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SENTENCE-IDENTITY BUILDING:
A SYNTACTIC RESOLUTION OF AMPHIBOLY
CAUSED BY PREPOSITIONAL-PHRASE ATTACHMENT

Abstract

Amphiboly is a matter of linguistic ambiguity, which, in its turn, is essentially related to the intractable natural issue of the disparity between what we can possibly think and what we can actually express through language. The papers on various types of ambiguity and the solutions to them are not few. However, as with almost everything of a theoretical nature in language, they are far from being enough to cover the complexity of the issue in point. The present paper does not claim to solve amphiboly once and for all: it only proposes a framework that can be followed easily by those interested in the interpretation of similar sentences and in the production of unequivocal ones. The material selected for analysis consists in a few sentences, collected mainly from online sources, in which amphiboly caused by prepositional-phrase attachment is present. Some instruments provided by Syntax and Morphology as branches of Linguistics are used to interpret them so that the framework of reasoning that we provide can be used whenever a similar structure needs disambiguation.

Keywords: Adverbial Clause, ambiguity, amphiboly, disambiguation, kernel clause, (post)modification, prepositional-phrase (attachment), Relative Clause, syntactic parsing

1. The Disparity between What We Think and What We Actually Express Linguistically

Language is the outfit of our thoughts. This means that in order to communicate them to the others we give our ideas linguistic shape by resorting to the system of one language or another. As our thoughts are considered practically infinite, we may assume that the utterances/sentences people can make to express them are infinite, too. But we know that the language systems are finite in terms of the material they are made of: *phonemes*, *morphemes*, *lexemes*, *phrases* and *sentences* structured in a limited number of ways according to *standard* and *non-standard grammatical rules*, etc., most of which are recorded by dictionaries and grammar books. Therefore, the combinations generated by such language systems are restricted in number, although this number is not precisely mentioned anywhere. Consequently, there are linguistic combinations that develop more than one meaning each, as well as there are meanings that may be rendered by more than one linguistic combination each. Translated into linguistic terms, we say that sometimes the same deep structure may be materialised in more than one surface structure and the other way round: there are situations when the same surface structure may be assigned more than one deep structure.

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This theory is not new at all. In order to explain why people can understand sentences which they have never heard before and why they can build correct sentences that they have not actually learnt, Noam Chomsky relies extensively on such ideas when conceiving the *Generative Transformational Grammar* at the beginning of the 1950's. In 1957, the American linguist Z. S. Harris takes a step forward and introduces the concept of **kernel clause**, which refers to the structure of a *finite, declarative, active* sentence, whose *simple phrase-constituents* are arranged in the *SP(C)(A)* order. Any alteration to this sentence pattern is considered a *transformation* that may operate within certain limits imposed by the grammar of a language. Both kernel clauses and the transformations they may undergo fall within the speakers' realm of expectations as far as what they can understand and produce linguistically goes. The disparity between what we think and what we actually express linguistically was focused on by M. A. K. Halliday, too, in his *Explorations in the Functions of Language*, where he contends that sometimes similar meanings may be expressed by different structures, some other times the same structure may employ various meanings. But he also opines that the intended meaning of such structures is seldom unclear due to the disambiguating hints provided by the linguistic and the extra-linguistic contexts in which linguistic communication takes place. He coins the term **meaning potential** to refer to the speaker's *cultural competence* to use language structures in order to express the meanings he intends. Although Halliday relates this concept to that of **competence** in Noam Chomsky's theory of the language, he stresses mainly upon the differences between the two: "The two are somewhat different. **Meaning potential** is defined not in terms of *the mind* but in terms of *the culture*; not as what the speaker *knows*, but as what he can *do* – in the special sense of what he can do linguistically (what he *can mean* […])" (Halliday, 1977: 25; my highlighting).

A combination of these linguists' theories proves very helpful when discussing **amphiboly**, which is used in this paper to refer to the characteristic of **morpho-syntactic structures** of allowing for more than one interpretation in a certain sentence, a case in which the interpreter encounters difficulties in building the overall meaning of that particular sentence.

2. Graeme Hirst's Disambiguating Factors

In his book, *Semantic Interpretation and the Resolution of Ambiguity* (1992), Graeme Hirst states that whenever we come across an ambiguous message in a sentence our trained mind resorts automatically to a series of disambiguating strategies and, more often than not, these strategies help us select what should be understood from what we hear or read. According to Hirst, people's ability to disambiguate messages is rendered by their skilful mental manipulation of a series of linguistic and non-linguistic factors, which co-operate or work independently:

a). people's knowledge of the linguistic context in which an ambiguity occurs, which allows them to make **contextual inferences**;

b). people's ability to find **semantic associations** between nearby words so as to select the most plausible meaning of an ambiguous word or structure in a certain context;

c). people's mental ability to handle **syntactic disambiguation cues**[1];

d). people's knowledge of the world, which allows them to make **extra-contextual inferences**[2].

