Salience and Defaults in Utterance Processing

Edited by

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Chapter 1

Introduction

Keith Allan and Kasia M. Jaszczolt

In the last couple of decades we have witnessed great progress and the proliferation of approaches in post-Gricean pragmatics, aimed at providing an adequate account of utterance meaning and utterance processing. The main debates focus on the controversy around the conscious vs automatic processing of available contextual information and the controversy surrounding the distinction between literal and nonliteral meaning. This book adds some ground-breaking research to these debates. It brings the two issues together demonstrating that they are in fact two sides of the same question: the literal/nonliteral distinction is closely bound with the distinction between the automatic and conscious retrieval of information. In particular, the articles in this collection focus on the concept of salient meaning as discussed in Giora’s seminal work and the concept of pragmatic defaults as utilised under different guises in the neo-Gricean tradition (e.g. Levinson 2000; Jaszczolt 1999, 2005, 2006, 2010a; Recanati 2004, 2010). For example Giora writes:

Though literal meanings tend to be highly salient, their literality is not a component of salience. The criterion or threshold a meaning has to reach to be considered salient is related only to its accessibility in memory due to such factors as frequency of use or experiential familiarity. (Giora 2003: 33)

In this way evidence of direct access sheds light on what theoretical distinctions we should be drawing in pragmatics. In particular, it constitutes a sound argument for redrawing the literal/nonliteral distinction in order to make it reflect the processing of information – a task already begun, albeit not on the basis of experimental findings, in Recanati’s Literal Meaning (Recanati 2004) and taken further for example in Recanati 2010. Experimental findings are also increasingly revealing of the need for redrawing boundaries (see for example the contributing papers to Sauerland and Yatsushiro 2009).

The question of literal meaning is inherently interwoven with the question of salience. The extent of this interrelation is best exemplified in the ordinary-language philosophers’ recognition of what was subsequently popularised as the concept of illocutionary act, and in particular in the late-
Wittgensteinian (Wittgenstein 1953) slogan that meaning is use; instead of a quest for concepts as abstractions over uses that can be discussed and defined in isolation, it is possible that the creation of meaning in context is all there is. This common-sense idea has also slowly made its way into post-Gricean pragmatics in the form of what Recanati (2005: 189) calls ‘meaning eliminativism’ whereby concepts are constructed directly, ‘online’ with the direct help from past uses of a word in past contexts. Less radically, with the commitment to the distinction between the logical and the encyclopedic entry for concepts, relevance theorists also seem to be tacitly weakening the logical-form-based distinction between the explicit and the implicit content, recognising the powerful role of ad hoc concept-adjustment (Carston, e.g. 2002, 2010) and construing the logical entry as inference rules rather than propositional representations. What we are left with at the beginning of the second decade of the 21st century is a very interesting multi-faceted picture: either the literal-nonliteral distinction is utterly uninteresting because it is based on a questionable construct of context-free ‘core meaning’, or we can make it interesting by radically revising the concept of literality, allowing context to play its role directly in concept construction. At this point the consideration of salience of an interpretation proves to be very revealing. Giora’s (e.g. 2003) experimental work leading to her Graded Salience Hypothesis strongly suggests that salience of an interpretation maps onto its’ being foremost on our minds, which need not coincide with being literal but instead does coincide with familiarity and frequency of use. If we are to be guided by the considerations of automatic vis-à-vis conscious inferential retrieval, then it would make sense to revise the concept of literality in the

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1. Cf.: On the relevance-theoretic view, what the encoded atomic concept amounts to is an address in memory or, viewed from a different perspective, a basic element of the language of thought (a monomorphemic ‘word’ in Men-talese). The content or semantics of this entity is its denotation, what it refers to in the world, and the lexical form that encodes it, in effect, inherits its denotational semantics. This conceptual address (or “file name”) gives access to a repository of mentally represented information about the concept’s denotation, some of which is general and some of which, such as stereotypes, applies only to particular subsets of the denotation. This information includes conceptually represented assumptions and beliefs, held with varying degrees of strength, and also, in some cases at least, imagistic and/or sensory-perceptual representations. A distinction is standardly made in the theory between this kind of information, which is stored in the ‘encyclopaedic entry’ associated with the concept, and the ‘logical entry’ for the concept. Logical entries consist of inference rules (rather than propositional representations) which are, crucially, taken to be content-constitutive. (Carston 2010: 161).
Keith Allan and Kasia M. Jaszczolt

direction of, so to speak, ‘locutionary literality’ that is informed by the fast, automatic, salient arrival of some content. But it would make even more sense to construe literality as informed by the main content that the speaker intended to communicate. We can call it, say, ‘illocutionary literality’. Guided by the considerations of modelling such primary intended content, Jaszczolt’s Default Semantics (e.g. 2005, 2010b) departs from the system-based (grammar- and lexicon-based) defaults postulated in Levinson (2000), as well as from the unconstrained context-dependence of interpretations of the followers of ‘nonce-inference’ and proposes salient, default interpretations which are defaults for the context and for the speaker and come from socio-cultural, epistemic, general-knowledge, and other sources. Now, if what is ‘literal’ is to be permeated with the consideration as to whether abstract concepts are justified tout court, then we may be left with only the latter route to pursue, acknowledging that concepts are themselves created in context. To summarize, we may thereby not be able to assess ‘how literal’, in the traditional core-concept-driven sense, the interpretation is. On the other hand, ‘locutionary literality’, or ‘neo-literality’, to review and re-label Recanati’s (2004) rather convoluted typology, coincides with salience, frequency, entrenched, frequent patterns of neural activation, depending on the approach and level of explanation at which the discussion is conducted. Be that as it may, all routes seem to lead to construing literality as some form of salience: salience caused by the recognition of the primary intended meaning, salience caused by the frequency of use (inadvertent activation) of a lexical item or string, and salience as a predictable interpretation for the particular context.

Experimental support in favour of such an outlook is accumulating. New evidence suggests that pragmatic modulation affects utterance interpretation to different degrees. While addressing the question of literal/nonliteral distinction by looking at a wide spectrum of generalised conversational implicatures (GCIs), Larson et al. 2009 found out that different types of GCIs were conceptualised differently by the subjects; some were felt to be more ‘literal’ than others and by a larger subset of respondents. In other words, while subjects were happy to include some types of GCIs in what they would call literal meaning, other types were left out as implicit. Their methodology is by no means unquestionable (indeed, all extant experiments aiming at pinpointing what is literal or what is said seem to suffer from some methodological drawback or other), but the results show beyond doubt that there is a gradation of context-specific meanings that speakers include in literal content. Neuroscience of language is also beginning to wrestle with such questions, addressing the pertinent problem of brain correlates of semantic representations and pragmatic processes and the compatibility of the explanations on the level of neuronal structures and activations, with explanations on the level of rules of compositionality (and thereby of composing
semantic representation, see e.g. Pulvermüller 2010). If, to put it simply, concepts themselves are ‘late-Wittgensteinian’, then compositionality and rule construction may be an easier problem to solve than formal semantics in the Montagovian tradition has led us to believe. The idea is this: concepts are constructed dynamically as discourse progresses. The resulting contextually-embedded concept carries with it information about the relevant structure –explained either by lexical projection as in the generativist tradition, or by patterns of neuronal structures in the connectionist tradition (we will leave discussion of this alleged alternative for another occasion). The ultimate answer to whether an interpretation is ‘automatic’ or ‘default’ may be close to the answer to what is ‘salient in a context’ and it may ultimately lie in patterns of activation of neurons, for which the co-activation of non-linguistic areas is a very relevant finding in that it may testify to the automatic extra-linguistic source for concept construction.

Next, the question of salience and defaults makes it obligatory to select the vantage point from which such privileged status of an interpretation is assessed. Arguably, for most instances of conversation, the perspectives of the speaker and the addressee effectively coincide and so do default meanings based on shared cultural and social values. Moreover, defaults grounded in the architecture and operations of the brain (cognitive defaults in Default Semantics) are yet another good candidate for reliable shared interpretations and possibly also for pragmatic universals. But salience at large is multifaceted: it is also grounded in individual experiences, frequency of use for each interlocutor, and other factors that contribute to automatic retrieval.

This wealth of sources results in some degree of flexibility of interpretation of the intended content, acknowledged not only by advocates of ‘top-down’ index-free pragmatic processing but also in indexicalist circles. Concerning the latter, in his recent discussion of the concept of context, John Perry (2009) acknowledges the need for a pragmatic construct that would reflect the meaning as it is intended by the holder of the uttered thought. He calls it a ‘locutionary content’. Locutionary content is arrived at through directing intentions of the speaker’s, modelled on Kaplan’s concept of intention derived from his Afterthoughts to Demonstratives (Kaplan 1989a, b). Directing intentions have dual significance for pragmatics: with their introduction, (i) the metaphysical concept of content (Kaplan 1989a) becomes reanalysed as a cognitive, in effect Gricean, concept, and (ii) the content intended by the speaker regains some significance over and above the meaning recovered by the addressee which is, in principle, more variable. After the period of the emphasis on the communicated content, the original Gricean emphasis on speaker’s meaning and speaker’s intentions seems to be revindicated in these recent proposals.

The current volume addresses these interconnected issues, stressing precisely their mutual interdependence for the purpose of an explanatory theory
of meaning. It is a step in the direction of putting the literal/nonliteral and default/nonce-inference questions in a more promising perspective by challenging the entrenched concepts and offering new possibilities. It is principally based on papers presented to a workshop organized by the editors for the International Pragmatics Association conference held in Melbourne in July 2009. We wish to thank all participants in that workshop for their contributions to intense discussions and for their constructive comments. In addition, Kecskes, Pitts and Gernsbacher were unable to attend the workshop, but have contributed chapters to this volume – the contents of which are briefly surveyed below.

In Chapter 2, ‘Default meanings, salient meanings, and automatic processing’, Kasia M. Jaszczolt discusses the difference between the processes which enrich the logical form of the sentence (constructing what is said) and those which produce implicatures, questioning whether inference subsumes automatic, associative modifications of encoded content and whether these are pre- or post-propositional. At the lexical level how do salient lexical meanings function in propositions? Jaszczolt argues that the automatic/inferential divide cannot be identified with any level of analysis in post-Gricean pragmatics. Automatic enrichment is tangential to it: both conscious inference and automatic, associative meanings are present on each level. The pre-propositional unit on which salient interpretation operates cannot be theoretically established a priori but is dependent on the particular situation of discourse. Starting with graded salience on the lexical level, interlocutors proceed to the interpretation of larger units, enriching them automatically or inferentially according to contextual factors. Default interpretations of utterances are best understood as defaults for the interlocutors and for the context rather than rigid linguistic-unit-based interpretations. Defaults are best defined as salient, frequent, and automatic meanings ascribed to the speaker by the addressee. This perspective allows for integration with findings about the processing of the lexicon. Jaszczolt concludes that, with respect to lexical items, Giora’s Graded Salience Hypothesis is compatible with her own theory of Default Semantics.

Orna Peleg and Rachel Giora in Chapter 3, ‘Salient meanings: The whens and wheres’, say that while it is widely acknowledged that supportive contextual information affects end-product interpretations, there is disagreement as to whether context governs initial lexical processes so that only contextually compatible meanings are accessed or whether inappropriate meanings are initially available regardless of context. The studies of lexically ambiguous words (homographs) reported by Peleg and Giora show that initial lexical processes are indeed independent of contextual processes. Although context may have effects even before lexical access takes place, these do not block salient meanings even when contextual information renders them anomalous. The independence of the encapsulated, exhaustive
lexical mechanism of contextual processes allows humans access to meanings not necessarily related to or invited by the information accumulated outside the module. They also point out that the predictive mechanism is dependent on the sentential position (initial vs. final) of the homograph. In sentence-final position, context may provide the relevant meaning before lexical access takes place but automatic lexical processes are not inhibited. Indeed, humour and other effects may be engineered from salient but contextually incompatible meanings.

Eleni Kapogianni in Chapter 4, ‘Graded salience effects on irony production and interpretation’ highlights the existence of different types of pragmatic devices used for the creation of irony, the most successful of which is the exploitation of strong contrast between a highly salient and a less salient meaning. She looks at highly salient meaning used in an inappropriate context for ironic effect and at situations where the ironist exploits the contextually inappropriate literal meaning of what is said in order to create an ironic effect. In both Greek and English data drawn from conversations she found that unsuccessful ironies were mostly cases of meaning inversion, whereas incongruity between a salient and a nonsalient meaning in ironic expressions facilitates the recognition of irony due to the addressee being able to recognize and retrieve the intended meaning by resorting to the strong and apparent contrast they contain. She argues that the salience of a meaning depends on the richness and prominence of the whole context which is entailed by and attached to it, and which is also mentally encoded as a scenario. She suggests the lexicon and/or linked encyclopedia should accommodate this information.

In Chapter 5, Istvan Kecskes writes of salience in language production rather than language interpretation. He seeks to explain what leads to the speaker’s choice of a particular mode of expression. He discusses how the salience of an entity biases the preference of the individual in selecting words and more complex constructs in the process of communication. The role of perceptual and linguistic salience in language production involves a ranking, and preference among alternatives. Kecskes takes a socio-cognitive approach to utterance production that distinguishes individual salience, collective salience, and emergent situational salience. Individual salience derives from prior experience with the use of lexical items and situation-bound utterances. Collective salience is shared with the other members of the speech community and changes diachronically. Emergent situational salience changes synchronically as a discourse develops via vividness of expression, speaker motivation, or recency of mention. In an actual situational context, individual salience is affected and shaped both by collective and situational salience. When the speaker is faced with the choice of a word or an expression, a ranking of the available choices is obtained on the basis of the degree of salience of entities in the context. Different prior experiences
and different evaluations of the actual situation, dynamically changing intentions and individual degrees of salience assessment result in personalized processes of production and comprehension that lead to different pragmatic enrichment processes for speaker and hearer.

In Chapter 6, ‘On salience and enrichment in expressions of negation’, Alyson Pitts reports on the behaviour and effects of negation (not, n’t) in spontaneous spoken discourse using data from ICE-GB. Negation targets (A) the locution, type-α, (c. 7%); (B) the “constrained” propositional completion or expansion, type-β, (c. 5%); or (C) any “unconstrained” meaning among the diffuse (implied) meanings capable of being retrieved within context, type-γ, (c. 73%). The rest serve a rhetorical purpose (c. 11%), are shadow negatives (copying an earlier one) (c. 3%), or LEM (law of excluded middle, e.g. whether or not) (c. 1%). Borderline cases between allocations are a reminder of the inherent fluidity between categories when applying any such scheme to real data. There is overwhelming prevalence of type-γ, negation within the corpus data. It is normal to employ the full lexeme not in LEM constructs, and there is a considerably higher frequency of rhetorical negatives among enclitic -n’t tokens. The findings may shed light on theories of natural language negation, such as the purported descriptive/metalinguistic distinction, which has received no conclusive empirical validation to date.

In Morton Ann Gernsbacher’s Chapter 7, ‘Understanding acronyms: The time course of accessibility’, she defines acronyms as abbreviations such as CD comprising the first letters of two or more words. She points out that acronyms are often closely associated with objects or ideas that are not explicitly contained in the components of the acronym itself, for instance, CD is commonly associated with music. Gernsbacher reports on six laboratory experiments conducted to uncover how the literal meaning interacts with the conceptual (associated) meaning. These show that the literal components of acronyms are their more salient meaning when processed as letter strings, but when acronyms are processed as lexical units, they lead to priming of their literal components more quickly than of their conceptual associates.

In ‘Graded salience: Probabilistic meanings in the lexicon’ (Chapter 8), Keith Allan argues that, so far as is possible, a listeme (lexicon entry) should be treated as monosemic and different aspects of its meaning should be included together with an account of the probability of each different interpretation being tagged as the preferred interpretation under given circumstances. This tagging raises questions of salient and default meaning. As a tool for ranking degrees of probability he proposes a credibility metric that

2. Some writers distinguish “alphabetisms” like CD, SOB and USA, pronounced as letter strings (/sidi, ɛsoubi, jursei/), from “acronyms” like AIDS, laser, and snafu, which are pronounced as words (/eidz, leizə, snafu/).
allows for an unbounded number of distinctions between 0 (undoubtedly false) and 1 (undoubtedly true). Probabilistic meanings are noted as non-monotonic inferences (defeasible inferences) that are contextually affirmed or disconfirmed, either from the co-text or some other factor in the common ground. For instance: that bird typically denotes a creature which flies; bull typically denotes a bovine; Jacqueline prefers leopard to fox typically means Jacqueline prefers leopard skin to fox fur whereas Harry prefers lamb to goat typically means Harry prefers lamb meat to goat meat. Graded salience also applies to the countability of nouns in the lexicon, e.g. car is typically used in countable NPs, furniture in uncountable NPs; uncountable sugar is differently understood than countable sugar. Allan also proposes an algorithm for the meanings of and. This proposal challenges traditional dictionaries and lexicographic models like FrameNet that will need to be adapted to incorporate probabilistic meanings.

Finally, in Chapter 9, ‘Practices and defaults in interpreting disjunction’, Michael Haugh discusses whether the interpretation of or involves a form of a pragmatic default and in particular whether the exclusive meaning if disjunction in English is evoked lexically or by the discourse context; he argues in favour of the latter. After presenting arguments in favour of the semantics of natural language or being both inclusive and exclusive disjunction (and demonstrating there is a lot of room for dispute over the proper interpretation), Haugh constructs an argument in support of the exclusive meaning as a sociopragmatic/discursive default. For the purpose of this analysis, he focuses on the strategy of the so-called “not-saying” realised as utterance-final disjunction interrogative (Have you found a job yet, or ...?) where the speaker leaves the interpretation of what is meant open to the hearer’s assessment of the type of action intended by the speaker and concomitant evaluation of politeness. He points out that the principal role of or in this strategy is to direct the addressee to an alternative, and therefore different, possibility, be it a fact or an interpretation which is different from the one stated in the proposition that precedes the disjunction, and therefore this strategy constitutes a pertinent example of the exclusive reading achieved ‘strategically’ so to speak.

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Chapter 2

Default meanings, salient meanings, and automatic processing

Kasia M. Jaszczolt

1. Preliminaries

As a result of the ongoing disputes concerning the boundary between semantic and pragmatic aspects of utterance meaning, the psychology of utterance processing has recently moved to the forefront of attention in post-Gricean pragmatics. The principal rationale for this trend is the following. When the outcome of pragmatic processing of an utterance came to be admitted as part of the truth-conditional content, or, in other words, when truth conditions came to be employed in the service of the meaning of utterances rather than sentences, a plethora of new research questions to do with the process of utterance interpretation has emerged. Contextualism, to call this orientation by its name (see Recanati 2005), must address the issues of, for example, how much context is allowed in the truth-conditional representation, how this contextual information gets there, and at what stages in utterance processing it gets there. Frequently asked questions include:

- Is there a difference between the processes which enrich the logical form of the sentence (constructing the explicit content, a.k.a. what is said) and those which produce implicatures understood as separate thoughts?
- Is there a difference in processing between inferring from context (viz. Grice’s particularized conversational implicatures) and inferring from general assumptions (viz. generalized conversational implicatures)?
- How should pragmatic inference be defined? Should it subsume automatic, associative ‘additions’ to encoded content or rather should the term mean only conscious processing by definition?

1. I am grateful to Rachel Giora and Keith Allan for their invaluable comments on this paper and to Istvan Kecskes for pointing out to me the issue of (in)compatibility of the predictions of the theory of Default Semantics and the Graded Salience Hypothesis.
Is pragmatic inference local (pre-propositional) or global (post-propositional)?

To this well-rehearsed list we shall add some other seminal questions to be tackled in what follows:

- How should automatic enrichment of the logical form be defined? Does the term ‘pragmatic default’ suit the task?
- Are there context-free automatic enrichments (defaults)?
- Is there context-free salient lexical meaning?
- Are salient lexical meanings and default meanings compatible concepts?

In what follows I make use of several approaches which emphasize the importance of such default meanings on the lexical and propositional level and point out how they contribute to solving some of the main problems listed above. I focus on Levinson’s (2000) presumptive meanings, Recanati’s (2004, 2007, 2010) automatic enrichment/modulation, Giora’s (2003, forthcoming, Peleg and Giora, this volume) graded salience, and Jaszczolt’s (2005, 2010a) default meanings of merger propositions, also pointing out the importance of default enrichment in dynamic semantics and optimality-theory pragmatics. We have to begin by pointing out that default sense is not necessarily a property of propositions but may arguably figure much earlier in the process of utterance interpretation. For example, it is theoretically possible that in (1) the meaning of ‘secretary’ is enriched by the addressee to ‘female secretary’ as soon as the relevant noun is processed, without waiting until the entire proposition is recovered.

(1) We sat down in Mr Baker’s office and his secretary brought us coffee.

However, pace Levinson (2000) who proposes a theory of such ‘local’ typical, presumed interpretations, it seems that such a pre-propositional unit, be it a word or a phrase, on which salient interpretation operates, cannot be theoretically established a priori. Instead, it seems to be dependent on the particular situation of discourse. In (2), for example, no analogous inference seems to arise.

(2) The president’s secretary was an expert on the new policy.

For this reason, it is prudent to wait with postulating such units until there is sufficient empirical evidence from relevant experimental or corpus-based studies. In the meantime, it seems methodologically preferable to adopt
what we can call the principle of methodological globalism: unless there is sufficient evidence for postulating default interpretations of expressions, it is methodologically sound to build a theory of utterance processing on an assumption that default senses apply to propositions alone. In other words, one has to recover the speaker’s thought which in itself can be taken in some salient sense or interpreted in a less salient one. We shall now proceed on adopting this assumption and will return to the psychological aspects of the local/global question in Section 5.

At this stage we have been using the term ‘default’ without giving it a fixed meaning. Continuing to do so would be bad practice – the kind of practice that has already led to a plethora of futile disputes and misunderstandings in the literature on the subject. For instance, the ongoing dispute between ‘defaultists’ and ‘noncists’ tends to make use of the term the default account, referring only to Levinson’s rather idiosyncratic understanding of the term (see contributors to Noveck and Sperber 2004 or Breheny et al. 2006). Let us then focus, for the rest of this section, on assigning a specific meaning to the term ‘default’ whereby ‘default’ will mean an automatic interpretation (or ‘default’ processing). To arrive at an interpretation ‘by default’ means to arrive at it unconsciously, without effort or time lapse. The sources of such automatic meanings can be various and we will not pursue this topic at the moment. Suffice it to say, defined as such, default interpretations are interpretations whose automaticity can have different provenance: sometimes it is context that enables it, at other times it arises out of context. In other words, context-dependent defaults is not an oxymoron on this definition: defaults can be context-free or context-dependent.

Defaults can co-exist alongside inferential interpretations as two routes through which the main intended message can be reached by the addressee. In Default Semantics (henceforth DS), this main intended message is called primary meaning – borrowing the term from the contextualist literature (e.g. Recanati 2004) but giving it a new scope. The formal equivalent of primary meaning is a merged proposition, represented in DS as a merger representation. Now, merged propositions are units of main content and as such are orthogonal to the standard contextualist explicit/implicit (what is

2. We refrain from the labels ‘context-free’ and ‘context-dependent’ for the time being.

3. In Default Semantics, there are default interpretations that arise thanks to the properties of human inferential system (so-called ‘cognitive defaults’) and defaults that arise when the subject is immersed in a particular culture and society (so-called ‘socio-cultural defaults’). For a revised version of Default Semantics see Jaszczolt 2009a and 2010a. See also Section 3.
Default meanings, salient meanings, and automatic processing

said/what is implicated; primary/secondary) divide. They are orthogonal for a very important, empirically verifiable reason. The standard contextualist distinction is drawn around the concept of development of the meaning of the uttered sentence and as such is dictated by the structure of that sentence in that development has to amount to the development of the logical form but must not go beyond it. If the ‘skeleton’ in the form of the logical form is not preserved, then we don’t have the explicit/said/primary meaning on the standard contextualist accounts but instead we deal with implicatures. In DS this structural constraint is not endorsed as there does not seem to be evidence from discourse that would support it; on the contrary, the majority of human communication takes place indirectly, that is in a manner where the meaning of the sentence does not provide even a logical structure to the main intended message (DS-theoretic primary meaning; see e.g. Sysoeva 2010 on primary meanings in English and Russian discourse).

Default meaning is arrived at compositionally. But compositionality of primary meaning can only be upheld when we recognise that the units that compose it are not the syntactic constituents of the sentence but instead constituents of a representation that draws on various means by which meaning is conveyed in discourse. Starting with salient meanings of lexical items (Giora 2003 and Peleg and Giora, this volume), interlocutors proceed to the interpretation of larger units either assigning meaning to them automatically or processing them through conscious inference, depending on contextual factors. The compatibility of lexical salience and pragmatic defaults will be taken up in Section 3. To repeat, assuming methodological globalism, we refrain from making assumptions concerning the length and status of any units that may give rise to such automatic senses. In the current state of post-Gricean pragmatics, an assumption that these units vary and have to be empirically established is the best way to proceed.

In brief then, we have just attempted to define the term ‘default’ by using processing criteria to mean the interpretation that is arrived at automatically, as opposed to information that is consciously inferred. This automatic appearance of such interpretations has various sources, the combination of which, and a fortiori often the result of which, varies from person to person. Therefore, default meanings are fast and effortless but do not always coin-

4. See also Haugh, this volume.
5. The distinction dates back to 1980s, see e.g. Sperber and Wilson’s 1995 and Carston’s 1988 on explicature and ultimately the Atlas-Kempson thesis that initiated the radical pragmatics of negation in 1970s (see Atlas 1977; Kempson 1975; and Atlas 2006 for a historical account).
cide with statistically frequent interpretations. Such meanings are salient in the context but not necessarily salient per se, on the lexical or syntactic, context-free level. They may be salient for the situation and for the speaker, because the sources of information about the speaker’s meaning operate in such a way in this particular scenario. It is evident from this rather permissive definition that such defaults have little in common with Levinson’s (2000) presumed interpretations which are ‘utterance-type meanings’, arising in all conversations, unless they are specifically cancelled in a particular context. This difference in the properties assigned to defaults is taken up in Section 4. Our DS-theoretic defaults are defined from the perspective of the agent engaged in the process of interpretation: they are meanings arrived at by the agent automatically, be it independently of the context or not, idiosyncratically or in agreement with other potential agents, because of a word that is used, a phrase, or an entire sentence or a series of sentences. The definition is then derived from the psychology of utterance processing rather than being founded on the theory of the structure of discourse. This orientation opens up a possibility, closed to structure-based defaults of Levinson’s theory of generalised conversational implicature, and indeed to Grice himself, of looking at possible affinities between the concept of default so-defined and the concept of salient lexical meaning as discussed in Giora’s (2003) theory of graded salience. When compositionality is conceived of as a property of utterances (or indeed discourses) rather than sentences, automatic salient meanings in the lexicon seem to be compatible with the default-semantic model of utterance processing: they interact with outputs of other sources of information about utterance meaning to produce the interpretation either automatically (to repeat, ‘default interpretation for the context and for the speaker’) or inferentially. This is the conclusion we will reach in this paper.

2. Automatic meanings in the lexicon and in discourse

Whereas, on the one hand, pragmaticists are interested in default interpretations of utterances and the possible automaticity of these defaults, on the other, it is also well acknowledged that some lexical items do come with salient, context-free preferred interpretations. Nonmonotonic reasoning in the processing of the lexicon is a well established domain of research, to mention only default inheritance (e.g. Asher and Lascarides 1995; Lascarides and Copestake 1998), abductive inference in the lexicon (Pustejovsky 1995), Giora’s Graded Salience Hypothesis (henceforth GSH,

6. Although, naturally, statistically more frequent meanings are ceteris paribus default meanings in that statistical frequency has automatic generation as one of its main causes.
Default meanings, salient meanings, and automatic processing

e.g. 2003 and Peleg and Giora, this volume) and Allan’s (this volume) for-formulae for probabilistic inference. These two strands of research, post-Gricean localism/globalism debate on the one hand, and nonmonotonic inference in the lexicon, inspired by computational linguistics on the other, rarely meet. If we were to contrast them in the most rudimentary manner, we would obtain the following two hypotheses:

**Hypothesis 1:** Lexical items give rise to context-free enriched meanings, be it through automatically attained salient interpretation or lexicon-based inference.

**Hypothesis 2:** Inferential enrichment or default (automatic) enrichment can arise either on the level of the lexical items, on the level of the proposition, or on a level in-between these two.

