

Discussion note

Defaults and inferences in interpretation

Fabrizio Macagno



ArgLab – Instituto de Filosofia da Nova (IFILNOVA), Universidade Nova de Lisboa, Edifício I&D – 4 andar, Avenida de Berna 26,
1069-061 Lisbon, Portugal

Received 5 December 2016; received in revised form 5 April 2017; accepted 8 June 2017
Available online 8 July 2017

Abstract

The notions of inference and default are used in pragmatics with different meanings, resulting in theoretical disputes that emphasize the differences between the various pragmatic approaches. This paper is aimed at showing how the terminological and theoretical differences concerning the two aforementioned terms result from taking into account inference and default from different points of view and levels of analysis. Such differences risk making a dialog between the theories extremely difficult. However, at a functional level of analysis the different approaches to interpretation can be compared and integrated. At this level, the standardization of pragmatic inferences can be regarded as the development of a specific type of presumptions, used to draw *prima-facie* interpretations.
© 2017 Elsevier B.V. All rights reserved.

Keywords: Inference; Default; Interpretation; Pragmatics; Relevance theory; Default semantics

In his paper *Default Semantics and the architecture of the mind* (Capone, 2011), Alessandro Capone points out the possibility of drawing some interrelations between Jaszczolt's Default Semantics and Relevance Theory. Capone claims that the two theories, despite their differences, can be integrated, as the cognitive defaults that are the ground of Jaszczolt's theory can be regarded as specializations of the application of the Principle of Relevance (Capone, 2011, p. 1746). He underscores the crucial difference between the two models. RT focuses on processing (the relationship between cognitive effects and processing efforts) and "aims at a psychological plausible theory in which Relevance is part of a broad picture of the way the mind works and of its cognitive architecture." On the contrary, "Default Semantics focuses on types of sources from which addressees draw information and types of processes that interact in providing it" (Capone, 2011, p. 1748). However, Capone regards the goals of the two theories as compatible, as they can provide different perspectives and contributions to the twofold problem of attempting to describe how the mind processes utterances and how the speaker's intention is reconstructed.

According to Capone, Jaszczolt's approach can be represented as "a system in which one stores default interpretations in an archive and such interpretations are automatically activated in a default context, unless there are visible clues that militate against the default interpretation and, thus, favor contextual modulation" (Capone, 2011, p. 1744). Defaults are considered as "short-circuited inferences", instructions to interpret a certain fragment of language use in a certain way in a default context, which are defeated by other defaults arising from different (cognitive, social, cultural or world-knowledge) sources. For this reason, this model is based on a "cognitive principle of basic rationality" aimed at minimizing efforts and promoting contextual effects, namely the principle of Relevance. This principle is regarded as one that the mind recruits "for the purpose of creating cognitive defaults which, if implemented

E-mail address: fabrizio.macagno@fcsh.unl.pt.

as simple instructions, are even more frugal and faster than the application of the Principle of Relevance each time a certain input occurs” (Capone, 2011, p. 1746).

Against this position, Zhang and Zhang argue that the differences between RT and Default Semantics make a unified picture of the two theories inherently impracticable (Zhang and Zhang, 2016). According to them, the fundamental divide between the two approaches to utterance interpretation results from the notions of default and inference (Zhang and Zhang, 2016):

Default Semantics does not belong to inferential pragmatics: default meanings in this approach are non-inferential in nature. In post-Gricean pragmatics, there are two opposing views on whether or not pragmatic determination of truth-conditional content involves inferences. Relevance theorists take the inferentialism stance and argue that linguistic communication should involve inferences, so the recovery of explicatures involves inferences. But Jaszczolt (2005) holds the anti-inferentialism position, that is that default meanings are generated without involving inferences.

On this view, RT provides an inferential model for the study of meaning that excludes the notions of default meaning or default inference, as all implicatures must be warranted by context (Carston, 2004). On the contrary, defaults are described as “effortless, automatic enrichments involving no conscious pragmatic inferences” (Zhang and Zhang, 2016).

This debate concerning the possibility of combining or conciliating the two theories brings to light the crucial importance for pragmatics of the allegedly contrasting concepts of default and inference. Drawing some distinctions can be helpful for better understanding where the conflict really lies.

1. Defaults

The notion of default is clearly described by Jaszczolt in terms of salience. According to her, the interpretation of an utterance is frequently driven by the salience of some of the possible interpretations, caused by frequency of meaning, social and cultural conventions, or cognitive principles. Such interpretations are conceived as cognitive defaults (Heine et al., 2015; Jaszczolt, 2010, p. 128). On her view, interpretation is driven by default reasoning, namely a defeasible inference to the first unchallenged alternative: “we reason by default, unless we have evidence that we should not.” On this view, a default is regarded as an automatic, effortless conclusion drawn in lack of contrary evidence and until contrary evidence is provided. Default reasoning is thus contrary to systematic and critical inferences (Jaszczolt, 2005, p. 46):

Hearers do jump to conclusions, and, more importantly, speakers assume that hearers will jump to conclusions, thereby overcoming the problem of the slow speed of speech production as compared with the speed of the recovery of meaning. This jumping to conclusions is most effective when it proceeds along the path of preconceived beliefs in the form of defaults that do not require pragmatic inference. And this default reasoning is both intended and recognized as being intended. This notion of belief- and intention-based default is adopted in Default Semantics.

In order to analyze the problem of default and its relationship with inference, it is useful to address first the notion of default reasoning. Default reasoning can be described based on its common understanding in logic, artificial intelligence, and argumentation, in which it is commonly defined as a type of reasoning based on patterns of plausible and defeasible inference having the form “in the absence of any information to the contrary, assume...” (Reiter, 1980, p. 81). Such defeasible and non-monotonic patterns or rules, called defaults, lead to conclusions that are only plausible, as they are based on less than conclusive evidence in the absence of any information to the contrary (Moore, 1985; Reiter, 1978a). The defeasible rules of inference, or defaults, are closed world assumptions (Reiter, 1978b), i.e. assumptions that all the relevant and positive knowledge is listed (Walton, 2005, p. 101).

