

## **Ambiguity in Argumentation: The Impact of Contextual Factors on Semantic Interpretation**

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### *Abstract:*

This article is concerned with the concept of ambiguity in argumentation. Ambiguity in linguistics lies on the coexistence of two possibly interpretations of an utterance, while the role of contextual factors and background/encyclopedic knowledge within a specific society seems to be crucial. From a systemic point of view, Halliday has proposed three main language functions (meta-functions): a) ideational function, b) interpersonal function, c) textual function. Language could reflect speaker's experience of his external and internal world, interpersonal relationships and organization of text, respectively. Lexico-grammatical choices under a micro-level perspective and context (the environment of language) may lead to inconsistent interpretations through semantic or syntactic ambiguities. In philosophy and argumentation logic, strategies of ambiguity have been investigated by Aristotle, since the first sophistic movement. In his *Topics*, *Metaphysics* and *Rhetoric*, has pointed out the notion of “τὸ διπλῶς / διχῶς λεγόμενον”, meaning that a term can have different senses and double interpretation. In this paper we discuss how we reconstruct the meaning of an utterance in dialogue through the mechanism of interpretation and how we analyze and construe ambiguities, combining the insights of argumentation theory and text linguistics. Research results show that in case of misunderstanding, the “best interpretation” is the less defeasible one according to contextual presumptions.

*Keywords:* argumentation logic, ambiguity, context, semantic interpretation, Systemic Functional Grammar.

## 1. Introduction

The notion of ambiguity has been investigated since the first sophistic theories in Aristotelian Topics, Rhetoric and Sophistical Refutations [14], [5], [25], [7].<sup>1</sup> In the field of his dialectics, Aristotle supports that a term could have two different meanings (*παρὰ τὸ διπτόν, τὸ διχῶς λεγόμενον / τὸ διπτῶς λεγόμενον*). In *De Sophisticis Elenchis* an Aristotle's classification of linguistic fallacies is included, which is the first one in the Ancient Greek world. More specifically, Aristotle supports that there are 13 types of ambiguity. Six of these are called *linguistic ambiguities*, such as *syntactic ambiguity* and *lexical ambiguity* (*ὁμωνυμία*)<sup>2</sup>, and they depend on the use of language [22]. Answerer (*interlocutor*) is allowed to ask for clarification from the questioner (*dialectician*) when he does not understand a term [24]. In this framework, problems of argumentation and communication may arise, resulting in different interpretations of an utterance and misunderstanding [1, p. 112b], [22]. It is remarkable the fact that Aristotle illustrates how expressions and definitions that involve temporal qualifications (i.e. *νῦν* = now) must be rejected in dialectic because of the ambiguity (*ἀμφιβολία*) which occurs in them [1, p. 142b21-33].<sup>3</sup>

In a pragma-dialectical approach, context seems to be crucial considering cultural factors, the purpose of dialogue and interlocutors' attitude [11], [26], [15], [18], [17]. In the last decades, context has become a significant concern for text linguistics and discourse analysis, taking into account interpersonal relationships in a dialogue, co-text (what precedes of an utterance and what follows), encyclopedic knowledge and social and cultural environment [20], [23]. Systemic Functional Grammar (SFG) could be a useful tool in order to analyze ambiguity in interpersonal relationships through argumentation [9], [8].

In this paper we examine a) the way we interpret ambiguities in argumentation applying Halliday's Systemic Functional Grammar (SFG), b) the role of contextual factors in argumentation analysis.<sup>4</sup> The paper is structured as follows: Section 2 concludes the research methodology; Section 3 presents Halliday's Systemic Functional Grammar while Section 4 discusses the notion of ambiguity in argumentation and the role of contextual factors. Finally, Section 5 describes the main research conclusions providing perspectives for future work.