Let us narrow down the investigation to the automatic enrichment on various levels of the utterance. When we address the issue of ‘automatic attainment’ of salient interpretations, we narrow down the study of the lexicon to exclude conscious inference from Hypothesis 1, but have to extend it in the direction of Hypothesis 2, asking whether such automatic lexical meanings have anything in common with automatic meanings postulated for utterance interpretation in some post-Gricean accounts. Following our assumption of methodological globalism, we arrive at the need to compare the following two tenets:

**Tenet 1:** Defaults, understood as automatic interpretations for the context, pertain to entire propositions/sentences/events/situations of discourse.

**Tenet 2:** There are automatically attained salient context-free lexical meanings.

Tenet 1 comes from the methodological assumption of DS and tenet 2 from Giora’s GSH. While discussing post-Gricean globalism/localism dispute, we emphasized that default interpretations were defaults for the context: in some situations ‘some’ will trigger automatic enrichment, in others it will not. On the other hand, lexical salient meanings are normally meanings whose salience is probabilistic, statistical, and can be built into a computational model of the lexicon. Giora (2003: 10), on whose approach we will focus for our comparison, states this point as follows:

[M]ore salient meanings – coded meanings foremost on our mind due to *conventionality, frequency, familiarity, or prototypicality* – are accessed faster than and reach sufficient levels of activation before less salient ones. According to the graded salience hypothesis, then, coded meanings would
be accessed upon encounter, regardless of contextual information or authorial intent.

Similarly, Allan distinguishes monotonic (marked as ‘→’ below) from nonmonotonic (marked as ‘+>’ below) ‘inference’ on the level of lexical items. In (3) and (4), ‘lamb’, ‘goat’, ‘leopard’ and ‘fox’ all trigger the non-cancellable meaning product-of as a result of using the uncountable form, and cancellable pragmatic meaning meat-of or pelt-of depending on the conventionality, frequency, familiarity, or prototypicality.

(3) Harry prefers lamb to goat.
(4) Jacqueline prefers leopard to fox.

Uncountable animal → product-of
    +> meat-of
    +> pelt-of

(adapted from Allan, this volume)

Both types of ‘added’ meaning, monotonic and nonmonotonic, have their place in the lexicon rather than in the pragmatic, Gricean, propositional overlay. Nonmonotonic meanings are just probabilistic meanings of the lexemes.

How are we to reconcile T1 and T2? Are they compatible? Such salient lexical meanings are produced automatically and irrespective of the particular context. We have also proposed earlier that default interpretations of utterances are produced automatically in the particular context. Can these two claims to automaticity of these very different processes be compatible?

3. Default meanings and salient meanings: Towards a unified account

Salience on Giora’s account is not contextual salience; it pertains to the storage of meanings in the mental lexicon. We can call it instead ‘pre-contextual salience’: “The criterion or threshold a meaning has to reach to be considered salient is related only to its accessibility in memory due to such factors as frequency of use or experiential familiarity.” (Giora 2003: 33), or even ‘salience in spite of context’: “[P]rivileged meanings, meanings foremost on our mind, affect comprehension and production primarily, regardless of context and literality. ...[A]ccess of salient meanings is hard to prevent, even when context is highly supportive of the less or nonsalient

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7. My own emphasis.
meaning, irrespective of whether they are literal or nonliteral.” (Giora 2003: 103). 8

At the same time, Giora allows for situations in which context has an immediate effect on the interpretation, creating the impression of direct access. What matters to her GSH is that lexical access as such is not affected: “...across the communication path, context and linguistic effects run in parallel” (p. 11), context producing final interpretations but not affecting the lexicon itself.

The properties of Giora’s salient meanings make them sit in-between two polar types of accounts: the direct access one and the modular one. According to the direct access view, context can be responsible for activating the relevant sense of an ambiguous word to the extent that the lexical salience does not play a part. On the modular accounts, ambiguous words engender the activation of all of their meanings, and the contextually inappropriate ones become suppressed at the next stage of processing. On Giora’s salient meanings view, lexical access and processing of the context operate in parallel. Meanings that are more familiar, frequent, or conventional are activated first, independently of their contextual relevance. Next, context can play its role in that inferential or automatic (our: default) interpretation takes place. If the context-dependent interpretation kicks in early, for example due to the inference from previous sentences that gives rise to expectations, then the role of salient meanings can be negligible; they disappear, so to speak, and do not affect the interpretation. And yet, they had been or will have been there, stronger or weaker, with their gradable presence.

The outputs of the processing of the context and the processing of the lexicon run in parallel on this account but the speed is the decisive factor: the sooner the output of context-based inference kicks in, the sooner the relevant meanings are activated, vis-à-vis the salient, context-independent meanings accessed in the bottom-up way. The appropriate meaning may even be activated before context-independent meaning. Now, since the GSH postulates that salient meanings are ‘automatic’ and ‘context-free’, it appears that the hypothesis has to run counter to the assumptions of DS where ‘automatic’ can be ‘context-dependent’ and therefore apparently subscribe to direct access.

Let us first consider a relatively simple example (5). It appeals to encyclopaedic information rather than to the lexical retrieval in that it involves reference assignment to proper names.

8. For example, familiar metaphorical and familiar literal interpretations of expressions are equally easy to access. See Giora (2003: 108).
(5) In *Revolutionary Road*, Kate and Leonardo made a very dynamic couple.

DS would make the following assumptions here:

(i) An utterance of (5) has one intended interpretation/primary meaning.

(ii) Since we don’t know exactly when the ‘going beyond sentence meaning’ takes place in the process of utterance interpretation, we can talk only about the meaning on the ‘global’ level of a proposition.

(iii) For many (but of course not all) communicators, this primary meaning is likely to be (5a).

(5a) In *Revolutionary Road*, Kate Winslett and Leonardo diCaprio made a very dynamic couple.

This reference assignment is triggered by the recognition of the film title *Revolutionary Road*.

(iv) The identification of the referents is arrived at either (a) inferentially, or (b) is attributed to socio-cultural defaults, depending on the entrenchment of information about the film in a particular agent.

It is (iv.b) that we should be particularly interested in for the current purpose of assessing compatibility of the claims made by GSH and DS, making an assumption that proper names as lexical items give rise to similar salience effects. A dedicated film enthusiast or film critic may recover the referent of ‘Kate’ automatically, while a casual viewer may have to, at best, consciously recover from memory that Kate Winslett indeed acted in this film. An even less interested viewer, or one endowed with poorer memory, may simply infer here something to the effect ‘an actress who is presumed to be intersubjectively identifiable in conversation when referred to by first name’.

When the scenario includes inference, Giora’s graded salience is perfectly compatible with the DS-theoretic predictions. I may still automatically invoke the sense, say, ‘my best friend Kate’ or ‘my favourite singer Kate Bush’ and then it becomes suppressed thanks to the parallel workings of the processing of the context.

But when the scenario allows for a socio-cultural default and thereby it is assumed that only the contextually relevant interpretation is triggered, and in addition it is triggered automatically, we apparently have a clash. If in (3) ‘Kate’ gives rise to the automatic assignment of reference as Kate Winslett, it is so due to the contextual embedding. However, the clash may be only apparent rather than real. All that GSH predicts here is that context should have no impact on blocking salient meanings. But his particular situation does not fall under the remit of GSH: ‘Kate’ as a lexical item does not have salient meaning in the sense in which common properties and relations do. Unlike ambiguous common nouns or verbs for example, it does not have
salient meaning worth testing. This does not mean that it is not testable. It is perfectly plausible to assume that people have salient interpretations of proper names (see e.g. Carston 2007). So, rather than fix a rigid boundary between common and proper names, let us consider the other proper name from example (5). ‘Leonardo’, on the contrary, seems to be worth testing in that it is clearly culturally loaded. Indeed, whether the sense ‘Leonardo da Vinci’ is invoked in the context of (5) is a matter for experimental testing. It is at least feasible that it does. But since proper names as directly referring expressions present a special case in that their meaning is at most encyclopaedic knowledge, again, the issue is somewhat tangential to the dispute.

Let us then take a sentence with an ambiguous word such as ‘pen’ in (6), or a sentence that leads to an interpretation due to an embedding in a social expectation, such as ‘secretary’ in (1) repeated below.

(6) Tom left the pen open and the pigs got out.
(1) We sat down in Mr Baker’s office and his secretary brought us coffee.

Since DS assumes methodological globalism, it seems that there is no obvious clash between the predictions of GSH and DS. If the automatic meanings were allocated to particular ambiguous words such as ‘pen’ or ones leading to culturally loaded predictions such as ‘secretary’, as on Levinson’s account discussed in Section 4, then the hypothesis that the contextually relevant meaning is automatically triggered would be incompatible with GSH. As it is, however, the issue of compatibility is still left open. It has to be flagged in that if there is a socio-cultural default in (1) that leads to an automatic enrichment to ‘female secretary’, the automaticity reflected at the global, macro, propositional level would have to subsume the parallel processing of the lexicon and context at a micro stage. In other words, in (5), ‘Kate and Leonardo’ may automatically trigger the interpretation of a pair of Hollywood actors in spite of some degree of activation of, say, ‘Leonardo da Vinci’ or even ‘Kate Bush’ when the word is processed.

Default interpretations are by definition more frequent, common, salience-based interpretations of utterances. They arise automatically, subdoxastically. What happens when the default for the utterance in a context does not coincide with salient lexical meanings? Do we have an irreconcilable incompatibility here? When we look closely at the recent disputes in the contextualist literature (Carston 2007, Recanati 2007), the lexical salience is being accepted: words trigger their salient meanings which then have to be overruled. This conclusion, based on some persuasive examples, leads to the claim that main interpretations of utterances, namely
the explicit content (a.k.a. what is said), cannot always be automatic, pace Recanati (2004); the addressee may have to resort to conscious inferential processing. I am going to argue below that while it is indeed true that main meanings of utterances can arise automatically or inferentially, on the level of the lexicon this is an overkill: there is no need to deny automaticity of interpretations of utterances whenever salient lexical meanings don’t figure in what is supposed to be the default interpretation of the utterance. In other words, when the salient lexical meaning is, so to speak, overridden by contextual considerations, we can still, arguably, have a default overall interpretation in the sense of an automatic, context- and addressee-dependent one.

The answer lies in the understanding of compositionality. When we model the meaning of the utterance (pragmatic construct) rather than the meaning of the sentence (syntactic construct), compositionality has to be applied differently. Notably, it has to be applied to the product of the interaction of chunks of information that come from various sources and which produce this primary message intended by the speaker and recovered by the addressee. As was noted in Section 1, such a pragmatic application of the principle of compositionality was introduced by Recanati (2004: 132) in what he called the Pragmatic Composition view and an ‘interactionist’, ‘Gestaltist’ approach to compositionality. The resulting approach to utterance processing becomes then truth-conditional pragmatics (see Recanati 2010). The idea of pragmatic compositionality was then further developed in Default Semantics (DS, Jaszczolt 2005, 2009a, 2010a) where the detailed principles of this composition were spelled out. The basic idea is this. There are various sources of information that contribute to the main meaning conveyed by the speaker and recovered by the addressee. In the DS model, we identify five main sources: word meaning and sentence structure (WS), world knowledge (WK), situation of discourse (SD), and two kinds of default information: stereotypes and presumptions about society and culture (SC) and properties of human inferential system (IS). The latter, for example, account for the fact that the strongest, most informative interpretation is the preferred one, such as the referential rather than attributive reading of definite descriptions, de re rather than de dicto reading of propositional attitude reports, or the anaphoric rather than presupposing reading of referential partial matches. These sources can also be directly mapped onto types of processes that interact in producing the interpretation but the types of processes will not concern us at present. Compositionality pertains to the result of the interaction of information coming from these sources and hence belongs to the level of merger representations defined in Section 1. To repeat, merger representations are formal equivalents of the main message intended by the speaker and recovered by the addressee, called in DS primary meanings. The concept of primary meaning is an
important one in that it is conceived as a cognitively real unit which is a result of a free combination of information from the identified sources. What it means is that in the case where the speaker chooses to communicate the main content implicitly, primary meaning need not be constrained by the logical form of the uttered sentence. In other words, the concept of primary meaning cuts across the explicit/implicit or what is said/what is implicated divide. Analogously, secondary messages, called secondary meanings, can pertain to implicit as well as explicit content of the sentence. To compare and contrast, in traditional compositional semantic accounts compositionality is predicated only of the level of WS, and therefore it causes insurmountable problems with providing a compositional account for certain types of constructions (intensional contexts).

Now, pragmatic compositionality, and in particular compositionality of merger representations, seems particularly susceptible to symbiosis with the GSH. The components entering the composition process are discrete units, they carry information of their own. DS identifies five of such sources; one of them, namely WS, is of particular importance here. Word meaning provides a component that enters composition not at the level of sentence-based propositions, but at the level of merger representations. In other words, we assume that compositionality is to be sought for speech acts, not for sentences (units of syntax). Syntax provides structures, but pragmatics does not merely mirror them. In addition to stressing contextual relevance

9. The question may arise, if the natural language constructions (WS) are not compositional but instead contribute to compositional units, so to speak, ‘higher up’, then how does one explain their semantic well-formedness and meaningfulness? In DS, it is not denied that sentences as syntactic units can be taken to exhibit some kind of compositional semantics. It is of course possible to hold they do, at the price of departing from verification judgements. But sentence meaning so conceived sheds little light on what users of this sentence would claim they had intended and what they would call true or false. Instead, I am attending to the problems with mapping sentence meaning, or meaning of a sentence fragment, onto the intended interpretation. We have known since medieval discussions on de re/de dicto modalities, and more recently from the Fregean tradition in the philosophy of language, that reconciling common-sense compositional meaning with what the compositionality of the sentence meaning predicts has not been attained and possibly is not attainable. Instead, DS proposes a separation of the composition of sentence meaning from ‘compositionality proper’, that is that of intended meaning, thereby attending to the problems of intensionality, incompleteness and intentions. I am grateful to Keith Allan for discussing this problem with me.

10. What we choose to call ‘semantics’ on this construal is up for grabs. While Recanati (2002, 2004, 2010) calls this perspective ‘truth-conditional
of an interpretation, DS develops a model of the particular sources. So, our question of compatibility can now be narrowed down to:

- Does the theory of graded salience fit as a theory of the lexical sub-component of the WS source of DS?

Now the compatibility becomes more attainable. The fact that lexical access is automatic and context-free does not preclude the possibility that the primary meanings are sometimes automatically reached – sometimes, because they are, of course, not always default meanings. Lexical access and utterance interpretation can run in parallel. For example, automatic reference assignment as Kate Winslett and Leonardo diCaprio in (5) does not preclude the automatic occurrence of the referents, say, Kate Bush and Leonardo da Vinci – in agreement with graded salience.

In a similar vein, a colleague reported to me that whenever she uses the name David to talk about our mutual work colleague, she always thinks of her husband called David at the same time. One can provide endless, anecdotal, corpus-based, and also controlled experimental, evidence of this context-free or even, so to speak, ‘against context’ activation. Puns add another twist to the story: they work because the meaning ‘foremost on our mind’ is activated alongside the contextually preferred, less salient meaning. Some puns also lead to humorous ambiguity effects, showing that homonymy or homophony can be exploited even when there does not seem to be any noticeable difference in salience, as for example in (7) and (8). If the search for one, optimal interpretation governed by direct access were the main principle of interpretation, presumably puns would have to be regarded as cases of defective communication.

(7) Tom worked as a lumberjack but was axed.
(8) At school, Lenin was obsessed by his marks/Marx.
(After Tolley 2004)

Next, we must remember that lexical salience on Giora’s account does not amount to dictionary meanings but to meanings in particular mental lexicons of particular speakers of a language. In other words, ‘[w]hat is foremost on one’s mind need not necessarily be foremost on another’s’ (Giora 2003: 37). Similarly, in DS, default interpretations are defaults for the particular speaker and for the particular addressee. As Haugh (2008) argues, defaults are predictable from directionality of communicative acts, pragmatics’ and retains the traditional label of semantics for the sentence-based proposition, DS, as the name suggests, proposes that the only useful sense of the term ‘semantics’ is the ‘theory of meaning of acts of communication’ and uses it for the meanings modelled in merger representations.
they are a product of emergent intentionality. They are interpretations recovered automatically by the addressee in the interaction as the main meaning intended by the speaker in this context. In modelling the compositional product we use the DS-theoretic concepts of the Model Speaker and the Model Addressee in order to arrive at a theory with good predictive power (see e.g. Jaszczolt 2005). However, all it means is that by talking about model communication we are excluding instances of miscommunication, or communication breakdown, and concentrating on useful regularities for sample context in order to demonstrate how pragmatic compositionality of primary meanings works and, on the technical side, how merger representations are composed.

The task set out for this section is now complete: salient lexical meanings and default utterance interpretations can coexist, where both are understood as automatic meanings and meanings for the speaker. Where they differ is their dependence on context: lexical meanings arise automatically in WS and interact in various ways with the output of the other sources of meaning identified in DS to produce the utterance interpretation which fits the purpose of the discourse at hand. The lexical stage is automatic, the composition of primary meanings on the other hand is either automatic, when it proceeds through the defaults coming from SC or IS sources, or conscious inferential when it utilises information coming from SD. To repeat, relevant interacting processes correspond to these sources.

Now, the answer to the question of compatibility is very different in the case of a local-default account such as Levinson’s presumptive meanings. A critical discussion of localism merged with defaultism (albeit understood in the sense of statistical preferences) is the topic for the following sections.

4. Incremental processing

As is well acknowledged in Gricean pragmatics, some interpretations are triggered by the context, while others ensue unless the context suppresses them (Grice 1975; Horn 2004). Grice’s original account of generalized conversational implicatures (GCIs) depicted the latter as propositions: pragmatically implied thoughts, founded on the proposition that corresponds to the uttered sentence. The conceptual foundation for GCIs was a thought, and more precisely a propositional form of a thought, in agreement with the theoretical preferences in that period.

It is worth remembering that Grice was a philosopher interested in the logical properties of natural language and in the rationality principles underlying communication, but there was one thing that he was not
interested in but which captured the attention of one of the groups of scholars who carried his ideas further: this topic is the description of the process of utterance interpretation. For this group, the important starting point in any inquiry is the premise that utterance processing is incremental: it proceeds, so to speak, ‘bit by bit’, and some manipulation of the meaning of the uttered words or phrases can potentially happen at any stage, not just post-propositionally. There is little sense in disputing this: interlocutors do indeed assign meanings to sub-propositional fragments. But what is worth disputing is whether the processing considerations should be brought to the forefront of pragmatic theory. There is an argument that they obscure the real aim which is laying out the principles for the interaction of sentence meaning with other factors in the recovery of the intended message. There is also an argument we used in Section 1 that until we know how exactly this incremental processing proceeds, it would be speculative to use increments as units in any pragmatic theory. It is easy to provide a long list of approaches which answer the question of the incorporation processing hypotheses negatively. For example, rhetorical structure rules of Segmented Discourse Representation Theory (Asher and Lascarides, e.g. 2003) focus on the logic of ‘gluing’ sentences together rather than on the processing of the constituents; Optimality Theory Pragmatics (e.g. Blutner 2000; Blutner and Zeevat 2004) proposes constraints which build upon Grice’s maxims and Levinson’s (2000) neo-Gricean heuristics, focusing on the regularities governing the emergence of the resulting proposition; automatic, sub-doxastic enrichment of sentence meaning in Recanatí’s (e.g. 2002, 2003, 2004) truth-conditional pragmatics also focuses on the resulting proposition, and so do primary meanings of DS (Jaszczolt, e.g. 2005, 2009a, 2010a; Sysoeva 2010; Srioutai 2004, 2006) which are modelled as the main meanings intended by the speaker and recovered by the addressee and which can be explicit or implicit – they cut across the explicit/implicit divide.12 Equally, Geurts (2009) opts for globalism, albeit using arguments from processing rather than from the suitability of the methodology. The other approaches mentioned above can be grouped as advocates of what I called in Section 1 methodological globalism. Here, the qualification ‘methodological’ reflects the fact that experimental studies of processing have not yet led to the recognition of fixed local units that would trigger pragmatic enrichment and it is therefore more judicious to adopt the generalization that such pragmatic meanings are post-propositional, no matter what the psychology of processing throws up in the end.

It has to be pointed out though that default interpretations are something of a mixed bag as far as their localism or globalism is concerned. While (9)-

12. See also Jaszczolt 2009b for an extensive discussion of the relation between the distinctions primary/secondary and explicit/implicit meaning.
(11) can be argued to invite local enrichments, with (9) only accidentally global in virtue of the position of ‘warm’ at the end of the sentence, (12)-(15) testify more to psychological, not only methodological, globalism, in that it is prudent to wait until the end of the sentence before rushing to the interpretation, otherwise unnecessary cancellations may ensue. The symbol $\rightarrow d$ signals the default interpretation and is inserted after the relevant item.

(9) Some ($\rightarrow d$ not all) of her lectures are inspiring.
(10) The coffee spoon ($\rightarrow d$ spoon used for stirring coffee) is dirty.
(11) The coffee is warm. ($\rightarrow d$ not hot)
(12) Alex enjoyed ($\rightarrow d$ reading) the book.
(13) You are digging your own grave. ($\rightarrow d$ causing harm to yourself)
(14) Everybody ($\rightarrow d$ invited) is coming to the party.
(15) The temperature fell below 0 degrees Celsius and ($\rightarrow d$ as a result) the rails contracted.

Examples in (16)-(21) are presented by Levinson as paradigm cases of local interpretation, to demonstrate that ‘hypotheses about meaning are entertained incrementally – as the words come in, as it were.’ (Levinson 2000: 5).

(16) bread knife $\rightarrow d$ knife used for cutting bread
(17) kitchen knife $\rightarrow d$ knife used for preparing food, e.g. chopping
(18) steel knife $\rightarrow d$ knife made of steel
(19) a secretary $\rightarrow d$ a female one
(20) a road $\rightarrow d$ hard-surfaced one
(21) I don’t like [garlic]. $\rightarrow d$ I dislike [garlic].

As was argued extensively elsewhere (Jaszczolt 2008), (12)-(17) are again a mixed bag. While (16)-(18) can be considered simple lexical compounds, (19) is a very dubious candidate for a social standard, let alone linguistic default, (20) is an exposition of the lexical content (with obvious locality-specific typicality effects)$^{13}$, and (21) is more plausible as a global, propositional interpretation than a case of local neg-raising. To strengthen the point further, let us consider (5) again and the alleged lexical default for the quantifying expression ‘some’. For localism to work as a general principle for scalar terms such as some, it would have to work across all examples. It is not difficult, however, to undermine its status. (22) triggers the main message to the effect in (23) or (24) rather than (25).

13. Pointed out to me by Keith Allan.
Some people say you are presumptuous. You should change something in your behaviour. You should refrain from boasting so much in conversation. Some but not all people say you are presumptuous.

Equally, if in (1) ‘secretary’ allegedly triggers the default interpretation ‘a female one’ as in (19), then frequent cancellations have to be built into the account of processing, as example (2) in Section 1 demonstrates. These are not only triggered by context but also by the various senses of the word ‘secretary’, including secretary of state, secretary of an organization, and so forth. In a similar manner, ‘a nanny’ would have to trigger a frequently cancelled default to ‘female nanny’, and even more frequently cancellable default to ‘young, pretty and lovable’ or the opposite ’old, thin, ugly and strict’, depending on what childhood stories shaped the addressee’s background beliefs. In short, this is an endless and unsystematic route: endless, because there is no principled end to such precisifications of word or phrase meaning, and unsystematic because we cannot specify, once and for all, the length of the unit which gives rise to enriched interpretations. The length of this unit will depend on the situation at hand. Sometimes it can be, say, the determiner ‘some’, sometimes the entire quantifier phrase ‘some of the guests’, and at other times the entire sentence. In other words, what we can call default base, the unit which triggers the default meaning, varies from context to context.14

Further argument against postulating rigid default bases, that is bases which don’t differ from context to context, comes from the scrutiny of Geurts’ objection to Levinson’s localism. Geurts (2009) discusses examples (26) and (27) and concludes that they go against the very spirit of Levinson’s localism, in that on the localist account they should not arise.

(26) It isn’t likely that the match will be cancelled: it’s certain.

(From Geurts 2009: 59)

(27) If the chair sometimes comes to the department meetings that is not enough; he should come always.

(From Geurts 2009: 60, after Levinson 2000: 205)

The argument is this. These are downward entailing contexts, containing negation and a conditional construction respectively. On a localist account sentence (26) would have to be interpreted as (26a).

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14. Analogously, the unit on the basis of which pragmatic inference is drawn will be called an inferential base.
(26a) It isn’t likely but not certain that the match will be cancelled: it’s certain.

Sentence (27) has a logical form that is subject to the equivalence $p \rightarrow q \equiv \neg p \lor q$ and hence (27a) would have to be correct, even if clumsy.

(27a) Either the chair never comes to the department meetings or (what he does) is enough.

Contradiction ensues with ‘he should come always’. There are of course possibilities of saving localism by incorporating the focus: ‘likely’ and ‘sometimes’ have to be stressed in order to achieve the contrasting effect, and the emphasis can be construed as a local phenomenon. However, it seems much more advantageous from the methodological point of view to admit that default bases differ from context to context.

5. ‘Defaultism is a lost cause’? A dénouement

Geurts (2009: 59) continues as follows: “although localism and defaultism aren’t wedded to each other, there is a natural affinity between the two.” Having argued against Levinson’s rigid, linguistic-unit-based localism, he concludes that ‘defaultism is a lost cause’. However, in the preceding section I suggested a different, more flexible notion of localism, where the default base is not a lexical or syntactic unit fixed once and for all; it varies from context to context and from circumstances to circumstances. Assuming such a flexible base, which is in need of experimental precisification, led us to adopting a temporary theoretical solution of methodological globalism. So, as was demonstrated throughout this study, it seems necessary to reopen the question as to what we should understand by ‘defaults’ and ‘defaultism’ in view of the fact that the length and character of the default base is still a matter for research.

Let us start with the common-sense assumption that default reasoning reflects ‘salience’ (in a pre-theoretic sense), common sense, and probability. When it is salient in the situation of discourse that by using ‘some’ the speaker intended to convey ‘not all’, this is the ‘default’ (in the pre-theoretic sense) interpretation for this context. Naturally, this will also be the statistically most common interpretation because interlocutors normally do not misjudge their respective background information and so convey the intended meaning in the appropriate way. But what makes such

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15. By ‘character’ I mean for example the questions concerning its dependence on the situation and interlocutors’ knowledge base or rather generalization to the element of structure à la Levinson.
interpretations ‘defaults’? Shouldn’t we just call them ‘default inferences’, ‘assumed inferences’, or ‘preferred inferences’? We could do so if our aim were to make statistically justified predictions. But in line with our assumption made in Section 1, the key point in identifying the ‘default status’ of interpretations is for us their effortless production, their automaticity; they are a result of default reasoning – a process which has been emphasized in pragmatic theory and in computational linguistics for a long time, and even longer in philosophy, to mention only Humboldt, Jespersen and Cassirer. Bach defines it as follows: “[D]efault reasoning is reasoning that contains at least one defeasible step, and what that is can be described intuitively as follows. When you take such a step you do not think, ‘Everything is OK, so I’ll take this step’. Rather, you just take it unless you think something might not be OK.” (Bach 1984: 40). It can be subsumed under the general principle of default logic (e.g. Reiter 1980):

\[
\begin{align*}
A & : B \\
 & : C
\end{align*}
\]

C can be concluded if A has been concluded and B can be assumed (and not B cannot be proven). All in all, our definition of default interpretation will therefore contain the following necessary components: contextual salience, fairly high predictability in the context, statistical frequency, and automaticity.

We are a long way though from being able to predict the particular contexts in which defaults so understood may arise. To repeat, unlike on other defaultist accounts, we are not in the business of delimiting types of expressions: defaults are defaults for the context and not defaults for the word or the syntactic constituent. The boundary between automatic and inferential enrichment is, and will remain, nonrigid and context-driven. The problem lies precisely in the context-dependence of the type of interpretation. It is the particular situation of discourse that dictates whether the interpretation comes automatically or inferentially. The ‘presumptive’, ‘default’ meanings proposed by Levinson better qualify for dividing the category between inferential and automatic enrichments, depending on who is interpreting and in what context. In (28), the possessive construction can be understood in a variety of ways and is likely to trigger inferential rather than automatic enrichment. (29) either triggers the interpretation ‘written by Chomsky’ automatically, or inferentially, or not at all, depending on the addressee’s background information. Setting them in stone as examples of

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16. For an extensive encyclopaedic review of various approaches to defaults in logic, linguistic semantics, and pragmatics see Thomason 1997 and Jaszczolt 2006, 2009d. See also Benferhat et al. 2005 and Veltman 1996.
word-based or phrase-based defaults puts the theory on the wrong track from the outset.

