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# Ellipsis

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The term 'ellipsis' is derived from the Greek *élleipsis*, and in modern grammatical theory most generally refers to the omission of linguistic material, structure, and sound. In various theoretical frameworks, the phenomenon of ellipsis has been conceived of as a special case of anaphora because the silent string in an elliptical sentence is dependent for its interpretation on being associated with something else in the context, as is the case with anaphoric expressions (see Schwabe and Winkler, 2003 for an overview).

Some examples of different types of ellipses are given in (1). In each of the elliptical constructions in (1a) to (1f), linguistic material is omitted, deleted, or simply left unpronounced. Nevertheless, the silent string in the elliptical clause, here marked by an underscore, can be recovered from the italicized string in the previous conjunct.

(1a) Manny *plays* the piano and Anna _ the flute. (Gapping)

(1b) They *play the piano* but Anna doesn't _. (VP-Ellipsis)

(1c) They *play* the piano better than Anna does _ the flute. (Pseudogapping)

(1d) Manny *plays the piano* and Anna _, too. (Stripping)

(1e) Someone's *playing the piano* but I don't know who _. (Sluicing)

(1f) Manny played a solo with one *hand* and Anna with two _. (NP-Ellipsis)

In (1a), the second conjunct is interpreted as *and Anna plays the flute*. The verb *plays* is gapped, and therefore the elliptical construction is called 'gapping.' In (1b), the complete verb phrase after the auxiliary is absent, forming a case of 'VP-ellipsis' (VPE). Whereas (1c) is parallel to gapping, because the verb *play* is missing, it also bears some features of VPE because the missing sting occurs after an auxiliary and therefore it is called 'pseudogapping.' The phenomenon in (1d), where everything is elided except *Anna* and the focus particle *too*, is called 'stripping.' In (1e), the complete sentential complement to the interrogative wh-phrase *who* is missing and is recovered from the antecedent conjunct. The final example in (1f) combines 'NP-ellipsis' (NPE) after the numeral *two* with gapping of the string *played a solo*.

The constructions in (1) bear a set of similar features: they occur in coordinate structures; the second conjunct contains a gap or a silent site, and therefore Ø is referred to as the 'elliptical clause or phrase'; at the same time, the second conjunct contains a means

of picking up the missing material from the first conjunct, often referred to as the 'antecedent clause;' the missing material or 'antecedent property' is interpreted in the elliptic site at the level of semantic interpretation; finally, the second conjunct contains elements that remain – so-called 'remnants.' The burning issue raised by the elliptical constructions in (1) for any theory of language is this: how is it possible that we understand more than we actually hear? The answer to this question lies in the most economic division of labor between the interfaces connecting form (syntactic structure), sound (PF)/(LF), and meaning as represented in the model of grammar (Chomsky, 1995).

Within the current theory of grammar, two prevailing research paradigms can be isolated: the deletion accounts and the nondeletion accounts (see Johnson, 2001 for details). Each of these approaches makes different predictions with respect to the three core questions relating to ellipsis: (i) how is ellipsis represented? (ii) how is ellipsis interpreted? (iii) how do information structure and focus contribute to the licensing and interpretation of ellipsis? These questions address the syntax, the semantics, and the information structure of ellipsis.

## Syntax

By far the most widely studied types of ellipses are gapping and VPE, as given in (1a, 1b). The most basic observations about these two types of ellipses that any syntactic analysis must account for are the following: (i) VPEs target a phrase, whereas a gap need not be a phrase; (ii) VPEs can precede their antecedents, but a gap cannot; (iii) VPEs can occur in a subordinate clause, but a gap cannot; (iv) VPE is not subject to Ross's Complex NP-Constraint, but a gap is; (v) VPE can refer to an antecedent outside the clause, but a gap must find its antecedent within the first conjunct. These core differences are illustrated in (2) to (6), where the a-examples contain VPEs and the b-examples contain gaps.

(2a) Mr. Katzenstein certainly would have *learned something*, and it's even possible that Mr. Morita would have _ too. (Penn Treebank)

(2b) As a result consumer prices for the first 10 months of 1989 *surged* by 5% and wholesale prices _ by 1.3%. (Penn Treebank)

(3a) Although we think he shouldn't _ , Bush might *win the election*.