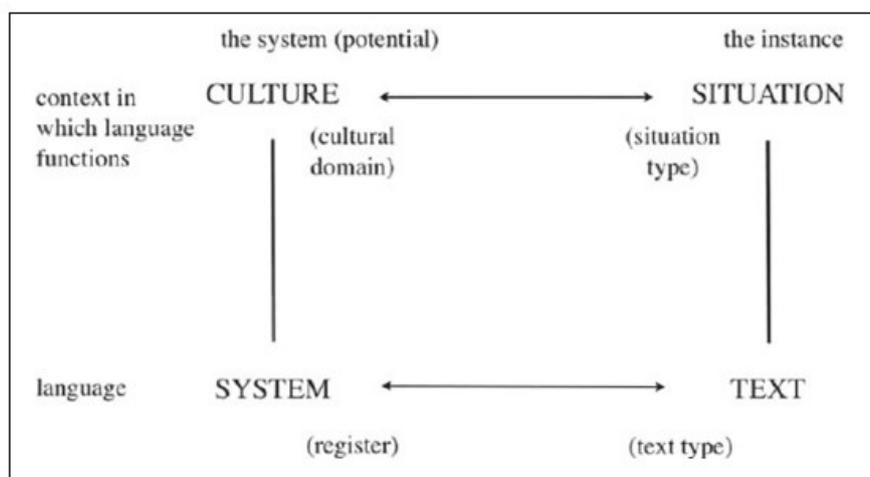
## 2. Methodology

For argumentation analysis, Systemic Functional Grammar (SFG) is applied, in order to reveal and analyze ambiguity/uncertainty, taking into account contextual factors. Systemic Functional Grammar (SFG) or Systemic Functional Linguistics (SFL) as proposed by Halliday in the 1960's is a model related to social semiotic approach to language, concerned with lexico-grammatical choices according to interlocutors' intention [8], [9]. For the analysis of ambiguities in argumentation, the specific model was chosen, due to the fact that offers a useful tool in a micro- and macro-level perspective. In this way, SFG could be a basic framework in order to solve ambiguity, viewed as a strategy of persuasion, and reveal the "best interpretation" taking into account contextual factors.

## 3. Systemic Functional Grammar (SFG)

Halliday's Systemic Functional Grammar emphasizes to the use of language. Language choices are related to speaker's and hearer's intention and what is important to SFG is the meaning and not the structure, as suggested by other linguistic models. In this framework, language is a system of meanings and socio-cultural context plays a crucial role (see Figure 1). Lexico-grammatical choices, such as adjectives, active or passive voice, epistemic modality, indefinite pronouns, present perfect tense, "construct" different aspects of social reality. Halliday proposes three main (meta)functions: a) ideational function, b) interpersonal function, c) textual function. The *ideational function* refers to the way the world is represented through language and it is related to encyclopedic knowledge. The *interpersonal function* deals with the way that language reflects identities or relationships within communicative discourse, for instance the relationship between

interlocutors. Finally, the *textual function* describes the use of language, structural relationships through lexico-grammatical choices [8].



**Figure 1:** Text in context according to Systemic Functional Grammar [10].

#### 4. Ambiguity in Argumentation and Context

Ambiguity, the property of a lexical item having more than one meaning, is a basic notion in semantics, syntax and pragmatics [2], [16], [19]. Lexical/semantic ambiguity refers to the presence of two or more possible meanings for a single word:

(1) I've brought the *seal* [4, p. 3]

In the above example, the multiple meaning of the word *seal* results to several interpretations. More particularly, the word *seal*, as a noun, could refer to “a sea animal that eats fish” or to “an official design or mark, stamped on a document to show that it is genuine and carries the authority of a particular person or organization” [27]. In this instance, in the word *seal* the phenomenon of *polysemy* is observed (a single lexeme has multiple meanings).

(2) a. *Paris* is a bustling metropolis.

b. *Paris* begins with the sixteenth letter of the English alphabet [4, p. 251].

In (2a) *Paris* refers to the city of France, while in (2b) it is mentioned to the word itself. The context in which the word is used plays a crucial role for the interlocutors. Speakers and hearers in a conversation rely on their background/encyclopedic knowledge (ideational function) and the co-text (in this case, the co-text is what follows the word *Paris*). The utterance is interpreted according to interlocutors' intention, taking into account lexico-grammatical choices, i.e. in (2b) *letter* and *alphabet* are nouns related to the same domain and they refer to the entry *Paris* in a dictionary (textual function).

In addition, ambiguity, paradox and vagueness are observed in arguments. Some examples from Modern Greek are:

(3) (premise 1) Ο Γιώργος είναι ευχάριστο άτομο (George is a pleasant person)

(premise 2) Το άτομο διασπάται (the atom disintegrates)

(conclusion) Ο Γιώργος διασπάται (George disintegrates)

(4) (premise 1) Ο αστυνόμος είναι όργανο (The police officer is an instrument)

(premise 2) Το μπουζούκι είναι όργανο (bouzouki<sup>5</sup> is an instrument)

(conclusion) Ο αστυνόμος είναι μπουζούκι (The police is bouzouki)

In (3) a syllogistic argument is observed. The single lexeme *átomo* in the two premises is a polysemous word and it has multiple meanings. In the first premise, the word *átomo* refers to George as a person, i.e. the human being as a unit with its particular and unique characteristics as opposed to the species or the society. In premise 2, *átomo* is a term of physics or chemistry and refers to the least and invisible part of the matter. In this argument the premises are true<sup>6</sup>, but the conclusion is false.

