

Presupposition & Root Transforms in Adjunct Clauses*

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Hooper & Thompson (1973; hereafter H&T) observe an interesting correlation between the syntax and pragmatics of adverbial clauses. As shown in (1a), adverbial *when-*, *before-* and *after-* clauses resist root transformations like Left Dislocation; correspondingly their content is presupposed (1b). By contrast, *because*-clauses like those in (1b) allow Left Dislocation (2a), and their content is asserted, not presupposed:

- (1) a. *Mildred bought a Mercedes
[**when/before/after** her son, he purchased stock in Xerox].
b. Mildred bought a Mercedes
[**when/before/after** her son purchased stock in Xerox].
Presupposes: Mildred's son purchased stock in Xerox.
- (2) a. Mildred drives a Mercedes [**because** her son, he owns stock in Xerox].
b. Mildred drives a Mercedes [**because** her son owns stock in Xerox].
Asserts: Mildred's son purchased stock in Xerox.

The robustness of H&T's correlation between root transform availability and presupposition is underscored by example (3). Here presupposition is forced on the *because*-clause by association with negation; notice now that Left Dislocation is blocked.

- (3) *Sam is going out for dinner [**not because** his wife, she can't cook],
but **because** he wants to discuss Q-magic with Stella. (= H&T's (245))
Presupposes: Sam's wife can't cook

Hooper & Thompson's observations raise some simple, but intriguing questions:

* The authors are grateful to audiences at the 2003 LSA Annual Meetings (Atlanta, GA), and at NELS 34 (Stony Brook, NY) for helpful feedback. We particularly thank G. Cinque and O. Ciucivara for discussion of the Italian and Romanian data in section 3.3.

- Why should a semantic/pragmatic phenomenon like presupposition be correlated with the possibility of certain syntactic operations – specifically, root transformations?
- How is this correlation achieved?

In this paper, we suggest an answer based on work by Michael Johnston (1994), who argues for an important semantic difference between *because*-adjuncts versus *when*-/*before*-/*after*-adjuncts. We propose that Johnston's semantic difference explains the presupposed/asserted contrast, and correlates with a syntactic difference, which explains the differential availability of root transforms.

1. The Breadth of the Phenomenon

Hooper & Thompson's correlation is exhibited across a wide variety of root transforms in English, including not only with Left Dislocation, but also other root transformations such as VP Preposing, Negative Constituent Preposing, Directional Adverb Preposing, Participle Preposing, PP Substitution, Subject Replacement, Direct Quote Preposing, Complement Preposing, Adverb Dislocation, Right Dislocation Tag Question Formation, and Topicalization. As shown in (4a-g), temporal adverbial clauses resist all of these operations:

- (4) a. *Helen and Jack had dinner [**before into the kitchen trooped the children**]
(Directional Adverb Preposing)
- b. *The villagers all burst into song [**when in came the bride and groom**].
(Directional Adverb Preposing)
- c. *We were all much happier [**when upstairs lived the Browns**].
(PP Substitution)
- d. *The guests laughed out loud [**after Mary stopped singing, strangely**]
(Adverb Dislocation)
- e. *The customer stomped out [**after the clerk, I guess, insulted her**]
(Complement Preposing)
- f. *Max left the room [**after "I won," Alice exclaimed**]
(Direct Quote Preposing)
- g. *Max was quiet [**before Alice was sleeping, wasn't she?**]
(Tag Question Formation)

But when these operations occur in *because*-clauses, as in (5a-g), the results are considerably better:

- (5) a. Helen and Jack stopped eating
[**because into the kitchen trooped the children**]
- b. The villagers burst into song [**because in came the bride and groom**].
- c. We were all much happier [**because upstairs lived the Browns**].
- d. The guests laughed out loud [**because Mary stopped singing, strangely**]
- e. The customer stomped out [**because the clerk, I guess, insulted her**]
- f. ?Max left the room [**because "I won," Alice exclaimed**]
- g. Max was quiet [**because Alice was sleeping, wasn't she?**]