(3b) *Although we _ Bush shouldn't win the election, they *think* differently.

(4a) But like Mr. Egnuss few expect program trading to be *halted entirely* and a surprising number doubt that it should be _. (Penn Treebank).

(4b) …the Colombian minister of economic development said Brazil *would give up* 500 000 bags of its quota and (*then he announced that) Colombia _ 200 000 bags. (Penn Treebank)

(5a) John didn't *hit a home run*, but I know a woman who did_. (Sag, 1977)

(5b) *John didn't *hit* a home run, but I know a woman who _ a smash.

(6a) The thought came back, the one nagging at him these past four days. He tried to *stifle it*. But the words were forming. He knew he couldn't_. (Hardt, 1993);

(6b) [same context] *He knew he couldn't _ them.

VPE and gapping differ with respect to one further characteristic, usually referred to as the 'parallelism requirement.' Under this requirement, gapping must occur in coordinate structures and requires its remnants to occur in a contrastive relationship to their antecedents, as in (7). VPEs do not require parallel structures. The remnants are typically free to assume various discourse functions depending on the context, as in (8). Focused and accented elements are capitalized.

(7a) MANNY *plays* the PIANO and ANNA _ the FLUTE.

(7b) *MANNY *plays* the PIANO and ANNA _ the piano.

(7c) *MANNY *plays* the PIANO and Manny/he _ the FLUTE.

(8a) Manny *plays the piano* but ANNA DOESN'T _.

(8b) Manny *plays the piano* but he claims he DOESN'T _.

In current generative theory, the most influential account of ellipsis is the phonological deletion account assumed in Chomsky (1995) among many others. Historically, it is closely related to the syntactic deletion account, also called the 'strict transformational position,' as proposed by Ross (1967), which assumes that "all anaphoric processes are transformations that involve deletion" (Hankamer and Sag, 1976: 394). The basic idea of the PF-deletion account is that the computational system of human language hands on the fully derived sentence to the interfaces, PF and LF. At LF, the incoming sentence is interpreted. At PF, ellipsis is achieved by deletion of redundant material. PF-deletion accounts are based on the assumption that elided material has abstract features of phonetic and phonological representation, but that grammar contains a means of blocking its pronunciation. A

straightforward PF-deletion hypothesis is given in (9), as for example assumed by Kuno, 1976; Rooth, 1992; Merchant, 2001:

(9) Phonological Reduction Hypothesis:
Given material is deaccented or deleted at Phonological Form.

The term 'given material' in its original definition by Halliday (1967) refers to "recoverable information" in general. The hypothesis that explains the focus pattern of the remnants is given in (10), as for example assumed by Kuno, 1976; Rooth, 1992; Merchant, 2001:

(10) Contrastive Focus Hypothesis:
Given or redundant information licenses contrastive focus on the remnants.

The term 'contrastive focus' is informally defined as evoking a suitable set of alternatives from which a subset is chosen. The PF-deletion account predicts that an elliptical site is fully structurally represented, but not phonologically realized, as symbolized by the strike-through in (11).

(11) They *play the piano* but ANNA DOESN'T ~~play the piano~~.

The hypothesis (9) applied to the examples in (1a–f) correctly accounts for the elliptical sites, because in each case there is an antecedent in the coordinate conjunct that constitutes given material and thus can be elided in the second conjunct. Hypothesis (10) accounts for the ungrammaticality of (7b, c). Note, however, that neither of these hypotheses can adequately explain the difference in syntactic distribution of VPE and gapping illustrated in (2)–(6). Consider the alternative, or nondeletion account.