In (4) the premises are true, but the conclusion is false. In this case, we observe a paradox that lies on the phenomenon of polysemy. In the first premise the word *όργανο* means *a person charged with a certain employment, especially within the framework of the state*, while in the second premise the notion *όργανο* refers to the Greek stringed-traditional instrument.

The phenomenon of polysemy is obvious in verbs, such as the verb *make* [28] in English, which has different meanings (see Figure 2). For example, the single lexeme *make* could mean *prepare* or *create* (she makes the table / she makes bread), *represent* (he made him a truly tragic figure), *appoint* (he made her his personal assistant), *equal* (5 and 8 makes 13), *force* (they made me follow the rules), etc. Ambiguity also occurs in cognitive verbs, such as *think*, *believe*, *assume*, *guess* and *suppose* [21], [13].

Polysemous word	Meaning
Make	1. prepare 2. represent 3. force 4. appoint 5. equal 6. calculate 7. reach 8. be suitable

**Figure 2:** Polysemous word *make* in English.

Although the verb *make* has different meanings, interlocutors consider all the contextual presumptions and confront ambiguities, choosing the less defeasible interpretation and taking into account the co-text of the utterance. In this way, they avoid miscommunication and misunderstanding. The “best interpretation” is related to contextual presumptions, such as the interaction, the background knowledge, interlocutor’s interests/values and the communicative purposes of utterances.

In another example, the preferred interpretation could be (5a)<sup>7</sup>:

- (5) a. The view could be improved by the addition of a *plant* out there.  
b. The view would be destroyed by the addition of a *plant* out there [19 p.174].

In the above instance (5a), the best interpretation is *plant = living organism such as flower, tree or vegetable*, while in (5b) *plant = factory*.

In addition to lexical ambiguities often appear in speech and syntactic ones, as the following example<sup>8</sup>:

- (6) Flying planes can be dangerous.
  - a. The act of flying planes can be dangerous.
  - b. Planes that are flying can be dangerous.

In the above cases, interpretation of these utterances is mainly related to the macro-level perspective according to Systemic Functional Grammar and not to micro-level, that is the lexico-grammatical elements. The choice of “best interpretation” depends on factors, such as the knowledge of native speaker, his background and his communicative intention. For instance, for the first interpretation (6a) interlocutor may have personal experience with the planes, perhaps as a pilot, and may be able to evaluate possible imminent dangers. On the other hand, one could argue that the second interpretation (6b) is more possible not to be chosen by the speaker/hearer because is more diffuse and hard to follow, as we all know the fact that planes are a safe means of transport. In addition in the second example, the verb *fly* determines the noun *plane* and there is a distinction between flying planes and non-flying planes. In a macro-level perspective, solving this misunderstanding presupposes the encyclopedic interlocutors’ knowledge, their internal and external knowledge, according to ideational function, as proposed by Halliday in Systemic Functional Grammar. Relationship between the interlocutors seems to be important in order to choose the “best interpretation” and specifically in 6a, in case that one of them (or both) is pilot (interpersonal function). Taking into account the lexico-grammatical choices (textual function), i.e. the adjective *flying* that determines *planes*, a corpus analysis through concordances could reveal lexical collocations and the co-text information [3], [6], [12].

## 5. Conclusions

Halliday’s Systemic Functional Grammar could be a useful tool in order to construe ambiguities in argumentation. Through the three functions (ideational function, interpersonal function and textual function) is possible to construct the “best interpretation” of an utterance. Relationship between the speaker and the hearer, their intentions and their knowledge about the world according to the social and cultural environment, contribute to the analysis of ambiguity as a persuasion strategy. In addition, lexico-grammatical choices (textual function), such as passive voice, epistemic modality and verbs i.e. *think*, *suppose*, *believe*, could imply the phenomenon of semantic or syntactic ambiguity. In this framework, co-text (what precedes of an utterance and what follows) and lexical collocations may solve misunderstanding problems, while the role of lexicalized verbs (i.e. *make*) seems to be crucial. Finally, the use of corpus analysis through concordances may enlighten cases of vagueness observed in argumentation.

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## Notes

1. Also, in the Euthydemus Plato mentions some fallacies, but he does not attempt to classify them.
2. Homonymy (ὁμωνυμία) is a lexical ambiguity in which a single word has two or more different meanings.
3. See among others Schiaparelli [22].
4. It is worth mentioned the fact that the paper does not examine the case of lexicalized metaphors (for instance, he is a "legend"/"star").

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5. Greek stringed instrument.
  6. The first premise is a personal view about George's character, that is may be true or false.
  7. It is worth noting the fact that the "best interpretation" in argumentation may be not identical for the interlocutors. For example, the opponent may consider (5b) as the best, while the proponent has (5a) in mind.
  8. Structural/syntactic ambiguity refers to the structure of a sentence that has multiple interpretations.