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1.1. Swedish (Andersson 1975)

Hooper & Thompson's correlations also extend beyond English. As discussed by Andersson (1975), Swedish *because*-clauses permit root transforms when their content is asserted (6):

- (6) a. USA har startat ett nytt krig [**därför att Nixon, han är ju inte klok**].
U.S has started a new war because that Nixon he is EMPH not sane
'The US has started a new war because Nixon is insane.'
(Left Dislocation)
- b. Vi följer inte med [**därför att ÖIS gillar vi inte**].
We follow not with because that ÖIS (= a sports team) like we not
'We aren't coming along because we don't like ÖIS.'
(Topicalization)
- c. Vi blev överraskade [**därför att ut i köket sprang plötsligt Olle**].
We were surprised because that out into kitchen-the sprang suddenly Olle'
'We were surprised because Olle suddenly ran into the kitchen.'
(Directional Adverb Preposing)

But, as in English, Swedish *when*-clauses block root transforms when their content is presupposed (7):

- (7) a. *Vi kom till Stockholm [**när Henry, han var på väg till Kairo**].
We came to Stockholm when Henry, he was on way to Cairo
'We came to Stockholm when Henry was on the way to Cairo.'
(Left Dislocation)
- b. *Vi åkte genast hem [**när Peter vi hade talat med**].
We went immediately home when Peter we had spoken to
'We went immediately home when we had spoken to Peter.'
(Topicalization)
- c. Vi satt och talade [**när ut i köket sprang plötsligt Olle**].
We sat and talked when out into kitchen-the sprang suddenly Olle'
'We sat and talked when Olle suddenly ran into the kitchen.'
(Directional Adverb Preposing)

1.2. Japanese (Minami 1974, 1993, Noda 1986, Takubo 1987, Takayama 1987, Koizumi 1993)

Japanese also exhibits the Hooper & Thompson correlation. Japanese root transformations are restricted to a construction involving Topicalization (NP-*wa*) + a modal element. This construction may occur in non-presupposed *kara*-clauses (*because*-clauses), as shown in (8a-d):

- (8) a. **kondo-no typhoon-wa ookii-rashii-kara**,
 this-gen typhoon-top big-seem-because,
 dansui-ya teiden-ni sonaeta hou-ga ii.
 cutting water-and cutting electricity-for prepare(PST) way-nom good
 ‘Because the coming typhoon seems to be very strong, (we) had better prepare
 for the water and electricity being cut off.’
- b. **mukou-no hodou-wa kawaite-iru-youda-kara**, mukou-ni wataro-u.
 over there-gen sidewalk-top dry-is-seem-because, over there-to cross-will
 ‘Because the sidewalk on the other side seems drier,(I) will cross the road.’
- c. **sake-wa karadani yoku-nai-darou-kara**, oolong-cha-o nomo-u.
 sake-top health good-Neg-May-because, oolong-tea-acc drink-will
 ‘Because sake may not be good for (our) health, I will have oolong tea.’
- (9) a. **ame-ga futta-kara**, Taroo-wa soccer-o shi-nakatta-no-de-wa nai,
 rain-nom fell-because, Taro-top soccer-acc didn’t-Comp-be Top Neg,
 totemo samukatta-kara-da.
 very cold(PST)-because-be(NPST)
 ‘Taro didn’t not play soccer because it was raining, but because it was very
 cold.’
- b. ***ame-wa futta-darou-kara**, Taroo-wa soccer-o
 rain-top fall(PST)-may-because Taro-to soccer-acc
 shi-nakatta-no-de-wa nai, totemo samukatta-kara-da.
 didn’t-Comp-be Top Neg, very cold(PST)-because-be(NPST)
 ‘Taro didn’t not play soccer because it may have rained, but because it was
 very cold.’