This account of default reasoning represents defaults as assumptions concerning specific issues (lexical information, world knowledge, social habits, see Asher and Lascarides, 2003), namely rules of inference from which non-monotonic conclusions can be drawn in lack of contrary evidence, or rather in “normal cases” (Asher and Williams, 2006). However, since defaults are defeasible rules of inference, they can interact and conflict with each other, and thus a monotonic principle has to be introduced in order to select the rule that applies in case of conflicts (Asher and Williams, 2006). In the Segmented Discourse Representation Theory, this monotonic principle is the principle of Maximising Discourse Coherence (Asher and Lascarides, 2003, pp. 20–21; Lascarides and Asher, 2008).

Default reasoning is thus based on rules of inference and leads to defeasible, non-monotonic inferences (Jaszczolt, 2005, p. 45). Jaszczolt applies the notion of default and default reasoning to (post-propositional) interpretations, and provides a system in which different sources contribute jointly to the representation of the speaker's meaning. Such sources are the following (Jaszczolt, 2011, p. 13, 2007, pp. 50–52):

1. Sentence structure and word meaning.
2. Conscious pragmatic inferences.

3. Cognitive defaults, or rather standard, presumed meanings resulting from the human processing system.
4. Social-cultural defaults or rather standard, presumed meanings resulting from frequently encountered scenarios, stored in the mind as default, presumed, *ceteris paribus* 'normal' ways things are.

On Jaszczolt's view, the concept of "default" cannot be disjoined from the basic definition of defeasible rule of inference (presumed interpretation resulting from different sources, either contextual or non-contextual). However, she specifies this concept claiming that "default" means an automatic interpretation, arrived at "unconsciously, without effort or time lapse" (Jaszczolt, 2011, p. 13). This specification concerns a characteristic of the processing of information, and results in the criticism of Zhang and Zhang that "Capone's assumption that Default Semantics admits default inferences diverges from Jaszczolt's model" as inferences are described by Jaszczolt "as conscious, effortful pragmatic processes" (Zhang and Zhang, 2016). This issue needs to be considered by analyzing the notion of inference in detail.

2. Inference

The controversy developed in linguistic pragmatics on the notion of inference is due to the complex relationship between a logical notion and the psychological processes involved. In logic, "inference" is defined as follows (Walton, 1990, p. 402):

We define inference as the use of a rule or warrant to link some propositions (statements) with others. The conclusion is the proposition toward which the inference moves. The premises are the beginning propositions from which the inference starts. Thus, an inference links the premises to the conclusion, and it always has a direction-proceeding from the premises to the conclusion.

In this sense, inferences represent "evidentiary relationship that obtains between premises and conclusions" (Godden, 2001), namely steps in reasoning, moving from premises to conclusions (which can be propositions or actions) based on "guiding principles" drawn from different sources (Adler, 2008, p. 1; Grice, 2001, p. 5; Pinto, 2001; Walton, 1990, p. 403).

The logical notion of inference has been investigated by considering the underlying psychological processes, which can be broadly classified in the dual-process accounts as spontaneous (or heuristic) vs. intentional (or systematic) processes (Chaiken and Trope, 1999; Evans, 2003; Uleman, 1999; Uleman et al., 2008). The correspondences between the types of inferences (inductive, deductive, abductive, etc.) and the psychological processing has been studied in psychology pointing out the correlation between associative reasoning and spontaneous inferences (Uleman, 1999). More specifically, as Sloman puts it (Sloman, 1996, p. 6):

Human reasoning seems to be performed by two systems, two algorithms that are designed to achieve different computational goals. One is associative, and it seems to operate reflexively. It draws inferences from a kind of statistical description of its environment by making use of the similarity between problem elements, interpreted (as seen below) using such aspects of general knowledge as images and stereotypes. The other is rule based and tries to describe the world by capturing different kinds of structure, structure that is logical, hierarchical, and causal-mechanical.

These two distinct algorithms for drawing inferences (originally introduced by James, see James, 1950, chap. 22), one based on similarity and statistical regularities, and the other on rules (abstractions that apply to any and all statements that have a certain well-specified symbolic structure, characterized by logical structure and variables) have been distinguished using the heuristics of awareness. Associative inferences are commonly drawn without the agent being conscious of the process (unconscious or immediate inferences); on the contrary, the agent is aware of both the result and the process in rule-based reasoning. However, this distinction is only a rule of thumb, as the two processing systems may contribute to a response, and rule-based reasoning can be unconscious (Prinz, 2006; Sloman, 1996; Uleman, 1999). In this sense, inferences can be described according to the processing system (associative vs. rule-based) and the psychological source heuristically characterizing an inference (whether it is – usually – the result of a conscious or unconscious process).

The disagreements in pragmatics concern the description of pragmatic inferences in terms of different criteria: psychological criteria, processing criteria, and communicability criteria. For this reason, an inference can be described according to the following distinctions:

1. Psychological criteria
 - a. Effort (Sperber, 1995)
 - i. Effortless
 - ii. Effortful

- b. Intentionality (voluntary control)
 - i. Involuntary – automatic
 - ii. Voluntary
 - c. Processing speed
 - i. Fast
 - ii. Slow
 - d. Availability (consciousness) (Recanati, 2002, pp. 116–118)
 - i. The judging subject is aware only of the conclusion of the inference
 - ii. Premises and conclusions of the inference are available to the judging subject (consciously accessible)
2. Processing criteria
- a. Algorithms (Recanati, 2003, p. 29)
 - i. Associative processing
 - ii. Inferential (logical, rule-based) processing
 - b. Systems (Carston, 2002; Sperber and Wilson, 2002)
 - i. Modular (sub-personal): spontaneous, automatic
 - ii. Central (non-modular, personal): reflective
3. Communicability criteria (Recanati, 2003, pp. 49–50). An inference can be:
- a. Tacit personal (the agent can make the inference explicit)
 - b. Tacit sub-personal (intuitive: the agent cannot be ascribed the reflective capacities for explicitly justifying those interpretations)
 - c. Explicit

These criteria result in different positions relative to the description of the types of inference involved in interpretation. According to relevance theory, pragmatic inferences can be automatic (namely spontaneous) or conscious, where the concepts of “conscious” is defined according to the psychological criteria of speed, intentionality, and effort. On the contrary, in Recanati’s view, the distinction is drawn based on the availability of the premises involved in the inference, which includes some spontaneous and automatic, but consciously accessible inferences (Recanati, 2002, pp. 117–118). These positions can be represented in Fig. 1.