The nondeletion or proform accounts (a modern variant of the 'strict interpretive position') reject the claim that unpronounced material has syntactic representation. Instead they claim that "all anaphors (pronominal or null) are present in the underlying representation, and that no anaphors are derived transformationally" (Hankamer and Sag, 1976: 394). They propose that general mechanisms governing the recovery of meanings from context can be put to work to analyze elliptical constructions. One influential proposal was put forward by Lobeck (1995), building on much earlier work, in particular, Williams (1977) and Chao (1988). The main aim was to account for the distribution of ellipses by combining two assumptions: (i) ellipses are empty (non-nominal) proforms and are constrained in the same way as the empty nominal proform *pro*; (ii) ellipses must be analyzed as complements of a functional head. The result of applying (i) and (ii) to the elliptical constructions in (1) is that they account for VPE (1b), sluicing (1e) and

NPE in (1f), but not to (1a, 1c, 1d). In VPE, sluicing and NPE, the complement of a functional head is empty (e), as illustrated in (12):

(12a) They *play the piano* but [$_{TP}$ Anna [$_{T'}$ doesn't [$_{VP}$ e]]].
(12b) Someone's *playing the piano* but I don't know [$_{CP}$ who [$_{C'}$ +wh [$_{TP}$ e]]].
(12c) Manny played a solo with one *hand* and Anna with [$_{DP}$ two [$_{N}$ e]].

This characterization fits in nicely with the claim that the set of elliptical constructions in (1) form two distinct natural classes, discourse-bound, as in (12) and sentence-bound as in (13), a distinction inspired by Williams' (1977) original differentiation between sentence grammar and discourse grammar (1977: 102) and further developed in Winkler (to appear). The examples in (13) comprise the sentence-bound ellipses, gapping and stripping, which are characterized by the absence of the phrasal head and other material in the elliptical clause.

(13a) Manny *plays* the piano and Anna [$_{VP}$ [$_{V}$ ~~plays~~] the flute].
(13b) Manny *plays the piano* and [$_{TP}$ Anna [$_{T'}$ ~~plays the piano~~]], too.

The distinction between sentence-bound and discourse-bound ellipses also provides an explanation for the data in (2) to (6). VPE is a discourse-bound ellipsis and can be accounted for by a proform analysis; gapping is a sentence-bound ellipsis and is more syntactically constrained, in a sense to be made more precise in the section on information structure.

## Semantics

The question of how ellipsis is interpreted is closely connected to the nature of the identity that holds between the ellipsis and its antecedent. The PF-deletion account has the advantage that the syntactic structure in the elliptic site is strictly identical to its antecedent and is preserved for semantic interpretation at LF. However, it has the disadvantage that additional mechanisms must be assumed for cases where the strict syntactic identity between the ellipsis and its antecedent is not obeyed, as in (14):

(14) Speaker A: Do you think they will like me?
Speaker B: Yes, I'm sure they will _.

Example (14) is a case of VPE. It constitutes a problem for any theory that requires the ellipsis site and the antecedent site to be syntactically identical, because it can only be understood as *I'm sure they will like you*. Instead of maintaining the referent of the antecedent VP (strict identity), the pronoun within the antecedent VP changed its referent in the

elliptic site, a phenomenon often referred to as 'sloppy identity.' However, the phenomenon of sloppy identity does not pose a problem for proform accounts that treat VPE on a par with other proforms, where the sloppy identity reading, as observed in (14), results from the fact that information retrieval operations are freely ordered.

There are three further syntactic effects on variables that are not respected under ellipsis and thus challenge the deletion account. First, it has been observed by Reinhart (1983) that for bound variables, like reflexives, the strict reading is systematically absent under VPE, as in (15a). Note, however, that the reflexive can acquire a strict interpretation when the coordinating conjunction *and* is replaced by the causal conjunction *because*, as in (15b) (from Hardt, 1993). Even context can trigger the strict reading, as in G. W. Bush's statement directed to Sadam Hussein (October 2002), given in (15c). The intended reading occurs in square brackets.

(15a) John voted for himself and his lawyer did _ too. [voted for himself]
(15b) John$_i$ defended himself$_i$, because his lawyer didn't_ [defend him]
(15c) "You disarm, or we will_[disarm you]." (G. W. Bush)

A second case in which syntactic constraints are not respected under ellipsis is illustrated in (16). Under the PF-deletion approach, (16) would be predicted to be ungrammatical due to the violation of Condition C of the Binding Theory. However, the Condition C effect is absent under VPE.

(16) I expected Jan$_i$ to win even when he$_i$ didn't_. [expect himself$_i$ to win].

