shifts that occur are similar.

We thus see that when content words change to function words in ASL, there is generally an associated phonological change, including a characteristic non-
manual behaviour, as well as a loss of syntactic privileges of occurrence. The derivation of UNDERSTAND' from UNDERSTAND can be seen in this context as part of a systematic process. This process, while derivational in character, does not regularly apply across a number of forms. This kind of systematic process of deriving function words from content words is also found in spoken languages, as we shall now show.

Examples in other languages

One of the ways in which languages change is that splits or shifts can occur so that a word or class of words changes categories; Bybee (1985) as well as numerous classical scholars have shown that free functor morphemes become bound morphemes, for example. It has been argued that the Proto-Indo-European person agreement inflections started out as free personal pronouns which became cliticised and eventually ended up as bound inflections.

It has also been suggested that functors can sometimes be derived from content words. For example, Li & Thompson (1973) argue for a lexical reanalysis in the history of Mandarin in which verbs become prepositional case-markers, and Givón (1975) argues for a similar process in Niger-Congo, as in Example (13):

(13) (Yoruba)
mo bá o mú iwé wà iilé.
I benefited you take book come house.
'I brought a book home for you.'

Many conjunctions, particularly complex conjunctions, are transparently derived from related verbs. For example, in French, many conjunctions consist of a past participle or contentful prepositional phrase, followed by a complementiser, as in Example (14); indeed, as the translations indicate, some of these conjunctions have complex counterparts in English:

(14) pourvu que, à condition que, à moins que, afin que,
provided that, on condition that, unless, in order that,
attendu que, vu que, étant donné que,
given that, seeing as, given that.

These complex conjunctions no longer function as verbs or nouns; they take sentential complements, but they cannot take subjects. Those derived from verbs cannot take modals. They are unambiguously functioning as conjunctions that now happen to coexist with phonologically and semantically related content words.⁴

Lord (1976) shows that a similar process occurred in a large number of languages. For example, in what have been called the Kwa languages of Niger-Congo, verbs meaning 'say' have evolved into sentential complementisers. In fact, in some languages this change has occurred at two different stages of development (with different words for 'say'), so that in some sentences there will be as many as three apparent verbs 'say' of which only one is functioning as a main.
verb, the other two of which function as a single complementiser unit, as in Example (15):

(15) (Yoruba)
ó so wi-kpé adé lo.
he say (say-say) Ade go.
‘He said that Ade went.’

In discussing similar processes within current syntactic theory, Campbell (1989) suggests that what happens is that historically a lexical item can lose its categorial selection privileges, its ability to assign a theta-grid (select thematic roles), or both. These studies on historical change suggest that the process of deriving function words from content words can take place over a long period of time. If this is true, and if individual lexical items are the leaders in the change, then we might expect to see different lexical items at different stages of development. We will next discuss evidence for this in ASL.

Parallel verbs without corresponding conjunctions

As we saw above, WRONG' has changed dramatically, semantically as well as syntactically; when used as a conjunction, WRONG' need not carry adversative meaning. Although UNDERSTAND' has changed syntactically, as we have shown, its core meaning is still related to the verb UNDERSTAND fairly transparently. We could thus say that WRONG' has progressed further from its source than UNDERSTAND', which is probably still very much in the process of developing. This would account for some idiosyncrasies in signers' use of the range of meanings. What about the other end of the scale?

In explaining the meaning of UNDERSTAND', one of our consultants explicitly mentioned its meaning and use parallel to two verbs, WARN and INFORM. They have somewhat similar meanings to UNDERSTAND', and are used in similar pragmatic contexts. Some examples of native signers' spontaneous productions using these verbs are given in Examples (16) and (17):

(16) YOU CAN BORROW MY CAR, BUT WE MUST WARN YOU ALL-GONE GAS.
‘You can borrow my car, but I must warn you that there’s no gas in it.’

(17) MOTHER TELL-ME CAN GONE MOVIE, BUT SHE INFORM-ME THERE CROWDED.
‘Mom said I could go to the movies, but she told me it would be crowded there.’

