

Context and Well-formedness: the dynamics of ellipsis

Using data from ellipsis as evidence, this talk argues that a grammar formalism for natural languages should both articulate the process of building up interpretation in real time, and be sensitive to contextually provided information.

Almost every natural language expression displays some form of context dependence. This is most obvious with anaphora and tense construal, but the effects go much further than this. An utterance of e.g. *I bumped into Mary yesterday in the park* will convey different information according to who the speaker is, who Mary might be, where the park is (and what park) and when the sentence was uttered. Such matters are generally treated as the province of semantics, the syntax merely providing some decontextualised compositional analysis of the string of words that inputs into the semantic interpretation. A string like *He cried* is thus treated by the syntax to be well-formed irrespective of whether the context provides appropriate antecedents for the construal of the two pronouns, even although a sentence like (1) is peculiar, if not ill-formed, with no prior context to provide a male referent.

(1) # Mary hit her head on the doorframe and he cried.

There are, however, syntactic phenomena that more obviously require some reference to context to determine well-formedness, in particular elliptical constructions, where the preceding linguistic context is essential in determining the well-formedness of the string:

(2) Mary washed her hair and so did Bill. (*Mary was tall and so did Bill.)

(3) Bill dislikes something but it's not clear what. (#Bill dislikes coffee but it's not clear what.)

(4) Sue sang a ballad for John and some lieder too. (*Sue is sick, and some lieder too.)

(5) Sue gave John a book and Bill a CD. (*Sue sings well and Bill a CD.)

While the obvious context dependence of elliptical constructions as in (2 - 5) has received a considerable amount of attention in the literature, it is only within the confines of the sentence that this is definable, and it is notable that all such analyses fail to reflect the informal intuition that ellipsis is a device in which context itself directly provides the way the ellipsis site is to be interpreted. Yet such constructions may cross sentential boundaries (7-8), may be uttered by other speakers, (6), (9), and may constitute answers to questions (10-12).

(6) A: Mary washed her hair. B: So did Bill.

(7) Bill dislikes coffee. I don't know why.

(8) Sue sang a ballad for John. Some lieder too.

(9) A: Sue gave John a book. B: And me a CD.

(10) A: Who washed the dishes? B: John (did).

(11) A: Who does Mary dislike? B: Herself.

(12) A: Who does everyone love? B: Their mother.

Despite the fact that the existence of such data is wellknown, ellipsis is standardly treated as either a syntactic process involving null productions from a complete structure, or as a semantic process which involves an abstraction operation on some antecedent content in order to provide something with which the content of the elliptical expression may combine. This is important because it is otherwise unclear what status elliptical fragments have within the grammar. Under the normal Chomskyan definition of competence as knowledge of how *sentences* are constructed independently of anything external to the linguistic system, fragments can be defined with respect only to the context provided by the sentence under construction. To account for elliptical fragments in discourse, however, on this view requires an entirely different story: such strings cannot be licensed in the same way, as the licensing context is not part of the same sentence. So, it would appear that either we need

a theory of ellipsis in dialogue that is independent of sentence internal ellipsis, or we need to assume that any fragment that is licensed within a sentence can appear as a well-formed string in its own right. Neither option is particularly attractive. In the first place we abandon any pretense at a unitary characterisation of intra- and inter-sentential ellipsis, despite the fact that they show the same syntactic properties. In the second, we lose sight of the fact that such strings have a very restricted distribution, dependent entirely on the immediate linguistic context (though see (Ginzburg, forthcoming) for a type-theoretic approach to explicitly representing this restriction for anaphora and fragments). An alternative strategy would be to abandon the entrenched idea that context is irrelevant to syntax and provide a general characterisation of processes of ellipsis that is blind to whether the triggering context is internal or external to the sentence. It is this perspective that we propose, against the background of Dynamic Syntax (DS, Kempson et al. 2001).

In DS, syntax is construed as the *process* by which semantically transparent structure is incrementally built up. General syntactic principles and lexical specifications provide actions that update partial structures, with the overall goal of defining a propositional structure representing the content of some string as uttered in a particular context. The syntactic process is construed from a parsing perspective and is defined to update trees on a strictly time-linear and word-by-word basis. It is thus a sequence of labelled partial trees which constitutes the core of the structural characterisation. As shown in (Otsuka & Purver 2003, Purver & Kempson 2004), this characterisation holds also for generation, which can be defined over the same partial tree structures and the same lexical/computational actions, merely requiring an additional incremental subsumption check on generated content.

With generation and parsing being given essentially the same characterisation, context itself may be defined in the same terms: viz. as (possibly partial) structures together with the actions used to build them up. Once this step is taken, a unitary analysis of the wide range of ellipsis phenomena can be given, irrespective of whether the licensing context for the elliptical construal is within the current sentential string or not, notably capturing the informal intuition lost in more orthodox, static accounts: in all cases, ellipsis requires re-use of some contextually provided construct. VP ellipsis, such as (2,6), involves either re-use of some term decorating some previously given structure (strict construal) or the re-use of actions used to construct some given structure (sloppy construal). In the case of fragment answers, contextually provided structure is used directly as the point of departure for the actions they dictate, as in (11)-(12). The account generalises naturally to sluicing (7), bare argument fragments (8), and gapping (9).

Since the analyses provided depend on having defined structure for strings and the context relative to which they are evaluated in terms of actions used to build up the string's interpretation, both the limited distribution of such expressions and their context-dependence is captured directly. Given a grammar formalism which articulates the progressive (time-linear) build up of interpretation over partial structures, we can then express a range of concepts of well-formedness: wellformedness with respect to a given context, with respect to at least one context, with respect to all/no contexts. As both parsing and generation are defined in terms of the same context-dependent actions, this enables us to take into account not only fragments but, equally, continuations in shared utterances (Pickering and Garrod 2004), while still distinguishing all such expressions from classical context-independent well-formed sentences. Context dependence and the dynamics of its update, we thus argue is central, not only to semantic interpretation, but also to the syntactic process.

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