

***Until* and Expletive Negation in Modern Hebrew**

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Goal: Provide an account for the occurrence of expletive negation (EN) under one reading of Modern Hebrew (MH) *ad* 'until' and its unavailability in the context of two other readings.

1. Outline of the talk

- ▶ The three possible readings of MH *ad* 'until'
- ▶ Only one reading remains with EN
- ▶ Fleshing out the semantics of *until*
- ▶ Previous accounts for EN under *until*
- ▶ EN is a polarity item licensed by monotone decreasing contexts
- ▶ EN under *ad* 'until' in affirmative contexts

2. Data

- In MH, the lexical item *ad* 'until' can give rise to three distinct readings. The first is durative *until*:

(1) dani yišan **ad** še-ha-mesiba tatxil.
Danny sleep:FUT:3MS **until** that-the-party start:FUT:3FS¹
'Danny will sleep until the party starts.'

- This reading is only available with stative verbs in the matrix clause.
- When *ad* is used with an eventive verb, this gives rise to a second reading, which is expressed in English as 'by (the time)':

(2) dani yagi'a **ad** še-ha-mesiba tatxil.
Danny arrive:FUT:3MS **by** that-the-party start:FUT:3FS
'Danny will arrive by the time the party starts.'

- The third reading is visible only when there is overt negation in the matrix clause. This has been known as NPI-*until* since Karttunen (1974).

(3) dani lo yišan **ad** še-ha-mesiba tatxil.
Danny NEG sleep:FUT:3MS **until/by** that-the-party start:FUT:3FS
'Danny won't sleep until the party starts.'

- The three available readings for (3) can be spelled out as²:

(4) a. (**not + durative until**): Danny will wake up before the party starts.
b. (**until-by**): Danny will not have slept by the time the party starts.
c. (**NPI-until**): Danny will start sleeping when the party starts (but not before).

¹ The following abbreviations will be used in the glosses: FUT = future, PST = past, PRES = present, SUB = subjunctive, M = masculine, F = feminine, S = singular.

² We ignore the possible metalinguistic reading: Danny won't sleep until the party starts, he will sleep until it ends.

- When the negative marker *lo* appears in the until-clause it does not contribute negative force to the sentence, and thus can be labeled expletive negation³.
- (5) dani lo yišan **ad** še-ha-mesiba **lo** tatxil.
 Danny NEG sleep:FUT:3MS **until** that-the-party **NEG** start:FUT:3FS
 'Danny won't sleep until the party starts.'
- Furthermore, in this context two of the three readings noted above are not available, namely, (4a) and (4b), so that (5) only retains the NPI-*until* reading, (4c). The remainder of this paper attempts to explain this observation.

3. Three *untils*

3.1 Semantics for durative *until*

- According to Giannakidou (2002), a sentence with durative *until* like (1) has the following semantics:
- (6) Semantics for durative *until*
 For $\alpha: \lambda s [\mathbf{P}(s) \wedge \exists t \mathbf{AT}(s, t)]$; $\beta: \lambda t' \mathbf{Q}(t')$
 $[[\text{until}(\alpha, \beta)]] = \lambda s \exists t \exists t' \exists t'' [\mathbf{P}(s) \wedge \mathbf{AT}(s, t'') \wedge \mathbf{Q}(t') \wedge t \subseteq t'' \wedge \forall t'']$
 $[[t \leq t'' < t'] \rightarrow \exists s' [s' \subseteq s \wedge \mathbf{P}(s') \wedge \mathbf{AT}(s', t')]]]$
- The state P denoted by the matrix VP α holds at all times prior to the endpoint β , at which time the event Q denoted by the until-clause takes place.