Relevance theory		Recanati		
Inference	Psychological source	Availability	Processing	Processes
Narrow sense	Conscious process (a voluntary, effortful and slow activity)	Premises and conclusions of the inference are available (consciously accessible)	Explicit reasoning	Secondary
Broad sense (psychological inference in Sperber, 1995)	Spontaneous process (effortless, fast, and takes place unconsciously)		The judging subject is aware only of the conclusion of the inference	
		Cognitively penetrable		Primary
			Not cognitively penetrable	

Fig. 1. Different accounts of “inference”.

In this complex picture of inference, Recanati uses different criteria of classification, of which the “processing” criterion is the closest to the logical account of inference. On Recanati’s view, decoding, just like perception, can be considered as an inference in the broadest sense, namely playing “no justificatory role” in the speaker’s mental life (Recanati, 2002). According to Recanati, this type of inference is not based on a grounding premise, but just on perception, and for this reason, the speaker is not aware of the inferential connection. This account, however, merges again a psychological dimension with a logical one. The speaker’s awareness of the inferential connection (availability condition) does not correspond to the existence of a justificatory link between two judgments. The examples that in pragmatics are described in terms of “perception,” in logic and argumentation theory are investigated as inferences from appearance (Pollock, 1995, p. 41; Walton, 2006), namely arguments (or rather inferences) grounded on the justificatory premise that, “Having a percept with content φ is a *prima facie* reason to believe φ ” or rather, “If it appears that object could be classified as C, then it should be classified as such” (Walton, 2016, chap. 7). This type of reasoning is clearly defeasible, and in case it is challenged, it needs to be supported by specific arguments grounded on justificatory premises (Prakken and Sartor,

2004). In this sense, the different types of inferences can be distinguished based on the nature of the justificatory links and the information defeating them.

In this complex picture, Jaszczolt defines “default” using only the psychological criteria of speed, effort, and consciousness. According to her view, default is an automatic interpretation (Jaszczolt, 2011, p. 13), and defines defaults as inferences in the broad sense, without discussing whether they are spontaneous in Recanati’s sense or unconscious, and cognitively penetrable or not (Jaszczolt, 2006, p. 202). However, another dimension of the controversy on whether her defaults can be considered as default (pragmatic) “inferences” needs to be taken into account, namely the cognitive source of the inference (or rather, the type of premises it is based on) and more precisely whether pragmatic inferences can be only the ones grounded on contextual information.

3. Defaults, defeasible inferences, and context

Sperber and Wilson draw a crucial distinction between “code-like processes” for treating generalized conversational implicatures (default-based), and the inference of speaker’s intentions “independently of any convention” (Sperber and Wilson, 2002, p. 7). The first type of process is labeled generally as “coding” and contrasted with “inference;” and Carston (Carston, 2004, p. 72) even claims that no implicatures are a matter of default inference, but rather all must be warranted by context (Zhang and Zhang, 2016). The crucial problem is to understand to what this difference amounts.

Sperber and Wilson acknowledge a level of intuitive, unconscious metapsychological “inferences” that are the result of dedicated inferential mechanisms or modules, which rely on specific domain-dependent heuristics and draw inferences based on (domain dependent) regularities (Sperber and Wilson, 2002, p. 9). The dedicated sub-module of mind reading relative to utterance interpretation is grounded on the presumption of relevance (the utterance is presumed to be the most relevant one compatible with the speaker’s abilities and preferences, and at least relevant enough to be worth the hearer’s attention, Wilson and Sperber, 2012, p. 276). Thus the comprehension procedure can be represented as a (possibly) automatic inference from (1) an input (an utterance, such as “John is a soldier”), (2) the activation of possible interpretations ordered according to their contextual accessibility (“John is a member of the army”; “John is devoted to his duty,” etc.); and (3) the presumption of relevance, from which follows that the most relevant (contextually accessible) interpretation is selected (“John is a member of the army” in the context in which the issue discussed is John’s profession). In this sense, “inferences” are characterized by conclusions properly warranted by the premises and drawn either reflectively or automatically. In relevance theory, however, pragmatic “inferences” are grounded on “regularities in the relations between mental states and behavior” (Wilson, 2005, p. 1136) and thus are characterized by being contextual (take contextual factors as their premises) and lead to conclusions that represent the “most plausible hypothesis about the speaker’s meaning” for the hearer (Sperber and Wilson, 2002, p. 19).

Sperber and Wilson distinguish this concept of inference from decoding, which is attributed to the neo-Gricean theories. On this latter account, a level of “utterance type” (Atlas, 1989) lies in between sentence-meaning (decoding based on grammar in the larger sense) and a level of speaker-meaning (the result of actual nonce or once-off inferences made in actual contexts by actual recipients with all of their rich particularities) (Levinson, 2000, p. 22). The problem is how to interpret this middle level, and more importantly how to interpret the interpretive process involved. Sperber and Wilson label it as “decoding,” thus distinguishing it from inferences and excluding it from the field of inferential pragmatics. Contrary to this position, since the beginning Levinson underscored the difference between default inference and decoding, claiming that equating “default but defeasible inferences with automatic decoding” is a mistake (Levinson, 1987, p. 723).

In the neo-Gricean theory, utterance type is based on reasoning from stereotypes (Atlas, 2005, p. 29; Atlas and Levinson, 1981). However, this type of reasoning is local and pre-propositional (Jaszczolt, 2008), consisting in the application of default rules associated with specific lexical items or syntactic constructions (for example, “some” is usually interpreted as “not all”). This type of inferential mechanism (at work in GCI’s) is defaultive in the sense that “*U* implicates *i* unless there are unusual specific contextual assumptions that defeat it” (Levinson, 2000, p. 16). The default rules (*x* is normally interpreted as *X*₁) encode general expectations about how language is normally used (Levinson, 2000, p. 22), but such expectations involve social considerations (what speakers *take* as stereotypical or conventional behavior) (Atlas and Levinson, 1981, p. 49). What is non-controversial (shared background presumptions in the context) and fitting the communicative intentions attributable to the speaker in light of “what he has said” will be considered then the best interpretation (Atlas and Levinson, 1981, p. 42).

This discussion between Neo-Gricean theories (defending a middle level of (pre-propositional) presumptive meaning) and relevance theory is based on the nature of the premises involved in the inferential processing (Jaszczolt, 2008):

So, there is a problem here of how much of the previous discourse are we allowed to consider while still retaining the concept of default for a particular interpretation rather than calling it a case of pragmatic inference. We need reliable criteria for discerning such reliable, shared interpretations. In other words, we need to establish where, at what level of specificity, the default meaning ends.