We can easily identify in Hirst's list of disambiguating factors above those referred to by Halliday earlier (*i.e.,* the *linguistic* and the *extra-linguistic contexts* in which linguistic communication

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[1] For instance, when interpreting the famous **syntactic garden-path** example: "The horse *raced* past the barn fell". Cf. Graeme Hirst, 1992, *Semantic Interpretation and the Resolution of Ambiguity,* Cambridge: C.U.P., p. 11.

[2] These aspects/factors are discussed by Graeme Hirst in connection with the problems that should be overcome by artificial intelligence programmers in their effort to build a computer able to process natural language in the same way as people do. He says that a computer that could be equipped with memory for each of these aspects would be able to deal with ambiguity as humans do, and it would be able to translate texts from one language into another, no matter how ambiguous, metaphorical or idiomatic these texts may be. Cf. *Idem*, pp. 77 – 78, apud. Curelariu, "Sense, Nonsense, and Sense Again: The Interplay between Implicature and Logical Deduction in Lewis Carroll's *Through the Looking Glass*", in *Messages, Sages, and Ages*, Editura Universităţii Suceava, Oct. 2008, pp. 325-331, 3rd edition.

takes place). These factors will be referred to below in order to account for the interpreter's spontaneous works of mind that contribute to an amphibolous sentence identity building.

3. Amphiboly Caused by Prepositional-Phrase Attachment: A Framework for Syntactic Parsing

"**Syntactic parsing** is a process of uncovering the internal structure of sentences, in particular, articulating what the constituents of a given sentence are and what relationships are between them." (Bailey et al, s.a.:1; bold mine) In what follows, we will focus on a particular example of an amphibolous sentence, *i.e.* a sentence that approves of two syntactic parsings simultaneously. The comments we make in order to explain its ambiguity and to resolve it may be used to interpret other similar examples we may come across in everyday communication:

Jim rode a black horse <u>in red pajamas</u>.

Semantically speaking, it is unclear whether it was *the horse* or *Jim* that was wearing *red pajamas*. Given its proximity to the NP functioning as Direct Object (i.e., *a black horse*), we tend to interpret the prepositional phrase *in red pajamas* as a *qualifier* to the noun-head *horse*, as the syntax of the English noun-phrase approves of this entirely. What we do in such a case is mentally look for similarities in syntactic patterns in the language we already know (see the disambiguating factor *c* above). In line with this, Houpt suggests that "the frequencies of different structures [in everyday linguistic communication; my note] are a factor used in determining the structure of a sentence. In this case when there are multiple choices for a structure, the more likely one is chosen." (Houpt, 2006:8) However, when forced into dealing with contextual meanings that contradict our knowledge of the world - as that rendered by our sentence above if the PrepP is taken as a qualifier of the noun head *horse* - our mind tends to search its 'database' of personal experiences and situations in everyday life, too, *i.e.*, it makes extra-contextual inferences (see Hirst's disambiguating factor *d* above). In this case, our common sense dictates that it is only a human being that could wear such an outfit - although totally inappropriate for a horse-ride, socially speaking - and not the horse. Only then does the 'translation' into grammatical terms come and, in order to make language fit our knowledge of the world, we usually process the phrase *in red pajamas* as a *circumstance/ Adverbial* that describes the *actional process/ Verb* in the sentence and, consequently, the *Actor*/*Subject*[3] carrying out that action. (However, if we take this to the cartoons world, the situation gets more complicated, as there both humans and animals may be wearing anything…) Therefore, in the absence of any contextual clues, be them linguistic or extra-linguistic - *i.e.*, if this sentence were uttered/written separately, not as part of a text - a question such as 'Who was wearing *red pajamas*?' would be totally justified here. The speaker/writer can avoid it by formulating his thought in an unambiguous way from the very beginning either as: "*Wearing red pajamas* [AdvCl], Jim rode a black horse." or: "Jim rode a black horse *that was wearing red pajamas*. [RelCl]" In the former re-phrasing, the tricky prepositional-phrase becomes part of an Adverbial Clause, usually placed nearer the Subject + Verb construction that it gives details about. In the latter, it becomes part of a Relative Clause, clearly detailing on the antecedent *horse*.