(28) John’s book is good. \( \Rightarrow \) the one he read, wrote, borrowed…
    (From Levinson 2000: 37)
(29) Chomsky’s book is about grammar.

There are differences in the class of possessive constructions which have to do with their salience and specialization and which testify against structure-based defaults and in favour of the situation-based ones.

6. Concluding remarks: Salience and defaults in contextualism

The concluding remarks and methodological postulates that stem from this discussion are as follows:

– Default interpretations of utterances are best understood as defaults for the interlocutors and for the context rather than rigid linguistic unit-based interpretations. They are best defined liberally as salient, frequent, and automatic meanings ascribed to the speaker by the addressee. This perspective allows for an integration with the findings about the processing of the lexicon.

– While it is well acknowledged that utterance interpretation proceeds incrementally, it is methodologically more prudent to adopt globalism, or propositionalism, about meaning assignment in that (i) the default base (and likewise the inferential base) differs from context to context and (ii) we are far from being able to test experimentally default bases or inferential bases so understood. ‘Globalism’ is a temporary methodological solution, necessary until the length and character of the default bases and inferential bases is experimentally demonstrated.

– Salient meanings of lexical items as defined on the GSH are compatible with default meanings of utterances as defined in DS. Automaticity of both processes is compatible because compositionality pertains to the level of the merger of information coming from different sources as identified in DS. While the automaticity of defaults pertains to the level of merger representations, the automaticity of salient lexical meanings pertains to the level of the WS source of DS.

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Chapter 3

Salient meanings: The whens and wheres

Orna Peleg and Rachel Giora

1. Introduction

The bulk of research into lexical ambiguity resolution has made it clear that both lexical (e.g., degree of meaning salience) and contextual information influence the processing of lexically ambiguous words (e.g., Giora, 2003; Duffy, Morris and Rayner, 1988; Peleg, Giora and Fein, 2001, 2004, 2008; Titone, 1998). Whereas one’s previous experience with one of the meanings of an ambiguous word (e.g., the monetary, institutional meaning of bank) may render that meaning accessible, the immediate context may bias our interpretation towards any of the meanings of the word. For example when we encounter Bill stole from ..., we expect a place one can steal from, and when we encounter Bill fished from ..., we expect a place one can fish from. However, despite decades of intensive research, the time course and the relative weight of these effects are still highly debated (for an overview, see Giora 2003; Simpson, 1984; Simpson, 1994; Small, Cottrell, and Tanenhaus, 1988).

On the one hand, interactive, direct-access models suggest that a strong biasing context can selectively activate the contextually appropriate meaning of an ambiguous word initially, regardless of degree of meaning salience (e.g., Kellas, Paul, Martin and Simpson 1991; Martin, Vu, Kellas, and Metcalf, 1999; Vu, Kellas, Metcalf and Herman 2000; Vu, Kellas, and Paul, 1998). On the other hand, modular, two-stage models argue that initially all the meanings of an ambiguous word are activated, regardless of contextual bias. At a later, post-lexical access stage, however, contextually inappropriate meanings are discarded (e.g., Onifer and Swinney, 1981; Swinney, 1979).

Between these two extremes, The Graded Salience Hypothesis (Giora, 1997, 1999, 2003; Peleg et al., 2001, 2004, 2008) proposes that comprehension involves two distinct mechanisms – lexical and contextual – that run parallel without interacting initially (as proposed by Fodor, 1983). The mechanism responsible for lexical access is sensitive only to lexical

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It is modular, exhaustive, and ordered so that salient meanings – coded meanings foremost on our mind due to familiarity, conventionality, frequency, or prototypicality – are activated faster than less-salient ones, coded but lower on these dimensions. Being stimulus driven, this bottom-up machinery is encapsulated and does not feed on information outside the module. Consequently, it does not conform to contextual information. It therefore allows the processor to also activate seeming contextually incompatible information.

According to The Graded Salience Hypothesis, while lexical access is impervious to context effects, contextual information can independently and immediately affect comprehension via inferential or predictive processes which do not penetrate lexical processes but run parallel. Indeed, under certain conditions, this expectation-driven mechanism may predict the contextually appropriate meaning of an upcoming ambiguous word very early on, even before the relevant stimulus is encountered. Thus, according to this parallel processing view, contextual processes may be faster than, coincidental with, or slower than lexical processes. They cannot, however, inhibit salient meanings activated automatically by the lexical mechanism responding to the relevant stimulus.

The Graded Salience Hypothesis thus makes two intriguing predictions with regard to the effects of salience and context on lexical ambiguity resolution. First, it predicts that contextually appropriate meanings may be activated immediately via predictive processes on the basis of information provided prior to the ambiguous word in question. Second, it predicts that when ambiguous words are encountered, salient meanings will always be activated, even when prior context strongly favors the less-salient meaning. In the present chapter, we summarize empirical evidence, obtained in our lab, which provide support for these predictions (Peleg et al., 2001, 2004; Peleg and Eviatar 2008, 2009).

2. Manipulating the effect of the contextual mechanism

As mentioned above, the extent to which contextual information affects ambiguity resolution has been studied for a few decades. Whether a strongly biasing context can determine lexical access so that contextually appropriate meanings are activated exclusively has been an enduring question. Although a number of experimental paradigms have been used to investigate the temporal aspects of context effects, the most compelling types of experiments are those that tap on-line processes closely. Most of these are priming experiments in which an ambiguous prime is presented in a neutral and a biasing context, and is followed by a probe which is related or unrelated to one of its meanings. Subjects are required to make a lexical decision or provide a naming response to the probe. Magnitude of priming is calculated by subtracting reaction times to related probes from reaction
times to unrelated probes. In particular, priming experiments with short prime-probe intervals seem to provide the best temporal window for activation process, given that they allow tapping early processes occurring while multiple meanings may still be active.

For the last two decades or so, Kellas and colleagues have advanced a context-sensitive account of lexical access, according to which if context is sufficiently constraining and supportive of the less-salient meaning, that meaning will be activated exclusively, with no recourse to salient meanings (e.g., Kellas et al., 1991; Vu et al., 1998, 2000). According to this view, contexts can be made strongly constraining by manipulating the level of specificity of the lexical constituents (e.g., the subject noun and/or the verb). For example, in one of their studies (Vu et al., 1998), three sentences were created, for each target homograph (arms) – one biasing it toward the salient meaning (The physician massaged his arms), another biasing it toward the less-salient meaning (The marksman discharged his arms), and another nonbiasing sentence compatible with both meanings (The man cleaned his arms). Probe words related or unrelated to one of the meanings of the ambiguous targets (“hands”/”weapons”) were presented immediately following the ambiguous prime (arms). Results obtained from a naming task showed priming for both salient and less-salient meanings following nonbiasing contexts, but exclusive priming of the contextually appropriate meaning (“hands”/”weapons”) following biasing contexts, regardless of degree of salience. On the basis of these results, Kellas and colleagues concluded that context can constrain lexical access.

It is quite possible, however, that these results may have an alternative explanation and need not be attributed to early context effects interacting with lexical processes. Rather, they could be induced by a mechanism that does not involve interaction with lexical access. According to The Graded Salience Hypothesis, it is the central expectation mechanism operating alongside lexical processes that is responsible for the results obtained by Vu et al. (1998). Specifically, because the homograph was placed at the end of a strong sentential context, that context made available the intended meaning even before the lexical stimulus was encountered and accessed.

Indeed, in Peleg et al. (2001) we used the same materials used by Vu et al. (1998) (e.g., The marksman discharged his arms). However, in our study, probes related to the salient (“hands”) or the less-salient (“weapons”) meaning of the sentence-final homographs (arms) were presented immediately before the homograph was displayed. Results indicated that the context preceding the homograph (e.g., The marksman discharged his…) primed the contextually compatible probe (“weapons”) even before the homograph was encountered. Replication of Vu et al.’s (1998) findings under conditions that disallow lexical access shows that contextual
information can be strong enough to predict the appropriate meaning on its own accord, with no recourse to lexical processes.

This notwithstanding, it can still be argued that the predictive processes assumed by The Graded Salience Hypothesis do not just run parallel but also eventually penetrate lexical access when allowed. In order to reduce the possibility that strong contexts such as used by Kellas and colleagues can be constraining rather than merely predictive, a second study was designed (Peleg et al., 2004, 2008). In that study, we aimed to manipulate degree of predictability without changing “constraining” information.

Review of the literature indicates that often a selective access of the less-salient (but contextually compatible) meaning was obtained when an ambiguous word was embedded in sentence final position (e.g. Van Petten and Kutas 1987; Vu et al., 1998, 2000). In contrast, when the critical ambiguous word was introduced in sentence or in clause initial position, salient but incompatible meanings immediately surfaced despite prior contextual information to the contrary (e.g. Duffy et al., 1988; Gibbs 1990).

We therefore assumed that the expectation-driven mechanism would operate most efficiently toward the end rather than at the beginning of sentences or clauses.

To test this hypothesis, we used the materials used by Vu et al. (2000), but manipulated the sentential position of the critical homograph (Peleg et al., 2004, 2008). In Vu et al. (2000), two-sentence passages were composed, which were either biased toward the salient or less-salient meaning of their final homograph (e.g., _The gardener dug a hole. He inserted the bulb_). Probes related to the salient (“light”) or less-salient (“flowers”) meaning of the final homographs (bulb) were presented immediately after the ambiguous prime. Vu et al.’s (2000) results indicated that under these conditions, only the contextually appropriate probe was immediately primed.

To provide for an alternative explanation based on The Graded Salience Hypothesis, we attempted to replicate Vu et al.’s (2000) results with the same homographs presented in similarly constraining contexts, but introduced in sentence initial position. Since there is no controversy regarding the (apparently) selective activation of salient, contextually appropriate meanings, only passages biased toward the less-salient meaning were used. To manipulate sentence (initial/final) position, the second sentence of Vu et al.’s (2000) (e.g. _He inserted the bulb_) was subjected to passivization (_The gardener dug a hole. The bulb was inserted_). Participants were asked to silently read the passages and to perform a lexical decision task on probes displayed immediately after homograph presentation. The probes were related to the salient (“light”) or the less-salient (“flower”) meaning of the ambiguous word (bulb), or unrelated to it.
According to The Graded Salience Hypothesis, the same lexical constraints, used by Vu et al. (2000) to bias their contexts toward the less-salient meaning of the critical ambiguous word, will neither inhibit nor precede activation of salient but inappropriate meanings of ambiguous words presented at the beginning of sentences. Indeed, consistent with this prediction, our results demonstrated that when the ambiguous stimulus was placed in initial position, probes related to the contextually compatible meaning were not exclusively primed as would be predicted by context sensitive/selective access models. Instead, both the less-salient compatible meaning and the salient but incompatible meaning were activated simultaneously (Peleg et al., 2004, 2008).

These results support our view that language comprehension involves independent mechanisms that run parallel. Since sentence position (initial/final) affects the speed of the top-down, contextual mechanism, manipulating it helps tease apart their respective independent effects. The expectation-driven mechanism is faster toward the end than at the beginning of sentences, where different types of constraints (pragmatic, semantic, and syntactic) enable it to better predict an upcoming concept and thus activate compatible meanings even before the relevant lexical stimulus is encountered (as shown by Peleg et al., 2001).

However, the findings obtained in sentence initial position cannot be accounted for by a context-sensitive, interactive model, which predicts that, given enough constraints, only the compatible meaning of an ambiguous word will be activated. In our study, subjects read the first sentence (The gardener dug a hole) and the homograph (The bulb...) before the probe (“light”/“flower”) was displayed, thus adding more constraints to those found in Vu et al. (1998). According to the context-sensitive model, the entire preceding sentence plus the ambiguous word (e.g., The gardener dug a hole. The bulb...) should have been more than enough to prime the contextually appropriate meaning (“flower”) exclusively. Nevertheless, our findings demonstrate that, in initial position, the less-salient compatible meaning was not accessed exclusively. Instead, incompatible but salient meaning (“light”) was primed as well (Peleg et al., 2004, 2008).

In sum, using Vu et al.’s (1998, 2000) materials, our studies show that the sentential position of the homograph (initial vs final) is crucial for the operation of the global, predictive mechanism, whose effects, accumulated in prior discourse, mask lexical effects in final, but not in initial position. Our more recent experiments (see below) further show that even in a sentential position that favors contextual effects (i.e., sentence final position), lexical access is not affected by biasing contextual information: Salient meanings are activated upon encounter of the lexical stimulus, regardless of contextual information to the contrary.
3. Manipulating the effects of the lexical mechanism

In our more recent studies we investigated the hemispheres’ involvement in ambiguity resolution. A widespread experimental method for assessing hemispheric contributions to language processing, in general, and ambiguity resolution, in particular, is the divided visual-field (DVF) priming paradigm. This technique takes advantage of the fact that stimuli presented in the left side of the visual field are initially processed exclusively by the right hemisphere and vice versa. Although information presented in this manner can be later transmitted to both hemisphere, the interpretation of DVF paradigms rests on the assumption that responses to stimuli presented briefly to one visual field reflect mainly the processing of that stimulus by the contralateral hemisphere. Thus, responses to targets in the right visual field (RVF) reflect left hemisphere (LH) processes and responses to targets in the left visual field (LVF) reflect processes in the right hemisphere (RH) (for theoretical and electrophysiological support for this assumption, see Banich, 2003; Berardi and Fiorentini, 1997; Coulson, Federmani, Van Petten, and Kutas, 2005).

Research using the DVF technique has led to the conclusion that the hemispheres differ in the way they deal with lexical and contextual factors during ambiguity resolution (e.g., Burgess and Simpson, 1988; Faust and Chiarello, 1998; Faust and Gernsbacher, 1996). According to the received view, when readers encounter an ambiguous word, multiple meanings are available immediately in the LH, but shortly afterwards, one meaning is selected on the basis of relative salience and/or contextual information. The RH, on the other hand, activates all meanings more slowly and maintains these meanings irrespective of context or salience. On the basis of such findings, current hemispheric models have converged on the proposal that processes related to meaning activation and selection are faster in the LH than in the RH (for a review, see Peleg and Eviatar, 2008).

One possible explanation for this LH advantage relates to the different ways in which meanings are accessed in the two hemispheres. Generally speaking, there are two ways to access meaning from print: The visual route (from orthography directly to meaning), and the phonological route (from orthography to phonology and then to meaning). The visual route is believed to be available in both hemispheres. The phonological route, however, is available only to the left hemisphere (e.g., Halderman and Chiarello, 2005; Lavidor and Ellis, 2003; Marsolek, Kosslyn and Squire, 1992; Marsolek, Schacter and Nicholas, 1996; Zaidel, 1982; Zaidel and Peters, 1981). In principle, two are better than one; since in the LH words can be “read” both visually and phonologically, it is usually faster.

Because an orthographic representation of an English word (as well as other Latin orthographies) is usually associated with one phonological representation, most studies of lexical ambiguity used homophonic
homographs – a single orthographic and phonological representation associated with multiple meanings (e.g., bank). Unlike English, for example, the unwoveled Hebrew offers an opportunity to examine other types of homographs as well. In Hebrew, letters represent mostly consonants; vowels can optionally be superimposed on consonants as diacritical marks. Since the vowel marks are usually omitted, Hebrew readers frequently encounter not only homophonic homographs (such as bank), but also heterophonic homographs – a single orthographic representation associated with multiple phonological codes, each associated with a distinct meaning (e.g., tear).

Both types of homographs have one orthographic representation associated with multiple meanings. They differ, however, in terms of the relationship between orthography and phonology. When orthographic and phonological representations are unambiguously related (as in the case of homophonic homographs such as bank), lexical access should be faster in the LH than in the RH, because all the related meanings are immediately boosted by both orthographic and phonological sources of information. However, when a single orthographic representation is associated with multiple phonological representations (as in the case of heterophonic homographs such as tear), meanings may be activated more slowly in LH than in the RH, due to the competition between the different phonological alternatives.

To test these predictions we devised a number of studies (Peleg and Eviatar 2008, 2009), in which a divided visual field technique was employed in conjunction with the lexical-priming paradigm. Participants silently read sentences that ended in either a homophonic or a heterophonic homograph and performed a lexical decision task on probes presented laterally (either to the left visual field, i.e., the RH or to the right visual field, i.e., the LH) 150 ms or 250 ms after onset of the final homograph (SOA). Sentential contexts were either biased towards the less-salient meaning of the final homograph or unbiased (see Table 1). Probes were either related to one of the meanings of the ambiguous prime, or unrelated. The two types of homographs were equated in terms of length, degree of salience, degree of polarization, degree of relatedness to the different sentential contexts, and degree of relatedness to the different probes (for details, see Peleg and Eviatar 2008, 2009). Translated examples are presented in Table 3.1.

Given the phonological asymmetries described above (direct orthographic-phonological connections in the LH versus no such connections in the RH), and our rapid presentation rates (150-250 ms SOAs), which tap automatic semantic activation, we predicted that differences between heterophonic and homophonic homographs will be more pronounced in the LH than in the RH. Thus, we mainly focus here on
processes occurring in the LH. Specifically, we predicted that direct connections between orthographic and phonological representations in the LH should speed up (bottom-up, stimulus driven) lexical processes in the case of homophonous homographs (bank), but slow down lexical processes in the case of heterophonous homographs (tear). Whereas for homophonous homographs, lexical access may be

<table>
<thead>
<tr>
<th>Homograph Type</th>
<th>Sentence Context</th>
<th>Homograph</th>
<th>Pronunciation</th>
<th>Probes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homophonic</td>
<td>Nonbiased: They looked at the…</td>
<td>getNode</td>
<td>/xoze/</td>
<td>Salient: Document Less-salient: Prophet</td>
</tr>
<tr>
<td></td>
<td>Biased toward the less-salient meaning: The children of Israel listened to the…</td>
<td>Seer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterophonic</td>
<td>Nonbiased: The young man looked for the…</td>
<td>getBook</td>
<td>/sefer/</td>
<td>Salient: Reading Less-salient: Hair</td>
</tr>
<tr>
<td></td>
<td>Biased toward the less-salient meaning: The bride made an appointment with the…</td>
<td>Barber</td>
<td>/saper/</td>
<td></td>
</tr>
</tbody>
</table>

faster in the LH, for heterophonous homographs, meanings may be activated more slowly in the LH.

Clearly, the direct connections between orthography and phonology in the LH have implications for salience effects. In principle, when homographs are polarized (i.e., when one meaning is more salient than the other), salient meanings are activated before less-salient meanings (Giora, 1997, 2003; Peleg et al., 2001, 2004, 2008). Salience effects, however, can be the result of both semantic and phonological representations of words. Therefore, for homophonous homographs, salience differences reflect relative exposure to different meanings only. For heterophonous homographs, however, salience differences reflect both relative exposure to different meanings as well as to different pronunciations.

Given that heterophonous homographs are both phonologically and semantically ambiguous, whereas, homophonous homographs are only semantically ambiguous, we expected that in the LH, polarization (i.e., the difference in degree of salience between the salient and the less-salient meanings) should be more pronounced for heterophonous homographs than for homophonous homographs.

Thus, when homographs are embedded in a nonbiased neutral context and presented to the LH, salient meanings are expected to be more highly activated compared to less-salient meanings in the case of heterophonous homographs than in the case of homophonous homographs, in which this difference should be less pronounced. Specifically, when contextual
information is kept neutral, this large difference in the case of heterophonic homographs may speed activation of salient meanings, but slow down activation for the less-salient meaning. Given our short SOAs, we anticipated that in the LH, less-salient meanings will be activated in the case of homophonic homographs but not in the case of heterophonic homographs.

However, according to The Graded Salience Hypothesis, when contextual information strongly favors the less-salient meaning, contextually appropriate meanings will be boosted via the contextual predictive mechanism, whereas salient but contextually inappropriate meanings will be activated only via bottom-up lexical processes. When bottom-up lexical processes are fast, as in the case of homophonic homographs, salient, contextually inappropriate meanings are likely to be immediately activated via the lexical mechanism, resulting in simultaneous activation of multiple (appropriate and inappropriate) meanings. In contrast, when bottom-up lexical processes are slowed down, as in the case of heterophonic homographs, contextual processes can have faster effects than lexical processes. As a result, contextually appropriate meanings are more likely to be activated before salient but contextually inappropriate meanings, without inhibiting it, though.

Specifically, when context is strongly biased in favor of the less-salient meaning of the homograph, salient but contextually inappropriate meanings of homophonic homographs (bank), which prompt fast lexical processes in the LH, will be speedy. However, in the case of heterophonic homographs (tear), which slow down lexical processes in the LH, salient but contextually inappropriate meanings may be activated slowly in the LH, resulting in an ordered access, where the less-salient contextually appropriate meaning is activated before a salient but contextually inappropriate meaning. We anticipated then that, in the LH, given a context biased toward the less salient meaning of the homograph, salient but contextually incompatible meanings of homophonic homographs will be activated faster than salient contextually incompatible meanings of heterophonic homographs.

As predicted, our results show that homophonic and heterophonic homographs, which diverge on how their meanings are related to phonology, were processed differently in the LH. Our results also demonstrate that, in the RH, similar patterns (in terms of significant priming effects) were obtained for both types of homographs. These results converge with previous studies showing that the LH is more strongly influenced by the phonological aspects of a written word (e.g., Halderman and Chiarello 2005; Lavidor and Ellis, 2003; Zaidel, 1982; Zaidel and Peters, 1981), whereas lexical processing in the RH is more sensitive to the visual form of a written word (e.g., Halderman and Chiarello 2005; Lavidor and Ellis, 2003; Marsolek, Kosslyn and Squire, 1992; Marsolek, Schacter and
Nicholas, 1996; Smolka and Eviatar, 2006). Overall, we show that in the case of homophonic homographs, lexical access was faster in the LH than in the RH. In contrast, the opposite pattern was found for heterophonic homographs: Lexical processes were faster in the RH than in the LH. In what follows, we report the time course of ambiguity resolution for each context condition separately.

3.1 Results obtained in a neutral, nonbiasing context

In a neutral, nonbiasing context our results regarding homophonic homographs replicated previous results reported in studies run in English (e.g., Burgess and Simpson, 1988; Faust and Gernsbacher, 1996). In the RVF/LH both meanings were available early on at 150 ms SOA. However, 100 ms later, only the salient meaning remained active. In the LVF/RH, the less-salient meaning was activated more slowly, so that 150 ms following the onset of the ambiguous prime, only salient meanings were significantly activated. Shortly afterwards (at 250 ms SOA), the less-salient meaning was activated alongside the salient one. Thus, consistent with previous proposals, in the case of homophonic homographs, both activation and selection processes were faster in the LH.

Importantly, however, heterophonic homographs revealed a different pattern of results. In contrast to the received view, our results suggest that, in the case of heterophonic homographs, it may be harder for the LH to activate the less-salient meaning, so that initially, 150 ms after encountering the homograph, the LH activated only the salient meaning; the same pattern of results obtained even 100 ms later (at 250 ms SOA). In the LVF/RH, salient meanings were activated before less-salient meanings. Thus, 150 ms after encountering the ambiguous word, only the salient meaning was significantly activated for both types of homographs and 100 ms later (at 250 ms SOA), both meanings were activated for both types of homographs.

3.2 Results obtained in a context biased toward the less-salient meaning

In a context biasing the ambiguous word toward the less-salient meaning, a different pattern of results is obtained in the two visual fields and for the two types of homographs. For homophonic homographs, both meanings, the less-salient contextually compatible meaning as well as the salient contextually incompatible meaning, were activated at 150 ms SOA and remained active at 250 ms SOA, regardless of probe location (RVF/LH or LVF/RH).

Heterophonic homographs, however, were processed differently: In the LVF/RH, both meanings were immediately activated (150 ms SOA) and remained active at 250 ms SOA. In contrast, in the RVF/LH, at 150 ms SOA, the less-salient contextually appropriate meaning was activated
exclusively. Shortly afterwards, however, at 250 ms SOA, the salient inap-
inappropriate meaning was also activated.

3.3. Discussion

According to The Graded Salience Hypothesis (Giora, 1997, 1999, 2003; Peleg et al., 2001, 2004, 2008), language comprehension involves independent lexical and contextual mechanisms that run parallel without interacting initially. The lexical mechanism responsible for lexical access is modular, exhaustive, and ordered so that salient meanings are activated faster than less-salient ones. While lexical access is impervious to context effects, contextual information can independently and immediately affect comprehension via predictive processes which do not penetrate lexical processes.

Type of homograph (homophonic/heterophonic) may also affect the speed of the bottom-up, lexical mechanism in the LH, where orthographic, phonological, and semantic representations are available (e.g., Halderman and Chiarello 2005). First, when orthographic and phonological representations are unambiguously related (as in the case of homophonic homographs such as bank), both salient and less salient meanings are activated faster in the LH than in the RH, because both meanings are immediately boosted by both orthographic and phonological sources of information. However, when a single orthographic representation is associated with multiple phonological representations (as in the case of heterophonic homographs such as tear), meanings are activated more slowly in LH than in the RH, due to the competition between the different phonological alternatives.

Specifically, The Graded Salience Hypothesis assumes that when contexts are strongly biased toward the less-salient meanings, this meaning is immediately activated by the contextual predictive mechanism. Nevertheless salient but contextually incompatible meanings are activated independently by the lexical mechanism. Since type of homograph (homophonic/heterophonic) affects the speed of the lexical mechanism in the LH, it helps tease apart the independent effects of these two mechanisms in that hemisphere. In the case of heterophonic homographs, where lexical processes are slower, top-down contextual/predictive processes activate less-salient compatible meanings (at 150 ms SOA) even before lexical bottom-up processes activate salient but contextually incompatible meanings (at 250 ms SOA). Alternatively, in the case of homophonic homographs, where lexical processes are faster, both salient and less-salient meanings are activated simultaneously very early on (at 150 ms SOA).

Independent contributions of lexical and contextual processes are emphasized when the results described above are compared with results obtained in neutral unbiased contexts, where contextual effects are hardly
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operative. Given that heterophonic homographs are both phonologically and semantically ambiguous, whereas homophonic homographs are only semantically ambiguous, polarization in the LH (i.e., the difference in degree of salience between the salient and the less-salient meanings) is more pronounced for heterophonic homographs than for homophonic homographs. Thus, when homographs are embedded in neutral contexts, only salient meanings are activated in the case of heterophonic homographs (between 150-250 ms SOA). However, in the case of homophonic homographs, both salient and less-salient meanings are both activated quite early on (at 150 ms SOA). Given this pattern of results, it is clear that the immediate activation of less-salient meanings of heterophonic homographs, embedded in contexts biased toward the less-salient meaning, reflects contextual predictive processes rather than lexical access.

Moreover, contrary to the predictions of the context-sensitive models (e.g., Kellas et al., 1991; Vu et al., 1998, 2000), suggesting that a strong context can selectively activate the contextually appropriate meaning, regardless of degree of salience, we show that both context and salience influence the retrieval of word meanings. Importantly, consistent with The Graded Salience Hypothesis (e.g., Giora, 1997, 2003, Peleg et al., 2001, 2004, 2008), our results show that context can enhance activation of the contextually appropriate meaning, but it cannot inhibit salient meanings even when contextually inappropriate.

Thus, even when contexts strongly favored the less-salient meaning, salient, meanings were nonetheless activated. In the case of homophonic homographs, both meanings were activated immediately (at 150 ms SOA) and remained active 100 ms later, regardless of visual field. Importantly, even when contextual processes preceded lexical processes, as in the case of heterophonic homographs, in which the contextually appropriate meaning was activated exclusively in the LH (at 150 ms SOA), 100 ms later (at 250 ms SOA), the salient but contextually inappropriate meaning also became available, regardless of context.

