WHY BE SILENT?

SOME FUNCTIONS OF ELLIPSIS IN NATURAL LANGUAGE*

Petra Hendriks & Jennifer Spenader
University of Groningen; Stockholm University
p.hendriks@rug.nl; j.spenader@gmail.com;

Abstract

Although ellipsis is a highly pervasive phenomenon in natural language, its function has largely remained a mystery. While the use of ellipsis can make a sentence more difficult to understand, sometimes the reverse is true. Using ellipsis sometimes is the best way, or even the only way, to express a given meaning. Ellipsis can restrict possible readings, express otherwise ineffable meanings, clarify discourse structure, and establish rapport between speaker and hearer. All these functions motivate a closer look at the possibilities of integrating a treatment of ellipsis in natural language applications.

1 Ellipsis

Ellipsis is the non-expression of sentence elements whose meaning can be retrieved by the hearer. This is a highly pervasive, but at the same time ill-understood phenomenon in natural language. The presence of ellipsis is commonly believed to be one of the main reasons why natural language is so ambiguous. If sentence elements are left unpronounced, a hearer must rely on other parts of the sentence as well as intonation or extra-sentential information, to recover the unpronounced material. For this reason, an elided utterance could have several meanings. But why would a speaker intentionally choose to make a sentence more ambiguous? And why do speakers make this choice so frequently? For example, Alcántara and Bertomeu (this volume) found that 7.5% of the 6922 events found in their 50,000 word corpus were elided. The standard explanation for ellipsis is in terms of speaker's economy (or 'least effort'). By not expressing sentence elements whose presence is not essential for the meaning of the sentence, the speaker can communicate more with fewer words.

However, in this paper we will argue that ellipsis has more functions than merely meeting the speaker's wish to reduce his or her efforts. In the following sections, we discuss a number of other functions, that suggest that the elided form contributes different meanings than their full form counterparts. Ellipsis can restrict possible interpretations, allow us to say things with that are otherwise ineffable, disambiguate

* Petra Hendriks gratefully acknowledges the Netherlands Organisation for Scientific Research, NWO (grant no. 015.001.103).

discourse structure, and serve as a rapport-creating device that could be relevant to automatic dialogue systems.

2 Speaker's economy

The notion of speaker's economy as a driving force behind ellipsis can already be found in the work of Zipf (1949). Zipf identified a systematic interaction between two opposing forces, the first one being the force of unification, or speaker's economy. If this force were to apply unboundedly, however, the result would be a vocabulary of just one word (presumably *uh*) which refers to all the distinct meanings of the language. Because this never happens, there must be another force at work which has the opposite effect of promoting a distinct meaning for every word. This force is called the force of diversification, or hearer's economy. In the neo-Gricean pragmatics framework of conversational implicature, these forces have been reformulated in terms of the hearer-oriented Q principle and the speaker-oriented R principle (e.g., Horn, 1993). According to the Q principle, the speaker should say as much as she can, given the Gricean maxim of Quality and the R principle. According to the R principle, the speaker should say no more than she must, given the Q principle.

These two principles are not merely in opposition, but interact in such a way that the one principle constrains the other. With respect to ellipsis, the interaction between the Q principle and the R principle results in ellipsis only being possible if the hearer is able to recover the missing material. In addition, the interaction gives rise to what Horn terms the division of pragmatic labor. According to Horn's division of pragmatic labor, the more specialized or lexicalized form of two expressions with more or less the same meaning will tend to become associated with the unmarked, stereotypical meaning, while the use of the more complex and less lexicalized expression will tend to be restricted to all other cases. This is illustrated by the following example, taken from Horn (1993):

(1) a. He wants him to win.
b. He wants PRO to win.

As Horn argues, the selection of a full pronoun in (1a) over a null PRO signals the absence of the co-referential reading associated with the reduced syntax. Under Horn's view, the reduced sentence (1b) thus is the unmarked form, which carries the unmarked, co-referential, reading. Using a full form is the marked case, whereas using a reduced form is the unmarked case. This contrasts with the standard view on ellipsis, according to which the full utterance is the default case and ellipsis is the special case.

However, speaker's economy by itself is not sufficient to explain the presence of ellipsis. Even if we assume ellipsis to be restricted to those cases where the elided material is recoverable by the hearer because some identical element is present in the sentence, this does not yield an explanation for all instances of ellipsis. In contrast, and in line with Horn, we will argue instead that one function of ellipsis is to restrict the meaning to a subset of the meanings expressed by the corresponding full form.