Notice the differences between WARN and INFORM versus UNDERSTAND': WARN and INFORM can take both subjects and modals, whereas UNDERSTAND' cannot. Furthermore, UNDERSTAND' seems to be signer-
oriented, in that it expresses the attitude of the signer, and can be used in a third-
person context only in direct quotation. See Example (18):

(18) *?MOTHER TELL-ME CAN BORROW CAR, UNDERSTAND' ME
MUST PUT-GAS.

As shown in Example (17), this is not true for INFORM, or indeed for WARN. 
Thus, whereas UNDERSTAND' has undergone the syntactic changes to become 
a conjunction, WARN and INFORM, despite their pragmatic similarities, have 
not made that transition. The process we have observed in deriving UNDER-
STAND' from UNDERSTAND could well apply in the future to verbs such as 
WARN and INFORM. However, given the idiosyncratic phonological relations-
ships found in the pairs we have already discussed, we would not want to predict 
the phonological modifications that such verbs would undergo.

What kind of conjunction?

We have been sidestepping the issue of whether UNDERSTAND' is a co-
ordinating or subordinating conjunction. The intuitions of native signers as well as 
our own are that the clauses introduced by UNDERSTAND' are adverbial sub-
ordinate clauses.\(^5\) We investigated a number of syntactic tests in an attempt 
to resolve this issue. Although one of the tests was inconclusive, two others sup-
ported our hypothesis that UNDERSTAND' introduces a subordinate clause.

The first test we tried involves the order between subordinate and main clauses. 
Many types of subordinate clauses can either precede or follow their main clauses. 
This is illustrated in Examples (19) and (20), both of which are acceptable, though 
in fact Example (19) is more frequent.\(^6\)

(19) SUPPOSE' YOU PUT-GAS, ME ACCEDE LOAN-YOU CAR.

'If you put gas (in the car), I'll agree to loan (it) to you.'

(20) ME ACCEDE LOAN-YOU CAR, SUPPOSE' YOU PUT-GAS.

Unlike clauses introduced by SUPPOSE', however, clauses beginning with 
UNDERSTAND' may not occur at the beginning of the sentence:

(21) *UNDERSTAND' MUST PUT-GAS SELF, YOU CAN BORROW MY 
CAR.

The fact that UNDERSTAND' is more restricted in its occurrence than 
SUPPOSE' does not preclude the possibility that UNDERSTAND' is a sub-
ordinating conjunction. There are other subordinating conjunctions in ASL that 
do not permit clausal reordering, as illustrated in Examples (22) to (24).

(22)  
<table>
<thead>
<tr>
<th>t</th>
<th>rh-q</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOKIES, ME GOBBLE-UP, WHY ME HUNGRY, ME.</td>
<td></td>
</tr>
</tbody>
</table>

'As for the cookies, the reason I scarfed them down was that I was hungry.'
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(23) \[ \text{rh-q} \]
\[ * \text{ME HUNGRY ME, ME GOBBLE-UP COOKIES WHY.} \]

(24) \[ \text{rh-q} \]
\[ * \text{WHY ME HUNGRY, ME, GOBBLE-UP COOKIES.} \]

Thus this test cannot tell us whether \textit{UNDERSTAND'} is a subordinating or co-ordinating conjunction.

A grammarian's test for subordinate versus co-ordinate clauses is whether the clause can stand alone. The intuition of native signers is that clauses introduced by \textit{UNDERSTAND'} are incomplete. For example, if Example (25) opens a discourse, it is unacceptable, and if it occurs within a discourse, it is understood as a continuation, much like Examples (26) or (27):

(25) ?\textit{UNDERSTAND'} MUST PUT-GAS SELF

(26) Because I'm pooped.

(27) Tukaretyatta kara (Japanese)

\quad tired out because

\quad 'because I'm pooped'.

A final syntactic test seems to differentiate strongly between co-ordinate and subordinate conjunction: the ability to undergo one kind of conjunction reduction. In ASL, this kind of conjunction reduction is permitted in co-ordinate structures, as illustrated in Examples (28) and (29):

(28) ME ADORE CHOCOLATE, ALWAYS GOBBLE-UP e. 7

\quad 'I love chocolate, and always scarf it down.'

(29) ME ADORE CHOCOLATE, BUT ALLERGIC e.

\quad 'I love chocolate, but I’m allergic to it.'