4. Summary and conclusions

It is uncontroversial that both lexical (e.g., degree of meaning salience) and contextual information influence the processing of lexically ambiguous words (e.g., Duffy, Morris and Rayner, 1988; Peleg, Giora and Fein, 2001, 2004, 2008; Titone, 1998; for a review see Giora 2003 Chapter 3). However, the temporal locus of these effects and their relative weight are still debated. The issue is whether top-down contextual cues can override the strong relationship between the word form of an ambiguous word and its salient – coded and prominent – meaning. According to interactive, direct access models (e.g., Kellas et al., 1991, Vu et al., 1998), sufficiently constraining contextual information biased toward the less-salient meaning
can inhibit activation of the salient (but contextually incompatible) meanings. In contrast, The Graded Salience Hypothesis (Giora, 1997, 1999, 2003; Peleg et al., 2001, 2004, 2008) maintains that salient meanings are accessed automatically, regardless of context. Specifically, we suggest that degree of salience and prior contextual information affect meaning activation via distinct mechanisms that operate simultaneously without interacting initially. Thus, although contextual processes may, under some conditions, be even faster than lexical processes, they cannot inhibit salient meanings activated automatically by the lexical mechanism. In this chapter, we have provided a brief review of empirical evidence supporting this hypothesis.

First, in Peleg et al. (2001) we demonstrated that contextual facilitation of the compatible meaning of an ambiguous word can occur even before the homograph is encountered, that is, before lexical access takes place, fostering an impression of a selective process. Importantly, however, sentential position (initial vs final) may be crucial for the operation of the predictive mechanism. When homographs are placed in sentence-final position, a strong disambiguating prior context can make available the contextually compatible meaning even before lexical access occurs. In contrast, we would not expect contextual effects to temporally outweigh salient meanings in the beginning of sentences. Thus, given the same contextual constraints but placed in initial position, homographs’ salient meanings were activated immediately, regardless of contextual information to the contrary (Peleg et al., 2004, 2008).

Assuming two different, independent mechanisms as opposed to a single, interactionist mechanism, may account not just for our findings (Peleg et al., 2001, 2004, 2008), but even more so for conflicting findings prevalent in the literature. For instance, findings demonstrating that a strong context can make accessible the appropriate meaning immediately, regardless of salience (e.g., Vu et al., 1998, 2000), can also be viewed as induced by the contextual mechanism alone, without postulating that it interacts with lexical processes. Indeed, in Vu et al., in which probes were placed in sentence final position, context effects preceded lexical access, suggesting that findings compatible with an interactionist account may very well be the product of contextual processes that do not interact with lexical processes. In contrast, findings showing that contextually incompatible meanings slow down processes may be due to the lexical mechanism, particularly if probes are placed in sentence/clause initial position (e.g., Duffy et al., 1988). In spite of a strongly biasing prior context, context effects in such a position are expected to neither inhibit nor supersede salient though contextually incompatible meanings.

Furthermore, we have also demonstrated that salient but contextually incompatible meanings are not inhibited even where context may be most
effective (i.e., in sentence final position). Specifically, the type of homophomograph (e.g., homophonic vs heterophonic) was found to be crucial for bottom-up lexical processes in the LH. Previous studies have shown that both hemispheres can recognize words visually via orthographic-semantic connections, but orthographic-phonological connections are available only to the LH. In a series of divided visual field studies (Peleg and Eviatar 2008, 2009), we have shown that direct connections between orthographic and phonological representations in the LH have differential consequences for the two types of homographs. In the case of homophonic homographs (e.g., bank), direct orthographic-phonological connections speed up lexical access. Alternatively, in the case of heterophonic homographs (e.g., tear), meaning activation is slower due to the competition between the different phonological alternatives.

The most interesting result was observed when contexts were biased toward the less-salient meaning. In the case of homophonic homographs, both the contextually appropriate less-salient meaning and the contextually inappropriate salient meaning were activated immediately in both hemispheres. In contrast, heterophonic homographs induced a different pattern of results: In the LH, at 150 ms SOA, only the contextually appropriate less-salient meaning was available. Nevertheless, 100 ms later (at 250 ms SOA), the salient meaning was activated as well. Importantly, these results indicate that salient meanings are always activated, regardless of context. Moreover, as predicted by The Graded Salience Hypothesis, even if context is strong enough to initially activate the less-salient meaning exclusively via a contextual predictive mechanism, salient meanings are still activated via automatic lexical processes when the relevant stimulus is encountered. Such findings cannot be accounted for by direct access/context sensitive models which, under these conditions, predict exclusive activation of compatible meanings, regardless of salience.

Taken together, our studies show that initial lexical processes are independent of contextual processes. Although context may have early effects occurring even before lexical access takes place (see also Rayner, Binder and Duffy, 1999), they do not affect lexical access and therefore do not block salient meanings. Salient meanings are accessed on account of their salience, regardless of contextual information to the contrary. Results obtained in our studies testify to the involvement in comprehension of distinct mechanisms that do not interact initially, thus enabling comprehenders to resist conformity with contextual information and have a choice (Giora, 2003: 199). The independence of the encapsulated, exhaustive (lexical) mechanism of contextual processes allows humans an access to meanings not necessarily related to or invited by the information accumulated outside the module. Indeed, Giora (2003) attests that comprehenders do not always suppress salient but contextually incompatible
information, but occasionally utilize it for various purposes such as humor, pleasure, innovativeness, or subversion.

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Chapter 4

Graded salience effects on irony production and interpretation

Eleni Kapogianni

1. Introduction

The effects of *graded salience*¹, as introduced and discussed by Giora (1997, 1999, 2003) can normally be observed during the process of meaning interpretation: the focus of current research falls on the issue of automatic access to salient meanings, which occurs regardless of any contextual bias. This chapter, however, explores some additional effects of salience, in parallel to its usual role in meaning interpretation.

More specifically, the importance of salient meanings being in a contrastive relationship, either with other meanings or with the context at hand, is highlighted through the examination of different strategies for irony. The main hypothesis is that speakers and hearers are not only aware of the “competition” between meanings of various degrees of salience in different kinds of contexts, but they also use the strongest cases of such competition as a fertile ground for rhetoric devices like irony.

The basic premise of this analysis is the existence of different types of pragmatic devices used for the creation of irony. A preliminary presentation of these devices is necessary for the understanding of the particular strategies that exploit salient meanings. Therefore, I will first introduce a typology for irony before moving on to discuss two different cases of contrastive use of salient meanings. The first case relies on the contrast between a salient and a less salient but literal or contextually prioritised meaning of an expression. In these cases, the ironist chooses to exploit the less (or least) probable meaning in order to create the ironic effect. In the second case, an expression carrying a highly salient meaning is used in the wrong context: assuming that such (conventionalized) expressions, apart from carrying a specific meaning, are also attached to a specific context, it

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¹ Further definition of the term is given in section 3.
can be claimed that it is the strong contrast between the anticipated and the actual context that causes the ironic effect.

The examination of irony misinterpretation data is considered an important test for the effectiveness of different strategies for irony. Considering the two strategies under discussion, this test reveals that hardly any instances of contrastive use of salient meanings are communicationally unsuccessful ironies, since most of the cases in which irony fails to be recognized are cases of meaning reversal, i.e. when there is no ambiguity (or multiple possible meanings) in the given context and the only clues for the ironic interpretation come from background assumptions. Thus, the incompatibility between a salient and a non-salient meaning in ironic expressions seems to facilitate the recognition of irony.

The discussion following the above observations will extend to the important question of how and where salient meanings are encoded. It is argued that the salience of a meaning depends on the richness and prominence of the whole context which is entailed by and attached to it, which is also mentally encoded (as a scenario). Therefore, it is reasonable to claim that salient meanings, which can be seen as shortcuts bypassing the compositional/inferential character of meaning derivation, have to be stored in a mental component containing all sorts of pragmatic information.

2. A typology of ironic utterances

2.1. Data

The present study is based on a corpus of verbal irony compiled for the purposes of my PhD thesis. It is a bilingual corpus, containing a total of 570 Modern Greek and English instances of irony use (c.38000 words). The collected examples come from a variety of sources and contexts, both natural (real) and constructed (scripted): natural examples are collected from TV and radio talk shows, as well as internet communication (message boards, forums and blogs), while constructed examples are collected from movies, comedy series, comic books and works of literature (theatrical plays/novels).

The collected ironies are of two textual forms: dialogical instances and narratives. Of course, the richest source of pragmatic observation is ironies found in dialogues: through them, one can observe (a) the trigger of the irony (usually something that one interlocutor, i.e. the ironist's target, says) and (b) the response to the ironic utterance, which reveals the degree to which the irony was successfully recognized, interpreted and appreciated. Therefore, it was considered that the purposes of this study are better served through the examination of dialogical ironies.
Another important distinction should be drawn, of course, between real and fictional dialogues. The main difference between the two lies in the purposes and intentions of the speakers: while in actual, non-scripted dialogues each speaker has specific communicative intentions and all speakers are trying to be cooperative (or, at least, adhere to some of the principles of cooperation in order to achieve their goals), in fictional, scripted dialogues the verbal behavior of the speakers satisfies the goals of the writer, who usually seeks the entertainment of the audience via various humorous effects (see section 4.1).

Finally, it should be noted here that, at least as far as the aims of the current analysis are concerned, no significant culture-dependent differences were detected in the use of irony by speakers of Greek and English, so examples from both languages are equally taken into account.

2.2. Necessary conditions for irony

At this point, it is of crucial importance for our methodology to establish specific but more global criteria for the definition of irony. This attempt is a response to the observed tendency of semantic/pragmatic accounts of irony to focus on specific ironic strategies and ignore others (see Kapogianni, forthcoming). Of course, it is worth noting that the proposed general guidelines for the recognition of irony do not form a definition (or, even less, an account) of the phenomenon but they can rather be used to facilitate its detection.

The first step towards delineating the distinguishing features of verbal irony would be to view the phenomenon as part of the larger conceptual unit (natural class of phenomena) where it belongs (see Clift 1999 for a similar attempt). Irony as an “umbrella term” for a number of different manifestations, such as situational irony, tragic irony and verbal irony, is basically characterized by the existence of duality and contrast.

Therefore, as far as verbal irony is concerned, background contrast can be considered as the first necessary condition for its presence. Each ironic utterance is triggered by some kind of contrast, manifested either as conflict between the goals/beliefs of the ironist and those of his target (victim) or as discrepancy between hopes/expectations (of the ironist or, most commonly, of his target) and the reality. It must be clarified that this background contrast is different from and not directly related to the contrast between the “said” and the “meant”.

The second necessary condition for the characterization of an utterance as ironic is incompatibility with facts/reality or context. This characteristic, partially observed by Grice as violation of the maxim of quality (Grice 1975:53), seems to be a common denominator for the variety of ironic techniques. Of course, lack of truthfulness is only one way of being in
conflict with facts or reality. “Inappropriateness” as a relevant term (Searle 1991:536; Attardo 2000) is closer to capturing this condition, but it is more limited to the “incompatibility with context” side of it.

In contrast, by formulating the criterion as above, one manages to capture many more (if not all) possible manifestations of verbal irony: apart from conveying, or implying / entailing, an insincere message, an ironist can also opt to express something which is incompatible with general assumptions about reality (see section 2.4.2), or with the expectations raised by the context (this is the case with the second strategy on which this analysis focuses, see section 3.2).

The third necessary condition for the presence of irony lies in the intention of the speaker, which usually is the expression of a “feeling, attitude or evaluation” (Grice 1978:124). This is an important distinguishing feature between irony and other “nonliteral” tropes, which makes irony the intermediate step for an indirect speech act which can be considered as an act of evaluation towards a specific target. Basically, evaluation is anticipated by contrast (the first necessary condition). As Clift (1999:546) notes: “[I]rony routinely occurs in positions where evaluations are expected”. However, it should be mentioned that evaluation is not necessarily negative: its ultimate function may be that of appraisal.

The conditions described above are required by the very nature of verbal irony and that is why the simultaneous presence of all three of them – at the background of the conversation, at the content of the utterance, and at the intentions of the speaker respectively – is necessary for the detection of the phenomenon.

An important function of these conditions is their role in discriminating between irony and same-level nonliteral phenomena, namely metaphor, wordplay/puns and sarcasm. More specifically, as far as sarcasm is concerned, a notion which is very often used interchangeably with irony, it can arguably be viewed as partially overlapping but not coinciding with irony. A more “bitter” form of irony (Leech 1983:143-144) can be characterized as sarcasm (or self-sarcasm) but, at the same time, there can also be cases of non-ironic sarcasm, in which the speaker’s attitude is a highly caustic criticism, not being in any conflict with facts/reality or context. We can imagine an example of non-ironic sarcasm as in (1):

(1) Context: It is exam period but John is not studying, ignoring his mother’s warnings that he is going to fail. After he fails the test, he is obviously disappointed and his mother says:

   *So, you are regretting it now, aren’t you?*

On a final note concerning the distinguishing features of irony, it should be pointed out that all extralinguistic indications (irony markers) can function
as cues for its recognition but are not necessary for its presence. Intonation in particular, which is the most important irony marker, displaying specific patterns which point to the phenomenon (Padilla García 2009), should be considered culture-dependent, varying according to the degree of explicitness of irony for each culture. The lack of intonational cues in texts and Computer Mediated Communication will be commented on in section 4.2.

2.3. Criteria for classification of irony strategies

The study of irony as a phenomenon that operates at the Semantics – Pragmatics interface, dictates that any attempt to formulate a typology of the phenomenon should employ criteria which are relevant to the issues concerning the mentioned theoretical field. In this perspective, the questions to be asked when examining an ironic instance are: (a) Is there any semantic connection between the said and the intended meaning? If there is such a connection, (b) What kind of logical/cognitive operation leads from the one meaning to the other? And, if there is no semantic connection (c) What kind of inferential processes operate between the said and the intended meaning?

It must be noted that the term “ironic operations/strategies” refers to the process that leads from the intended meaning (as the underlying meaning in the speaker’s mind) to the expressed meaning and, secondarily, to the process that the hearer needs to employ in order to derive the intended meaning. Usually, the same strategy is followed in both directions (from the intended to the expressed and from the expressed to the intended) but this is not always the case, as the analysis of examples in 2.4.2 will reveal.

2.4. Ironic types

2.4.1. Meaning reversal

A closer examination of the compiled corpus, with a parallel consideration of the ironic examples that have been discussed in the literature, reveals that a great part of all ironies contains some kind of meaning reversal. This observation is fairly compatible with the traditional views about irony, namely, the treatment of irony as “meaning the opposite of what is said”. The term “reversal” includes a variety of processes for the derivation of ironic meaning, which would not be predicted by the strict definition of irony as negation.

(2) This is a great party!
(3) Not that I am offended or anything, I just have to leave.
(4) a. This dress is slightly overpriced
   b. This car is going at the speed of light!
Example (2) is a typical ironic example, where the intended ( ironic) meaning is thought to be the negation of the explicitly expressed meaning. However, as Giora (1995) first pointed out, negation is not sufficient for the derivation of the intended meaning, which is not just “this is not a great party” but something more along the lines of “this is an awful party!” Therefore, our adoption of the general term “meaning reversal” is more adequate in describing this particular irony strategy, since the relation between the expressed and the intended meaning is that of polar antonymy. It must be noted that it is not impossible for irony to use simple negation: the utterance in (3), for instance, when used ironically, explicitly negates the intended meaning (“I am offended”) so that its derivation needs to directly negate that negation. This, however, is a much less common strategy.

Examples in (4) instantiate another case of meaning reversal which, unlike the ones discussed above, is not absolute reversal. (4a), uttered at a context where the speaker refers to a dress of an extremely high price, is a case of ironic understatement, and (4b), uttered at a context where the car is moving really slowly, is a case of ironic overstatement. Here, a process of scalar reversal should be considered to be the link between the expressed and the intended meaning: both speaker and hearer need to think of the expressed meaning as part of a scale (often created ad hoc) where the intended meaning is either in a higher (in the case of understatement) or lower (in the case of overstatement) position. In example (4b), for instance, the scale would be: “extremely slow < very slow < slow < average speed < fast < very fast < speed of light”, so that the intended meaning is at the bottom of the scale, the top of which is represented by the expressed meaning. Of course, the reversal of the scale is not necessarily absolute (from top to bottom) as, in some cases, the expressed and the intended meaning are in less extreme positions in the scale: in example (4a) the scale would be “not at all – slightly – moderately – considerably – very much – extremely” and the intended meaning would coincide with either of the two positions at the top of the scale.

On the whole, when irony employs the technique of meaning reversal, this is done either by direct or by indirect (according to Giora) negation, the latter being divided into absolute (polar) reversal and scalar reversal.

2.4.2. Proposition replacement

Unlike the examples we have presented so far, ironic instances such as in (5) and (6) are not sufficiently discussed in the literature.

(5) a. You are right, and I am the Queen of Romania!
   b. Sure! And the world is ruled by giant beavers.
Given context: “Your friends meet you at the cafeteria and ask you:”

Eðo  iste?²
HERE³  be2PL
‘Here is where you are?’

Oçi, den imaste emis, ta  oloγramata mas ine!
no  Neg.  be2PL  us  thePL  holograms  our  be3S
‘No it’s not us, it’s our holograms!’

In the conventionalised (to a greater or lesser degree) ironic utterances of examples (5a,b) the speaker makes an obviously false and “outrageous” claim, in order for it to serve as an ironic comment on the hearer’s explicitly asserted or assumed beliefs. The logical form of utterances produced by this ironic strategy, unlike the case of meaning reversal, is not semantically (logically) related to the intended proposition. In both examples (5a, b), we may consider the intended meaning as something along the lines of “Whatever you believe/say is impossible/stupid”.

Example (6), taken from a popular internet-circulated list of “answers to stupid questions”, exemplifies a case in which a standardised (in a similar vein to Bach’s (1995) account) meaning of an utterance is questioned by the ironist, who, by pretending not to recognise it, answers to the literal meaning instead. Here, the ironist's reply, as in (5), is an impossible and unrealistic statement.

The examination of examples (5a, b) and (6) reveals another major strategy of being ironic, which is achieved by making a contextually inappropriate and usually absurd/unrealistic statement, which in some cases may also be in the form of a question, with the aim of criticizing and dismissing the target’s claims, intentions or beliefs. The derivation of the intended meaning in this strategy comes through the replacement of the expressed proposition by the intended proposition, which is semantically

2. Transliteration Conventions: S(ingular)/PL(ural), 1/2/3 (person); ACC(usative case); IMP(e)RF(ective); Neg(ation); Polite (form); grammatically encoded politeness. Unless otherwise marked, verbs are in Present tense and nouns in Nominative case.

3. The word “eðo” (‘here’) is in a focalized position in the sentence.

4. These remarks-in-form-of-questions can be considered “standardized” in Bach's sense (Bach 1995:681-683), since the hearer is normally led to the direct recognition of the particular speech act as a remark rather than a question. In the same sense, the salient meaning of these sentences is the content of the remark (“oh, you are here!”) and not the content of the question (“are you here?”). Thus, this example can be considered as one more instance of competition between salient and literal meaning, which is the focus of discussion in section 3.1.
unrelated and of an evaluative character (\( p \rightarrow q_{eval} \)). At a closer look, we can also notice a pattern of inferences leading to the replacement of \( p \) by \( q_{eval} \); this would have to be a “modus tollens” syllogism as in (7) and (8) (see also Kapogianni, forthcoming).

\[
(7) \quad ((p \rightarrow q) \land \neg q) \rightarrow \neg p
\]

\[
(8) \quad p: \text{What you are saying is accepted as true/real/rational...etc.}
q: \text{[Statement that clashes with reality or the context at hand and therefore inherently false]}
\]

It is also interesting to note, here, that in the place of the expressed proposition \( p \), there could be any other, equally absurd and inappropriate proposition \( x, y, z \), while the intended meaning would still be the same, that is, an evaluative proposition \( q_{eval} \).

This last remark leads to a further comparison between the meaning reversal and the proposition replacement irony strategies. The first operates in both directions: we can reach the intended meaning by negating/reversing the expressed meaning, which is what the addressee needs to do in order to achieve the correct interpretation, but we can also recreate the process taking place in the speaker’s mind when knowing what the intended meaning is. On the other hand, this bidirectional relationship between the expressed and the intended meaning does not hold in the case of the absurd meaning replacement. Despite knowing the intended meaning of an absurd response (the rejection/negative evaluation of the target’s statements and beliefs) we cannot anticipate the semantic content of the phrase that the ironist might choose to use in order to express the intended meaning.

3. The contrastive exploitation of salience in irony production

According to the Graded Salience Hypothesis (henceforth GSH, Giora 1997, 1999, 2003), salient meanings always arise regardless of the strength of contextual bias towards another, less salient, interpretation. The coexistence of salient and non-salient meanings implicates a situation of contrast. Although this kind of situation would be considered as “costly”, it is definitely not uncommon and, at the same time, cognitively stimulating (see Colston and O’Brien 2000). As Nerlich and Clarke (2001) have shown, the communicational benefits of such contrastive coexistence outweigh any additional processing effort.

Following Leech (1983), it is important to recognize the existence of various communicational principles that come into play during verbal exchange, as a part of the interpersonal rhetoric. Nerlich and Clarke (2001:13-14) specifically cite Leech’s interest principle and expressivity principle: these function during regular conversations and are able to
overwrite other communication principles, such as the Gricean maxim of manner, which would not permit purposive ambiguity. Therefore, it is reasonable to expect that the contrast between salient and less salient meanings can be consciously exploited for rhetorical purposes, irony being one of them.

One can observe the contrastive exploitation of salient meanings for the creation of ironic effect in two different components of ironic expression /interaction: at the trigger of an ironic response and at the ironic utterance itself. As it will be analyzed in sections 3.1 and 3.2, the former strategy relies on the contrast between the salient and the non-salient (usually literal) meaning, while the latter strategy exploits the contrast between the salient and the actual context of an utterance.

3.1. Salient versus non-salient

3.1.1. Sources of competing meanings

In order to describe the meaning contrasts that may trigger and facilitate a particular irony strategy, it is important to discuss and compare the different sources of lexical (and, secondarily, compositional) meaning. Lexical meaning interpretation draws information from three major sources: encoded meaning, automatically arising (by default or by virtue of salience) meaning and context.

First of all, we shall discuss the relation between encoded and literal meaning. According to Giora (2003:32-34) a (salient) meaning is encoded, but not necessarily literal. Under this perspective, the notion of lexical literality needs further clarification. Giora adopts Ariel’s (2002) view on the multiple levels of literality, matching lexical literality to the grammatically specified meaning or “what is denoted by words” (Giora 2003:33).

Attempting a stricter definition for the purposes of the present analysis, literal lexical meanings shall be considered the meanings that comprise all the semantic information (including the grammatically relevant such as ±animate, ±human etc.) that is attached to a word, while literal uses of a word can be considered the uses that do not demand any process of semantic “shift” (such as the processes described by Carston 2002) in order for the word to be linked to its intended referent. Of course, in cases of polysemy, there can be more than one literal meanings linked to a word.

Bearing that in mind, the characteristics and “strength” (in terms of interpretability) of a potential meaning of a word in relation to its context of use can vary according to the possible combination of sources (see Table 4.1).

A meaning can be encoded, automatically arising (because of its salience) and also reinforced by the context at hand. Obviously, such a
meaning, in the case where all three sources converge, can be considered “strong”, immediately recognisable or (contextually) unambiguous (possibility (i) in Table 4.1). Of course, an encoded and automatically arising meaning is not always contextually reinforced (possibility (ii) in Table 4.1). This is the case of (highly) salient meanings, as defined by the GSH. This kind of meaning may or may not be the literal meaning of the word, as highlighted above (and in Giora 2003:33). It also need not be compatible or reinforced by the context, since lexical access is independent from contextual processes (see Peleg and Giora, this volume).

Moreover, again in the category of encoded meanings, there are less salient or non-salient meanings, which although encoded, do not automatically arise (due to their lack of frequency, conventionality, familiarity or prototypicality). These should only arise when dictated by the context (possibility (v) in Table 4.1), otherwise their participation in meaning derivation is highly unlikely (possibility (vii) in Table 4.1).

On the other hand, a meaning can automatically arise without necessarily being previously encoded (possibilities (iii) and (iv) in Table 4.1). This seems to be a difference between salient and default lexical meanings: default meanings (as introduced and defined by Jaszczyk 2005, 2010 and in this volume) when/if applied locally to words can make use of “building blocks” such as reasoning/cognitive processes, without necessarily resorting to encoded meanings⁵. Context may or may not play a role in the emergence of lexical defaults (possibility (iii) and (iv) respectively). An example for such meanings can be novel metaphors, the meaning of which is directly processed through cognitive defaults (for example, calling someone a “chopstick” directly evokes an analogy of body type, “a thin and tall body”; this analogy is reinforced when the person’s body type is part of the common ground).

### Table 4.1 Sources of lexical meaning

<table>
<thead>
<tr>
<th>Source</th>
<th>comb.</th>
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<tr>
<td>Automatically arising</td>
<td></td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contextual (reinforced)</td>
<td></td>
<td>☑</td>
<td></td>
<td>☑</td>
<td></td>
<td></td>
<td></td>
<td>☑</td>
</tr>
</tbody>
</table>

⁵. Jaszczyk (2005:205-210; see also this volume) chooses a globalist approach on the function on defaults, although highlighting that this is more of a methodological solution, since it is not impossible for defaults to be applied locally (at a lexical level).

⁶. Possible combinations of meaning sources.
Finally (possibility (vii) in Table 4.1), there are novel uses of words, creating not previously encoded meanings, the interpretation of which solely relies on contextual information (e.g. novel metaphors that are not accessed via default interpretations). Therefore, it is reasonable to argue that the possible contextual statuses of meanings described above can be ordered hierarchically from “strongest” to “weakest” in terms of their possibility to arise during interpretation in context and their ability to override other competing meanings. Of course, this hierarchy (from (i) to (vii), “strongest” to “weakest”) should by no means be considered a strict rule, given that there may be other factors interfering with meaning interpretation, which vary depending on the nature of the discourse, the context, the shared common ground, the intended meaning of the whole utterance, but also the various idiomatic or less standard uses of words. However, it is theoretically plausible (under the point of view of the GSH and Default Semantics) that the described factors can make an interpretation possible/strong to a greater or lesser degree and in a given context.

3.1.2. Ironies based on meaning conflict

Given the observations in 3.1.1 above, it is expected that during meaning interpretation, meanings supported by different sources might be in “competition”. In many cases, of course, such a competition is not apparent: if the intended meaning is supported by both the context and the lexicon, while also being salient and arising automatically, it is possible that no other meanings will come into play. Moreover, at the level of lexical meanings again, there are words which are rather unambiguous, and therefore, if intended literally, their meaning will not be in any competition with other meanings. Our focus, here falls on cases where there is some kind of conflict between different meanings coming from different sources, which is exploited for the purposes of irony. In examples (9), (10) and (11) the speakers are being ironic by giving an unexpected reply to their interlocutors:

(9)  
Imaste ston  
be2PL at.theACC airACC
‘Are we on (the) air?’

Oçi imaste sto  
no be1PL at.theACC fegari
‘No, we are on the moon!’

(10)  
Pos perasate?  
how passed2PL etrojes?
‘How did you enjoy yourselves? Were you(S) eating?’
First, in examples (9)–(11), it can be clearly observed that all the necessary conditions for irony hold: the ironist is in the receiver position of what he considers unnecessary/dull questions or comments, hence expressing his/her criticism. What is more, his/her statement is highly unexpected and incongruous in the given context (cf. the condition of conflict with facts/reality or context in 2.2) in which the speaker uses an exaggerated and obviously unreal utterance. It is noteworthy that, according to the typology given in section 2.4, all examples fall into the category of proposition replacement, since in all of them the ironist’s intended meaning is something along the lines of “your question/statement is dull and of no interest to me”.

Example (9) comes from a Greek radio show in which the producer operates the station’s call centre, adopting the persona of a rude and unhelpful call operator (some callers believe they speak to an actual call operator, while others suspect it is the radio producer talking to them). In this particular example, the caller wants to know if he is “on air”, i.e. whether his call is being broadcast live on the radio. The ironic reply of the radio producer exploits the clash between the common, salient meaning of the expression “on (the) air” and its less salient literal meaning. The very strong contextual bias in the particular case would normally leave no doubt about the intended meaning, but, notably, this does not deter the ironist from retrieving the contextually improbable literal meaning and using it as a basis for his ironic utterance.

Certainly, the very strong contrast between the literal and the salient meaning of the expression, each of them entailing a very different context, provides the ground for all kinds of word plays/jokes and, of course, irony.