Defaults can be considered as a proposal to regard the relationships between inference and context in terms of implicit vs. explicit context, and more importantly, in terms of type and amount of implicit contextual information that is carried with a discourse sequence. On this view, defaults can be considered as an explanation in terms of inference and processing of the fact that “language encodes prior contexts and is used to make sense of actual situational contexts, so language is never context-free” (Kecskes, 2013, p. 136). In this sense, defaults can be regarded as inferences from a prior recurring context of reference, which are triggered during the process of comprehension.

4. Default inferences, default reasoning, and interpretive disputes

The “division of labor” between Relevance Theory and Default Semantics that Capone points at can be interpreted as a proposal to combine the two theories to describe the continuum between the inferences drawn from the implicit context “indexed to” by lexical items, phrases, or even utterances, and the ones involving premises drawn from the actual situational experience (context) (Kecskes, 2013, p. 130). Default inferences are triggered when information about the current context is absent or not necessary for comprehension (it is already specified by the previous context and “encapsulated” in the linguistic items used), namely when the (automatic) inferential conclusion is not conflicting with the actual context. However, more complex inferences need to be made when default inferences cannot be drawn, namely when the prior “encapsulated” context (Kecskes, 2013, p. 129; 131, 2008; Kecskes and Zhang, 2009) cannot be used alone for drawing the actual meaning of the utterance (or part thereof). Thus, the difference between these two types of inferences (Wilson, 2005, p. 1135) can be conceived in terms of distance between the “prior” (or stereotyped) context and the actual one.

Capone's proposal of combining and mutually integrating the two pragmatic theories can be reinterpreted at a functional level and used within the field of argumentation for the purposes of explaining and solving interpretive conflicts (Alexy and Dreier, 1991; Guastini, 2011; Macagno and Capone, 2016; MacCormick, 2005, 1995; Tarello, 1980) or detecting, assessing, and overcoming misunderstandings in ordinary contexts (Macagno and Bigi, 2017).

In a functional (argumentative) perspective, the focus is not on the processing but on justifications provided to solve interpretive disputes, and more precisely on the types of inferences and presumptive premises on which an interpretive conclusion is based. Building on Hamblin's account of presumptive meaning (Hamblin, 1970, pp. 290–291; Macagno, 2011), discourse can be seen as grounded on various types of presumptions concerning the expectations of meaning consistency relative to a group of speakers or a previous discourse (Hamblin, 1970, pp. 294–295). For example, common presumptions are “*the speaker uses his words in compliance with their common use;*” “*the meaning of a word is the pattern of its previous use;*” or “*the meaning of a word used more than once in the same argument or discourse is the same.*”

On this view, the interpretation of an utterance is a defeasible conclusion that can be challenged at a semantic (lexical and syntactic dimension) or pragmatic (the communicative function of an utterance) level by means of presumptive or abductive patterns of inference. The threefold distinction between decoding, defaults, and pragmatic inferences can be regarded in argumentative terms as different types of justifications provided for an interpretive conclusion. “Automatic” or default inferences can be regarded as inferences based on presumptions concerning what a lexical item, phrase, or utterance is usually used to mean. “Conscious” or “pragmatic” inferences can describe the inferences drawn when default inferences cannot be triggered, as the preceding or following discourse is incompatible with the prior contexts encapsulated. Such inferences can involve premises from various sources, and most importantly from presumptions related to the specific contextual information (mutual knowledge). In between defaultive and abductive (creative) inferences, lie inferences based on presumptions concerning the prior speaker's contexts of use, namely about his specific history of use of a lexical item, phrase, or utterance (Kecskes, 2013, p. 141), either in general or in the specific communicative situation.

The two patterns of inference, which we referred to as “presumptive” and “abductive,” can be represented in terms of argumentation schemes, pointing out their different structure. The “default” interpretation can be conceived as based in part on linguistic decoding (which – differently from Capone's view – is seen in terms of non-monotonic and defeasible conclusions drawn from generic lexical presumptions), in part on other types of presumptive inferences, drawn from premises concerning what the interlocutor can know or can accept (Macagno and Walton, 2014, chap. 5; Rescher, 2006; Walton, 1995). Such presumptive conclusions are based on defeasible rules of inference (Thomason, 1990), which can be more generic or more specific, i.e. less or more related to the speaker, and drawn from different “sources,” namely distinct types of expectations about the speaker's knowledge and linguistic behavior. Rescher represented the structure of this type of inference as in Fig. 2 below (Rescher, 2006, p. 33), which will be referred to as “presumptive reasoning.”

Premise 1:	P (the proposition representing the presumption) obtains whenever the condition C obtains unless and until the standard default proviso D (to the effect that countervailing evidence is at hand) obtains.
Premise 2:	Condition C obtains (Fact).
Premise 3:	Proviso D does not obtain (Exception).
Conclusion:	P obtains.

Fig. 2. Presumptive reasoning.

Premise 1:	U is a communicative act.
Premise 2:	I (Interpretation 1) is a satisfactory interpretation of U .
Premise 3:	No interpretation I' (such as interpretation 2) given so far is as satisfactory as I .
Conclusion:	Therefore, I is a plausible interpretation, based on what is known so far.

Fig. 3. Reasoning from best interpretation.

When a default interpretation is subject to dispute or is contradicted by contextual evidence (Dascal and Wróblewski, 1988; Patterson, 2004), a more complex, abductive, pattern is needed, aimed at comparing and assessing possible interpretations and the defeasibility thereof (Bench-Capon and Prakken, 2010; Walton, 2002; Walton et al., 2008; Weinstock et al., 2013; Wyner and Bench-Capon, 2007). The notion of reasoning from best interpretation (Atlas and Levinson, 1981) is thus conceived as a defeasible argument having the following abductive pattern (Fig. 3) (adapted from Walton et al., 2008, p. 329).

The difference between the two schemes consists in the critical assessment of the possible alternative interpretations. While the presumptive reasoning scheme leads to a *prima-facie* interpretation without considering any alternative and merely relying on one presumption, the reasoning from best interpretation involves the comparative analysis of the plausibility and defeasibility of the possible interpretations. In this latter case, the interpreter goes through an evaluation and criticism of and comparison among the possible alternatives, and selects the “best” one given the evidence available. For this reason, this latter pattern is more critical from a functional point of view, but also more effortful and slower from a psychological perspective.