3 Removing readings

Although ellipsis often introduces potential ambiguity, it sometimes removes ambiguity that would otherwise occur. A well-known example is the following (the b-example is taken from Partee & Rooth, 1983: ex. 23):

(2) a. A fish walked and a fish talked.
b. A fish walked and – talked.

The a-example is ambiguous between a reading according to which one fish walked and another fish talked, and a reading according to which the same fish walked and talked. The b-example, in which the subject of the second conjunct has been omitted, only allows for the second reading. Because of the mismatch between the two meanings of (2a) and the single meaning of (2b), many analyses of coordination assume that (2b) is not an elided sentence derived from (2a). Rather, (2b) is assumed to be base-generated as VP coordination. The consensus towards this example and similar ones is that the meaning effects in these sentences typically occur as the result of the quantified expression *a fish*.

However, ellipsis can also remove ambiguities in sentences without a quantified expression. Consider the following sentences (Levin & Prince, 1986):

(3) a. Sue became upset and Nan became downright angry.
b. Sue became upset and Nan - downright angry.

Sentence (3a) has two readings, a symmetric and an asymmetric one. According to the symmetric reading, the two events expressed by the two conjuncts are understood as independent. According to the asymmetric reading, the first event is interpreted as the cause of the second event. That is, because Sue became upset, Nan became angry. In sentence (1b), the finite verb *became* has been omitted from the second conjunct, an operation which is known as gapping. In contrast to sentence (3a), elided sentence (3b) only has the symmetric reading. This is why sentence (3b) is impossible in the context in (4), which favors an asymmetric reading:

(4) Susan's histrionics in public have always gotten on Nan's nerves, but it's getting worse. Yesterday, when she couldn't have her daily Egg McMuffin because they were all out, Sue became upset and Nan became downright angry.

The disappearance of the asymmetric reading when the finite verb in the second conjunct is not pronounced suggests that the ellipsis itself sometimes signals important information to the hearer. In this case, gapping provides the hearer with clues that the coherence relation between the two conjuncts should be interpreted as a contrast relation rather than a causal or temporal relation (Kehler, 2000), and the two subjects as contrastive topics (Hendriks, 2004). Similarly, in sentence (2b) omission of the subject of the second conjunct indicates to the hearer that the conjuncts share the same subject. An explanation of ellipsis in terms of speaker's economy (or 'least effort') is not able to account for this effect of ellipsis. Rather, this effect is in line with the view, put forward in the previous section, that ellipsis signals a restricted meaning. On the production side,

this effect has been incorporated in the natural language generation system proposed by Hielkema, Theune and Hendriks (this volume). But ellipsis not only restricts meaning. It also allows us to express meanings that are otherwise inexpressible.

4 Conveying non-expressible aspects of meaning

Surprisingly, even if ellipsis is the non-expression of sentence elements, these do not necessary have to be elements that are normally expressible. In this section, we list several examples where ellipsis is the only way to express a certain meaning, because the full form violates syntactic or semantic constraints. Consider the following comparative, which lacks an overt *than*-clause or *than*-phrase:

(5) Wolves get bigger - as you go north from here.

In example (5), originating from Carlson (1977) and discussed by Zwarts, Hendriks, and de Hoop (2005) under the name of 'reflexive comparatives', it is impossible to add a *than*-clause or *than*-phrase without changing the meaning:

(6) Wolves get bigger than ??? as you go north from here.

As Carlson already observed, the intended reading of (5) is not that a wolf grows in size when you put it in your car and drive north with it, but that spatial parts ('stages') of the wolf population differ in size. Observe that the meaning expressed by the elided sentence (5) cannot be expressed in an explicit way through a non-elided version of the sentence; there is no way to explicitly add that the size of wolves correlates with latitude.

Zwarts, Hendriks, and de Hoop (2005) argue that the impossibility of such a non-elided version lies in the unacceptability of sentences expressing a relation of comparison between two identical referents if this relation is not explicitly marked as being reflexive (for example by using a reflexive form). Consider (7):

(7) Jane smokes more than Jacky, but Jacky drinks more.