In example (10), again, the intended meaning is not the literal meaning and this is rather obvious: in this dialogue between a grandson, who has just returned from a short vacation, and his grandmother, who knows that he has been perfectly healthy during that time, the grandmother asks “Were you eating?” in the sense of “Were you eating well enough?”. The grandson, however, in order to express his annoyance about his grandmother’s constant worrying, replies with an ironic statement that appears to be a reply to the strictly literal meaning of his grandmother’s question (“Were you
eating *at all*?). Here, the “competing” meanings are the salient (with a certain degree of conventionalisation) and contextually reinforced meaning on the one hand, and the literal but contextually improbable meaning on the other. Although in non-ironic interaction the latter meaning would probably not arise, here, the ironist observes the clash between the literal and the salient/contextual and exploits it for his purposes.

Finally, example (11), coming from the same radio show as example (9), depicts a situation in which the literal and the salient coincide, but they are contrasted to the contextually prominent meaning. The caller in this example, believing she is talking to an actual call operator, wants to receive more information on her winning a ticket to a play by taking part in a competition. The producer/call operator, however, answers ironically in order to appear indifferent to the caller's request. The basis of the ironic “game” in this example is the clash of at least two possible meanings of the word “theatre”: the first meaning is the theatre as a “commercial enterprise”, and the second meaning is derived through the common metonymic use of the word to denote a “theatrical play”, which, in this particular case, becomes (through further metonymy) “ticket to a theatrical play”. The meaning “commercial enterprise”, at least in Greek, appears closer to the literal meaning and is more salient than the meaning “theatre ticket”, which is the product of double metonymy. However, the latter is the contextually prominent one, with a very strong set of assumptions biasing in its favour: the only kind of “theatre” that someone can win in a daily radio show competition is a “theatrical ticket”.

All in all, the ironies discussed above exhibit strong contrasts between different combinations of meaning selection factors: salient and contextually prominent versus literal, as well as salient and literal versus contextually prominent. The strength of these contrasts is mostly due to greatly different meanings and respective contexts. Whenever such contrasts arise, the ironist, whose primary (evaluative) intentions must be assumed to have a priority over any economy/computability “drawbacks” of the process, seizes the opportunity to exploit them.

### 3.2. Salient context versus actual context: “displaced” utterances

(12) Context: Christina has just been introduced to Olga, her future mother in law, who, in a very condescending manner, informs her about the family’s high social status.

[Olga] *Emis exume erýostasio*
we have1PL factoryACC
‘We possess a factory’

[Chris.] *Na to ćereste! Kali proodo tu efxome!*
to itACC enjoy2PL good progressACC itGEN wish1S
Graded salience effects on irony production and interpretation

‘(I wish you) to enjoy/be proud of it! I wish it well (literally: a good progress to it)’

(13) Context: Christina’s daughter Dorita is a member of a group of radical ecologists, who travel around Greece in order to take action in protecting endangered species.

[Dorita] Φεύγω. Πάω στι Ζακίνθο για να παράψω την ζακίνθια έγκυο για να μετακινητοποιηθεί στο Ζάντη.
‘I’m leaving. I’m going to Zante because the Careta-carreta (turtle) is in labor/laying eggs’

[Chris.] Καλά λευτερία... καλή πόνον.
‘A safe delivery... and with a single pain (painless)’

The two “wishes” of Christina are both conventionalized expressions in Greek, which are used in specific contexts: the first (“enjoy him/her/it/them”) is very frequently used as a general wish, referring to the addressee’s child/children, while the second is always addressed to (usually young) students – where “progress” refers to “progress at school”. Therefore, the combination of those expressions has a highly salient meaning, which is automatically retrieved, even out of context, as referring to the addressee’s young child. In the discussed example, the salient meaning is crucial for the creation of irony, as it is the discrepancy between the salient referent of the expressions (which should be the addressee’s young child) and their actual, contextual referent (the addressee’s factory) what causes the ironic effect. In other words, we have strong contrast between the anticipated and the actual context.

The ironically exploited expressions in the discussed examples belong to the category of “Situation Bound Utterances (SBU)” (Kecskes 2000). These are utterances which, because of being systematically used in specific situations, have acquired a conventionalised meaning, different from what would normally be considered their literal meaning. This characteristic is quite common in many different utterance types, in which the distance between the literal and the conventionally used meaning varies. According to the analysis of Kecskes (2000:610) the meaning of an SBU applies within a relevant situational frame to which they are attached. In other words, it can be claimed that these conventionalised utterances necessarily carry specific information about their context (situation/scenario) of use when encoded in the speaker’s mind.

It is therefore apparent in the discussed examples that the irony occurs not so much as a product of a contrast in meanings but rather through a contrast in contexts: the actual context versus the conventional context of use. The observed encoding of contexts along with expressions, points to
the theories of organisation of (lexical) information in frames and scripts (Barsalou 1992; Coulson and Kutas 1998).

Frames are networks of meanings, related in multiple ways (causal, hierarchical, categorical etc) and they are evoked by multiple triggers found in the (linguistic and non-linguistic) context at hand. They facilitate the specification and disambiguation of word meanings, since each different meaning of a polysemous word is linked to a different script/frame, evoked by a different context.

Frames are also exploited for the creation of humour. One widely discussed humour technique is that of script opposition (Attardo and Raskin 1991). In this technique, two different frames are evoked by elements belonging to both of them, in order to be contrasted through an incongruous element, called a “disjunctor”, which signals the incompatibility of the two, causing the humorous effect. This technique is also used in the examples discussed in this section. Both examples (12) and (13), being primarily ironic, can also be categorised as humorous, since irony is achieved via script opposition.

More specifically, in example (12) the SBUs used by the ironist mainly evoke a script of giving wishes to a person for their child. However, the contextual information available to the hearers is that the speaker is giving wishes to a person for their factory – the factory, here, being the disjunctor and the cause of the humorous effect. Similarly, in example (13) the opposed scripts are those of a woman giving birth Vs turtles “giving birth”. The intended evaluative proposition in both cases should convey a criticism of the target’s attitude towards the disjunctor (factory (12), turtle (13)) which, according to the ironist is not worthwhile.

4. Success and failure in irony interpretation: the role of salience

4.1. Evidence from dialogical examples

In this section, the strategies that exploit salient meanings will be compared to the other irony strategies (namely, as mentioned in section 2, the strategies involving meaning reversal) in terms of successful interpretation. Setting aside issues of speed of interpretation, which demand experimental testing and have been thoroughly investigated (by Giora 1999; 2003, Gibbs and O’Brien 1991, Dews and Wiener 1999) to mention just a few) the focus, here, falls on data from irony misinterpretation.

The main prediction concerning the two proposed general types of irony (meaning reversal and proposition replacement) is that the first type, expressing a proposition which is not completely incompatible with all the elements of the context at hand, is less prominent and, therefore, less detectable than the second type, the striking unreality of which would not
easily be mistaken for literally intended. The examination of the compiled
corpus of ironies (2.1) and, more specifically, of the dialogical ironic
eamples (both natural/real and scripted/constructed) in which the response
of the addressee was attested, confirmed that prediction: cases of
proposition replacement, and especially cases relying on salience effects for
the creation of irony were less likely to be misunderstood.

In particular, as shown in Table 8.2, the examination of 127 dialogical
eamples containing the hearer's feedback (54 of which came from real and
73 from constructed contexts) showed that out of 50 cases of proposition
replacement, only 7 (14%) were misinterpreted, while the 19.4% of ironies
employing the meaning reversal strategy (15 out of a total of 75) were
misinterpreted. However, the significance of these results does not appear
unless we examine examples from real contexts separately from scripted
eamples.

The important distinction concerning these two types of contexts (real
and constructed) concerns the intentionality (from the part of the comedy
creator) lying behind the misunderstanding: in constructed contexts, the
caracter who misinterprets an irony of the second type (proposition
replacement) is always a character portrayed as being “ naïve” and some-
what unable to grasp everyday conversation cues and conventions. Two
such characters are “Dr. Sheldon Cooper” (from the American comedy
series “The Big Bang theory”) and “Baldrick” (from the British comedy
Blackadder). In examples (14) and (15) below it becomes obvious that not
only is misunderstanding of a non-realistic (proposition replacement) irony
used as a humour device, but it is presented as one of the comic trademarks
of the said characters, explicitly observed by the characters who interact
with them.

(14) [Leonard] You know what, you’ve convinced me. Maybe tonight we
should sneak in [to the neighbour’s house] and shampoo her carpet.
[Sheldon] You don't think that crosses a line?
[Leonard] Yes! For God’s sake, Sheldon, do I have to hold up a
sarcasm sign every time I open my mouth?
[Sheldon] You have a sarcasm sign?

(15) [Baldrick] Oh sir, you’re not going to become a highwayman, are
you?
[Blackadder] No I’m auditioning for the part of Arnold the bat in
Sheridan’s new comedy.
[Baldrick] Oh that’s alright then.
[Blackadder] Baldrick, have you no idea what irony is?
[Baldrick] Yeah! It's like goldy and bronzy, only it’s made of iron.
It is for this reason that the percentage of misinterpreted proposition replacement ironies is much higher in constructed dialogues than in real dialogues (20.68% as opposed to 4.76%). It can even be argued that the same type of irony has the reverse effects in each of the different contexts: the more obvious the ironic character of an utterance, the more probable it is for it to be misinterpreted in a scripted comedy context (for humorous effects) and the less likely it is to be misinterpreted in actual discourse.

It should therefore be stressed that the significant finding here (highlighted in Table 4.2) is the difference between the percentage of misinterpreted ironies of the two types (proposition replacement and meaning reversal) in real contexts: 4.76% vs 24.4%.

4.2. Evidence from irony misinterpretation in Computer Mediated Discourse

4.2.1. Method and data

In the light of the above remarks, further investigation of a separate examination of misinterpreted real (non-scripted) ironies was considered necessary, in order to strengthen the hypothesis that the proposition replacement (and particularly the exploitation of salience) device is hardly ever misinterpreted, in contrast to the other devices.

Computer Mediated Communication (CMC) was selected as the source for the collection of the needed examples: CMC is text-based communication, conducted through networked computers, either real-time (instant messaging) or asynchronous (e-mail, message boards, comment sections etc., see Herring 2003). This medium was preferred because, apart from the advantage of the body of on-line texts functioning as a searchable corpus, it is a fertile ground for misinterpretations, since the lack of extralinguistic ironic cues makes the interpretation of irony a matter of dependence from linguistic and contextual information only. As research by Hancock (2004) has revealed, contrary to what would be expected from the lack of extra-linguistic cues and the consequent risk of miscommunication,
irony is not avoided in CMC, but it rather tends to be used to a greater extent than in face to face communication.

The first methodological step towards a quantitative and qualitative analysis of irony misunderstandings in CMC was to test whether all of the irony tactics analyzed in the present study (sections 2.4 and 3) are actually used in CMC. This could already be verified by searching the available compiled corpus, since it contains 170 instances of irony used in CMC. Among these, 97 belong to type 1 irony (meaning reversal) and 73 belong to ‘type 2’ irony (proposition replacement). As far as the contrastive use of salience is concerned, which, as described earlier, generally belongs to the second irony type, 13 instances of the salient versus non-salient (section 3.1) tactic and 9 instances of misplaced utterance (section 3.2) tactic were attested in the corpus. This makes a total of 30.14% (22/73) out of all ‘type 2’ ironies and 12.94% of the whole body of ironies coming from a CMC source (see Table 4.3).

<table>
<thead>
<tr>
<th>Type</th>
<th>Subtype</th>
<th>Instances</th>
<th>Percentage (of the CMC corpus: 170 instances)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Meaning Reversal</td>
<td></td>
<td>97</td>
<td>57.06%</td>
</tr>
<tr>
<td></td>
<td>salient vs non-salient</td>
<td>13</td>
<td>22 (30% of type2)</td>
</tr>
<tr>
<td></td>
<td>misplaced utterance</td>
<td>9</td>
<td>12.94%</td>
</tr>
<tr>
<td></td>
<td>Absurd statement</td>
<td>51</td>
<td>30.00%</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td>170</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

According to this evidence, it is assumed that ironies exploiting salience are normally present in CMC communication. Given their possibility of occurrence, the null hypothesis that logically follows is that ironies exploiting salience are relatively as possible to be misinterpreted as any other ironic strategies. Therefore, if it is found that this is not the case, the initial expectation that ironies using salience are more successful would be verified.

Since the above set of CMC examples contained in the collected corpus do not include enough evidence on successful/unsuccessful interpretation (the addressee's responses are either missing or not revealing the addressee's acknowledgment of the irony), a separate body of misinterpreted ironies occurring in CMC had to be collected, for the purposes of investigating the “success” of different types of irony.
A total of 50 dialogues containing misinterpreted ironies were found in on-line sources, both in Greek and English, collected with the criterion of conforming to the schema of the “third position repair” (term used by Conversation Analysis, Schegloff 1987:203) which is as in (16):

(16) [Position 1] Interlocutor A produces a turn [a] (ironic) with the intention to express [a’] (intended meaning)
[Position 2] Interlocutor B produces a sequentially appropriate response [b] based on his understanding of utterance [a]
   \textit{This response reveals to interlocutor A that his utterance [a] was not properly understood}
[Position 3] Interlocutor A performs an operation on the problematic utterance, which takes a fairly typical form “No, I don’t mean [a], I mean [a’]”

It was through searching for different possible variations of the repair phrase (“I was not serious”/ “I was being ironic”/ “You didn't get the irony” etc.) that all instances of misinterpretation were collected. Examples drawn from the data are presented in (17) and (18) below.

(17) Context: Comments on a music video on “youtube”.
   [A] This is true pirate music!
   [B] Do you really imagine pirates singing and dancing this techno pop thing?
   [A] Hell no, I'm just kidding.

(18) Context: Discussion on the U.S. government economy policy.
   [A] Government jobs aren't real jobs and don't produce anything.
   [B] Tell that to the safe drinking water you drink, the highway you drive [...], the FDA that recalls the drugs that if given to you will kill you, the Judges that protect your rights in court, etc.
   [A] I was being ironic [...] Sorry, I guess I didn't pull it off.

The results of this examination disproved the null hypothesis, since no occurrences of the salience-based ironies were found among the misinterpreted ironies. Moreover, as shown in the following section, the whole type to which these ironies belong (type 2: proposition replacement) is hardly ever susceptible to misunderstanding.

4.2.2. When does irony fail? A categorization of the unsuccessful ironies

The detection of the cause of misinterpretation of irony in the examined cases did not appear as an outcome of the existence of multiple competing meanings, as one might expect. On the contrary, misinterpreted ironies were
in their vast majority statements of the reverse of what was meant – interpreted literally due to the addressee’s incomplete knowledge of the speaker’s beliefs, experiences, tastes etc. – while the derived meaning did not contain any lexical ambiguities.

The body of misinterpreted utterances could clearly be divided into three categories of ironic sub-strategies shown in Table 4.4: the first two (echoed utterance and relative term) are sub-categories of the reversal strategy, while the third is a sub-category of the proposition replacement strategy. Given that distinction, a striking 92% (32%+60%) of the misinterpreted utterances belonged to the first general irony type (meaning reversal), while only 8% belong to the second (proposition replacement). It is worth noting that none of the misinterpreted ironies of ‘type 2’ appears to be using the particular strategies of contrastive salience that are the focus of this paper.

<table>
<thead>
<tr>
<th>Table 4.4 Categories of misinterpreted ironies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>echoed utterance</td>
</tr>
<tr>
<td>relative term</td>
</tr>
<tr>
<td>absurd statement</td>
</tr>
</tbody>
</table>

It was found that the most frequently misinterpreted ironies were those using the tactic of “echoic mention” (Sperber and Wilson 1995). This is easily justifiable considering that an echoed phrase is usually not unlikely to be uttered by someone else (the irony target, in particular) in the same context. Given the usual anonymity and/or lack of personal relationship between interlocutors in CMC, it is understandable why addressees considered the ironic utterance as a plausible literal contribution of the “speaker” (ironist). Example (18) above is one such case, since at a later stage of the dialogue the ironist makes clear that he was “making fun of the Republicans beliefs”.

Almost all the rest of misinterpreted utterances were cases of meaning reversal, the central element of which was some case of subjective judgment expressed by the use of adjectives, adverbs and various evaluative expressions (e.g. cheap/expensive, fast/slow, fortunately/unfortunately etc.). The misinterpretation of these is also justified by the lack of sufficient contextual and common ground information from the part of the addressee/reader.

Finally, it is worth noting that the very few instances of misinterpreted ‘type 2’ ironies examined, were cases which were not absolutely detached from reality and, therefore, the addressee interpreted them as mistakes of the “speaker”. For example, in (19) below the addressee believes that the
speaker's claim is due to a wrong estimation, although the ironist clearly uses an *if-then* proposition replacement tactic (see (7) and (8)).

(19) **Context:** Discussion on the view that many modern-day Greek politicians claim to have participated in the historic event of the “Athens Polytechnic uprising” (1973) against the military junta, in order to gain political credit.

[A] *Sto politechnio prepi na itan 4 ekatomiria mesa* in.the Polytechnic must to were3PL 4 million inside

‘There must have been 4 million (people) in the Polytechnic (occupation of the Polytechnic School building)’

[B] *4 ekatomiria? Liyo meyalos arithmos mu kani.*

‘Four million (people)? It seems a bit (too) big a number to me’

[A] *Ironika to ipa!* IRONICALLY7 itACC said1S

‘It was in an ironic way that I said it!’

This categorisation of misinterpreted ironies concurs with what can be seen as part of the wider categorisation of implicit meaning misinterpretation proposed by Yus (1999). He recognises three major factors of miscommunication at the level of the implicit: the lack of necessary contextual assumptions (which cause a “puzzled understanding”), the erroneous use of alternative contextual assumptions, and the hearer considering it unnecessary to search for a meaning other than the explicit (both of which lead to “an alternate understanding”). Yus (1999:512) considers the misinterpretation of irony as a consequence of the third factor. However, it is clear from this analysis that accepting the explicit meaning as the intended is a direct consequence of the (combination of) other two factors: a lack of necessary background assumptions, established common ground and indications of the speaker’s intentions. On the other hand, the success of type 2 ironies (and ironies exploiting salience in particular) can be attributed to the fact that none of these factors plays an important role in their understanding since the main clues for their recognition and interpretation are much stronger, being based on obvious contrasts (between meanings and between contexts) and counterfactuality.

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7. Focalized.
5. Discussion

5.1. Parallel access to multiple meanings

Going back to Nerlich and Clarke’s (2001) observations on the everyday use of polysemy, “juggling” with multiple (of different degrees of salience) meanings of a word has proven to be more efficient in the achievement of communicative goals (see Table 4.4) while also being generally considered more expressive. One of the cases in which polysemy becomes a tool instead of an “obstacle” for communication, is the use of the competition between salient and non-salient meanings as a device for irony.

The GSH maintains that it is a property of salient meanings to arise regardless of contextual bias. The claim of the present analysis is that the automatic access to salient meanings is only part of the discussed irony strategy, as it is the fact that salient meanings play the role of one of at least three potentially competing sources of lexical meaning that makes them exploitable by irony.

Does this observation implicate that all encoded meanings (both salient and non-salient) are accessed during meaning interpretation? The answer would have to take into consideration the ironist’s intention when employing such a tactic: a person intending to make use of a rhetoric strategy in conversation does not follow the usual path dictated by the “minimum processing effort”. In that sense, the ironist is prepared to make use of every tool language has to offer and, in particular, the phenomenon of polysemy and meaning contrast. Therefore, although it cannot be claimed that in any regular conversation even non-salient encoded meanings are accessed by the speakers, these are certainly accessible and available for a contrastive use against the more salient meanings, whenever speakers intend to seek and exploit such contrasts.

5.2. Salient meanings and salient contexts

The ironic effect discussed in section 3.2 is based on a contrast between the context that is primarily evoked by a conventionalised utterance and its context of use. This observation can lead to a more general claim regarding the relation between encoded meanings and contexts: an encoded meaning is also “attached” to a particular context of use.

Various arguments can be given in order to reinforce this claim, mainly coming from speaker’s behavior when asked to provide the definition of a word: for instance, a study conducted by Kecskes (2001) focuses on the fact that word meanings are not perceived out of context; when presented with a single “context free” word, a person always assumes the most salient context of use for this word - retrieving its most salient meaning.
As far as the degrees of salience are concerned, it can be assumed that the more salient the meaning, the more well defined the context it is related to: given that frequency of use is a key factor for salience, a salient meaning must be encountered in a large number of similar contexts, the information concerning which is enriched with every new encounter.

At this point, it is important to comment on the distinction between “private” and “common/collective” encoded context (see Kecskes 2008) and the respective “private” and “collective” side of salient meanings. Giora (2003:37) notes that salience can be relevant to the individual, while at the same time it seems reasonable that factors like frequency of use, conventionality and prototypicality contribute to a degree of salience which is shared by the members of a linguistic community. Therefore, we can argue that, for an individual, a meaning is mainly marked as salient depending on the contexts s/he has come across and is more familiar with, while at the same time, s/he shares some general intuitions on the salience of a meaning with the rest of the linguistic community. The salient meanings are not encoded independently of their contexts of use and, therefore, each individual “attaches” the particular contexts in which s/he has encountered a meaning to that meaning, while also making the necessary abstractions that enable the whole linguistic community to share the same categories of contexts in relation to specific salient meanings.

5.3. Where are salient meanings encoded?

The above observation on the requirement for salient meanings to be part of an encoded context (or scenario), brings us to the question about the mental component(s) in which such information can be stored.

Word meanings are generally considered to be stored in the mental lexicon, which is part of the language faculty and a source of input to the computational mechanism of language. However, by needing to be transparent to a computational mechanism, the mental lexicon would have to be rather minimal in extent, i.e. containing codified and computationally relevant information, thus not allowing entries that “carry” details such as descriptions of various contexts of use.

A more plausible candidate for this kind of information would then have to be the “encyclopedia”, which contains all of the person’s world knowledge. A hypothesized division of labour between the lexicon and the encyclopedia, as far as encoded lexical meaning is concerned, should be followed by an adequate description of the relationship between the two components. It is often proposed that there should be a cognitive path from the lexicon “listeme” to directly access encyclopedic information. Allan (1995:294) suggests that the lexicon entry is an “access point to the isomorphic set of encyclopedic entries, all of which are activated by
recognition of a listeme”. However, what is not easily resolved is the definition of the extent of each component: there are no clear criteria according to which we would be able to discern between information that should or should not be encoded in the lexicon.

In agreement with Kecskes (2008), the two components should not be viewed as static/stable lists of information, but their dynamic character should be emphasized instead: with every use, a meaning goes through the “dialectical” and “relational” interaction of encoded contexts on one part and actual/situational context on another, which ends up in the enrichment/update of the encoded information.

Given the above assumption, a sketch of a meaning organization model can be proposed. Each meaning can be seen as a “bundle” of multiple levels of information: (a) the computationally relevant (morpho-syntactic and semantic) information as well as the word’s phonetic/phonological form; (b) an abstraction (or “schema”) of the multiple possible meanings of the word, which is necessary for its application to novel contexts of use, and particularly, in cases of non-literal uses that require meaning shift (such as metaphor); (c) the contextualized meanings, which are characterized by various degrees of salience and “carry” different kinds and amounts of information concerning their different situations of use.

Although this three-level model does not necessarily reflect a modular view and a clear-cut lexicon-encyclopedia distinction, it is easy to assume that the richness of information contained in (c), which is related to the designation of salience, should be part of a wide enough mental component, unrestricted by matters of economy, unlike what the mental lexicon would presumably need to be.

6. Conclusion

According to Giora, ironies are components “divorced from the salient meanings of the utterances” and “rely heavily on contextual information for their derivation” (Giora et al. 2007:121). Although it is true that (in non-conventionalised ironies) the ironic meaning is not the salient meaning, it has been shown that the salient meaning can be involved in the production and interpretation of irony as a factor or trigger of the ironic strategy.

More specifically, I presented evidence that meanings of high degree of salience can be used in two different ways in order to create an ironic effect: either in direct contrast to other less salient meanings or by evoking a context which is in contrast with the context at hand. The analysis of discourse data strengthened the hypothesis that ironic utterances produced via this particular strategy are generally more successful than others, due to the addressee being able to recognize and retrieve the intended meaning by resorting to the strong and apparent contrast they contain.
Following the points raised in the discussion (section 5) there are two directions of possible further research on this matter: (i) a revision of the lexicon-encyclopedia relation in a model that incorporates the three proposed levels of information (the computationally relevant, the schema or abstraction and the contextualised meaning) and (ii) the experimental testing of the possibility that “salience in contrast” facilitates (i.e. makes not only more successful but also faster) the understanding of certain expressions, tropes and rhetoric devices such as irony.

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Chapter 5
Salience in language production

Istvan Kecskes

1. Introduction
As a semiotic notion, salience refers to the relative importance or prominence of signs. The relative salience of a particular sign when considered in the context of others helps an individual to quickly rank large amounts of information by importance and thus give attention to that which is the most important. We tend to over-estimate the causal role (salience) of information we have available to us both perceptually and linguistically.

Linguistic salience describes the accessibility of entities in a speaker’s or hearer’s memory and how this accessibility affects the production and interpretation of language. Several theories of linguistic salience have been developed, to explain how the salience of entities affects the form of referring expressions, as in the Givenness Hierarchy (Chafe 1976; Givón 1992; Gundel et al., 1993), or how it affects the local coherence of discourse, as in Centering Theory (Grosz and Sidner 1986; Grosz et al., 1995), or in Giora’s Graded Salience Hypothesis (1997; 2003) just to mention a few. I also include Jaszczyk’s (2005) concepts of ‘primary meaning’ and ‘pragmatic default’ in this list, because the latter also deals with salience, albeit from a somewhat different perspective.

Giora (1997; 2003) claimed that cognitively prominent salient meanings, rather than literal meanings, play the most important role both in production and comprehension of language. There are numerous works analyzing how salience affects comprehension but only a very little number of studies have focused on production. The main reason is that production is simply inherently more difficult to study. It is quite hard to design appropriate tests for the effects of salience on language production because we have access only to what is actually produced, not all the options that were left out. Despite this difficulty, some studies have made efforts to investigate the subject.
2. Former research

Clark Hull (1943: 229) was probably the first to tackle salience in production with his principles of behavior. He argued that in both comprehension and production, more salient meanings will be processed first. The idea that the attentional processing of the cognized world may somehow be reflected in how people organize their production and comprehension of sentences comes from studies by Osgood and Bock (1977) and MacWhinney (1977). The former study explicitly suggested that the referents’ salience status acting as an exogenous determinant of the distribution of speaker’s attention should promote the referents currently in focus to the prominent positions in a spoken sentence. MacWhinney’s study (1977) presented the “Starting Point” hypothesis. Although it is not specifically geared toward sentence production, the hypothesis predicts that one of the main factors determining the assignment of the prominent positions in a sentence is the interlocutor’s perspective or attentional focus.

Osgood and Bock (1977) distinguished three principles of salience: naturalness, vividness, and motivation of the speaker. All three principles are based on the assumption that more prominent or more salient items appear earlier in a sentence. Osgood and Bock argued that naturalness is exhibited in the fact that subjects almost always come before objects in languages around the world because the subject is more prominent than the object. This prominence often arises naturally from a series of relations. We should note here that there are subject-prominent and topic-prominent languages. Li (1976) distinguished topic-prominent languages, like Chinese and Japanese, from subject-prominent languages, like English. Topic-prominent languages have morphology or syntax that highlights the distinction between the topic and the comment (what is said about the topic). Topic-comment structure may be independent of the syntactic ordering of subject, verb and object like in Chinese. See for instance (1):

(1) Yuàn zì lǐ tíng zhè yì liàng chē.

In the courtyard is parked a car.

The topic of the sentence (defined as "old" information) takes precedence in the sentence. The sentence does not follow normal subject-first word order, but adheres perfectly to the topic-comment structure.

Vividness refers to the affective features of a particular element. The more emotional intensity a unit carries, the more likely it will appear earlier in the sentence. Emotional intensity naturally raises the level of prominence

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1. I owe sincere thanks to my student Matthew Parker who helped me collect information about former research.
for the speaker, making it only natural that such a movement should occur. See for instance (2) and (3):

(2) Never have I seen such a beautiful girl.
(3) To grandma’s house we go.

