Recoverability and Bidirectional Optimisation

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Abstract

Pesetsky (1997, 1998) postulates an OT syntactic constraint that he calls “RECOVERABILITY”:

(1) **RECOVERABILITY**:
A syntactic unit with semantic content must be pronounced unless it has a sufficiently local antecedent. (Pesetsky 1998, 342)
“[…] This fact is accounted for by a principle called the Recoverability Condition – the idea being that the semantic content of elements that are not pronounced must be recoverable from local context. […]” (Pesetsky 1997, 154)

I will argue that a constraint like this should not and in fact cannot be part of EVAL. Rather, this principle is so central for the relation between sound and meaning that it should be part of the definition of grammaticality itself. Building on insights by Lee (2001) and Kuhn (2001), it can be shown that the effects of this constraint result as emergent properties from a properly defined bidirectional OT system combining syntax and semantics in a particular way, i.e., focusing on the *surface* form (cf. Vogel, 2002):

(2) First optimisation:
   a. input = [M, LF] (Vogel, to appear, Vogel 2002)
   b. Candidates = [LF,PF] pairs

(3) PF (=‘feedback’) optimisation:
   a. input = a PF
   b. candidates = [LF,semantics] pairs

(4) M is a semantic representation
LF is an abstract syntactic representation:
Constituent structure, Syntactic categories, abstract features
PF is the surface form:
linearisation, prosodic phrasing, intonation, morphology

Recoverability has a straightforward expression as a particular way of behaviour in such a bidirectional system:

(5) **Recoverability**
An input /I/ is recoverable from its optimal output [O], iff the optimisation of [O] yields /I/ again.

The notion of *Grammaticality* that is built on this, is the following one:

(6) **Grammaticality**
An OT grammar evaluates [LF,PF,M] triples in the following way:
The triple [M_i,LF_i,PF_i] is *grammatically well-formed* iff
a. [LF_i,PF_i] is the optimal output for a given input [LF_i, M_i]
b. M_i, LF_i are the optimal analyses of, i.e., are *recoverable* from, PF_i

The crucial departure of this bidirectional system from those used within OT semantics, e.g., by Blutner (2000), is that the underlying form is not only a meaning, but rather a meaning plus an abstract syntactic specification: both of these underlying representations require some surface reflection. While usually bidirectional systems conceive the two directions as generation and interpretation, the perspective that I have in mind is more that of (surface) encoding and (surface) decoding.

How this model works, will be demonstrated in an empirical discussion involving Pesetsky's original data, word order freezing, case recoverability and superiority. A number of problems discussed by Hankamer (1973) will also be targeted.

References

Archangeli, Diana & D. Terence Langendoen, eds (1997): *Optimality Theory. An Overview*. Blackwell, Malden, Mass. and Oxford.

Barbosa, Pilar, Danny Fox, Paul Hagstrom, Martha McGinnis & David Pesetsky, eds (1998): *Is the best good enough? Optimality and competition in syntax*. MIT Press, Cambridge, Massachusetts.

Blutner, Reinhard (2000): 'Some Aspects of Optimality in Natural Language Interpretation', Rutgers Optimality Archive, ROA-389.

Hankamer, Jorge (1973): 'Unacceptable Ambiguity', *Linguistic Inquiry* **4**, 17–68.

Kuhn, Jonas (2001): Generation and Parsing in Optimality Theoretic Syntax: Issues in the Formalization of OT-LFG. *In:* P. Sells, ed., *Formal and Empirical Issues in Optimality-Theoretic Syntax*. CSLI Publications, Stanford, California, pp. 313–366.

Lee, Hanjung (2001): Optimization in Argument Expression and Interpretation: A Unified Approach. PhD thesis, Stanford University.

Pesetsky, David (1997): Optimality Theory and Syntax: Movement and Pronunciation. *In* Archangeli & Langendoen (1997), chapter 5, pp. 134–170.

Pesetsky, David (1998): Some Optimality Principles of Sentence Pronunciation. *In* Barbosa, Fox, Hagstrom, McGinnis & Pesetsky (1998), pp. 337–383.

Vogel, Ralf (2002): Feedback Optimisation. Economy and Markedness in OT Syntax, Pt. I. Manuscript, Uni Potsdam.
*http://www.ling.uni-potsdam.de/˜rvogel/feedback.pdf

Vogel, Ralf (to appear): Free Relative Constructions in OT Syntax. *In:* G. Fanselow & C. Féry, eds, *Sonderheft Optimality Theory*. Linguistische Berichte, Helmut Buske Verlag, Hamburg.