But Japanese *toki-* (*when-*), *mae-* (*before-*) or *ato-*clauses (*after-*clauses), which are presupposed, block topicalization (NP-*wa*) + modal (10):

- (10) a. ***Taro-wa raishuu kuru-darou-toki**, soba-o motte kite morau
Taro-top next week come-may-when, noodles-o bring come BENE
 ‘When Taro may come next week, (I) will ask him to bring soba noodles.’
- b. ***Taro-wa ki-ta-darou-ato**, minna-no naka-ga warukunat-ta
 Taro-top come(PST)-may-after, everyone-gen relation-nom bad-become-PST
 ‘After Taro came, everyone was in a bad mood.’
- c. ***Taro-wa kuru-darou-mae**, minna-no naka-ga warukunat-ta.
 Taro-top come-may-before, everyone-gen relation-nom bad-become-PST
 ‘Before Taro came, everyone was in a bad mood.’

2. Our Analysis

We propose an account of the Hooper & Thompson correlation based on the semantics for adverbial clauses offered by Johnston (1994), who draws an important distinction between temporal clauses headed by *when*, *before* and *after*, and causal clauses headed by *because*.¹

¹ An appeal to Johnston’s semantics for *because*-clauses may not be essential to our account. Davidson (1967) analyzes *cause* as a binary relation between event individuals (cause(e1,e2)) rather than propositions,

sentence, creating an interval description that restricts a quantificational adverb. This explains why temporal clauses presuppose the existence of the complement event.

2.2. “Because” –Clauses as Event Relations

Causal clauses have a very different analysis. For Johnston *because* takes a closed event sentence as its complement, and expresses a binary relation between closed event sentences. The truth-conditions for *because* are given in (14) and the analysis of a basic case, *Marty sold his bike because the gears broke*, is given in (15).

(14) **Truth-conditions:** If X and Y are propositions, then **because'**(X,Y) is true iff X is true as a result of Y being true.

(15) a. Marty sold his bike because the gears broke.
 b. **because'**($\exists e_1$ [**sold'**(Marty, his bike, e_1)], $\exists e_2$ [**break'**(Marty, his bike, e_2)])

Notice that, under the truth conditions given, the existential quantifier over events is not provided by *because*.

Furthermore, since *because* and its complement do not yield a description of events or intervals, it cannot function as a restriction on an adverb of quantification. As Johnston discusses, there is no reading of (16a) equivalent to (16b) where all relevant events caused by John's wrecking the car are ones in which Jane fixes it.

(16) a. Jane **always** fixes the car because John wrecks it.
 b. **# \forall because'**($\exists e_1$ [**wreck'**(John, the car, e_1)]) [**fix'**(Jane, the car, e_2)]
 # 'All (relevant) events caused by John's wrecking the car are ones of Jane's fixing it.'

Since the *because*-clause does not (and cannot) restrict an adverb of quantification, its content is not presupposed.

In summary, then, causal connectives combine with a closed event sentence, and create a functor that selects another closed event sentence. They do not create restrictions on adverbs of quantification, and this explains why they do not presuppose the existence of the complement event, but merely assert it.

2.3. A Structural Conjecture

Looked at from a certain perspective, Johnston's semantics implies that *because* thus applies to a "larger" semantic domain than temporal connectives. Temporals combine with open eventuality descriptions. *Because* combines with a closed eventuality description; that is, an open eventuality description plus a quantifier:

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when Marcia was at the cafe

when' + **at'**(Marcia, the cafe, e)

because Marcia was at the cafe

because' + $\exists e$ + **at'**(Marcia, the cafe, e)

It is attractive to suppose that this semantic difference is reflected in a syntactic difference: that along with having a larger semantic domain than *when*, *before*, and *after*, *because* also has a larger syntactic domain. Suppose temporals combine with some projection YP (17a). Then we may propose that *because* combines with some larger projection XP, which includes YP, and whose head contributes the existential quantifier \exists over events (17b).

- (17) a. **when/before/after** [YP ...]
 b. **because** [XP [X' $\exists e$ [YP ...]]]
 c. **because** [XP her son [X' $\exists e$ [YP he owns stock in Xerox]]]

Notice that this extra layer of structure will bring with it an extra specifier position (Spec of XP). We propose that it is just this area that is accessed by root transformations, along the lines in (17c).