Both the presumptive and the abductive (best-interpretation) schemes are based on different types of presumptive premises, which can be divided in four categories according to their content. The first type (Level 0 – pragmatic presumptions) refers to the presumptions of use, namely the common association between the use of lexical item, phrase, or utterance, and a communicative purpose (Kecskes, 2008; Kecskes and Zhang, 2009; Kissine, 2012). This broad category includes both socially (culturally) shared uses (“can you pass me the salt?” is normally used to request gently the salt) and individual (prior) uses.

The second type (Level 1 – Linguistic) includes presumptions related to the use of linguistic (or rather semantic-ontological) items and structures (called semantic presumptions). For instance, dictionary or shared meanings of lexical items are presumed to be known and commonly used by the speakers of a language (“Usually ‘soldier’ means a member of the army”). Such presumptions represent the presumptive meaning of linguistic elements (Hamblin, 1970; Macagno, 2011), which, however, are subject to default in case the context requires a different interpretation (such as in case of metaphors, see Giora, 2003, p. 60). The third level of presumptions (Level 2 – Factual, encyclopedic) concern encyclopedic knowledge, such as facts, common connection between events, or behaviors and habits that are considered as shared. Finally, the last kind of presumptions (Level 3 – Values and interests) includes presumptions about the interlocutor’s possible criteria of evaluation and choice.

These types of presumptions can have different levels of specificity. They can concern the individual inasmuch as a member of a broader community (such as a linguistic community) or of a specific culture or sub-culture (Kecskes, 2015) (for example, “recommendation letters usually mention only the outstanding qualities of a candidate”), or the interlocutor as a specific individual (for example, “this professor usually writes very few and short recommendation letters”). These latter presumptions are based on the interlocutor’s previous behavior (including the linguistic one) or choices. The

specificity of a presumption becomes crucial in case an interpretation is challenged (either directly or indirectly, namely in case of communicative failures or misunderstanding), as more specific presumptions are less subject to be defeated by additional information.

The aforementioned presumptions constitute the possible means that can allow the interlocutors to bridge the gap between their individual (and cultural) knowledge. By relying on presumptions, the participants to a dialog can advance an educated guess about the other's mind, and more importantly, they can justify their interpretation of the interlocutor's communicative behavior. In this sense, they can be used to represent the mental and interpretative processing at its *functional* level. The levels of presumptions can be represented in Fig. 4.

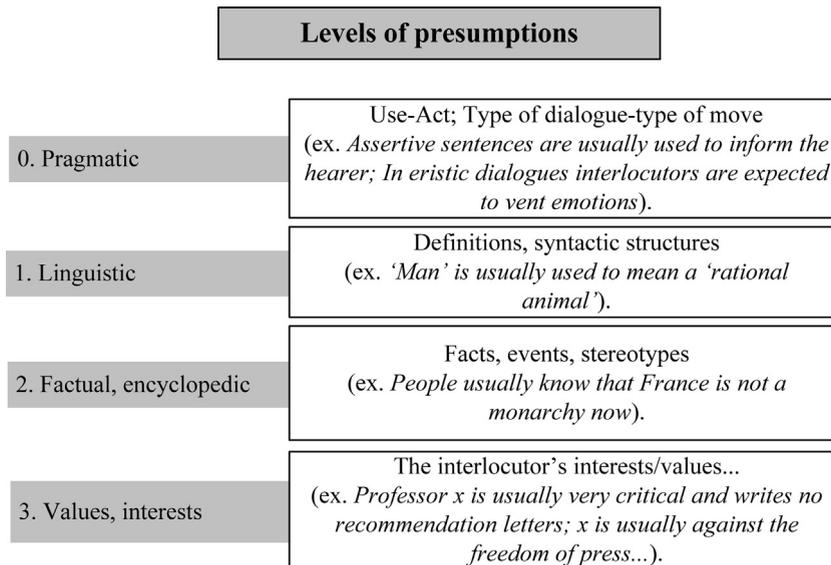


Fig. 4. Levels of presumptions.

As mentioned above, presumptions can be classified according to their content and ordered and assessed based on their defeasibility conditions (Clark, 1996, chap. 4; Clark and Brennan, 1991). The more likely is that conflicting or defeating evidence can be added or be found, the more likely is that a presumption is subject to default. For this reason, presumptions closer to the conversational situation in which the utterance (or the move) is performed are likely to be less subject to default than more generic presumptions. For example, specific presumptions resulting from direct evidence concerning the interlocutor's behavior (values, interests, behavior of the interlocutor) are less likely to be subject to default than generic encyclopedic or linguistic information, as less abstract from the specific setting in which the utterance is made. Pragmatic presumptions related to the interlocutor's prior contexts of use are stronger than the corresponding generic presumptions drawn from cultural habits or sociolinguistic considerations.

This inferential mechanism (Macagno, 2012; Macagno and Walton, 2013) can be illustrated using the following example drawn from a recent speech by Hillary Clinton¹:

Unlike him, I have some experience with the tough calls and the hard work of statecraft. I wrestled with the Chinese over a climate deal in Copenhagen, brokered a ceasefire between Israel and Hamas, negotiated the reduction of nuclear weapons with Russia, twisted arms to bring the world together in global sanctions against Iran, and stood up for the rights of women, religious minorities and LGBT people around the world. And I have, I have sat in the Situation Room and advised the President on some of the toughest choices he faced. So I'm not new to this work. And I'm proud to run on my record, because I think the choice before the American people in this election is clear.

The default meaning resulting from the use of "some" is a lower-bound value (not much) (Horn, 2010; Jaszczolt, 2008; Levinson, 2000) resulting from the generic pragmatic uses of this adjective ("some" is generally used to indicate a quantity lower than "all," "much," "many" . . .). However, this default interpretation conflicts with the evidence from the following text and the presumption that who has done a lot of negotiations, advisory, and government decision-making is usually considered to have a lot of experience, leading to the conclusion that in fact Clinton has a lot of experience in conducting

¹ <http://time.com/4355797/hillary-clinton-donald-trump-foreign-policy-speech-transcript/> (retrieved on 21 February 2017).

state affairs (factual presumption). This conflict results in a more complex interpretive justification, leading to the best interpretation of “some” as an “understatement of ‘a lot of.’” However, this interpretation can become in turn “standardized” and “compressed into a default semantics” (as Capone puts it). From a functional perspective, this use can become a specific pragmatic presumption, used to interpret further similar uses of “some” by Clinton by relying on a less complex interpretive reasoning pattern (usually, Clinton uses “some” as an understatement of “a lot of” when she talks about her achievements). This presumption thus can be used as a premise in a pattern of presumptive reasoning and lead to a *prima-facie* interpretation.