3.2 NPI-*until* and durative *until*

- Karttunen (1974) demonstrated that *until* under negation (NPI-*until*) behaves differently from durative *until* (cf. also Giannakidou 2002). Consider again sentence (1), with durative *until*, and sentence (3) under the NPI-*until* reading, repeated here as (7) and (8).
- (7) dani yišan **ad** še-ha-mesiba tatxil.
 Danny sleep:FUT:3MS **until** that-the-party start:FUT:3FS
 'Danny will sleep until the party starts.'
- (8) dani lo yišan **ad** še-ha-mesiba tatxil.
 Danny NEG sleep:FUT:3MS **until** that-the-party start:FUT:3FS
 'Danny won't sleep until the party starts.'
- (7) contains an implicature whereby there is a change of state at the point denoted by the until-clause. The fact that it can be cancelled establishes that it is not an entailment:
- (9) dani yišan ad še-ha-mesiba tatxil. Lema'ase, hu yišan ad še-hi tigamer.
 'Danny will sleep until the party starts. In fact, he'll sleep until it ends.'
- In contrast, (8) *entails* that there is actualization of a sleeping event when the party starts:
- (10) dani lo yišan ad še-ha-mesiba tatxil. #kše-hi tatxil, hu yakum, yitlabeš ve-yelex le-tiul.
 'Danny won't sleep until the party starts. #When it starts, he'll get up, get dressed and go out for a walk.'

³ Note that in similar sentences *lo* can be interpreted as conventional negation. See example (31).

- NPI-*until* also allows eventive predicates (13). Durative *until*, however, is only compatible with statives (11-12).

(11) The princess slept until midnight. (Giannakidou 2002, ex. (1))

(12) *The princess arrived until midnight. (Giannakidou 2002, ex. (3))⁴

(13) The princess didn't arrive until midnight. (Giannakidou 2002, ex. (8a))

- Mittwoch (1977) attempted to reduce the special properties of NPI-*until* to scopal ambiguity. In her framework, NPI-*until* is *until* scoping above negation.

- When *until* scopes under negation, this reading corresponds to what we have called *not* + durative *until*.

- In Mittwoch (2001), she concedes that a separate NPI-*until* must exist. She still argues that the reading obtained with *until* above negation, which only implicates a change of state, must also be available in some contexts. Specifically, if the *until*-clause is preposed, this reading can be observed, both in English and MH:⁵

(14) ad še-ha-mesiba tatxil dani lo yišan. kše-hi tatxil, hu yakum, yitlabeš ve-yelex le-tiul.
'Until the party starts, Danny won't sleep. When it starts, he'll get up, get dressed and go out for a walk.'

- In sentences where the matrix clause precedes the *until*-clause, the absence of an implicature reading (cf. (10)) seems to be overridden by the stronger entailment reading (and see Mittwoch 2001).

3.3 *Until-by*

- MH *ad* has a third, purely temporal reading which English *until* lacks. It allows an event to occur at any subpart of the interval (Giannakidou 2003).

(15)(=2) dani yagi'a ad še-ha-mesiba tatxil.
Danny arrive:FUT:3MS by that-the-party start:FUT:3FS
'Danny will arrive by the time (*until) the party starts.'

4. EN and *until*

- MH licenses a negative marker lacking negative force in *until*-clauses⁶.
- On EN, see Horn 1978, Tovena 1996, Brown 1999, a.o.

4.1 Previous accounts

- Abels (2002, 2005) deals with EN under Russian *poka* 'until', as in the following example:

(16) Ja podoždu poka ty ne prideš (Russian)
I will wait until you NEG arrive
'I'll wait for you until you arrive.' (Abels 2005: ex. (80))

⁴ The MH counterpart of (12) is grammatical only because it allows the *by-until* reading.

⁵ Contra Giannakidou (2002), these sentences are acceptable for all speakers of English we consulted.

⁶ EN also occurs in exclamatives and universal concessive conditionals in MH (see Eilam 2005 for further details).

- Abels (2002) gives *poka* the semantics of while: 'I will wait for you while you have not arrived'.
- Abels (2005): (*p* until *q*) means that *p* (*I will wait*) is true as long as *q* (*you will arrive*) is not, so that the negation over *q* is actually not vacuous.
- But: In Russian, EN is obligatory and not related to the appearance of negation in the matrix clause, unlike MH.
- **Espinal (2000)**: EN with *until* and in *wh*-exclamatives (cf. fn. 6) in Italian, Spanish and Catalan appears in the same syntactic configuration: an X° head, hosting *until* or similar EN licensors. This head must be strictly local to the negative marker.

