

Reversibility and Interface Conditions
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One of the central architectural features of a grammar is that it is used to parse and produce sentences. How are grammars used to do this? Well, both parsing and production pair a “meaning” with a “sound” and as grammars produce PF-LF pairs, they should be useful in executing this task. Moreover, the way that grammars make PF-LF pairs available is by providing a finite recipe for generating them. An obvious question then arises: Are the operations that grammars use to “generate” PF-LF pairs analogous to those used to parse and produce sentences with PF-LF properties. One plausible assumption (though perhaps incorrect) is that more or less the same operations that generate sentences are used to parse them and produce them. In other words, there is a relatively transparent relation between the primitives, principles, and operations of the grammar and those of the parser/producer. A strong version of this thesis would be that all of the operations, principles, and constructs specified by the grammar are operations, principles, and constructs of the parser/producer as well. Weaker versions would adopt some properties of the grammar while rejecting others.

In light of the central role of grammars in parsing, I would like to propose that, *ceteris paribus*, more transparent grammars (i.e. grammars whose operations, principles, and constructs are more directly usable by the performance systems) should be preferred to less transparent ones. After all, if grammars are used, then it must be that linguistic structures are constructed in accordance with grammatical principles in real time. What better way to do this than to build these structures using the very same principles, operations and constructs that the grammar employs? If this is correct, however, it has an interesting consequence: a grammar’s operations and principles must be reversible. What I mean by this is that its operations and principles should be usable whether one is building a structure bottom-up (when deriving a sentence grammatically) or left to right (when one is parsing a sentence in real time). The direction of the “flow” of information should not affect the applicability of the principles. They should, in short, be directionally invariant (viz. reversible). Curiously, this property is less trivial than it might seem as I illustrate using principles that have been proposed over the years.