This perspective is clearly focused only on the justificatory aspect of interpretation, namely on how an interpretation can be shown to be more acceptable than others. This approach does not address the psychological distinctions between decoding, processing defaults, and drawing pragmatic inferences. Rather, the distinctions made are between the grounds of interpretive conclusions. At this functional level, every interpretation can be considered as justifiable in terms of presumptions. Some conclusions are drawn by default, relying on pragmatic or linguistic presumptions. Others are the outcome of a more complex reasoning pattern, in which various presumptions are compared and assessed. However, at this level Capone's proposal can be regarded as a tentative to show how new stronger presumptions are developed and become the ground of *prima-facie*, default interpretations.

5. Conclusion

Capone's paper and Zhang and Zhang's comments thereon can be considered as the starting point for analyzing how terminological and theoretical differences can be bridged. Capone underscored how Relevance Theory and Default Semantics develop concepts that can be integrated in a different perspective, in which different levels of analysis can be considered separately and can lead to a fuller account of the process of interpretation (Capone, 2011, p. 1742). The goal of this paper was to address a specific terminological issue, concerning the notions of inference and default, and to investigate at what level of analysis the two apparently conflicting theories can be integrated.

The notion of inference was analyzed by distinguishing the logical from the psychological level, and showing how at a functional (argumentative) level the difference between pragmatic inferences and defaults can be identified in the type of inferential pattern and presumptive premises relied upon. Defaults can be regarded as *prima-facie* conclusions of interpretive presumptive inferences, which are grounded on more or less specific pragmatic or linguistic presumptions. Pragmatic inferences can be considered as based on a more complex, abductive pattern. They involve the analysis and assessment of alternative interpretations, which are grounded on various “contextual” pieces of evidence resulting from the communicative setting and the corresponding presumptions. For this reason, pragmatic inferences are more critical, as they presuppose the consideration of the defeasibility conditions of the competing interpretations, and thus they are more effortful and slower.

The two types of inference (the presumptive and the abductive one) are interrelated in communication. As Capone maintains, pragmatic inferences can become standardized and associated with some specific uses of a sentence or linguistic item. In this sense, they become specific pragmatic presumptions used in a presumptive pattern of inference, leading to default conclusions.

Acknowledgments

The author would like to thank the Fundação para a Ciência e a Tecnologia for the research grants no. IF/00945/2013/CP1166/CT0003, PTDC/IVC-HFC/1817/2014, and PTDC/MHC-FIL/0521/2014.

References

- Adler, J., 2008. Introduction: philosophical foundations. In: Adler, J.E., Rips, L.J. (Eds.), Reasoning. Cambridge University Press, Cambridge, pp. 1–34. <http://dx.doi.org/10.1017/CBO9780511814273.002>
- Alexy, R., Dreier, R., 1991. Statutory interpretation in the Federal Republic of Germany. In: MacCormick, N., Summers, R. (Eds.), Interpreting Statutes. A Comparative Study. Dartmouth, Aldershot.
- Asher, N., Lascarides, A., 2003. Logics of Conversation. Cambridge University Press, Cambridge.
- Asher, N., Williams, M., 2006. Pragmatic Reasoning, Defaults and Discourse Structure, Game Theory and Pragmatics. Palgrave Macmillan, London, UK. http://dx.doi.org/10.1057/9780230285897_6
- Atlas, J.D., 1989. Philosophy Without Ambiguity: A Logico-linguistic Essay. Clarendon Press, Oxford.
- Atlas, J.D., 2005. Logic, Meaning, and Conversation. Oxford University Press, Oxford. <http://dx.doi.org/10.1093/acprof:oso/9780195133004.001.0001>
- Atlas, J.D., Levinson, S., 1981. It-clefts, informativeness and logical form: radical pragmatics (revised standard version). In: Cole, P. (Ed.), Radical Pragmatics. Academic Press, New York, pp. 1–62.
- Bench-Capon, T., Prakken, H., 2010. Using argument schemes for hypothetical reasoning in law. Artif. Intell. Law 18, 153–174. <http://dx.doi.org/10.1007/s10506-010-9094-8>