In this construction, the covert object in the second conjunct is understood to be coreferential with the overt object in the first conjunct. This reduction process is not possible in subordinate clauses. Rather, an overt pronoun or lexical NP is required in the object position. 8 Compare Example (30) with (31), and Example (32) with (33).

(30) \*SUPPOSE' SEE CHOCOLATE, ME GOBBLE-UP e.

(31) SUPPOSE' SEE CHOCOLATE, ME GOBBLE-UP INDEX.

\quad 'Whenever I see chocolate, I eat it.'

(32) \*ME ADORE CHOCOLATE, EVEN-THOUGH ALLERGIC.

(33) ME ADORE CHOCOLATE, EVEN-THOUGH ALLERGIC INDEX (CHOCOLATE).

\quad 'I love chocolate, although I'm allergic to it.'
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In Examples (31) and (33), the overt pronoun makes the sentence grammatical, is contrast to Examples (30) and (32), which are ungrammatical due to the absence of the pronoun.

Recall that the co-ordinate structure in Example (29) is grammatical. If we substitute UNDERSTAND' for BUT, we obtain Example (34):

(34) *ME ADORE CHOCOLATE, UNDERSTAND' ALLERGIC e.

As in the cases in Examples (30) to (33), Example (34) can be saved by introducing an overt pronoun or a lexical NP, as in Example (35):

(35) ME ADORE CHOCOLATE, UNDERSTAND' ALLERGIC INDEX (CHOCOLATE).

'I love chocolate, although I'm allergic to it.'

We believe, therefore, that evidence comes down on the side of UNDERSTAND' being a subordinating conjunction, introducing a qualifying adverbial clause.

Conclusion

ASL, a young and rapidly developing language, provides a natural laboratory for studying the processes by which some function words develop from content words. We have found several verbs in ASL such as WRONG, SUPPOSE, and UNDERSTAND, that have morphologically related alternates that function as conjunctions introducing an adjunct clause; additionally, we have shown examples of this process in a variety of spoken languages. We have further demonstrated that apparently similar predicates in ASL have not yet undergone this process.

The derivation of function from content words is clearly something that happens in many if not most of the languages of the world. What is exciting about studying this process in ASL is the ability to see it happening before our eyes.

Notes

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2. We use the following conventions for representing ASL: signs are glossed in capital letters if a single sign requires a gloss of several English words, those words are connected by hyphens in the gloss. Fingerspelled words are represented with hyphens between individual letters. Fingerspelled loan signs are indicated by a '#' preceding the gloss. A line above a sign or sign sequence indicates the scope of the facial expression or other non-manual behaviour indicated above the line. For the sake of this paper, abbreviations include:
3. In fact there is another conjunction, *WRONG*'*, which may function as some kind of co-
ordinating conjunction for some signers (*WRONG-TWIST*), meaning 'and then', without
any adversative meaning.

4. It isn't only conjunctions that can make the transition from content word to function
word. Complex prepositions in many languages can also be derived from content words;
for example, *in spite of* or *on top of* in English and *no shita ni* and *no ue ni* in Japanese.
We are grateful to Morris Halle for pointing this out to us.

5. *UNDERSTAND* can co-occur with *BUT*, suggesting that it might be some form of co-
ordinating conjunction insofar as *BUT* itself is a co-ordinating conjunction. However,
the order of *BUT* and *UNDERSTAND* is fixed, and the two cannot be separated by any
other sign. This leads us to suspect that *BUT*+*UNDERSTAND* functions as a complex
unit, reminiscent of the complex complementisers discussed by Lord (1976). Native
signers have told us that their intonations are that *BUT*+*UNDERSTAND* function
together as a subordinator.

6. We are assuming, as seems plausible based on semantics and distributional facts, that
*SUPPOSE* ('if') is a subordinating conjunction. Interestingly, *SUPPOSE*, which
introduces conditional clauses, is itself derived from the content word *SUPPOSE*, with concomitant phonological changes, such as eye widening and eyebrow raising.

7. 't' in this and subsequent examples represents the neutral representation of an empty
category. For the present we are uncommitted to whether this empty category is empty
in underlying structure, is moved, or is deleted.

8. The overt pronoun is required with non-agreeing verbs, as in the examples given. How-
ever, since agreeing verbs license a null pronoun (Lillo-Martin, 1985), the object can be
empty in the case of such verbs.

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