Motivation of the speaker relates to the prominence a speaker gives to a particular unit that otherwise may carry no special significance. This principle has been thought to carry the largest effect of the three principles. However, Osgood and Bock’s study claims otherwise. Naturalness was found to be highly regulatory in terms of ordering. The earlier occurring elements of an utterance will be more salient because they have more prominence in the mind of both the speaker and the hearer. Ordering is influenced by the salience prominence of the agent (for active relations) or figure (for stative relations). Orderings occurred as predicted in the various test situations. The basic hypothesis was that speakers around the world promote the more salient elements of an utterance to the beginning of that utterance. Osgood and Bock argued that this phenomenon derives originally from the unconscious forward movement of items which have inherent salience. Their study showed the effects of inherent salience consistently trumped those which would need to gain salience from speaker motivation. Speakers were shown to naturally front items which occur in a number of situations that inherently comprise an element of increased salience. These situations included cases of actors and instruments, which were found to be more active or potent (increasing their salience); animateness, for which living elements were always evaluated as more active and more meaningful than non-living ones; and for mobility, where mobile pieces were more salient than non-mobile ones (tongue vs tooth, animal vs vegetable, etc.). Palpability did not hold the same effect, as the more palpable elements were not found to be significantly more salient than their impalpable partners (cube vs square, ball vs smoke, etc.). Subordinates (September as compared to month, baby as compared to human, tarantula as compared to spider, etc.), however, were found to be considerably more salient. Since inherently salient items naturally move to the beginning of utterances, it makes sense that this trend would be continued when the salience of the element in question is not inherent. Human speech production is expected to follow a principle that is already naturally in place. The claim made by this principle has effects that reach well beyond these observations.

The analysis of the experimental data revealed that (1) speakers tended to use naturalness as the main determinant of the order of mentioning in the sentence (in other words, they relied heavily on the natural event causality and the canonical grammar of English), (2) Agents were more likely to be mentioned before Patients, and that (3) referents of a higher vividness status were more likely to be mentioned before the ones of a lower vividness
Salience in language production

status. Osgood and Bock (1977) contrasted their findings to the well-known tendency of the old discourse information to appear before the novel material. They claimed that control of the ordering through givenness is not as powerful as the same process driven by the factors related to “naturalness” and “vividness”. They, however, acknowledged that the problem with this interpretation is that the “perceptual” properties of the referents, such as vividness were derived solely from the lexical ratings. Whether such vividness reflects a tendency for a preferential perceptual treatment of corresponding world referents is not at all clear.

Languages around the world further demonstrate the fronting of salience-high elements through topicalization (see example 1), which very frequently is manifest through forward movement – the element intended to have the greatest salience or importance is placed at the beginning of the sentence, regardless of its grammatical category. In configurational languages a syntactic change accompanies this movement; in non-configurational languages such a change is unnecessary as the relevant morphemes still clarify the meaning of the sentence. English (configurational):

(4) Peter has broken the glass. It was Peter who broke the glass.

   (structural change)

Russian (non-configurational):

(5) Petr razbil stakan. Stakan razbil Petr. (word order change)

This movement appears to follow the theory of naturalness primarily through generative effects – speakers consider whatever they have topicalized to be most salient in their utterance, and therefore simply follow the standard rules of the principle of naturalness and promote that item to position prominence. Though this explanation makes some sense, Osgood and Bock (1977) made an interesting distinction. They claimed that elements whose high salience is the result of speaker cognition rather than inherent attribution are categorized differently. Osgood and Bock proposed a theory concerning motivation of the speaker, which includes a host of salience effects which closely mirror those of the principle of naturalness in many aspects but were shown to differ in some key ways. Their study showed that differences might exist between the processes that apply to inherently or motivationally salient items. Osgood and Bock (1977) found that elements of inherent salience have a stronger effect on ordering than elements of motivated salience. This claim basically coincides with what Giora says in her graded salience hypothesis (Giora 1997; 2003). However, further research is needed especially in production because speaker’s emergent motivation could easily overcome the effects of inherent salience in ordering in the process of communication. We can topicalize any element of a sentence that we feel is most important, so shouldn’t what we feel is
important trump whatever effect naturalness has? We will return to this question later.

Continuing on the work of Osgood and Bock, Rosemary Stevenson (2002) studied referent generation from the perspective of salience. Her findings were rather clear in demonstrating that salience does affect the choice of whether someone will refer to an entity in an utterance, though they went into further detail in a number of areas. Osgood and Bock’s principles of vividness and naturalness are again confirmed in this study, though Stevenson adds to the idea some relatively new elements. Animacy was found to be a deciding factor in salience – verb-evoked salience (from implicit causality verbs and the like) and proximity salience are only applicable when the subject is animate. Inanimate subjects failed to carry the salience required to properly trigger the naturalness or vividness principles.

Stevenson (2002) also proposed a theory of salience effects blended with the Centering Theory (Grosz and Sidner 1986). Her work dealt primarily with the generation of pronouns. Centering Theory posits two local discourse centers, Cf (which is forward-looking) and Cb (which is backward looking). The Cf is used to introduce entities, whereas the Cb is used to refer back to previously mentioned entities. Since multiple Cfs can occur in a single utterance, the most salient of these is also identified. This is labeled as the Cp, or “preferred center”. Several methods have been proposed for ranking Cfs, but current research is trending towards structure being the main factor, with ranking determined by order of occurrence – that which comes first is ranked highest. This fits very well with Osgood and Bock’s (1974) theory of naturalness.

So what do Cfs and Cbs have to do with salience and production? Stevenson (2002) claims that the Cb will be present in the choice of what referent a pronoun takes – whichever realized Cf from the previous utterance (Un-1) is the highest ranked will be the referent for the Cb in the current utterance (Un). Gordon et al. (1993) made the claim that the pronominalization of the Cb actually increased the coherence of the discourse as it forces relational cohesion in the mind of the listener – using a pronoun naturally makes the listener have to go back and relate the previous utterance to the current one. If the pronoun is left out in favor of an actual name, it may suggest to the listener that the sentences are somehow not meant to correlate, as the interpretation can be that this is a Cf instead of a Cb. In a study by Stevenson et al. (1994), it was found that the salience of the antecedent in Un-1 affected the choice of entity referred to in Un, but not how it was referred to, which was chosen instead by the grammatical role of the entity. Stevenson also claimed that “the choice of who to refer to in an utterance depends on the salience of the entity in the speaker’s mental model of the preceding utterance” (Stevenson 2002:188).
3. The socio-cognitive framework

Salience in language production will be discussed in a socio-cognitive framework (SCA) that was proposed by Kecskes (2008; 2010). This approach unites the societal and individual features of communication, and considers communication a dynamic process in which individuals are not only constrained by societal conditions but they also shape them at the same time. SCA emphasizes not only the role of co-construction but also the importance of individual prior knowledge as basis of salience in the interaction. It points out the complex role and interplay of social and cultural models and private individual mental models, and how these are applied categorically and/or reflectively by individuals in response to socio-cultural environmental feedback mechanisms, and how this leads to and explains different meaning outcomes and knowledge transfer. In meaning construction and comprehension individuals rely both on pre-existing encyclopaedic knowledge based on their prior experience and current knowledge co-constructed by interlocutors in the process of interaction.

In the socio-cognitive paradigm communication is driven by the interplay of cooperation required by societal conditions and egocentrism rooted in prior experience of the individual and triggered by salience. Consequently, egocentrism and cooperation are not mutually exclusive phenomena. They are both present in all stages of communication to a different extent because they represent the individual and societal traits of the dynamic process of communication (Kecskes 2010). Recognizing the importance of egocentrism of speaker-hearers, the socio-cognitive approach is a synthesis of cooperation-centered view of communication and the egocentrism-based cognitive psychological approach.

We need to make a difference between a conscious type of egocentrism that is driven by preferences of the speaker as discussed in the relevance theory (e.g. Sperber and Wilson 1995), and a subconscious, automatic speech behavior of the interlocutor that cognitive psychologists talk about. Several researchers (e.g., Keysar and Bly 1995; Barr and Keysar 2005; Giora 2003) have indicated that speakers and hearers are egocentric to a surprising degree, and individual, egocentric endeavors of interlocutors play a much more decisive role in the initial stages of production and comprehension than current pragmatic theories envision. Their egocentric behavior is rooted in the interlocutors’ suggested greater reliance on their own knowledge instead of mutual knowledge. Egocentrism means that interlocutors activate and bring up the most salient information to the needed attentional level in the construction (by the speaker) and comprehension (by the hearer) of communication. Consequently, the speaker will use the linguistic resources (e.g., lexical units, syntactic structures) which s/he thinks are most salient for expressing his/her
communicative intentions and/or goals; similarly, the hearer will cooperate by capturing those salient units and assigning them a proper place in the communicational process. Because of their different knowledge bases, the frequency/rituality of their knowledge in the situation, and the attendant attentional resources available to them for processing the salient items, the interlocutors’ knowledge has different levels of salience; as a result, they conduct the attentional processing of communication in an egocentric manner, as for instance in (6).

(6) Chris’s friend Peter arrived by plane and Chris met him at the airport.
    Chris: Are you hungry?
    Peter: I had something to eat on the plane. I am OK.
    Chris: All right. Let’s go to a Wendy’s.

In this conversation Peter’s utterance “I had something to eat on the plane” can be interpreted in three different ways: kind of hungry, not hungry, don’t really know. However, his adding “I am OK”, points to implying “not hungry”. Chris either misses this interpretation or thinks that his friend needs encouragement. Or, maybe, he is hungry himself. In any case his suggestion to go to a Wendy’s does not quite match Peter’s intention.

In the socio-cognitive approach (Kecskes 2008, 2010; Kecskes and Zhang 2009) communication is characterized by the interplay of two traits that are inseparable, mutually supportive and interactive:

<table>
<thead>
<tr>
<th>Individual trait:</th>
<th>Social trait:</th>
</tr>
</thead>
<tbody>
<tr>
<td>attention</td>
<td>intention</td>
</tr>
<tr>
<td>private experience</td>
<td>actual situational experience</td>
</tr>
<tr>
<td>egocentrism</td>
<td>cooperation</td>
</tr>
<tr>
<td>salience</td>
<td>relevance</td>
</tr>
</tbody>
</table>

Communication is the result of interplay of intention and attention motivated by socio-cultural background that is privatized individually by interlocutors. The socio-cultural background is composed of encyclopaedic knowledge of interlocutors deriving from their prior experience tied to the linguistic expressions they use and current situational experience in which those expressions create and convey meaning.

The socio-cognitive approach integrates the pragmatic view of cooperation and the cognitive view of egocentrism, and emphasizes that both cooperation and egocentrism are manifested in all phases of communication to a varying extent. While cooperation is an intention-directed practice and measured by relevance, egocentrism is an attention-oriented trait and measured by salience. Intention and attention are identified as two measurable forces that affect communication in a systematic way. The measurement of intention and attention by means of relevance and salience is distinct from earlier explanations (e.g. Sperber and Wilson 1995; Giora 2003).
4. Utterance generation in SCA

SCA demonstrates a functional and/or cognitive view of utterance production, according to which utterance structures reveal the cognitive processes involved in the preparation and production of sentences. Basic cognitive operations such as memory retrieval and attentional tracking of entities therefore become important phenomena underlying aspects of utterance production.

By producing an utterance the speaker makes a commitment to some information or action s/he can be held accountable for. However, the degree of speaker’s commitment and accountability varies between saying and implying. Haugh (2010) argued that where two (or more) interlocutors co-construct what is said, the speaker generally holds him/herself accountable for that interpreting, while in the case of implying, where two (or more) interlocutors co-construct an implicature, the degree to which the speaker should hold him/herself accountable for that interpreting is often more open to discussion. This is what happens in example #5. Haugh added that he did not want to suggest that speakers are always held less accountable for meanings achieved through implying, because implicatures cannot always be legitimately cancelled (Burton-Roberts 2006; Jaszczolt 2009). Instead, he proposed that a richer understanding of speaker meanings may be derived through greater exploration of the ways in which interlocutors create meanings in interaction.

4.1. The mechanism

In order to explain sentence production SCA adopts Levelt’s modular approach to explain perceptual, conceptual, and linguistic processes during production of sentences in different languages (Levelt 1989; Bock and Levelt, 1994). The model includes three levels or stages of sentence generation distinguished as (1) MESSAGE component, (2) GRAMMATICAL component, and (3) PHONOLOGICAL component, or ARTICULATOR (see Figure 5.1 adopted from Bock and Levelt, 1994). Accordingly the production stages are as follows:

PERCEPTUAL (from perceptual analysis to rapid apprehension) → CONCEPTUAL
(from lemma selection to lexical access) → LINGUISTIC (from lexical retrieval to phonological encoding).
Each of the processing stages receives input from the preceding level. As the first step of producing an utterance, a communicative intention is created. This intention is called a message (cf. Garrett, 1975). At the message stage, pre-verbal thought (intention) is processed, and organized into a conceptual scheme of the event before any linguistic processing occurs. It is at this message level where salience comes in as an important factor. The perceptual effects are supposed to be the most active here biasing conceptualization of the event according to the event’s salience map. The message captures features of the speaker’s intended meaning and provides the raw material for grammatical encoding. The grammatical component has two sub-stages: functional processing level and positional processing level. The functional level is responsible for word selection: selecting *lemmas*. Lemmas are “amalgams” of an individual lexical concept’s properties including its semantic representation and its morpho-syntactic features (cf. Myachykov 2007). However, lemmas are not yet lexical forms. This is also the level where grammatical functions, like Subject and Object are assigned. Lemmas and grammatical function information are fed into the positional sub-component. At this sub-level
representations of words are sequentially inserted into a sentence structure that later becomes fixed as the order of the elements in an utterance. This ordering may not be imposed during functional processing. Evidence for this comes from different types of errors. For instance, according to Garrett (1982) quoted by Myachykov (2007), when sounds are exchanged, they originate in the same phrase 87% of the time as opposed to whole word exchanges that occur within the same phrases only 19% of the time. Finally, at the phonological level, the phonological forms for the words are retrieved and an overt utterance is produced.

4.2. Selection and ordering

What determines the selection of words to put the preverbal thoughts into? Past and current research has focused mainly on the formal and structural issues of selection and ordering asking the questions: What facilitates the choice of a structure and the ordering of the sentence constituents during the production of utterances? However, according to SCA conceptualization and the concept/word (lemma) interface plays a crucial role in shaping structures. Selected words require/facilitate particular structures and not vice versa. Structural variability depends on the selected words. Before this is explained we need to review findings on the formal and structural selection and ordering.

Evidence from some previous studies points to the role of salience and the distribution of attention in planning and formulation of sentences (e.g. Myachykov 2007; Tomlin 1997; Stevenson 2002). Speakers seem to actively take into account the attentional status of the referents in the scene when they decide what to say first and, depending on that, what structure to use to organize the sentence (Myachykov and Posner, 2005; Myachykov 2007; Garrod and Pickering, 1999; Sanford, 2001). But several other factors have also been found to influence the accessibility of words and, therefore, their ordering in sentences. Those factors comprise also the ones that are related to the referent’s conceptual status: novelty in discourse, animacy, concreteness, definiteness, imageability, and prototypicality.

The role of salience and distribution of attention as primary factors affecting selection and ordering is somewhat contradicts to the traditional view commonly shared in linguistics: “The (sentence) constituents move to certain positions because of their discourse function interpretation” (King, 1995: 63). This approach is based on the assumption that the assignment of the syntactic positions in a clause is based on the functional opposition between clause-level theme and rheme, topic and comment, and/or the referents’ semantic roles, like agent and patient. Traditionally, starting from the Prague school of linguistics (e.g. Mathesius, 1929; Firbas, 1965; Daneš, 1970) continuing with Halliday (1985) the notion of theme is associated
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with the element “what one is talking about, the topic,” while the rheme is “what one says about it, the comment” (Daneš, 1970). In this framework the subject of a sentence frequently acts as the syntactic counterpart of the theme or topic of the utterance. But there may be other structures that highlight the theme through means such as clefts and dislocations.

Functional interaction between discourse elements is generally realized as the hierarchy of semantic roles. Fillmore (1968) used the term “agent” to denote a doer of the action while the term “patient” referred to an experiencer of the agent’s action. According to this view the semantic agent is the most likely candidate to take the position of syntactic subject of a sentence. This is usually so in configurational language such as English, as for example in (7):

(7) Because of the rain the driver could hardly see the road.

This is not necessarily the case in non-configurational languages such as Russian, Turkish, Hungarian, etc. (8) is an example from Russian:

(8) Mne nravits’a Masa. (I like Mary).

In order to understand what makes one referent more prominent than another, why some referents (or, more broadly, concepts) receive preferential treatment by the processor we need to attend to the notion of conceptual accessibility (Bock and Warren, 1985) which is related to “codeability”, “imageability”, “retrievability”, etc. Bock and Warren said that “Conceptual accessibility is the ease with which the mental representation of some potential referent can be activated in or retrieved from memory” (Bock and Warren, 1985: 50). Sanford and Garrod (1981) developed a similar approach. They claimed that one important function of maintaining coherence in discourse is to constantly perform a successful search for discourse-relevant referents in the memory of the interlocutors. They called such referential situation a scenario. They argued that referents which form part of the current portion of the discourse, and, therefore, are actively maintained in the memory, are more easily (or quickly) accessible than the referents that do not correspond to the current topic of discussion (see Myachykov 2007). Levelt (1989) also expressed a similar idea. He related the production of referring expressions to the level of the accessibility in terms of the addressee’s mental state.

As mentioned above, the information flow in discourse can be divided into old or given information and new information. The term givenness represents the knowledge shared between the interlocutors. Consequently, the given information is that which the speaker believes to be known by the hearer. In contrast, the new information is the information the hearer r is unfamiliar with (cf. Clark and Haviland, 1977; Halliday, 1967/1968, Haviland and Clark, 1974). A quasi-psychological view on givenness
suggests that given versus new distinction correlates with the notion of cognitive activation of the concept. Chafe (1976: 30) said that “Given (or old) information is that knowledge that the speaker assumes to be in the consciousness of the addressee at the time of the utterance. So-called new information is what the speaker assumes he is introducing into the addressee’s consciousness by what he says.” In fact, here, Chafe implicitly referred to the issue of salience and memorial activation. Explaining what makes the referent given or new he argued that the new information is “newly activated” at a given point in conversation, while the old information is the one that does not require such activation (Chafe, 1994:72). Such activation status, among other things, depends on the speaker’s perspective affected by the salience of the processed material.

5. Conceptual accessibility and salience

5.1. Dimensions of conceptual accessibility

Prat-Sala and Branigan (2000) distinguished two dimensions of conceptual accessibility (CA): inherent and derived accessibility dimensions. Inherent accessibility is based upon the intrinsic properties of the concept, such as word frequency status, familiarity, animacy, concreteness, and prototypicality. These are the features the concepts possess regardless of the interlocutors’ intentions and the current discourse status of the corresponding referents. The derived accessibility is a temporary property of the concept that is dependent on the referent’s current activation status in both linguistic and non-linguistic terms. The derived accessibility is driven by various means of priming such as vividness, speaker motivation and recency of mention. These two CA dimensions can overlap at any given time in discourse if the inherent prominence status is supported by the current, derived prominence status. On the other hand, the contributions of the inherent and derived accessibility forces can be contradictory if the prominence promoted by priming is not supported by the inherent prominence status of a referent. This approach introduces both the global and the local levels for the CA effects to appear.

Inherent and derived accessibility looks similar to what Pattabhiraman (1993) called canonical salience and instantial salience. The former is a natural, built-in preference which is inherent in the general conceptual knowledge and linguistic knowledge of the speaker. Canonical salience is rooted in prelinguistic perceptual experience and has resemblance to Osgood’s naturalness. Instantial salience arises in the generation context because of a number of factors, such as vividness, speaker’s motivation, recency of mention. Pattabhiraman also mentions that the interaction
between canonical salience and instantial salience (between built-in factors and situationally arising factors) is a crucial issue of language production.

5.2. Salience in SCA

SCA distinguishes three types of salience: inherent salience, collective salience, and situational salience. The notion of inherent salience is close to what Prat-Sala and Branigan (2000) called inherent accessibility and Pattabhiraman (1993) referred to as canonical salience. Inherent salience is characterized as a natural preference built into the general conceptual- and linguistic knowledge of the speaker; it has developed as a result of prior experience with lexical items, and changes both diachronically and synchronically. Inherent salience is affected by the two other types of salience. Collective salience is shared with the other members of the speech community, and changes diachronically. Actual situational salience is similar to “derived accessibility” of Prat-Sala and Branigan (2000) and instancial salience of Pattabhiraman (1993). It changes synchronically, and refers to the salience of specific objects and linguistic elements in the context of language production. Situational salience may accrue through such determinants as vividness, speaker motivation, and recency of mention. In an actual situational context, inherent salience is affected and shaped both by collective and situational salience. The following (source: British sitcom) example serves to show the role of salience both in production and comprehension:

(9) Jill: I met someone today.
    Jane: Good for you.
    Jill: He is a police officer.
    Jane: Are you in trouble?
    Jill: Oh, no.

Jill met someone who was a policeman. Conforming with our society’s collective salience, the concept of ‘policeman’ is identified with some kind of trouble. However, this understanding of the concept is privatized in Jill’s case and acquires a positive overtone, as the result of her positive (maybe even romantic) encounter with the policeman. Jane did not have this experience, so she processed the word in accordance with its collective salience, as privatized by her in the given situation. What the speaker meant differed from what the hearer inferred from the same utterance. The difference is the result of the concept’s different privatization, based on prior experience.

Actual situational salience refers to the salience of situational constraints that can derive from factors such as obviousness, vividness, recency of mention, and others. The cashier’s “how are you doing today?” question in a
supermarket requires only a short “fine, thank you”. The salience of the situ-
situation makes the function of the expression obvious. However, actual situational salience can be overridden by both collective salience and inherent salience. In the following example, situational salience is overridden by a collective salience, individualized similarly by hearer-readers.

(10) (Sign on the door of a department store)
“Girls wanted for different positions.”

Not even the actual situational context and environment can subdue the sexual connotation of the sentence. As Giora (2003) claimed, both salient information and contextual knowledge run in parallel, and salient, but contextually inappropriate information may not be discarded. A similar example comes from one of Robin Williams’ films, where the hero says: “I had to sleep with the dogs. Platonically, of course…” The speaker thinks that the sexual connotation of “sleep with” is so strong that a clarification is necessary.

5.3. Competition between inherent and actual situational salience

Figure 5.2
From a theoretical perspective, it is also difficult to reconcile the attended first (instantial salience, situational salience) with the given-before-new (canonical salience, inherent salience) hypothesis. Bock, Irwin, and Davidson (2004) provide a comprehensive account of this theoretical controversy. They claim that “the focused first” and “the old first” proposals are contradictory because the information that attracts the focus of attention is typically the new elements of the scene, whereas givenness promotes the already established background. The lexical-semantic factors (e.g. old-before-new) and the perceptual factors (e.g. focused/attended first) should, therefore, produce competing effects. However, this is not necessarily so in the socio-cognitive paradigm. Prior experience also plays some role in attention-getting, i.e., what the focus of attention becomes. Inherent salience (old-before-new) and situational salience (focused-first) are intertwined and affect each other continuously in the communicative process. The strongest communicative effect is reached when there is no competition between the two, like in the advertisement in Figure 5.2. Not only actual situational salience but also perceptual inherent salience direct (especially males’) attention to the girl in the advertisement. The note “girl not included” aims to decrease or cancel this powerful saliency. Male mind-set, based on prior experience directs attention to the female character just like actual situational salience does. This affect, however, is hardly present in the case of female recipients, which demonstrates the different privatization of saliency.

6. Differences between SCA and the Graded Salience Hypothesis

SCA relies mainly on the Graded Salience Hypothesis (GSH), but it does not accept all of its tenets. GSH basically is hearer-centered, while SCA focuses on both production and comprehension. GSH deals with lexical processing, whereas SCA’s concern is both lexical unit meaning and utterance meaning. In contrast, SCA distinguishes inherent salience, collective salience, and actual situational salience. While GSH uses ‘context’ in the sense of actual situational context, SCA emphasizes the difference and interplay between prior context, encapsulated in the utterance formulation, and actual situational context.

The main claim of the GSH is that salient information is superior to less salient information and often (Giora, 2003: 15), though not always, to unstored information, such as novel information or information inferable from context (see Giora, 2003: 10-11; Peleg, Giora and Fein, 2001). As a consequence, salient meanings of lexical units (e.g., conventional, frequent, familiar, or prototypical meanings) are processed automatically, irrespective of contextual information and strength of bias. Although context effects
may be fast, they run in parallel with lexical processes and initially do not interact with them (Giora, 2003: 24).

According to the GSH hypothesis, in language processing both salient information and contextual knowledge run in parallel, and salient information may not be filtered out even when it is contextually inappropriate. This claim basically questions context-dependency that is one of the main tenets of current pragmatic theories. While salience, according to the GSH, mainly concerns the storage of knowledge as a function of degree of familiarity, frequency, prototypicality and conventionality, salience in SCA refers to the contingent effect of salient knowledge as a result of the attentional processing of communication in a particular situation, which facilitates or hampers the expression of intention and the subsequent achievement of communicative effects.

Another significant difference between GSH and SCA is that the GSH emphasizes the importance of stored information, while SCA considers salience to be both a stored (inherent salience) and an emergent entity (actual situational salience). According to the GSH (Giora 2003:15), for information to be salient – to be foremost on a person’s mind – it needs to undergo consolidation, that is, to be stored or coded in the mental lexicon. Stored information is superior to unstored information, such as novel information or information inferable from the context: while salient information is highly accessible, non-salient information requires strongly supportive contextual information to become as accessible as is salient information. Giora seems to equate salient information with consolidated/stored information and nonsalient information with unstored information. This, to me, is somewhat questionable because it considers salience as a relatively static entity. In contrast, SCA emphasizes that salience is in a continual state of change both diachronically and synchronically. What is ranked ‘most salient meaning’ at the present moment may die off after only a few decades. An example of such diachronical change is the word ‘gay’, whose most salient meaning in the 50s of the past century was ‘joyful’; nowadays, this meaning would rank below that of ‘homosexual’. Salient information can be ‘disconsolidated’ when its salience dies off and the information in question ends up as less salient or non-salient.

7. Salience as guiding mechanism in language production

The role of salience in language production involves a ranking relation of prominence of entities, as well as a preferred choice among alternatives. When the speaker is faced with having to choose a word or an expression, a ranking of the available choices is obtained on the basis of the degree of salience of entities in the context of generation. The word or phrase then is selected for utterance on the basis of maximum salience. Once a speaker has
either an *a priori* or an emergent, co-constructed intention to communicate, s/he should find an appropriate linguistic representation to transfer this message to the hearer. The message of the preverbal thought is made up by combining the concepts that the speaker intends to *explicate*. Concepts are attached to several possible frames. When a preverbal thought is formulated, the related schemas will be activated. Jackendoff (2002) claimed that concepts have no direct, one-to-one connection with lexical items. A concept may be associated with several lexical expressions, and conversely. The process of transforming preverbal thought into linguistic expressions varies among different speakers because they have several options to explicate their intentions.

Kecskes (2008:401) argued that there is a difference between speaker processing and hearer processing. When a lexical unit (labeled for private context) is used by a speaker, private contexts attached to this lexical expression are activated top-down in a hierarchical order based on salience. This hierarchical order works differently for the speaker and the hearer. For the speaker, there is primarily an inter-label hierarchy, while for the hearer the intra-label hierarchy comes first. The *inter-label hierarchy* operates in the first phase of production, when a speaker looks for words to express her/his intention. First, s/he has to select words or expressions from a group of possibilities in order to express his/her communicative intention. These words or expressions constitute a hierarchy from the best fit to those less suited to the idea s/he is trying to express. The hearer, however, has to cope with a different type of hierarchy from her/his perspective. Thus, an *intra-label hierarchy* is in force when the hearer processes (a) lexical unit(s) in an utterance (or even an entire utterance). The label (word) uttered by the speaker hierarchically triggers the history of that particular label as used by the hearer (but not by the speaker). This may also be a reason for misunderstanding in the communicative process. Compare the following (source: American sitcom) interchange in (11).

(11) Bob: Are you OK?
   Mary: I am fine.
   Bob: I know you are fine, but are you OK?

Bob had several options to ask about Mary’s well-being: “Are you OK?”, “Are you fine?”, “Is everything all right?”, etc. His selection of “Are you OK?” caused a slight misunderstanding between the two because they interpreted “OK” differently.