- Capone, A., 2011. Default semantics and the architecture of the mind. *J. Pragmat.* 43, 1741–1754. <http://dx.doi.org/10.1016/j.pragma.2010.11.004>
- Carston, R., 2002. Linguistic meaning, communicated meaning and cognitive pragmatics. *Mind Lang.* 17, 127–148. <http://dx.doi.org/10.1111/1468-0017.00192>
- Carston, R., 2004. Truth-conditional content and conversational implicature. In: Bianchi, C. (Ed.), *The Semantics/Pragmatics Distinction*. CSLI Publications, Stanford, pp. 65–100.
- Chaiken, S., Trope, Y. (Eds.), 1999. *Dual-process Theories in Social Psychology*. Guilford Press, New York.
- Clark, H., 1996. *Using Language*. Cambridge University Press, Cambridge.
- Clark, H., Brennan, S., 1991. Grounding in communication. In: Resnick, L., Levine, J., Teasley, S. (Eds.), *Perspectives on Socially Shared Cognition*. American Psychological Association, Washington, pp. 127–149.
- Dascal, M., Wróblewski, J., 1988. Transparency and doubt: understanding and interpretation in pragmatics and in law. *Law Philos.* 7, 203–224.
- Evans, J., 2003. In two minds: dual-process accounts of reasoning. *Trends Cogn. Sci.* 7, 454–459. <http://dx.doi.org/10.1016/j.tics.2003.08.012>
- Giora, R., 2003. On Our Mind. Salience, Context, and Figurative Language. Oxford University Press, Oxford. <http://dx.doi.org/10.1093/acprof:oso/9780195136166.001.0001>
- Godden, D., 2001. On the relation of argumentation and inference. In: *Ontario Society for the Study of Argumentation IV: Argumentation and Its Applications*, .
- Grice, P., 2001. *Aspects of Reason*. Oxford University Press, Oxford. <http://dx.doi.org/10.1093/0198242522.001.0001>
- Guastini, R., 2011. *Interpretare e argomentare*. Giuffrè, Milano.
- Hamblin, C.L., 1970. *Fallacies*. Methuen, London.
- Heine, B., Narrog, H., Jaszczolt, K., 2015. Default semantics. In: Barber, A., Stainton, R. (Eds.), *The Oxford Handbook of Linguistic Analysis*. Oxford University Press, Oxford, pp. 193–221. <http://dx.doi.org/10.1093/oxfordhb/9780199677078.013.0009>
- Horn, L., 2010. WJ-40: issues in the investigation of implicature. In: Petrus, K. (Ed.), *Meaning and Analysis: New Essays on Grice*. Palgrave Macmillan, Houndmills, pp. 310–319.
- James, W., 1950. *The Principles of Psychology*. Dover, New York Original ed.
- Jaszczolt, K., 2005. *Default Semantics*. Oxford University Press, Oxford. <http://dx.doi.org/10.1093/acprof:oso/9780199261987.001.0001>
- Jaszczolt, K., 2006. Meaning merger: pragmatic inference, defaults, and compositionality. *Intercult. Pragmat.* 3, 195–212. <http://dx.doi.org/10.1515/IP.2006.012>
- Jaszczolt, K., 2007. The syntax-pragmatics merger: belief reports in the theory of default semantics. *Pragmat. Cogn.* 15, 41–64. <http://dx.doi.org/10.1075/pc.15.1.06jas>
- Jaszczolt, K., 2008. Psychological explanations in Gricean pragmatics and Frege's legacy. In: Kecskes, I., Mey, Jacob (Eds.), *Intentions, Common Ground, and the Egocentric Speaker–Hearer*. Mouton de Gruyter, Berlin, pp. 9–45.
- Jaszczolt, K., 2010. Default semantics. In: Barber, A., Stainton, R. (Eds.), *Concise Encyclopedia of Philosophy of Language and Linguistics*. Elsevier, Oxford, pp. 128–130.
- Jaszczolt, K., 2011. Salient meanings, default meanings, and automatic processing. In: Jaszczolt, K., Allan, K. (Eds.), *Salience and Defaults in Utterance Processing*. De Gruyter, Berlin, pp. 11–33.
- Kecskes, I., 2008. Dueling contexts: a dynamic model of meaning. *J. Pragmat.* 40, 385–406. <http://dx.doi.org/10.1016/j.pragma.2007.12.004>
- Kecskes, I., 2013. *Intercultural Pragmatics*. Oxford University Press, Oxford.
- Kecskes, I., 2015. Intracultural communication and intercultural communication: are they different? *Int. Rev. Pragmat.* 7, 171–194. <http://dx.doi.org/10.1163/18773109-00702002>
- Kecskes, I., Zhang, F., 2009. Activating, seeking, and creating common ground: a socio-cognitive approach. *Pragmat. Cogn.* 17, 331–355. <http://dx.doi.org/10.1075/pc.17.2.06kec>
- Kissine, M., 2012. Sentences, utterances, and speech acts. In: Allan, K., Jaszczolt, K. (Eds.), *Cambridge Handbook of Pragmatics*. Cambridge University Press, New York, pp. 169–190. <http://dx.doi.org/10.1017/cbo9781139022453.010>
- Lascarides, A., Asher, N., 2008. Segmented discourse representation theory: dynamic semantics with discourse structure. In: Bunt, H., Muskens, Reinhard (Eds.), *Computing Meaning*. Springer, Dordrecht, Netherlands, pp. 87–124. http://dx.doi.org/10.1007/978-1-4020-5958-2_5
- Levinson, S.C., 1987. Implicature explicated? *Behav. Brain Sci.* 10, 722. <http://dx.doi.org/10.1017/S0140525X00055473>
- Levinson, S., 2000. *Presumptive Meanings: The Theory of Generalized Conversational Implicature*. MIT Press, Cambridge, MA.
- Macagno, F., 2011. The presumptions of meaning: Hamblin and equivocation. *Informal Log.* 31, 368–394.
- Macagno, F., 2012. Presumptive reasoning in interpretation. Implicatures and conflicts of presumptions. *Argumentation* 26, 233–265. <http://dx.doi.org/10.1007/s10503-011-9232-9>
- Macagno, F., Bigi, S., 2017. Understanding misunderstandings. Presuppositions and presumptions in doctor-patient chronic care consultations. *Intercult. Pragmat.* 14, 49–75. <http://dx.doi.org/10.1515/ip-2017-0003>
- Macagno, F., Capone, A., 2016. Interpretative disputes, explicatures, and argumentative reasoning. *Argumentation* 30, 399–422. <http://dx.doi.org/10.1007/s10503-015-9347-5>
- Macagno, F., Walton, D., 2013. Implicatures as forms of argument. In: Capone, A., Lo Piparo, F., Carapezza, M. (Eds.), *Perspectives on Pragmatics and Philosophy*. Springer International Publishing, Cham, pp. 203–225.
- Macagno, F., Walton, D., 2014. *Emotive Language in Argumentation*. Cambridge University Press, Cambridge. <http://dx.doi.org/10.1017/CBO9781139565776>
- MacCormick, N., 1995. Argumentation and interpretation in law. *Argumentation* 9, 467–480. <http://dx.doi.org/10.1007/BF00733152>
- MacCormick, N., 2005. Rhetoric and the rule of law. In: *Recrafting the Rule of Law: The Limits of Legal Order*. Hart Publishing, Oxford. <http://dx.doi.org/10.5040/9781472561992.ch-008>
- Moore, R.C., 1985. Semantical considerations on nonmonotonic logic. *Artif. Intell.* 25, 75–94. [http://dx.doi.org/10.1016/0004-3702\(85\)90042-6](http://dx.doi.org/10.1016/0004-3702(85)90042-6)
- Patterson, D., 2004. *Interpretation in law*. *San Diego Law Rev.* 42, 685–710.
- Pinto, R., 2001. The relation of argument to inference. In: Pinto, R. (Ed.), *Argument, Inference and Dialectic*. Springer, Amsterdam, Netherlands, pp. 32–45. http://dx.doi.org/10.1007/978-94-017-0783-1_4
- Pollock, J., 1995. *Cognitive Carpentry*. MIT Press, Cambridge, MA.

