

OT SYNTAX – AN INTERVIEW WITH JANE GRIMSHAW

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ReVEL – Optimality Theory has a great appeal for phonological work. But it has also applications in other areas of grammar, such as syntax. What were the first investigations in OT syntax?

Grimshaw – The first major study was done by Legendre and colleagues on case and voice systems. (See BLS proceedings 1994.) They posited extremely simple constraints relating argument types to case, and were able to predict an insightful typology for case and voice patterns. The paper was quite technical, but it opened people’s eyes to the possibilities. My own work on phrase structure (LI 1997) developed a syntactic constraint system which elucidated some properties of English clause structure, thus extending the scope of OT syntax into a very different domain. Of course this answer doesn’t do justice to all the pieces of work, many done by graduate students, which contributed to the excitement and the results.

ReVEL – How does OT syntax relate to other syntactic theories and frameworks, such as Lexical Functional Grammar (LFG), Principles & Parameters (P&P) and the Minimalist Program?

Grimshaw – This is a complicated question. There are two properties of OT that connect to other theories in ways that are interesting to explore. The first is

that it invites non-derivational theories, in which each constraint assesses alternatives at a single level of representation. Since it has proved difficult to establish clear arguments for or against the role of derivation in syntactic theory, the significance of this property remains unclear to me. The second is the centrality of *competition* and thus *optimization*. The well-formedness of a sentence can only be determined through comparison with alternatives. Minimalism also relies crucially on competition, although the process of evaluating alternatives seems quite different.

There is, however, one absolutely fundamental difference between OT and all of these other theories, which is that they all assume perfection of grammatical forms. Well-formedness in one language but not another is attributed, for example, to the effect of a parameter, or to the effect of a functional head in one lexicon. The possibility that they differ in the nature of their imperfection, i.e. the constraint(s) they violate, can be envisaged only in OT.

ReVEL – How can we explain cross-linguistic variation adopting concepts like *violability* and *constraint interaction*?

Grimshaw – Since grammars are rankings of universal constraints, variation is attributed to the rankings. Suppose that a language shows “*do* support” (mentioned again below), as English does: *What did you read?* **What read you?* **What you read?* This is possible only if at least one constraint prefers *do* is satisfied (or better satisfied) if *do* is present than if it is not, and this constraint dominates all of the constraints which prefer *do* to be absent. Now suppose we look at a language which does not allow “*do* support” in such configurations. We already know a lot about the rankings in this language. At least one constraint which prefers *do* to be absent must dominate all constraints which prefer it to be present, and all constraint rankings in the second language must be consistent with this. Believe me when I say that if you have made a mistake you will find out at this point! This theory of cross-linguistic variation

crucially depends on violability and interaction. Constraints interact to force violation patterns in optima and this is why all languages are not the same.

ReVEL – Could you explain us a little about the input-output mapping architecture in OT, especially when it comes to optimization in syntax?

Grimshaw – This is probably the question I am asked most frequently, and will take the most space to answer.

My view is that the input contains three important pieces of information. First is the set of lexical heads to be organized into a syntactic structure. For each lexical head the input provides an argument structure, and indicates the role that other lexical heads and their projections will play with respect to the argument structure. For *the dog barked*, for example, the input contains “*bark* (x), x = *dog*”. Second, the input associates a set of grammatical features with each lexical head. These can be realized in the output as functional heads (*the* in the example above realizes a +def feature associated with *dog*) or as bound morphemes (like *-ed* realizing a +past feature associated with *bark*). In the case of complex sentences, the input expresses the subordination relations among components. These are organized into alternative morphological and syntactic structures, such as complex words and X-bar structures. Ranked universal constraints choose the best among the resulting candidates.

Faithfulness constraints assess the relationship between inputs and outputs. The rankings of these constraints with respect those they conflict with determine to what extent grammatical sentences are faithful to the input. In syntactic systems, optimal candidates are always faithful to the *lexical* specifications in the input (barring e.g. ellipsis), so lexical heads are always preserved in the optimal candidate. They are not always faithful to grammatical/functional specifications. The phenomenon of “*do* support” is an example of unfaithfulness if *do* is not in the input but is required in the output because of markedness constraints.

ReVEL – Could you please suggest some essential readings for people who want to study Syntax in the OT framework?

Grimshaw – A good place to start is the introduction to *Optimality Theoretic Syntax* (MIT Press 2001), written by Géraldine Legendre. It surveys a number of important issues, and would be helpful to someone who wanted to read papers from the collection itself. An early non-technical paper which highlights the general theoretical character of OT in phonology, syntax and language learning appeared in *What is Cognitive Science?* (Blackwell, 1999) and was written by Tesar, Prince and Grimshaw. Many researchers post their work to the Rutgers Optimality Archive at <http://roa.rutgers.edu/>. This option is available to everyone, and the archive allows research results to circulate freely.