Resolving the elided compared element in the *but*-clause to *than Jane* is fine, but resolving this elided element to *than Jacky* is awkward because there seems to be a restriction on comparative relations between the same referent (Zwarts, Hendriks, & de Hoop, 2005). The same constraints seem to play a role in (5). Eliding the comparative clause allows for a comparison between two referents that are as identical as possible, while at the same time avoiding having to use a reflexive form. The missing compared element is preferably retrieved from the same sentence. However, taking the subject of the matrix clause, *wolves*, as the antecedent of the missing compared element results in a reflexive reading which is not marked as such. By adding 'intensional' indices to the arguments of the comparative (in the example in (5) these indices are provided by the domain of space, but temporal or other indices are possible as well), which allow for a mapping from spatial positions to different wolves, the hearer is able to establish a comparison between two almost identical, yet not completely identical, referents, namely wolves at position x and wolves at position y. By comparing these wolves on a

scale of size, the reading is obtained that the size of wolves correlates with latitude. As in the cases we discussed in the previous two sections, the meaning of the elided sentence is more restricted than the meaning of its non-elided counterpart, if this latter sentence were acceptable. In particular, 'wolves at position x' has a more specific reference than just 'wolves'.

Another example where the non-elided version is ungrammatical is found in sluicing (from Merchant, to appear: ex. 8a):

(8) They want to hire someone who speaks a Balkan language but I don't remember which. (*Balkan language they want to hire someone who speaks.)

Because expression of the full subordinate clause would result in the violation of an island constraint (wh-extraction out of a relative clause island), ellipsis is the only possible way to express the above meaning. The meaning of the sluicing clause is more restricted than the meaning of the full subordinate clause would have been: in (8), *which* can only have wide scope, whereas a full clause *they wanted to hire someone who speaks a Balkan language* is ambiguous between a narrow scope reading and a wide scope reading for *a Balkan language*. So also in situations where the non-elided version is ungrammatical, the elided version has a meaning which is a subset of the meaning that a non-elided version would have had, if the sentence could have been formulated into a surface form.

5 Establishing discourse coherence

A well-known function of ellipsis, and anaphoric relations in general, is to establish discourse coherence. For example, by using a pronoun rather than repeating the full name, a speaker signals to the hearer that the referent is already familiar and should be found in the preceding discourse context. For this reason, (9b) is better than (9a). By omitting the noun phrase in its entirety, as in (9c), the speaker again signals that the referent is familiar, but, moreover, indicates that the missing subject must have the same reference as the subject of the first conjunct.

(9) a. John walked. John talked.
b. John walked. He talked.
c. John walked and talked.

Although the *he* in (9b) could also refer to someone else than John, this is not possible for the missing subject in (9c). So an elided subject has a more restricted meaning than a pronominal subject.

6 Establishing a positive relationship with the hearer

Ellipsis is also generally recognized as a positive politeness strategy (Brown & Levinsons, 1987; Morand & Ocker, 2003). By omitting part of the message, one establishes a relationship with the addressee and this helps soften the Face Threatening Act (FTA) made. Consider the following examples:

(10) a. (Do you) Mind if I join you? (Morand & Ocker, 2003)
b. (Have you) Got any gum?
c. If your husband routinely comes home late with lipstick on his collar, (then he must be having an affair)

The elided utterances express the same meaning as their full counterparts, but in addition they are specified with respect to the attitude towards the hearer. In this sense, then, the elided utterances express a subset of the meanings of their full counterparts.

7 Not a function of ellipsis: Introducing ambiguity

One of the well-known side-effects of ellipsis is that it can introduce ambiguities, such as stripping in (11) and VP-ellipsis in (12):

(11) Mary likes John, and Bill too.

(12) John loves his wife and Bill does too.

Interestingly, in an appropriate context this ambiguity seldom creates problems. This observation is not surprising from a communicative perspective. Since a speaker knows what meaning she wants to convey, her task is to select the form for that meaning. Only when the form is selected do alternative meanings become available. The lack of ambiguity in ellipsis is supported by the fact that VP-ellipsis has been suggested as a test to distinguish ambiguity from vagueness by Zwicky and Sag (1975). If one meaning of an ambiguous expression is used in the source clause, the same meaning must be used in the elided clause ((14b) is from Barker, to appear).

(13) Jane bought a bat and Jack did too.

(14) a. Bill waved and the flag waved too.
b. ?? Bill waved and the flag did too.

Thus in (13) both Jane and Jack must have either bought a winged rodent, or baseball equipment. In (14a), each use of *waved* has a different, though related, sense, that of greeting and that of moving in the wind. In (14b) we can see that eliding the second verb leads to awkwardness because even at the level of senses, the elided version must have the same interpretation as the source clause. This is again a case where the elided version restricts the potential interpretation of lexical expression.