- Prakken, H., Sartor, G., 2004. The three faces of defeasibility in the law. *Ratio Juris* 17, 118–139. <http://dx.doi.org/10.1111/j.0952-1917.2004.00259.x>
- Prinz, J., 2006. *Is the mind really modular?* In: Stainton, R. (Ed.), *Contemporary Debates in Cognitive Science*. Blackwell Publishers, Oxford, pp. 22–36.
- Recanati, F., 2002. Does Linguistic Communication Rest on Inference? *Mind Lang.* 17, 105–126. <http://dx.doi.org/10.1111/1468-0017.00191>
- Recanati, F., 2003. *Literal Meaning*. Cambridge University Press, Cambridge. <http://dx.doi.org/10.1017/CBO9780511615382>
- Reiter, R., 1978a. On reasoning by default. In: *Proceedings of the 1978 Workshop on Theoretical Issues in Natural Language Processing*. Association for Computational Linguistics, Morristown, NJ, USA, p. 210. <http://dx.doi.org/10.3115/980262.980297>
- Reiter, R., 1978b. On closed world data bases. In: Gallaire, H., Minker, J. (Eds.), *Logic and Data Bases*. Springer, Boston, MA, US, pp. 55–76. http://dx.doi.org/10.1007/978-1-4684-3384-5_3
- Reiter, R., 1980. A logic for default reasoning. *Artif. Intell.* 13, 81–132. [http://dx.doi.org/10.1016/0004-3702\(80\)90014-4](http://dx.doi.org/10.1016/0004-3702(80)90014-4)
- Rescher, N., 2006. *Presumption and the Practices of Tentative Cognition*. Cambridge University Press, Cambridge. <http://dx.doi.org/10.1017/CBO9780511498848>
- Solman, S.A., 1996. The empirical case for two systems of reasoning. *Psychol. Bull.* 119, 3–22. <http://dx.doi.org/10.1037//0033-2909.119.1.3>
- Sperber, D., 1995. *How do we communicate?* In: Brockman, J., Matson, K. (Eds.), *How Things Are: A Science Toolkit for the Min. Morrow*, New York, pp. 191–199.
- Sperber, D., Wilson, D., 2002. Pragmatics, modularity and mind-reading. *Mind Lang.* 17, 3–23. <http://dx.doi.org/10.1111/1468-0017.00186>
- Tarello, G., 1980. *L'interpretazione della legge*. Giuffrè, Milano.
- Thomason, R., 1990. Accommodation, meaning, and implicature: Interdisciplinary foundations for pragmatics. In: Cohen, P., Morgan, J., Pollack, M. (Eds.), *Intentions in Communication*. MIT Press, Cambridge, pp. 325–364.
- Uleman, J., 1999. Spontaneous versus intentional inferences in impression formation. In: Chaiken, S., Trope, Y. (Eds.), *Dual-process Theories in Social Psychology*. Guilford Press, New York, pp. 141–160.
- Uleman, J.S., Adil Saribay, S., Gonzalez, C.M., 2008. Spontaneous inferences, implicit impressions, and implicit theories. *Annu. Rev. Psychol.* 59, 329–360. <http://dx.doi.org/10.1146/annurev.psych.59.103006.093707>
- Walton, D., 1990. What is reasoning? What is an argument?. *J. Philos.* 87, 399–419. <http://dx.doi.org/10.2307/2026735>
- Walton, D., 1995. *Argumentation Schemes for Presumptive Reasoning*. Routledge, Mahwah. <http://dx.doi.org/10.4324/9780203811160>
- Walton, D., 2002. *Legal Argumentation and Evidence*. The Pennsylvania State University Press, University Park.
- Walton, D., 2005. *Argumentation Methods for Artificial Intelligence in Law*. Springer-Verlag, Berlin/Heidelberg. <http://dx.doi.org/10.1007/3-540-27881-8>
- Walton, D., 2006. *Argument from appearance: a new argumentation scheme*. *Log. Anal.* 49, 319–340.
- Walton, D., 2016. *Argument Evaluation and Evidence*. Springer, Cham.
- Walton, D., Reed, C., Macagno, F., 2008. *Argumentation Schemes*. Cambridge University Press, New York. <http://dx.doi.org/10.1017/CBO9780511802034>
- Weinstock, C.B., Goodenough, J.B., Klein, A.Z., 2013. Measuring assurance case confidence using Baconian probabilities. In: *2013 1st International Workshop on Assurance Cases for Software-Intensive Systems (ASSURE)*. IEEE, San Francisco, pp. 7–11. <http://dx.doi.org/10.1109/ASSURE.2013.6614264>
- Wilson, D., 2005. New directions for research on pragmatics and modularity. *Lingua* 115, 1129–1146. <http://dx.doi.org/10.1016/j.lingua.2004.02.005>
- Wilson, D., Sperber, D., 2012. *Meaning and Relevance*. Cambridge University Press, Cambridge. <http://dx.doi.org/10.1017/cbo9781139028370>
- Wyner, A., Bench-Capon, T., 2007. *Argument schemes for legal case-based reasoning*. In: Lodde, A., Mommers, L. (Eds.), *Proceedings of the 2007 Conference on Legal Knowledge and Information Systems: JURIX 2007: The Twentieth Annual Conference*. IOS Press, Amsterdam, pp. 139–149.
- Zhang, Y., Zhang, S., 2016. Explicature versus default meaning: a response to Alessandro Capone's Default Semantics and the architecture of the mind. *J. Pragmat.* 79, 211–221. <http://dx.doi.org/10.1016/j.pragma.2016.06.011>

Fabrizio Macagno (Ph.D. in Linguistics and Communication, UCSC, Milan, 2003) works as a researcher (Investigador FCT) and invited auxiliary professor at the Universidade Nova de Lisboa. He authored several papers published on international peer-reviewed journals including *Journal of Pragmatics*, *Intercultural Pragmatics*, *Argumentation*, and *Pragmatics and Cognition*. His most important publications include the books *Argumentation Schemes* (CUP 2008) and *Emotive language in argumentation* (CUP 2014). He also works as a forensic linguistic consultant.