3. Some Cross-linguistic Data

We will not attempt to supply the details of (17) here, or identify the specific categories X and Y, but rather will close by noting, very briefly, the existence of some apparent cross-linguistic evidence that *because*-complements are in fact syntactically "larger" than *when/before/after*-complements, as expected under our proposal. We do not present these data as definitive, but only suggestive. Plainly a good deal of further work would be required on each construction to show that the distinctions observed are due to the structural one we are proposing.

3.1. Haitian Creole Verb-Doubling (Lefebvre & Ritter 1993)

Lefebvre and Ritter (1993) note that Haitian Creole can form temporal and causal adjunct clauses by "doubling" the main clause predicate in initial position. This process is illustrated in (18a-c):

- (18) a. [**Bwè** li bwè remèd la], l ap geri
 drink he drink medicine DM he FUT recover
 'As soon as he takes the medicine, he will get better'
 b. [**Vini** Jan te vini an], manman li kontan
 come John PST come DM mother his happy
 'Since John has come, his mother is happy'

- c. [**Rive** Jan rive (a)], Mari pati
 arrive John arrive DM Mary leave
 'As soon as/since John arrived, Mary left'

Lefebvre and Ritter argue that in temporal adjuncts, the doubled V resides in T; whereas in causal adjuncts, the doubled V is positioned higher, in C; see (19a,b). Among other things, this explains why clausal adjuncts can contain tenses, modals and negation, but temporal adjuncts cannot; compare (20a) and (20b).

- (19) a. [TP V ... V ...] doubled *when*-clauses in HC
 b. [CP V ... [TP ... V ...]] doubled *because*-clauses in HC
- (20) a. **Achte** Jan pa te achte flè yo, Mari fache.
 buy John NEG PST buy flower Det, Mary angry
 'Because John didn't buy the flowers, Mary is angry.'
 b. ***Di** m pa di l sa, li ale.
 tell I NEG tell him that, he go
 'As soon as/When I didn't tell him that, he left.'

So the size-difference in temporal vs. causal adjuncts is reflected in a difference in V scope.

3.2. Sakha Agreement (N. Vinokurova p.c.)

Agreement patterns in Sakha (N. Vinokurova) also appear to furnish evidence for a size difference. In Sakha root sentences, subject and verb agree, and *pro* is possible; see (21). *Because*-clauses show normal subject agreement (21a), but temporal clauses do not (21b):

- (20) a. Marty/pro amerika-qa baar-a
 Marty/he Amerikca-DAT exist-3
 'Marty/he was in America'
- (21) a. Marty belesipie-ti-n atylaa-bat-a [**toqo dieri pro amerika-qa baar-a**].
 Marty bike-3-ACC sell-NEGPST-3 because he America-DAT exist-3
 'Marty didn't sell his bike, because he was in America.'
 b. Marty belesipie-ti-n atylaa-bat-a [amerika-qa pro baar-(*a) kemiger].
 Marty bike-3-ACC sell-NEGPST-3 America-DAT he exist-(*3) time-dat-3
 'Marty didn't sell his bike, when he was in America.'

Assuming that subject agreement resides in a projection AgrsP above TP (Chomsky 1993), this suggests *because*-type adjuncts include AgrsP, but *when*-type adjuncts do not, a result consistent with Lefebvre and Ritter.