However there are some situations in which speakers intentionally introduce ambiguity. Puns are a well-known example. In these cases the purpose of the speaker or writer obviously is not to leave the reader in uncertainty as to the meaning to be expressed. Because the addressee has to put in some effort to decode the message, when he or she succeeds the result is a positive attitude towards the speaker. Puns are used frequently in advertising because the same positive attitude often carries over to the product being advertised (van Mulken, van Enschot-van Dijk, & Hoeken, 2005). The give as an example an add for a flashlight that ended with: *The gift that leaves you beaming!* makes people feel positive towards the flashlight. That's why interpreting an

elided utterance can sometimes have a similar effect as solving a riddle or a crossword puzzle. Even an example similar to (14b) can be perceived as witty with the right content. Consider (15):

(15) Dictator Dave suffered a heart attack. Immediately after, he collapsed, and his evil empire did too.

Example (15) plays on the ambiguity between the two senses of *collapse* and creates a clever effect. Thus purposeful introduction of ambiguity by means of ellipsis does exist, but its function can be grouped under the function of ellipsis discussed in the previous section, namely to contribute to a positive rapport with the addressee.

8 Conclusion

In this paper, we argued that speaker's economy by itself is not sufficient to explain the presence of ellipsis in natural language. We listed several examples illustrating that ellipsis can have many other functions than merely meeting the speaker's wish to reduce his or her efforts: ellipsis can remove ambiguity, ellipsis can convey non-expressible aspects of meaning, ellipsis can establish discourse coherence, and ellipsis can contribute to a positive rapport with the hearer. The paper discussed several cases where ellipsis does not increase but rather decreases ambiguity. In these cases, ellipsis appears to signal a restricted meaning which is a subset of the meanings expressed by the corresponding full form. As a consequence, the full forms take over the remaining meanings. Elided forms thus appear to be unmarked forms giving rise to unmarked meanings, in accordance with Horn's division of pragmatic labor.

References

Alcántara M. & N. Bertomeu: 2005, Ellipsis in Spontaneous Spoken Language, this volume

Barker, C.: to appear, Vagueness. Encyclopedia article. *Encyclopedia of Language and Linguistics, 2nd edition*. Elsevier

Brown, P., and S. Levinson:1987, *Politeness*. Cambridge, Cambridge University Press

Carlson, G.: 1977, *Reference to Kinds in English*, PhD Dissertation, University of Massachusetts, Amherst

Hendriks, P.: 2004, Coherence Relations, Ellipsis, and Contrastive Topics, *Journal of Semantics* **21**, 133-153

Hielkema, F., M. Theune, & P. Hendriks: 2005, Generating Ellipsis Using Discourse Structures, this volume

Horn, L.R.: 1993, Economy and Redundancy in a Dualistic Model of Natural Language, in: S. Shore & M. Vilkuna, eds., SKY 1993: *1993 Yearbook of the Linguistic Association of Finland*, 33-72

Kehler, A.: 2000, Coherence and the Resolution of Ellipsis, *Linguistics and Philosophy* **23**, 533-575

Levin, N.S., & E.F. Prince: 1986, Gapping and Causal Implicature, *Papers in Linguistics* **19**, 351-64

Merchant, J.: to appear, Variable island repair under ellipsis. In Johnson, K. (ed.), *Topics in ellipsis*, Cambridge University Press, Cambridge

Morand, D., & R.J. Ocker: 2003, Politeness Theory and Computer-Mediated Communication: A Sociolinguistic Approach to Analyzing Relational Messages, *Proceedings of the 36th Hawaii International Conference on System Sciences* (HICSS'03)

Partee, B., & M. Rooth: 1983, Generalized Conjunction and Type Ambiguity, in R. Bauerle, C. Schwarze, & A. von Stechow (eds.), *Meaning, Use and Interpretation of Language*, Walter de Gruyter, Berlin, 361-383

Van Mulken, M., R. van Enschot-van Dijk, & H. Hoeken: 2005, Puns, Relevance and Appreciation in Advertisements, *Journal of Pragmatics* **37**, 707-721

Zipf, G.K.: 1949, *Human Behavior and the Principle of Least Effort*, Addison-Wesley, Cambridge, MA

Zwarts, J., P. Hendriks, & H. de Hoop: 2005, Comparative Paths to an Optimal Interpretation, *Proceedings of Sinn und Bedeutung* **9**, 553-563

Zwicky, A.M., & J.M. Sadock: 1975, Ambiguity Tests and How to Fail Them. In: Kimball, John P. (ed.), *Syntax and Semantics* **4**, 1-36