The mechanism of putting preverbal thought into linguistic expressions is a process of privatization of the actual situational context. In fact, this process contradicts Grice’s notion of “what is said”. For how can a truth-conditional semantic meaning be transferred from speaker to hearer without any change? Both processes, the speaker’s utterance production and the
hearer’s interpretation, are highly personalized/privatized, and are the re-
results of the interplay of inherent salience and actual situational salience.
Both speaker’s production and hearer’s inference comprise lexical processes
and contextual processes that run parallel and are governed by salience.
Speaker’s utterances often undergo corrections showing speaker’s attempts
to adjust to the context en-route. Similar processes occur in comprehension.
Utterance interpretation hardly consists of just those two modules, as the
Griceans maintain. Inferencing/interpreting is a trial-and-error process on
the part of the hearer who tries to make sense of speaker intention.

8. Conclusion

This paper has presented a socio-cognitive approach to utterance production
that is based on salience as a guiding mechanism. It was argued that salience
is both an individual and a societal phenomenon. Prior and actual situational
experience is privatized and prioritized in the mind of interlocutors. Their
different prior experiences, their different evaluations of the actual
situational context, their dynamically changing intentions and individual
degrees of salience result in a personalized process of production and
comprehension. As a result, there may be no single point in the recovery
process at which speaker’s utterance fully matches hearer’s interpretation.
This is because both speaker’s production and hearer’s interpretation are
‘contaminated’ by individualized pragmatic elements. Pragmatic enrichment
processes work differently for speaker and hearer. Consequently, the match
between the two sides keeps varying in the communicative process. This is
why we think that “we almost always fail […]. Yet we almost always nearly
succeed” (Rapaport 2003: 402). And this is why a pragmatic theory should
be both speaker- and hearer-centered. Speaker’s production should be
analyzed in its own right.

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Chapter 6

On salience and enrichment in expressions of negation

Alyson Pitts

1. Spoken negation in a corpus of English

This paper reports on a revised communicative scheme developed by Pitts (2009), applied here to negation in everyday spoken English. The data for the study is provided by the British component of the International Corpus of English [ICE-GB]; a one-million word electronic corpus of spoken and written texts collected between 1990–1993 and (re)released in 2006.

Focusing on the behaviour and effects of negation in spontaneous discourse, the current venture is restricted to exploring the spoken component of ICE-GB,2 which in itself features 600,000 words of English from a variety of discourse contexts, including ‘private’ dialogues such as direct conversations and telephone exchanges, and ‘public’ dialogues in the form of broadcast discussions, legal proceedings, and speeches.3 This in turn presents over seventy-two hours of speech data for evaluation, on account of which the present study is limited to all (and only) negative tokens within the corpus realised by the principle negator ‘not’ or the contracted enclitic ‘-n’t’. With a basic lexical search giving rise to 2822 and 5074 tokens respectively, any remaining instantiations of negation (beyond explicit ‘not’ and ‘-n’t’, such as prefixal un-, in-, im-; also never, neither, none alongside negation construed in a much broader sense, conveying an implied negative flavour) are excluded from the present investigation.

The present study is intended to illustrate (and evaluate) the communicative scheme suggested by Pitts (2009) through its application to real discourse data. In doing so, this may serve as a means to identify and

1. Sincere thanks to Kasia Jaszczolt, Johan van der Auwera and Billy Clark for feedback and discussion on an earlier version of this material.
2. Cf. Tottie (1982/1991) for a corpus-based comparison between spoken and written negation in English; also discussed in §7.1.
3. See Nelson, Wallis, and Aarts (2002) for detailed information about ICE (GB); including a full summary of particular discourse settings. Information is also available at http://www.ucl.ac.uk/english-usage/projects/ice-gb/
distinguish different ‘threads’ of negation in the corpus data under investi-

1.1. A revised communicative scheme

Pitts (2009: 66–69) endorses the magic number three in promoting a revised

1.2. Applying the scheme to negation

Having briefly acknowledged this revised trichotomy for everyday English

communication, we may now be in a position to respond to the need for an

empirical application of the scheme developed by Pitts (2009). While

constructing homemade examples may conveniently serve to illustrate the
scheme, a more convincing means of testing the adequacy of such a pragmatic programme arguably invites its application to language in use. This might be achieved through reconciling the modified trichotomy with negation in discourse; by exploring the extent to which we can correspond any of the tiers from Figure 6.1 with what is being negated in each instance. Examples in which these communicative bands are directly targeted by the negation operator may then be taken to give rise to type-α, β, or γ negation, respectively:

α: Negation of a basic utterance level entity  
β: Negation of a ‘constrained’ propositional completion or expansion  
γ: Negation of an ‘unconstrained’ conceptual/mental entity

By this formulation, these three potential allocations crucially depend on the immediate discourse context (in contrast with a necessarily grammatical criterion) for their identification. Similarly, with the utility of ICE-GB for the current study lying in its ability to provide a wealth of readily accessible spoken material for evaluation, as a wholly pragmatic and functional study, the present venture doesn’t purport to do adequate justice to the potential grammatical utility of the corpus. At this juncture, it is also worth emphasising that the present aim is not to promote a new terminological artillery, but to better understand and evaluate the communicative tiers proposed by Pitts (2009: chapter 3) through their attempted reconciliation with real language data.

Upon first encountering ICE-GB, Figure 6.2 shows the basic concordance from a lexical search for ‘not’ in the spoken component of the corpus, as presented by the corpus utility programme [ICECUP]. In order to assess whether any of the proposed communicative bands were being negated in each case, I then reviewed every available token in the corpus in search of material in the local discourse context providing an antecedent to
Figure 6.2. Initial concordance for 'not' in spoken component of ICE
which the negated material could be pragmatically (anaphorically) bound – whether explicitly, or through implicit ‘bridging inference’ (cf. Asher and Lascarides 1998). Figure 6.3 shows an expanded context for a select example from Figure 6.2 (deemed type-β in §2.24).

Taking each token (as in Figure 6.2) and its immediate discourse context (as in Figure 6.3) into consideration, Figure 6.4 shows the first seven tokens from ICE-GB for the lexeme ‘not’ imported into my own data table (all such allocations are explained in due course).

These data tables therefore contain features not shared by ICECUP; perhaps most notably that each example in Figure 6.4 comprises of three lines, consisting of the negative clause under evaluation (the central line), preceded and followed by relevant/associated conversational contributions.

4. See (13).
<table>
<thead>
<tr>
<th>No.</th>
<th>Dialog.</th>
<th>Text</th>
<th>Pre-text, Negative clause, Correction/reinforcement clause [where available]</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S1A-001</td>
<td>005</td>
<td>Did you not Can you just</td>
<td>n/a</td>
</tr>
<tr>
<td>2</td>
<td>S1A-001</td>
<td>030</td>
<td>What sets it apart is that there is a sense that nobody is left out of this group  This is a dance group which does not exclude people</td>
<td>γ</td>
</tr>
<tr>
<td>3</td>
<td>S1A-001</td>
<td>055</td>
<td>How do the able-bodied members of the Mike Heath group feel about working with the disabled people // I think that the problems of working together are not just for the able-bodied people but equally for disabled people coming to work ... with able-bodied</td>
<td>γ</td>
</tr>
<tr>
<td>4</td>
<td>S1A-001</td>
<td>065</td>
<td>when people hear about the group and say I'd like to but I'm just not sure about ... how I can dance what I can do</td>
<td>γ</td>
</tr>
<tr>
<td>5</td>
<td>S1A-001</td>
<td>080</td>
<td>So ... you see it as art as another dance form within its own right // Absolutely / Uhm that's not to say that there aren't in inverted commas therapeutic side effects or therapeutic effects ... from the dance</td>
<td>γ, v, l</td>
</tr>
<tr>
<td>6</td>
<td>S1A-001</td>
<td>121</td>
<td>And uhm their response was uh very positive ... / but we are not sure ... what we could do you know what can we do</td>
<td>γ</td>
</tr>
<tr>
<td>7</td>
<td>S1A-001</td>
<td>125</td>
<td>and it transpired that ... none of the students in that group ... had met or had any involvement with anybody with a severe disability ... I mean I wasn't shocked that the students had not met people with disabilities or people in wheelchairs Many of us don't</td>
<td>shadow</td>
</tr>
</tbody>
</table>

*Figure 6.4. Data table for lexeme ‘not’*
Double strokes // indicate a change in speaker, and a single stroke / merely reflects a new line in the ICE-GB transcription. Elided material deemed irrelevant for our purposes is denoted by the conventional ‘…’, and where text is underlined, this highlights the target lexeme in a clause featuring two (or more) negatives.

A number of tokens featured insufficient linguistic data, such as unclear speech, incomplete sentences and no (or considerably limited) prior discourse available, which led to 205 ‘not’ tokens and 330 from the ‘-n’t’ concordance being excluded from consideration; leaving 2617 and 4744 tokens available for allocation, respectively (this accounts for the discrepancy between the ‘total’ allocations in table 1 below and the full tallies given earlier as 2822 and 5074). All examples from the corpus are henceforth accompanied by their textcode, beginning with S- (denoting spoken text; as in figures 2–4). We embark on the study now in §2, beginning with negation construed as targeting the communicative A-tier.

2. Typology of negation within ICE-GB

2.1. Type-α negation

Negation targeting the A-tier from figure 1 emerged by virtue of directly honing in on some component of a prior linguistic utterance (as the most – and only – truly explicit entity in the discourse domain). In this manner, type-α negation could arise through directly responding to an element of grammatical or phonetic form, as illustrated by (1) and (2). NB. italics in examples denote mention of a term, rather than emphasis:

(1) A: there’s lots of deers and lots of rabbits  
   B: It’s not deers – it’s deer  
   [S1A-006#261]

(2) A: Doo doo doo doo …  
   B: It’s ooo, not doo the second time, is it?  
   [S1A-026#160]

By featuring a direct and verbatim reproduction of its target in this manner, type-α negation was therefore fundamentally quotational and corrective in its nature, on account of which it may seem perfectly natural to place the target of the negation within quotation marks:

(1) a. It’s not “deers”  
(2) a. it’s … not “doo” …

5. Detailed supplementary data listings featuring relevant data are available from the author; as are select audio files.
Further cases of type-\(\alpha\) negation (targeting a direct verbatim quotation within the discourse context) were found in the following from ICE-GB:

(3) A: That’s irrelevant
   B: It isn’t *irrelevant* [S1A-068#162]

(4) Is that Jane Warren? …
   Uh so it’s Jane Weaver, *not Jane Warren* [S1B-078#119]

(5) A: This is too salty …
   B: Well, it’s *not too salty*, but it certainly is very flavourful [S1A-010#091]

(6) I might have to do the after-dinner speech at our annual, well, *not annual*, our Christmas departmental dinner [S1A-030#072]

(7) My big green V neck jumper and velvet glittery leggings – well, *not glittery*, but velvet coloured leggings [S1A-039#316]

(8) A: he said ‘because some people think I’m boring you know …’
   well, I couldn’t say ‘no you’re *not boring*’ … [S1A-091#078]
   B: Because he is …

(9) The trouble with common sense is it’s *not common* [S1B-029#143]
   and it’s often not very sensible either

A review of the corpus data identified 81 such type-\(\alpha\) negations within the ‘not’ concordance, and 30 cases employing the enclitic form ‘-n’t’ (these allocations – with additions – are revisited in table 1). Taking all such cases into account, the majority of type-\(\alpha\) allocations (59%) arose in private dialogue settings (between family and friends), although it also emerged in various other discourse settings – with the notable exception of parliamentary debates and spontaneous commentaries. This absence of any direct and verbatim negation from parliamentary debate may be better understood through considering the nature of such tokens, for in correcting or modifying a prior utterance, type-\(\alpha\) commonly occurred as either an immediate, ad-lib self-correction like in (6) (surely to be avoided in political debate, to prevent undermining one’s authority) or it emerged as an outright disagreement with a claim made by an interlocutor as in (3), in which it possessed a high risk of face threat; surely an unfavourable strategy when striving for diplomacy.
2.2. Type-β negation

With negation targeting the B-tier (from figure 1) cancelling or blocking potential propositional developments of previously articulated material, type-β negation could also feature quoted elements. However, crucially unlike type-α negation (in which the quotation occurred as a direct target), type-β targets were expanded upon or elaborated within the immediate scope of the negation, as with the following propositional embellishments:

(10) You have … a ball …
    Not a tennis ball, just kind of hard ball
    [S1A-025#213]

(11) A: What exactly do I have to wear?
    B: A bunny costume
    A: Not like Playboy bunnies?
    [S1B-079#092]

(12) If I wrote this as a script you know for these purposes,
    it wouldn’t like be a theatre script
    [S1A-064#074]

(13) Ethnic, but not native ethnic
    [S1A-018#097]

(14) Rosie said we’re going to see her off at the airport Monday
    – not this Monday
    [S1A-048#052]

(15) Her looks can be really filthy
    Not personal looks, you know, attractively, but when she glances at you
    [S1A-036#082]

(16) A: So you don’t believe in an absolute fate …
    B: well, not fate in the way that sort of what happens to them
    [S1B-016#162]

(17) It might have been dislocated … it wasn’t dislocated in the sense of
    being displaced one bone relative to another
    [S1B-068#168]

(18) I would imagine that that’s what people from the country would
    bring to cousins in the city wouldn’t you think? A nice fat goose.
    It wouldn’t be a live goose though
    [S1B-014#108]

(19) I started thinking about her as a young woman and I started
    mourning – not for my mother – but for the girl who had gone to Cambridge
    and had been so brilliant
    [S1B-046#090]

6. As in figures 6.2 and 6.3 earlier.
(20) I haven’t been. And in case you’re wondering, that’s not to the loo

As a means of specification, type-β negation could thus target even the most basic disambiguation (completion) of a propositional radical (Bach 1994, 2001), such as the presumed interpretation of a given deictic or referential term. In this way, type-β negation permitted some – albeit constrained – degree of paraphrase (indicated by a dotted line):

(21) They wanted to photograph it for some baby magazine – not my cousins, but … the woman in the shop said oh you must let me photograph your baby for my magazine

(22) A: Has he got his own motor insurance …?
B: Uh, not car insurance

Through explicitly denouncing a particular embellishment in this fashion, type-β negation ultimately restricts the possible domain of interpretation; whether of a specific, localized predicate as in (23)–(24), or for a broader, global interpretation of a prior utterance, as in (25)–(27):

(23) A: Everybody was in favour …
B: The local girls’ school wasn’t in favour

(24) We didn’t really want to go to Holland and certainly not to northern Holland

(25) A: Did you see either of those two gentlemen on any occasion in nineteen eighty-seven? …
B: No, not to my recollection. But certainly not in the context of which we are talking

(26) She actually went to see John D. Rockefeller in person
Not to talk to, just to look at

(27) Partly – but not of course by any means entirely – as a result of …

7. Though Bach (1994: 274, 2004: 473) reasonably refers to these propositional completions or embellishments as implicature when naturally assumed but crucially unarticulated, in cases where such elements are overtly targeted (and thus explicitly realised) within the scope of negation, they arguably qualify as satisfying the relevance-theoretic term explicature, after all.
The corpus data gave rise to 195 such type-β negations in the ‘not’ concordance and 74 cases of type-β in the ‘-n’t’ data. Again, a considerable bulk (45.1%) of such examples occurred in direct conversations and phone calls, although this allocation could be found within all discourse contexts.

2.3. Type-γ negation

As a means of negating the rightmost C-tier in figure 1, material targeted by type γ-negation didn’t overtly feature in any preceding propositional schema, but was rather taken to have been derived via bridging inference within the exchange:

(28) We’re having a few bottles but that’s all … they’re not an alcoholic lot                  [S1A-008#290]

(29) A: Unless they were cockles
    B: Well no, they weren’t smooth                  [S1A-009#312]

(30) A: Do you want anything to eat?
    B: No thanks, I’m not hungry Esther              [S1A-047#165]

(31) The army will only confirm that missiles have fallen in Israel …
    It was not a chemical attack                [S2B-015#106]

(32) I’m wondering whether you could give me a quote …
    the thing is, I’m not a student               [S1B-074#121]

(33) We can get that out if you want …
    Well, it’s not that wonderful a film            [S1A-006#167]

(34) A: So he’s going to punch the details into a computer screen
    B: Well … obviously David, I’m not going to give him any of
    the personal stuff, am I?                   [S1A-092#323]

(35) I haven’t got enough hours in the day … unless I start teaching at midnight
    But the studio’s not open then                  [S1A-083#170]

(36) A: … certainly not in the context of which we are talking
    B: Well I’m not interested in the context of that   [S1B-065#041]

(37) A: I’m finding that totally impossible …
    B: Well, I’m not surprised                    [S1B-072#045]
A number of periphrastic constructions also emerged as type-\(\gamma\), such as negated superlatives in (38)–(40), negative polarity items in (41)–(42), and negated antonyms in (43)–(44):

(38) Present prosperity is not brilliant \[S1A-067\#286\]
(39) Robert’s not the cleanest shaved person I’ve seen \[S1A-065\#228\]
(40) He wasn’t entirely happy in this work \[S2A-041\#011\]
(41) we’re not really doing what we should be doing \[S1A-008\#007\]
(42) The engine’s pretty good. It pulls with not a hint of roughness \[S2A-055\#068\]
(43) I think that it is not unjust \[S2A-064\#037\]
(44) … the two are not unrelated \[S1B-015\#072\]

As a diffuse realm, and potentially limitless in terms of the material being targeted, the only prevailing constraint for type-\(\gamma\) was the most basic, rational presumption of providing an appropriate (or relevant) contribution to the discourse. Consequently, type-\(\gamma\) was naturally well represented within ICE-GB; occurring across all discourse settings, and giving rise to 1856 type-\(\gamma\) negations employing the lexeme ‘not’ and 3183 tokens featuring the contracted form ‘-n’t’. These type-\(\gamma\) allocations also included the relatively frequent occurrence of the self-contained phrase ‘I don’t know’; whether as a considered response to a question as in (45), or as a flippant, interjectory filler (functionally akin to ‘er’ or ‘uhm’) in (46):

(45) A: What are the names of those horse-drawn carriages?
    B: I don’t know \[S1A-006\#222\]
(46) Doesn’t mean … I suddenly had a surge of interest in going to play uh, I don’t know, basketball or anything \[S1A-003\#005\]

As in (46), this phrase proved capable of a certain mitigating effect, and was especially interesting in its ability to function as a hedging construct. This in turn was capable of targeting any of the three communicative tiers, and provided a basis for the following tangential observations.

2.4. Versatile negative constructs in ICE-GB

2.4.1. Conversational mitigation

In a number of instances, the hedging phrase ‘I don’t know–’ (also ‘I don’t believe–’ or ‘I’m not sure–’ and by far the most prevalent ‘I don’t think–’) proved capable of featuring any of the three communicative tiers by occurring alongside A, B or C tier entities. These appeared to serve as periphras-
tic negation conveying some degree of hesitation on the part of the speaker; typifying cases of 'conversational mitigation' discussed by Fraser (1980) and manifesting a strategy of negative politeness (cf. Brown and Levinson 1987). Such instances were found in the following (denoted by superscript $\text{CM}$):

(47) $\alpha^\text{CM}$

A: Weekly boarding at Westminster
B: No I don’t think Westminster
[S1A-054#075]

(48) $\beta^\text{CM}$

A: He’s a diffident fellow
B: I don’t know about diffident
[S1A-061#193]

(49) $\gamma^\text{CM}$

A: It’s quite uh apparently risky …
B: I don’t think it’s that risky
[S1A-003#114]

(50) $\gamma^\text{CM}$

A: Where do you think you’ve seen those?
B: I didn’t think I’d seen them
[S1A-011#178]

(51) $\gamma^\text{CM}$

I’m not sure it’s just us that think these atrocities are awful
[S1B-036#031]

(52) $\gamma^\text{CM}$

I don’t believe that’s correct
[S1B-069#063]

On the other hand, this periphrastic allocation didn’t extend to outright epistemic declarations, such as ‘I don’t know Ian well enough …’ [S1A-017#379] or ‘I’m afraid I don’t know you’ [S1B-075#146]; both of which were treated as straightforward allocations (as in §2.4.4 below).

Evaluation of the ICE-GB corpus data identified a combined total of 11 such $\alpha^\text{CM}$ allocations, 30 $\beta^\text{CM}$ allocations and 157 cases of $\gamma^\text{CM}$ (these additional allocations were subsequently included in the count for $\alpha$, $\beta$ and $\gamma$; further acknowledged and explained below). However, this hedging of illocutionary force by embedding the target within ‘I’m not sure–’ or ‘I don’t think–’ showed affinities with the higher-level description ‘I wouldn’t say–’; invoking a rather special situation considered now in §2.4.2.

### 2.4.2. Higher-level explicature

While relevance theory bestows higher-level descriptions (regarding that taken to have been said, meant or explicated) with the label ‘higher level explicature’ (cf. Blakemore 1991; Carston 2002), there is little justification
for incorporating this notion within the middle B-tier of propositional development from figure 1, since, as with conversational mitigation above, the versatility of these higher level descriptions can be demonstrated by their compatibility with all three communicative tiers (cf. Pitts 2009: 52–53). Such higher-order ‘locutionary’ allocations (in which an illocutionary term occurred within the immediate scope of negation) subsequently received the additional superscript \textsuperscript{HLE}, as in the following:

\(\alpha\textsuperscript{HLE}\)

(53) A: You worship him
B: I \textit{wouldn’t say worship him}; I just love him dearly  
[1A-085#232]

(54) A: … before then everyone thought that it was genetics
B: No, I \textit{didn’t say it was genetics}  
[1B-016#150]

\(\beta\textsuperscript{HLE}\)

(55) He’s coming back to a lousy job
I \textit{don’t mean the company} – I mean a client  
[1A-017#290]

(56) A: Fancy a drink John? …
B: I think all the pubs are closed …
A: I \textit{didn’t mean to go out for a drink}
I meant \textit{would you like} a drink  
[1A-047#010]

\(\gamma\textsuperscript{HLE}\)

(57) I’m a bit more Anglicized than most …
I’m not saying that’s good  
[1A-041#228]

(58) It is perhaps worth making the point that those words mean what they say
and they \textit{don’t mean unconditional surrender}  
[1B-027#062]

As with conversational mitigation, the communicative A-tier was targeted least commonly with a combined total of 7 type \(\alpha\textsuperscript{HLE}\) cases, followed by the B-tier as in 34 cases of type \(\beta\textsuperscript{HLE}\), while the C-tier proved to be the most targeted entity with 161 instances of \(\gamma\textsuperscript{HLE}\). This prevalence of \(\gamma\textsuperscript{HLE}\) makes sense when we bear in mind that such higher level descriptions – frequently focusing on \textit{cognitive} recall (in terms of what was \textit{meant} or \textit{communicated}) – needn’t be constrained by syntax, and may be entirely compatible with the communicative C-tier from figure 1.
2.4.3. ‘Not that-’ sentences

A further candidate for higher-level description in the corpus data emerged in the form of Not That sentences [NTSs] (denoted by additional $^{NTS}$); commonly realised with a de-stressed vowel in ‘that’, as ‘not [ðəʔ]−’.8

(59) $^{aNTS}$
A: And they want to screw up … what you’ve done
B: Well, not that they want to screw up

They want to contribute

(60) $^{bNTS}$
We are becoming classless…
Not that we’re becoming a classless society

(61) $^{cNTS}$
the overthrow of President Marcos was partly a settling of scores between the great families and the so-called crony-capitalists that Mr Marcos had raised. Not that politics in the Philippines are just an empty charade

(62) I’m not even five foot and he was six foot four. Not that that’s any excuse

NTSs have been discussed most recently by Delahunty (2006: 218) who claims that such constructs may be glossed as ‘this is not, however, to say/suggest that …’. On this basis, we might indeed construe them to be another type of higher level ‘explicature’. But nowhere does Delahunty credit the potentially variable application of any such higher-level constructs. In fact, Delahunty (2006: 218) indicates that the material targeted by NTSs is not linguistically explicit (qua A-tier material in figure 1), but rather appears “right out of the (con)textual blue” (2006: 219), akin to the C-tier in figure 1; tantamount to the broadest construal of particularized implicature. While the majority (19/22) of all identified NTS constructs in ICE-GB did indeed target C-tier propositions – as in (61) and (62) above – (59) and (60) nevertheless demonstrated at least some potential (albeit occasionally) to target the underspecified B-tier or even the linguistically explicit A-tier; contra Delahunty’s account of such constructs.

8. Contrast with non-NTS constructs featuring a more open vowel through ‘not [ðæʔ]−’: ‘especially not that side of the family!’ [S1A-007#161]; also (33).
2.4.4. Fuzzy criterion for higher-level descriptions

However, it is important to realise that these higher level allocations do not provide a separate basis for classification in the present exploration of negation, but merely offer a tangential sideline by acknowledging interesting constructs previously (and recently) discussed in the literature. Indeed, when appealing to NTSs as discussed by Delahunty (2006), the following received no such superscript in the present venture (although otherwise intuitively plausible contenders for inclusion as NTS constructs):

(63) Not just that it is something which leads to good news
(64) it wasn’t so much that Saddam knew the facts

This pinch of salt in the allocation procedure may also be cast on the delimitation of the additional higher level ‘explicature’ allocations; whereby reporting something to have been ‘said’ may vary from an entirely cognitive recall down to the most basic locutionary act. Indeed, the diffuse nature of allocations featuring the HLE superscript only serves to reinforce this, with some attested HLEs differing only minimally from a basic appeal to locutionary events, as in the following (which, as straightforward allocations, received no superscript):

(65) I’m not going to harp on about it
(66) I won’t go on too long
(67) He was not told

The broad scope of such ‘higher level’ allocations further emerged with the variable mitigating effect of ‘I don’t know–’, where in some instances the phrase taken in isolation could credibly function as either a straightforward epistemic claim in response to a query or as a possible diplomatic mitigation in response to a prior judgement, as in the following:

(68) A: All bastardizations …
    B: I don’t know

This interpretive ambiguity was similarly illustrated by the following; providing either a means for preserving negative face, or otherwise staking an honest admission that the speaker simply just didn’t know – on account of which no additional superscript was bestowed:

(69) I don’t know if it fits you
(70) I don’t know if it’s still valid
Due to the questionable means of delimiting such higher-level allocations, the additional superscripts were deemed to be merely orthogonal to the study (as a crucially pragmatic and not syntactic venture) and are consequently subsumed within the overall $\alpha \beta \gamma$ allocations, as summarised next.

### 2.5. $\alpha \beta \gamma$ allocations within the data

To recap so far, we’ve encountered types $\alpha$, $\beta$ and $\gamma$ negation. But we’ve also acknowledged cases of conversational mitigation [$^\text{CMS}$], higher-level ‘explicature’ embedding various locutionary verbs [$^\text{HLE}$], and Not That constructs [$^\text{NTS}$]; all of which have proved capable of spanning (and are subsequently incorporated within) the overall $\alpha$, $\beta$ and $\gamma$ allocations. Table 6.1 below presents a summary of these eventual totals from the corpus data; combining the results for ‘not’ and ‘-n’t’ in the final column (NB. Table 6.2 in due course provides a full list of allocations for all identified tokens in the corpus, thus accounting for the discrepancy between the total $\alpha \beta \gamma$ allocations and all allocated tokens within ICE-GB):

<table>
<thead>
<tr>
<th></th>
<th>‘not’</th>
<th>‘not’ %</th>
<th>‘-n’t’</th>
<th>‘-n’t’ %</th>
<th>combined</th>
<th>combined %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total $\alpha$</td>
<td>84</td>
<td>3.21</td>
<td>47</td>
<td>0.99</td>
<td>131</td>
<td>1.78</td>
</tr>
<tr>
<td>Total $\beta$</td>
<td>206</td>
<td>7.87</td>
<td>128</td>
<td>2.70</td>
<td>334</td>
<td>4.54</td>
</tr>
<tr>
<td>Total $\gamma$</td>
<td>1930</td>
<td>73.75</td>
<td>3446</td>
<td>72.64</td>
<td>5376</td>
<td>73.03</td>
</tr>
<tr>
<td>Total $\alpha \beta \gamma$</td>
<td>2220</td>
<td>84.83</td>
<td>3621</td>
<td>76.33</td>
<td>5841</td>
<td>79.35</td>
</tr>
<tr>
<td>All allocations</td>
<td>2617</td>
<td>100.00</td>
<td>4744</td>
<td>100.00</td>
<td>7361</td>
<td>100.00</td>
</tr>
</tbody>
</table>

We see from the rightmost column in Table 6.1 that overall, negation identified as targeting the communicative A-tier (type-$\alpha$) accounted for a negligible 1.78% of all allocations within ICE-GB and negation targeting the B-tier (type-$\beta$) accounted for just 4.54%, while the vast majority of tokens (73.03%) were allocated to the diffuse set of type-$\gamma$ (targeting the C-tier). The different percentage outcomes for ‘not’ and ‘-n’t’ in these data also reveal that negation of an explicit A-tier entity employs the full lexeme ‘not’ over three times more often than the enclitic ‘-n’t’ form and B-tier negation employs the full lexeme just under three times as often, whereas negation targeting the implicit C-tier occurred to a similar extent in both forms; around the 73–74% mark.