3.3. Romance Clitic Left Dislocation (CLLD)

Romance clitic left dislocation (CLLD) is known to be possible front of virtually any subordinate clause type (see Cinque 1990:58 for Italian; Zubizarreta 1998:187 for

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Spanish). Interestingly, however, whereas only single CLLD is available with temporal adverbial clauses, multiple CLLD is possible with causal clauses. The Italian facts in (22) and (23) from G. Cinque (p.c.) illustrate the contrast:²

(22) **Da quando** di vestiti a me Gianni non (**??me**) **ne** compra più,
When/since of clothes to me G. not to me of them buys no longer
sono costretto ad andare in giro mal vestito
I am forced to go around ill-dressed
'Since the time that Gianni stopped buying clothes for me, I have been forced to go around ill-dressed'

(23) **Poiché** di vestiti a me Gianni non **me ne** compra più,
Because of clothes to me G. not to me of them buys no longer
sono costretto ad andare in giro mal vestito
I am forced to go around ill-dressed
'Because Gianni stopped buying clothes for me, I have been forced to go around ill-dressed'

On the hypothesis that multiple CLLD is made possible by the existence of an additional position at the left-periphery of the clause, providing additional space for a dislocated element (Haegeman 2003), this contrast is consistent with the basic analysis proposed here.

A potentially similar phenomenon is pointed out to us by Oana Ciucivara (p.c.) for Romanian. In Romanian CLLD constructions two word orders are possible: the IO may precede the DO, or vice versa. For Ciucivara, the IO-DO order is more natural, and in this case, the presence of both clitics is possible, and indeed obligatory, in both temporal and *because*-clauses (24):

(24) a. IO>DO
De cand bunicului nepoatele-i nu i le-
of when grandpa-dat granddaughters.the-his not to him them (fem, pl)
am mai trimis, se simte din ce in ce mai singur
have.1st anymore sent SE-refl feels more and more alone.
'Ever since I no longer sent grandpa his granddaughters, he has been feeling more and more alone.'

² The contrast observed here appears to be distinct from one observed by Haegeman (2002, 2003), who argues for a structural difference between what she calls "central adverbial clauses" (conditional *if*-clauses, temporal *when*-clauses, purposive *so that*-clauses, among others), and "peripheral adverbial clauses," which (in her terms) "anchor to the speaker" like root clauses, and accept RTs (evidential *if*-clauses, contrastive *when*-clauses, resultative *so that*-clauses, etc.). According to Haegeman, Romance allows a single clitic left dislocation (CLLD) in 'central adverbial clauses', whereas multiple CLLDs are possible in 'peripheral adverbial clauses'. We will not attempt to relate Haegeman's claims with the data presented here.

- b. **Fiindca** bunicului nepoatele-i nu **i** **le** am mai trimis,
Because grandpa-dat granddaughters-his not to him them have.1sg anymore sent
se simte din ce in ce mai singur.
se-refl feels more and more alone.
'Because I no longer sent grandpa his granddaughters, he has been feeling more
and more alone.'

However, Ciucivara reports that when the DO precedes the IO, there appears to be a contrast: specifically multiple clitics remain acceptable in the *because*- clause (25b), whereas the indirect object clitic in the temporal clause is marginal (although not completely unacceptable) (25a).

(25) DO>IO

- a. ?**De cand** nepoatele-i, bunicului nu **i** **le**-am mai trimis, el se simte din ce in ce mai singur
b. **Fiindca** nepoatele-i, bunicului nu **i** **le**-am mai trimis, el se simte din ce in ce mai singur

One potential interpretation of this fact is that DO>IO represents a derived order in which the direct object has been moved to the at the left-peripheral position that we have been discussing, a position available in *because*-clauses, but unavailable (or only marginally so) in temporal clauses.

4. Conclusions

In this paper, we have that proposed that Hooper & Thompson's striking correlation between presupposition and the availability of root transformations in adjunct clauses is essentially an artifact of semantics, and its projection into syntax. Specifically, using the semantics for adverbials proposed by Johnston (1994) we have explored the following claims:

- Temporal connectives combine with open event sentences, yielding interval descriptions.
- These restrict (covert or overt) adverbial quantifiers and are presupposed.
- Causal connectives combine with closed event sentences, do not restrict adverbial quantifiers, and are not presupposed

Closed event sentences are semantically and syntactically "larger" than open ones, and the larger syntactic domain of causal adjuncts makes room for root transforms. We briefly reviewed some independent syntactic evidence that such a "size difference" does indeed exist.

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