

Monotonicity at the lexical semantics–morphosyntax interface

Andrew Koontz-Garboden, Stanford University

Although something like the Monotonicity Hypothesis (MH) in (1) seems to be assumed in much work on the semantics of word formation, sometimes explicitly (Kiparsky 1982; Rappaport Hovav and Levin 1998), it has been the subject of no systematic investigation, despite the fact that it makes a number of falsifiable predictions. This talk is a first step in the direction of (a) evaluating some of the clearest predictions of the MH in the domain of states and changes of state and (b) spelling out in more detail what the MH follows from on both non-lexicalist and lexicalist theories of word formation.

I first turn to some of the empirical predictions of the MH. Given commonly accepted decompositions of states (2a), non-causative changes into those states (2b), and causative changes into those states (2c), the MH makes the predictions in (3), with the strongest two of them, (3a,c), being the focus of investigation. Beginning with (3a), I distinguish between adjectival states (Dixon’s 1982 “property concepts”) and target states (Dixon 1982; Kratzer 2000), states that entail that the state was preceded by an event giving rise to it. The prediction in (3a) holds only for adjectival states, and indeed Koontz-Garboden (2005) finds crosslinguistically that while words naming adjectival states are never derived, words naming target states are commonly deverbal. This is seen in the English data in (4), where the adjectival state *red* does not entail an event giving rise to the state, while the target state *reddened* does. With this contrast in mind, data from a number of languages, such as Warlpiri in (5) and Eastern Armenian in (6) bear out the prediction in (3a)—words naming adjectival states are never derived from words naming changes into those states. Only derivations of changes of state from states are observed crosslinguistically, as predicted by the MH.

Next, I address (3c), an apparently incorrect prediction in the face of anticausativization, as shown for Italian in (7). There is growing consensus, however, that the representation of inchoatives like (7) does, in fact, include a CAUSE operator, as predicted by the MH given the fact that they are derived from causatives. First, several different types of adverbial modifiers of causers can appear with inchoatives. This is true e.g., for *per* ‘from’ phrases in Italian (8), where the *per* phrase modifies the CAUSE of the change of state event (Pustejovsky 1995). Similar data in German, where *durch* phrases modify the CAUSE (9a), and Greek, where *apo* phrases do the same (9b), also argue for the anticausative retaining the CAUSE (Alexiadou *et al.* To appear). Another argument comes from Chierchia’s (2004) observation that the Italian modifier *da sè* ‘by itself’, an anaphor which must be bound by the causer of the event, can appear with anticausatives (10a), but not with verbs lacking a CAUSE in the decomposition, e.g., stative verbs such as *conoscere* ‘know’ in (10b). Similar supporting data are found in English, Greek, and German (Levin and Rappaport Hovav 1995; Alexiadou *et al.* To appear). Additionally, there is converging evidence from the psycholinguistic studies of McKoon and Macfarland (2002), who show greater processing times for inchoatives derived via anticausativization when compared to non-derived inchoatives. This difference correlates with the presence of a CAUSE in the former, and its absence in the latter. Thus, although it may be the correct representation for some inchoatives, (2b) is not an accurate representation of the meaning of inchoatives derived by anticausativization. Instead, these retain their CAUSE operator, consistent with the MH.

Finally, I consider theoretical arguments for the MH, showing that it actually follows from generally accepted grammatical principles. On a theory such as Distributed Morphology (Halle and Marantz 1993), in which word formation is done in the syntax and therefore subject to syntactic principles, the MH follows from the Principle of Recoverability of Deletion, a principle that transcends generations of syntactic theories and rules out deletion unless the deleted element is recoverable. From a lexicalist perspective, even though the topic is not frequently explored, the language of lexical decompositions must have a syntax and a semantics (see e.g., Dowty 1979). Allowing only context-free syntactic rules in the decompositional language is a prerequisite for a context-free semantics, arguably a desirable constraint on the Principle of Compositionality (Dowty To appear). The conclusion, then, is that the MH need not be independently stipulated as a principle of the semantics of word formation; it is instead an unavoidable consequence of already well-motivated principles, regardless of whether word formation is approached from a non-lexicalist or a lexicalist perspective.

The conclusion, then, is that the MH is both empirically and conceptually well-founded. This is a welcome result given its widespread implicit assumption in work on the semantics of word formation.

- (1) The Monotonicity Hypothesis
Word formation operations do not remove operators from lexical semantic representations.
- (2) Common decompositional representations of the meaning of states and changes of state
- state (e.g., *red*, *long*, etc.): $\phi(x)$
 - change of state (e.g., *red*, *lengthen*, etc.): BECOME $\phi(x)$
 - causative change of state (e.g., *red*, *lengthen*, etc.): event(y) CAUSE BECOME $\phi(x)$
- (3) Predictions of the MH about the derivational relationship of states and changes of state
- States are predicted to never be derived from any of the other two.
 - Non-causative changes of state could be derived from states.
 - Non-causative changes of state are predicted never to be derived from causative changes of state.
 - Causative changes of state could be derived from states or from non-causative changes of state.
- (4) a. This soil is naturally red; it has never been reddened.
b. #This shirt is reddened; it has never been reddened.
- (5) Adjectival states are underived in Warlpiri (Hale and Keyser 1998:93)
- | | adj. state | non-causative | causative | |
|----|------------|---------------|-----------|-------|
| a. | wiri | wiri-jarri- | wiri-ma- | 'big' |
| b. | maju | maju-jarri- | maju-ma- | 'bad' |
- (6) Adjectival states are underived in Eastern Armenian (Megerdumian 2002:98)
- | | adj. state | non-causative | causative | |
|----|------------|---------------|--------------|--------|
| a. | layn | layn-anal | layn-ats-nel | 'wide' |
| b. | čor | čor-anal | čor-ats-nel | 'dry' |
- (7) Anticausativization in Italian
- rompere 'break-causative'/romper-si 'break-inchoative'
 - chiudere 'close-causative'/chiuder-si 'close-inchoative'
- (8) Italian *per* phrases modify the CAUSE in anticausatives
- Ma negli ultimi decenni il processo naturale si è alterato per l'emissione inatmosfera di gas ...
'But in the last decades, the natural process was altered by the non-atmospheric emission of gas'
 - Uno stabile stato evacuato a Pioltello, mentre in città una tubatura interrata si rotta per il freddo.
'A building is evacuated in Pioltello, while in the city a buried water pipe broke from the cold.'
- (9) German *durch* and Greek *apo* phrases modify the CAUSE in anticausatives (Alexiadou *et al.* To appear)
- Die tür öffnet sich durch einen windstoß. b. To hirografo katastrafike apo tin pirkagia.
'The door opened from a blast of wind.' 'The manuscript destroyed (lit) from the fire.'
- (10) *da sè* in Italian must be bound by the causer of the event (Chierchia 2004:42ff.)
- La porta si è aperta da sè. b. *Gianni conosce il latino da sè.
'The door opened by itself.' '*Gianni knows Latin by himself.'

Selected references

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