A third case in point is the behavior of the polarity expression in (17). Under a PF-deletion account, (17) would be expected to be ungrammatical.

(17) Although Philip Morris typically tries to defend the rights of smokers with free-choice arguments, this has nothing to do with cigarettes, nor will it ever_. [have anything to do with it.] (Penn Treebank)

Note that a syntactically identical copy of the antecedent in the ellipsis site would result in ungrammaticality.

A further problem for the strict syntactic identity account stems from the observation that VPE can have split antecedents. As expected under the proform account, VPE patterns with regular pronouns with respect to split antecedents. A pronominal split antecedent example is given in (18a) and a case of VPE with a split antecedent is given in (18b):

(18a) Ben$_i$ told Jan$_j$ that they$_{i,j}$ will win the game.
(18b) Susan wanted to write a letter and John wanted to call her, but neither of them did. (Napoli, 1985)

The relevant observation with respect to example (18b) is that there are two possible antecedents for each of the VPEs. The interpretation of (18b) cannot be achieved by a deletion account that preserves syntactic identity. The required meaning cannot be derived from coordinating the respective verb phrases, because *write a letter and call her* does not provide the right meaning. We expect something like *but neither did Susan write a letter nor did John call her*. It seems that any account that is based on mere deletion of syntactically identical material will have problems accounting for these data.

The final point that challenges accounts that assume syntactic identity between the elliptic site and its antecedent is examples that show that VPE does not require parallel syntactic form between antecedent clause and elliptical site, as illustrated in (19a, b):

(19a) A lot of this material can be presented in a fairly informal and accessible fashion, and often I do_. (N. Chomsky, cited in Dalrymple *et al.*, 1991).
(19b) I haven't had a chance to talk, but I'm confident we'll get a bill that I can live with if we don't_. (G. W. Bush, Brussels, 2001).

Example (19a) shows that VPE in its active form can occur with a passivized antecedent verb phrase, and (19b) demonstrates that VPE can even find its antecedent in an embedded antecedent clause.

## Information Structure

In recent publications on ellipsis and information structure, the PF-deletion account and the proform account make different predictions about how intonation and focus contribute to the licensing and interpretation of ellipsis. The claim is that the information-structural function of sentence-bound and discourse-bound ellipses differs and is signaled by different intonational features. Concentrate on two naturally occurring examples, one from each group: gapping, a sentence-bound ellipsis, is given in (20), and VPE, a discourse-bound ellipsis, in (21).

(20) It's probably true ... that the system is so hierarchical
[that only the ASSISTANT manager can talk to the MANAGER
and the MANAGER to the GENERAL manager ...] (Penn Treebank)

(21) Why does Betty think I was trying to kill myself?
[On the principle that one swallow doesn't
make a summer, but TWO probably DO],
dear girl. (Walters (1996) *The Dark Room*.
London: Pan Books, p. 42.)

The following pattern emerges. The sentence-bound and the discourse-bound ellipses have different information-structural functions, as stated in (22a, 22b).

(22a) Sentence-Bound Ellipsis:
The information-structural function of
sentence-bound ellipsis is the isolation of
contrastive foci or topics.
(22b) Discourse-Bound Ellipsis:
The information-structural function of
discourse-bound . . . is marking the elliptical
material as anaphoric or 'given.'

(22a) applied to the gapping construction in (20) predicts that the accented phrases represent contrasts. The first remnant of the elliptical clause *manager* is a contrastive topic; the second remnant *general manager* is a contrastive focus. (22b) must be applied to (21) and predicts that the elided material – here the NP *swallows* and the VP *make a summer* – marks given material. The fact that the functional elements immediately preceding the ellipsis sites are accented is due to a general rule of focus that regulates that the head of a phrase is accented if the argument cannot be (Selkirk, 1995).

## Conclusion

Linguistic research over more than three decades has contributed significantly to our understanding of the different types of ellipses, the most prominent of which have been discussed here. The most comprehensive theories are those that recognize ellipsis as an interface phenomenon between syntax, semantics, and information structure. However, many aspects of how the different components work together still remain to be worked out.

*See also:* Coordination; Information Structure in Spoken Discourse; Island Constraints; Minimalism.

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