(17) *Abans [que contesti [que passa res, jo me n' aniria]. (Catalan)
 before that answer+SUBJ.3sg that happens anything, I meCL enCL go
 Intended: 'Before he answers that anything happens, I would leave.'
(Espinal 2000: ex. (11c))

- The semantic feature present in X° which licenses the EN is argued to be nonveridicality, the property of not entailing the truth of the complement.
- Locality of EN to the licensing operator holds in MH as well:

(18) dani lo yišan **ad** še-yossi yagid lo še-ha-mesiba
 Danny NEG sleep:FUT:3MS **until** that-Yossi tell:FUT:3MS to.him that-they-party
lo nigmera.
 NEG end:PST:3FS
 'Danny won't sleep until Yossi tells him that the party has *(not) ended.'

- **Van der Wouden (1994)** employs the following hypothesis:

(19) Paratactic negation is a negative polarity item of the weak sort, i.e., it may occur in all monotone decreasing contexts. (van der Wouden 1994: p. 39)

- He applies the hypothesis to a number of environments licensing EN in Dutch and French⁷.

- However, durative *until* is in fact monotone increasing (Valencia et al. 1994):

(20) Danny will cry until you give him a lollipop → Danny will cry until you give him candy

⁷ It is worth noting that the French data are problematic, since the use of EN in French is guided by prescriptive rules taught in school.

4.2 Proposal

- In contrast to durative *until*, NPI-*until* includes a component which is clearly monotone decreasing, namely, the entailment that there is a change of state at the endpoint denoted by *until*. This entailment can be stated as:

(21) if q , not p

- Example:

(22) Danny won't shut up until you give him candy.

p = Danny won't shut up; q = you give him candy

(23) if you give Danny candy, not (he won't shut up) → if you give Danny a lollipop, not (he won't shut up)

- Going back to our original example of NPI-*until*, its entailment is spelled out in (25):

(24) (=3) dani lo yišan **ad** še-ha-mesiba tatxil.

Danny NEG sleep:FUT:3MS **until** that-the-party start:FUT:3FS

'Danny won't sleep until the party starts.'

(25) if the party starts, not (Danny doesn't sleep)

- This entailment of actualization is lacking in durative *until*, where it is only an implicature. In fact, this is what seems to differentiate NPI-*until* from its durative counterpart (see (9) vs. (10)):

(26) dani yišan **ad** še-ha-mesiba tatxil.

Danny sleep:FUT:3MS **until/by** that-the-party start:FUT:3FS

a. 'Danny will sleep until the party starts.'

b. 'Danny will sleep by the time the party starts.'

(27) if the party starts ↔ not (Danny sleeps) (i.e., Danny can continue sleeping after the party starts)

- In the case of *until-by*, there is no change of state and the endpoint marked by *until-by* simply denotes the termination of a time interval.

The fact that the actualization entailment is found with NPI-*until* but not in the context of durative *until* or *until-by*, together with the idea that EN is licensed in monotone decreasing contexts, explains why the former but not the latter allows EN⁸.

⁸ This account could arguably hold also for Spanish, where the facts seem to be similar to MH, i.e., durative *until* does not entail actualization, and the sentence with EN (ii) has only an NPI-*until* reading, whereas (i) has both this reading and the not + durative *until* reading:

(i) Daniel no dormirá hasta que la fiesta comience.

Danny NEG sleep:FUT:3S until that the party start:PRES-SUB:3S

(ii) Daniel no dormirá hasta que la fiesta no comience.

Danny NEG sleep:FUT:3S until that the party NEG start:PRES-SUB:3S

'Danny didn't sleep until the party started.'

- This analysis provides additional support for Karttunen's claim that a separate NPI-*until* exists. If the NPI-*until* reading were reduced to scopal ambiguity (*until* > negation), as Mittwoch (1977) argues, there would be no explanation why EN should be licensed under *until* > neg, but not neg > *until*.
- The monotonicity hypothesis is preferable over (Espinal 2000). Although she correctly predicts that EN should not be possible with *until*-by, because it is veridical (see (28)), she is unable to distinguish between durative *until* and NPI-*until*, since both are nonveridical.