Amphiboly caused by prepositional-phrase attachment is not rare in English. Two of the examples below (a, b) are similar to the one analysed above and, *mutatis mutandis*, they can be resolved in a similar way. The other two (c, d) are a little bit more complex, their complexity being the result of the presence in the sentence of a series of prepositional-phrases whose Complements of Preposition each contains a head-noun that can be post-modified by the prepositional-phrases in italics as IC's[4]. Nevertheless, the framework of reasoning described for the previous example can be applied to them, too, and disambiguating them involves identical structural transformations:

a. The police shot every thief *with guns*. (Was it *the police* or *the thieves* that carried guns? Disambiguation: *Using their guns [AdvCl]*, the police shot every thief. Or: The police shot every thief *who was carrying a gun [RelCl]*.)
b. The burglar threatened the student *with the knife*. (Was it *the burglar* or *the student* that had a knife?

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[3] The terms *circumstance, actional process, Actor* are semantic descriptions of the corresponding grammatical terms of *Adverbial, Verb, Subject* used in traditional grammar. Cf. Dennis Freeborn, 1995.
[4] The abbreviation *IC* stands for *Immediate Constituent*.

Disambiguation: *Handling a knife [AdvCl]*, the burglar threatened the student./ The burglar threatened the student *by handling a knife. [AdvCl]* Or: The burglar threatened the student *who had a knife [RelCl]*.)

c. Nadia saw the man <u>*in the park*</u> <u>*with the telescope*</u>. (Hirst, 1992:175) (Was it the man that had *a telescope* or was it Nadia? Was it only Nadia who was *in the park*, or only the man, or were they both there?
Possible disambiguating re-phrasings: *Using a telescope [AdvCl]*, Nadia saw the man *who was in the park. [RelCl]* Or: *When in the park [AdvCl]*, Nadia saw the man *who had a telescope*. *[RelCl]* A.s.o.

d. Put the box <u>*on the table*</u> <u>*by the window*</u> <u>*in the kitchen*</u>. (Is the *box* already *on the table* or should it get there? Is it *the table* that is *by the window* or should *the box* - which is already *on the table* - get *by the window*? Is it *the window* that is *in the kitchen* or should *the box* - which is already *on the table*, which, in its turn, is *by the window* in any other room – get *in the kitchen*? What is definitely clear from this sentence is that the box has to get in the kitchen.
Possible disambiguating re-phrasings: Put the box, *which is on the table [RelCl]*, <u>by the kitchen window</u> [Ca]. Or: Put the box, *which is on the table by the window [RelCl]*, <u>in the kitchen</u> [Ca]. Or: Put the box <u>on the kitchen table</u> [Ca]*, which is by the window [RelCl]*. Etc. In writing, the meaning of the non-restrictive Relative Clauses is clear due to the fact that they are placed immediately after their respective antecedents. In speaking, intonation contributes a lot to the building of these unequivocal meanings.)

It has to be noted that this last example is of a slightly different syntactic nature than those analysed before: in none of its re-phrasings do we use an AdvCl. This is so because it contains more than one prepositional-phrase and the Verb *put* functioning as its Predicator is different from those in the preceding sentences (*ride, shoot, threaten, see*). Although a transitive verb, too, *put* is always followed both by a Direct Object (here *the box…*) and an Adverbial Complement/ Ca. This is the syntactic function of the underlined prepositional-phrases after the noun-phrase whose head is *box* in the disambiguating re-phrasings; such a phrase is adverbial in meaning, but it is also necessary for the grammar of the verb in the respective sentence, which makes it a (compulsory) Complement, not an omissible peripheral Adverbial. If left out, the sentence will be ungrammatical: *Put the box.[5] (Cf. Freeborn, *op. cit.*) This means that what we have to do in our disambiguation process is assign a RelCl to the head noun in any of the nominal phrases - except *in the kitchen*, the last one in this series - and leave the rest of the sentence develop its meaning in its left-to-right parsing.

4.   4. Conclusion

What are the syntactic resorts that prove to be so challenging to our minds when it comes to amphiboly caused by prepositional-phrase attachment? Could they be grasped and such an amphiboly resolved by a simple memorable formulation? The answers to these questions are in the affirmative. First of all, it should be clear that in English - which is a language almost fully analytical/ nearly void of inflections - a prepositional-phrase may be employed to fill in a variety of slots in the sentence structure, among which we can mention, as illustrated in the analysis above:

-   the slot of an Adverbial modifying a Verb, when the Adverbial prepositional-phrase is usually *placed in final position* in a sentence;
-   the slot of a qualifier/ post-modifier to the head-noun in the structure of a Noun Phrase - a case in which we speak about *post-modification* – when the prepositional phrase is the IC of a head-noun in the structure of the complex NP.

If the two slots/positions coincide in the same sentence, the amphiboly thus arisen is disambiguated as follows:

-   such a phrase meant as an *Adverbial* can be re-phrased as an *Adverbial Clause*;
-   as a *qualifier*, it can be re-phrased as a *Relative Clause*. In such a case, the clausal qualifier immediately follows its antecedent.

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[5] The asterisk here is used to mark an ungrammatical formulation.

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