- (28) a. dani kvar lo yašan **ad** še-ha-mesiba hitxila.
 Danny already NEG sleep:PST:3MS **by** that-the-party start:PST:3FS
 'Danny was already not asleep by the time the party started.'
 b. *dani kvar lo yašan **ad** še-ha-mesiba **lo** hitxila.
 Danny already NEG sleep:PST:3MS **by** that-the-party **NEG** start:PST:3FS

4.3 The nature of expletive negation

- Van der Wouden (1994) maintains that the semantics of EN may simply be that of the identity function, so that EN is a theoretical concept separate from that of conventional negation (cf. also Brown 1999).
- In contrast, Abels (2005): "it is implausible that the realization of two vastly different logical operators, the identity function and negation, should map onto the same morpheme" (p. 5).
- Abels argues that EN can be reduced to conventional negation (see also Tovena 1996).
- With NPI-*until*, under which EN is always licensed, there seems to be a difference between the reading obtained with EN and that without EN in MH.

(29) #Nancy didn't get married until she died. (Karttunen 1974, ex. (23))

- (30) a. **ad** še-hu met dani lo hitxaten.
until that-he die:PST:3FS Danny NEG marry
 'Until he died, Danny didn't get married.'
 b. #dani lo hitxaten **ad** še-hu met.
 Danny NEG marry:PST:3MS **until** that-he die:PST:3FS
 'Danny didn't get married until he died.'
 c. ??dani lo hitxaten **ad** še-hu **lo** met.⁹
 Danny NEG marry:PST:3MS **until** that-he **NEG** die:PST:3FS
 'Danny didn't get married until he died.'

⁹ The fact that the entailment in (30c) is perceived as stronger than (30b) could be due to an effect of pragmatic reinforcement. Since EN requires the NPI-*until* reading, and thus always forces an entailment, the latter may be more salient in a sentence with EN.

- Contra van der Wouden, the same negative marker can be either conventional or expletive in MH, and thus ambiguity can arise:

- (31) dani lo yišan **ad** še-yossi **lo** yenagen ba-psanter.
Danny NEG sleep:FUT:3MS **until** that-Yossi NEG play:FUT:3FS in.the-piano
a. 'Danny won't sleep until Yossi plays the piano.'
(i.e., he'll start sleeping when Yossi starts to play)
b. 'Danny won't sleep until Yossi doesn't play the piano.'
(i.e., he can only sleep when Yossi stops playing)

5. EN in affirmative contexts

- In certain contexts, EN is also available with *until* in affirmative sentences.

- (32) "adam še-ne'ešam be-avera plilit xezkato še-hu zakai, **ad** še-**lo** huxexa ašmato ka-xok be-mišpat pumbi."
"Everyone charged with a penal offence has the right to be presumed innocent until **EN** proven guilty according to law in a public trial."
(Article 11 of the Universal Declaration of Human Rights)

- The felicity of such sentences depends on the context and an appropriate intonation, which deemphasizes the negative marker *lo*. Therefore, unlike the case in Spanish and Italian, all the MH speakers we consulted rejected the following sentence:

- (33) *dani yišan **ad** še-ha-mesiba **lo** tatxil.
Danny sleep:FUT:3MS **until** that-the-party NEG start:FUT:3FS
'Danny will sleep until the party starts.'

- The reading EN gives rise to in (32) is not related to a change of state at the endpoint, unlike EN under NPI-*until*. Native speakers' intuition is that the negative marker indicates the speaker's unwillingness to commit to the actualization of the until-clause.

6. Conclusion

- EN in until-clauses in MH requires NPI-*until*, because only NPI-*until* contributes a monotone decreasing entailment of actualization. In fact, the use of EN results in an even stronger reading of actualization. The postulation of two distinct lexical items for *until* finds additional support in the fact that durative *until* cannot license EN.
- As predicted by Giannakidou (2002), there are indeed languages which use a single expression to indicate all three possible meanings of UNTIL: NPI-*until*, *until*-by and durative *until*. MH *ad* is just such an expression.

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