While these $\alpha \beta \gamma$–based allocations encompassed the majority of negative tokens under consideration (84.8% of the ‘not’ data and 76.3% of ‘-n’t’ tokens), it nevertheless became appropriate to posit certain additional, subsidiary annotations to account for the remaining cases in the corpus data.
3. Additional allocations for corpus data

3.1. Shadow negatives

A number of cases emerged in which the negative element directly echoed an overt (articulated) negative in the preceding discourse exchange. To avoid terminological confusion/conflation with a much broader, metarepresentational treatment of ‘echoic’ use promoted by Carston ([1994] 1996, 1998), I opt for the term ‘shadow’, rather than ‘echo’, for such cases. These shadow negatives were taken to lie outside the bounds of the $\alpha\beta\gamma$ classification since they didn’t manifest negation operating in the logical, linguistic sense, but rather provided a means for emphasising, reinforcing or stalking some pre-existing negative. Such shadows occurred most explicitly in verbatim clausal repetitions, as in (71)–(75):

(71) A: It wasn’t put like that  
B: Wasn’t put like that  [S1B-069#157]

(72) A: Why is it not radiosensitive?  
B: Why is it not radiosensitive ... Science cannot answer  [S1B-010#105]

(73) A: Not too bad  
B: Not too bad  [S1A-095#133]

(74) I don’t know. I don’t know  [S1A-015#130]

(75) If it doesn’t work out it doesn’t work out  [S1A-071#233]

However, such shadow negatives weren’t exclusively verbatim, and could be found to feature basic deictic substitutions as in (76) and (77), or an intensifier as in (78)–(80) – as a means of highlighting their fundamentally reinforcing nature:

(76) A: I can’t say  
B: You can’t say  [S1B-064#054]

(77) A: I don’t mean the company  
B: He doesn’t mean the company  [S1B-017#294]

(78) I hadn’t got a clue. I really hadn’t got a clue  [S1B-049#163]

(79) I’m not going down that road –  
I’m definitely not going down that road  [S1B-029#111]
I didn’t know Islington until I moved there …
I didn’t know Islington at all until I moved there

A further case emerged with sentence final or interjectory I don’t/ wouldn’t/ shouldn’t think as reinforcing – and pragmatically bound to – an immediately prior negative:

(81) He’s not in tonight, I don’t think
(82) It hasn’t been used enough – I don’t think – to get one
(83) not enough time to come up from London, I shouldn’t think

While these cases demonstrate an affinity with the effect achieved by conversational mitigation in §2.4.1 above, it’s important to note however that this retrospective shadow negative is distinct from actual mitigating negation (‘I don’t think he’s in tonight’), for a clausal reversal of (81)–(83) would highlight the fact that an additional, supportive negative has been added to the mix to result in a form of negative concord (or strengthening of a single negative): ‘I don’t think he’s not in tonight’.

It is also important to note the means by which such shadow negatives can vary considerably in their conveyed attitudinal effect; whether through reinforcing agreement, contrastive disagreement, incredulity, ironic mocking and so on,9 with such effects reliant on various multimodal considerations such as incorporating shared knowledge between the speakers, and diffuse contextual effects. Though it may be worth further exploring the different effects of such negative shadows in a future study, in the interest of moving forward with the current venture, these shadow negatives accounted for 76 of the remaining tokens in the ‘not’ concordance and 166 tokens in the ‘-n’t’ data. Most of these (66%) emerged in direct conversations and phone calls, but a notable proportion (15%) occurred in legal cross-examinations, 4% arose in classroom lessons and the remaining cases emerged across all remaining discourse settings (both dialogue and monologue). This means of shadowing and validating a prior negative also included elliptical constructs, as in the following:

(84) A: Uh right. And that’s not good news
B: Not at all, no

9. In this way we might draw tentative parallels with Carston’s construal of echoic negation (1996, 1998), but shadow negatives require an explicit negative to precede; Carston’s construal of attributive echoic negation is considerably broader.
Nevertheless, remaining mindful of the centrally pragmatic nature of this classification, in which discourse context – not grammatical form – determined allocations, cases in which similar elliptical forms responded to a prior affirmative received a different allocation.

### 3.2. Type-αε (elliptical response)

A number of further cases emerged in ICE-GB where the material targeted by the negation was crucially unarticulated in the negative clause while challenging (or contrasting with) a preceding statement or question:

(85) A: You didn’t look round …
B: No. I didn’t look round. No. I didn’t

(86) A: It’s expensive
B: It’s not

(87) A: Trying to blame the problems of the world on teenagers
B: I’m not!

(88) B: You have to listen to it
A: [No] I don’t

(89) A: Was it crowded? …
D: [No] it wasn’t

Such cases (in which the negated material was elided) lay outside the initial discussion of types αβγ, due to the simple fact that the negative clause itself didn’t overtly express what was being negated – and so there was no concrete evidence of what it was actually targeting. And yet, as a direct response to a prior utterance, such challenges clearly and intuitively qualified as a negation; functioning in the same manner as a type-α, but with the material being objected to presumably taken to be so explicit and mutually known that it was then omitted altogether. Consequently, such elliptical tokens are construed as a subcomponent of type-α – as type-αε – which also included emphatic rejections:

(90) A: Would you change the structure of the police forces in a national direction?
D: Certainly not

(91) A: Do you consider yourself very much a stereotype kind of Jew?
B: [Oh no] Not at all
Type-$\alpha e$ responses were also realised within conversational mitigation and higher-level explicature, as in the following:

(92) I don’t think so [passim]
(93) You did not say that at all! [S1A-047#025]

In total, elliptical type-$\alpha e$ (including cases of conversational mitigation) accounted for 147 of the remaining ‘not’ tokens and 223 ‘-n’t’ tokens within the corpus data. The majority of such cases emerged in interactive dialogue, with 53% through direct conversation and phonecalls, 7% in classroom lessons and 6% in broadcast discussions, and a variety of settings among the remaining allocations.

As a more moderate means of contrast, elliptical type-$\alpha e$ also accounted for cases of the form X is $A$ [and] Y is not:

(94) She has her days when she’s affectionate and days when she’s not [S1A-019#177]
(95) Although ninety-five per cent of them are benign, five per cent are not [S1B-010#088]
(96) It’s funny why you’re so fat and I’m not [S1A-042#348]
(97) A: Are your parents talkative?
   B: Yes
   A: But you’re not [S1A-059#186]
(98) Now you see him; now you don’t [S2B-033#065]

Such allocations may invoke a challenge regarding how we are to know whether these allocations really belong to type-$\alpha$ or should in fact qualify as type-$\beta$. Indeed, while various boundary issues between these bands are acknowledged in due course, these cases were treated as elliptical type-$\alpha e$: on the assumption that the element to which the negation directly applies is so salient that it can be retrieved from within the prior discourse.

This fundamental bivalence underlying such elliptical responses leads us to posit another rather special allocation now in §3.3.

3.3. LEM

Another subsidiary set of negatives in the data emerged through the exclusive disjunction of contradictory opposites, which, by explicitly realising the
On salience and enrichment in expressions of negation

Aristotelian law of excluded middle (LEM), didn’t comprise an actual statement-making negation (qua application of the operator to some linguistic/conceptual entity), but rather set out the basic logical conditions for truth, in accordance with the law of non-contradiction:

(99) I am or I’m not

(100) it definitely is or it definitely isn’t

(101) the mat is or is not a constituent

(102) Whether or not we believe in God

(103) … whether it’s on or not

While these elliptical examples could be considered akin to type-α above through manifesting the most fundamental logical principle of bivalence, such instances of LEM clearly possess a special logical status as tautology. However, as in the case of (75) from earlier, this class doesn’t subsume all tautologies, only exclusive disjunction. On the other hand, certain cases arose where both the positive and negative disjuncts were entertained within a single clause yet failed to qualify as tautological LEM, on the basis that the disjuncts weren’t static, symmetrical contradictory opposites but were rather contraries, qua (104)–(105) below or even disparata (cf. Mill 1985) as in (106)–(107). Such contraries instead qualified as manifesting a straightforward type-γ propositional negation, with the dotted line indicating the contrary term(s) in question:

(104) You were decreasing and *not* increasing the loading

(105) that is only the start of the negotiating position and *not* the end

(106) … how you should run the priesthood, or *not* have a priesthood and so on

(107) … what with her wanting to be one place or another, or *not* with us at all

True cases of LEM, as in (99)–(103), occurred in 90 of the ‘not’ allocations and just 3 tokens in the ‘-n’t’ data. Taking the ‘not’ data in isolation for the time being (bearing in mind the high discrepancy in frequency between this

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10. This serves to remind us that disjunctive ‘or’ needn’t be sufficient to qualify a given token as tautological LEM.
and the enclitic form), 27% of such LEM allocations emerged in direct conversation and phonecalls, 13% arose in legal cross-examinations, 9% in legal presentations, with the rest among the various remaining discourse settings.

3.4. Speech act distinctions: Rhetorical effects

While addressing these additional allocations through negative echoes and LEM, I have so far made no appeal to speech act classification (Austin 1962; Searle 1969) within this typology, since as Sperber and Wilson (1995: 245) crucially observe, we can comprehend negation without identifying the illocutionary force with which it occurs. Indeed, for the vast majority of the corpus data it seems that we don’t need to incorporate speech acts, since the allocations are based on an evaluation of what is being negated, rather than how the clause is functioning.\footnote{Moreover, with Searle and Vanderveken (1985: 183) listing a total of thirty-two different English assertives, what benefit would come from further incorporating so many distinctions?} Therefore, any further attempts to incorporate speech act classifications as a basis for allocation appear rather futile, since imperatives and interrogatives seem relatively unproblematic within the present classification; hence the following interrogatives as LEM:

\begin{align*}
(108) & \text{are you vegetarian or aren’t you?} & \text{[S1A-011#244]} \\
(109) & \text{did you look at the theorem minus three or didn’t you do?} & \text{[S1B-013#228]}
\end{align*}

Any such LEM query may therefore be taken to comprise of two disjuncts:

\begin{align*}
(110) & \text{Are you a vegetarian?} \\
(111) & \text{Aren’t you a vegetarian?} \\
(112) & \text{Will you have a glass of beer?} \\
(113) & \text{Won’t you have a glass of beer?}^{12}
\end{align*}

However, acknowledging the role of speech act distinctions in this way leads to the postulation of a final subsidiary class of negatives within the data under scrutiny, for taking these disjuncts in isolation highlights that they actually appear to be asking the same thing. Consequently, negative constructs such as those featured in the subject-auxiliary inversion of (111) and (113) do not adhere to the present three-way $\alpha\beta\gamma$ schema of negation – precisely because they don’t comprise a linguistic negation, but rather, as cases of ‘polite pessimism’ (Brown and Levinson 1987: 174–175) serve as rhetorical negatives.

\footnote{Example from Jespersen (1924: 323).}
3.4.1. Rhetorical negatives

While the negative element in (111) and (113) occurs alongside propositional content, the important thing to observe in these interrogative forms is that the negative crucially isn’t acting upon the material by negating it, but rather appeals to (and so arguably reinforces) the corresponding affirmative. In this way, the negative face effect of CM or NTS discussed above – in which the negative element crucially does function as a negation in application to a communicative tier (cf. Jespersen 1917: 119, 1924: 323; Long 1961: 105; and Blake 1988: 122) – are distinct from such interrogative tags:

(114) do we not all have one father? [S2A-036#054]

(115) Is it not the case that the British Government is far more reluctant to step in and give economic assistance? [S1B-053#094]

(116) wouldn’t that be awful? [S1A-042#237]

(117) isn’t it lovely? [S1A-086#182]

Taking this effect into account, we can see how the prima facie declarative form below – allocated as type-γ in its ability to negate propositional content – might otherwise qualify as a rhetorical negative if, in fact, it emerges as an interrogative:

(118) You don’t want any tea [S1A-047#253]

However, with such subtle factors as a simple quizzical look, or perhaps even a laboured tilting of the head providing a means to distinguish between declaratives and interrogatives in actual interactive use, I readily concede that this reveals a considerably grey area for differentiating between attested statements of negation as in (118), and ‘politely pessimistic’ rhetorical negatives as in (113).

On the other hand, this rhetorical effect of a negative reinforcing the affirmative was more clearly identifiable in sentence-final tags, as in (119)–(123) below; essentially an invitation to endorse the given statement:

(119) The postal service is terrible, isn’t it? [S1A-095#304]
(120) He was a uh good speaker, wasn’t he? [S1B-078#232]
(121) Absolute daylight robbery really, aren’t they? [S1A-007#024]

(122) the steps to the swimming pool might be used a very substantial amount mightn’t they? [S1B-067#104]
A calculation about morality really is an incompatibility, is it not? [S1B-060#082]

The reinforcing nature of such tags is further illustrated by their use as a separate retort to a prior affirmative, and in doing so provide corroboration and reinforcement:

A: That’s great news  
B: Isn’t it!13

A: Your tulips are lovely  
B: Aren’t they!

This rhetorical effect of the negative was also found in indirect suggestions:

Why don’t you talk to Laura?  [S1A-038#222]  
Why don’t you buy a rickshaw?  [S1A-085#112]  
Why don’t you put your best suit on?  [S2B-006#129]

A: My mum’s coming  
B: Good stuff. Why not  [S1A-030#253]

Overall, this subsidiary class of rhetorical negatives accounted for 84 of the ‘not’ tokens. Of these allocations, the majority occurred in interactive dialogue settings: 67% arose in direct conversations and phonecalls, 11% in classroom lessons, 7% in broadcast discussions, 5% in legal cross-examinations, 4% in broadcast interviews, and 2% in parliamentary debates. In comparison, this allocation proved far more prevalent among the ‘-n’t’ tokens (bolstered by its role as a retrospective tag); accounting for 732 such cases. These again occurred in interactive dialogue – particularly in formal discourse settings, with 26% of cases emerging in parliamentary debates and 19% in legal cross-examinations. 18% of such allocations occurred in direct conversations and phonecalls, 16% in broadcast discussions, and 6% in classroom lessons.

13. At least two cases tagged in ICE as ‘isn’t it’ are clearly pronounced ‘inmit’ [ɪmɪt] [S1A-099#277; S1A-099#366]. Though often assumed to function as a form of agreement marker, certain uses of this term within colloquial British English appear to be that of an oft-semantically defunct solidarity marker (consider also ‘izzit’ [ɪzɪʔ]).
4. Data totals within ICE-GB

Taking into account every identified instance of the negative lexeme, Table 6.2 provides full listings for all allocations from ICE-GB:

<table>
<thead>
<tr>
<th></th>
<th>‘not’</th>
<th>‘-n’t’</th>
<th>combined</th>
<th>combined %</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \alpha )</td>
<td>84</td>
<td>47</td>
<td>131</td>
<td>1.78</td>
</tr>
<tr>
<td>( \alpha \varepsilon )</td>
<td>147</td>
<td>222</td>
<td>369</td>
<td>5.01</td>
</tr>
<tr>
<td>( \beta )</td>
<td>206</td>
<td>128</td>
<td>334</td>
<td>4.54</td>
</tr>
<tr>
<td>( \gamma )</td>
<td>1930</td>
<td>3446</td>
<td>5376</td>
<td>73.03</td>
</tr>
<tr>
<td>shadow negative</td>
<td>76</td>
<td>166</td>
<td>242</td>
<td>3.29</td>
</tr>
<tr>
<td>LEM</td>
<td>90</td>
<td>3</td>
<td>93</td>
<td>1.26</td>
</tr>
<tr>
<td>rhetorical negative</td>
<td>84</td>
<td>732</td>
<td>816</td>
<td>11.09</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2617</td>
<td>4744</td>
<td>7361</td>
<td>100.00</td>
</tr>
</tbody>
</table>

As the communicative tiers in question are fundamentally motivated by pragmatic criteria, elliptical \( \alpha \varepsilon \) is subsequently incorporated with type-\( \alpha \) (since types-\( \alpha \) and \( \alpha \varepsilon \) both operate on explicit [A-tier] material within the exchange). Moreover, by applying to explicit utterance-level (i.e., non-propositional) A-tier entities, the operator might technically be deemed pre-semantic in such instances, but for present ease we regard negation to be ‘semantic’ by virtue of operating upon some – any – material. It is important to note that shadow and rhetorical negatives do not therefore contribute to our semantic classification of negation, since the ‘negation’ in these cases doesn’t operate upon linguistic or conceptual material, but rather occurs alongside the material as a means for special emphasis or reinforcement. Posing as little more than rhetorical embellishment, such tokens comprise ‘mere’ negatives, and so fail to qualify as semantically interesting in the present venture. Removing these additional allocations (also conditional LEM, which falls short of statement-making negation), Table 6.3 gives a summary of specifically semantic allocations of negation.

<table>
<thead>
<tr>
<th></th>
<th>‘not’</th>
<th>‘-n’t’</th>
<th>combined</th>
<th>combined %</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \alpha / \alpha \varepsilon )</td>
<td>231</td>
<td>269</td>
<td>500</td>
<td>8.05</td>
</tr>
<tr>
<td>( \beta )</td>
<td>206</td>
<td>128</td>
<td>334</td>
<td>5.38</td>
</tr>
<tr>
<td>( \gamma )</td>
<td>1930</td>
<td>3446</td>
<td>5376</td>
<td>86.57</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2367</td>
<td>3843</td>
<td>6210</td>
<td>100.00</td>
</tr>
</tbody>
</table>
Indeed, having incorporated elliptical $\alpha\varepsilon$ alongside type-$\alpha$, types-$\alpha$ and $\beta$ are still overshadowed by the sheer frequency of diffuse type-$\gamma$; as is further illustrated by chart 1, accounting for all allocations from Table 6.2 above:

*Chart 1. Total allocations in ICE-GB (‘not’ and ‘-n’t’ combined)*

Bearing in mind however that **two** sets of data contribute towards tables 1–3, charts 2 and 3 allow a comparison between the respective allocations for ‘not’ and ‘-n’t’ in ICE-GB:

*Chart 2. Allocations in ICE-GB for lexeme ‘not’*

*Chart 3. Allocations in ICE-GB for contracted ‘-n’t’*
A comparison between charts 2 and 3 again serves to highlight the greater likelihood of using the full lexeme ‘not’ when targeting the communicative A or B-tiers (as previously noted from table 1 in §2.5), as well as the large proportion of type-γ cases employing both forms. Shadow negatives employed ‘not’ and ‘-n’t’ to a reasonably similar extent (around the 3% mark) whereas on the bases of these data, LEM allocations (tautologous disjunction) appeared to be over fifty times more likely to employ the full lexeme ‘…or not’ than contracted ‘-n’t’: Indeed, LEM isn’t even visible in chart 3. Another discrepancy between charts 2 and 3 pertains to rhetorical negatives, which (on the bases of these descriptive statistics) employed enclitic ‘-n’t’ just under five times as often as the full lexeme.

4.1. Discourse settings

It’s worth however bearing in mind that these outcomes may certainly have been affected by the different discourse domains in which they arose, and having acknowledged the situational contexts in which types α, β and γ negation typically occurred, we can now consider the settings in which the additional, remaining allocations emerged. Direct elliptical type-αε responses occurred frequently in interactive dialogue, but also in classroom lessons and broadcast discussions as typical contexts of direct questioning or debate. Echoic shadow negatives emerged in interactive dialogue, but this repetitive character and potential for highlighting information was also notably put to use in cross-examinations and classroom lessons. Alongside direct conversations, the use of ‘not’ in LEM most notably featured in legal proceedings (cross-examinations and presentations); perhaps typifying the latent, forced binary choice of verdict in such circumstances. Beyond this, rhetorical negative questions employing enclitic (‘-n’t’) were the only allocation for which the most common discourse setting was something other than direct (personal) conversations and phonecalls, and these rhetorical forms occurred notably in formal dialogue, such as parliamentary debate and legal cross-examinations. However, it’s also important to realise that such trends could be affected by particular speakers’ tendencies to use certain phraseology (for example, ‘– don’t you think’ or ‘in nit’). We could continue through appealing to further distinctions and comparisons, but an adequate consideration of all lexical differences and behaviour among enclitic forms would arguably necessitate a separate study altogether. Bearing in mind that this scheme was set up in an attempt to reconcile the communica-

14. One parliamentary debate [S1B-052] featured a string of seven consecutive entries of rhetorical negatives (involving five different speakers converging on this habit).
tive tiers from figure 1 with discourse negation.\textsuperscript{15} we now press on to acknowledge some of the difficulties encountered in the present venture, starting with some of the more practical considerations.

5. Difficulties emerging from using ICE-GB

5.1. Frequency of the negative

ICE-GB provides a wealth of available data, but a number of tricky consequences emerged from using the corpus for such a study of negation. To begin with, while spoken texts conformed to an approximate overall size, they were composed of a number of discourses of varying length, in addition to which the sheer frequency of negative tokens across different texts varied: One particular radio broadcast of a church service [S2A-020] featured no such tokens, whereas a number of spontaneous commentaries (all radio broadcasts) featured just one or two isolated tokens.\textsuperscript{16} Furthermore, the prominence of direct conversational settings across allocations most likely occurred as a result of these situations comprising a substantial proportion of the corpus data; reinforcing the necessarily qualitative nature of the present study.

5.2. Participant control

Another consequence of using the data provided by ICE-GB was that I had no control in selecting the participants providing the data. Speakers included males and females across a range of age groups and regional backgrounds, and Nelson, Wallis, and Aarts (2002: 3) note that all participants were British,\textsuperscript{17} aged 18 or over and had completed (at least) secondary school education in English. However, these variables are not regulated to proportionally reflect British society as a whole, for although participants came from a wide range of educational and geographical backgrounds within Great Britain, the corpus data is acknowledged as being somewhat London-centric.

\textsuperscript{15} Recall that echoic shadow negatives and rhetorical negative questions are arguably not manifestations of negation per se, but are mere negatives – and LEM served as a conditional negation at best.

\textsuperscript{16} Trooping the colour [S2A-010], motor racing [S2A-012], and international soccer [S2A-011].

\textsuperscript{17} Within this Nelson, Wallis, and Aarts (2002: 4) concede a discretionary “small number of cases” in which the speaker was born outside England, Scotland or Wales but moved to Britain at an early age.
5.3. Speaker awareness

Since (on ethical grounds) all recordings were non-surreptitious, subjects were fully aware of the recording equipment, and we accordingly find explicit reference to this in a number of direct conversational exchanges. This makes way for the so-called ‘observer’s paradox’ (Labov 1972: 209) wherein participants – aware of the given setup – may be disposed to conduct themselves in a more awkward or formal fashion. Indeed, with the central appeal of ICE-GB lying in its ability to capture ‘real’ data, in such a ‘big brother’ context we might question the ‘naturalistic’ extent of these recordings, after all.

5.4. Transcription (in)accuracy

Another factor worth acknowledging involves the accuracy of data transcriptions. No corpus is perfect, and with manual tagging a corpus of this size may be forgiven for containing minor errors and omissions along the way. Indeed, in some instances the wrong speaker is tagged, although this didn’t affect the present analysis to any considerable extent, since attention was primarily directed at the discourse status of anaphorically targeted material. However, a more important consequence did arise where I registered a different transcription from that allocated by ICE-GB. A key instance appears in the very first purported ‘not’ token, which I [ACP] deemed to have been tagged incorrectly (and therefore ineligible for classification) – hence the non-allocation in Figure 6.4 earlier:

(130) ICE: “Did you not”
ACP: “Can you just”

This demonstrates an apparent slip of the ear on the part of the corpus taggers, as further illustrated by the discrepancy between the ICE-GB annotation and my own:

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18. As in [S1A-008#106-107; #195; #253], [S1A-017#022; #258], [S1A-018#183], [S1A-047#116], [S1A-053#144] and [S1A-091#277].

19. For example, duplication of ‘fraiché’ [S1A-061#270] and ‘of’ [S1A-085#015]; also omission of ‘want’ [S1A-077#055] and ‘you were’ [S1A-085#004]. Further (subtle) inconsistencies emerged, such as reference to an individual as Chandra Sheka [S2B-006#051] and a few lines later as Chandra Shakir [S2B-006#055]. The crucial standard is taken to be around 95–97% accuracy.

20. Cf. [S1A-033#010], [S1A-044#025], [S1A-070#384], [S1A-087#198; #200] and [S1A-089#250].
Further discrepancies arose, though not as slips of the ear, but rather based on transcription conventions – as in the following:

\[
\begin{array}{ccc}
\text{ACP} & \text{tagged as} & \text{ICE} \\
\text{innit} & \text{isn’t it}\textsuperscript{21} & \text{I don’t know} \\
\text{I dunno} & \text{I don’t know} & \text{[passim]}
\end{array}
\]

Such cases of ‘dunno’ are acknowledged by Nelson, Wallis, and Aarts (2002: 96–97) as deliberately normalising a ‘nonstandard’ pronunciation with an ‘established’ orthographic form during the annotation process.

Some speech was further struck off by ICE as cancelled; particularly where a speaker self-interrupted before reformulating their contribution. However, I overruled the decision by ICE to ‘ignore’ such text in instances where its retrieval was key to ascertaining the anaphoric target of the negation. I also worked to a slightly different distribution of lexical items compared with the concordance summary provided by ICE, because in a number of cases both the cancelled text and its replacement shared a single concordance entry.\textsuperscript{22}

5.5. Audio files

We find further instances of data disregarded by the corpus annotation, in which the transcription merely stated ‘unclear word[s]’ and/or omitted elements of the discourse altogether – yet the file proved audible upon access. On the other hand, some such ‘unclear’ cases were indeed justified by the variable quality of recordings across settings; particularly in the most ‘natur-

\textsuperscript{21} Recall fn.13 above.

\textsuperscript{22} Hence [S1A-092#169], in which ‘won’t’ is listed as the concordance entry but self-cancelled and replaced by ‘can’t’; also [S1B-075#028], in which ‘isn’t’ is cancelled and replaced by ‘wasn’t’. Further such cases occur in [S1A-002#027], [S1A-050#096], [S1A-061#123], [S1A-076#074], [S1A-077#175], [S1A-080#087], [S1A-087#107], [S1A-092#169], [S1A-095#027], [S1A-097#294], [S1B-014#059; #063], [S1B-040#131], [S1B-064#091], [S1B-075#028] and [S2A-044#017].
realistic’ and direct conversational settings, with speakers situated at various distances from the recording equipment, and featuring distractions such as background noise from a television show [S1A-040]; crossed conversations [S1A-015; S1A-082]; restaurant music [S1A-019] and even a bus engine [S1A-011]. Beyond this, some sound files were missing altogether [S1A-010#053] or replaced by a duplicate file from elsewhere, and we encounter considerably distorted recordings in [S1A-023#230-232].

Having addressed certain practical and technical difficulties encountered through using the corpus, we now consider some of the more theoretical challenges arising through conducting this classification. Indeed, through maintaining this study as a pragmatic, conceptual distinction, these allocations are often far from cut and dried, and we encounter a fair degree of interaction between the posited categories.

6. Targeting given and new information

A key (and as yet unacknowledged) feature in the current classification appeals to the information status of the material being negated in respect of how given or new the targeted entity is within the discourse; a notion developed in pragmatic theory by Prince (1981). Certainly, with pragmatic binding providing the very basis for identification and allocation, the status of the targeted material within the discourse setting as given or new plays a crucial role in the present allocation procedure — with type-α/αε negation targeting an explicit, linguistically given (communicative A-tier) entity within the discourse domain (wherein the only new entity is arguably the negation itself [Bolinger 1977: 49]) and type-γ at the other end of the scale; pre-emptively blocking contextually implied (C-tier) material as linguistically new.

6.1. β–γ boundary resolution

This very notion of givenness provided a rationale for resolving some potential boundary allocations in ICE. For example, in the case of ‘not only–’ or ‘not just–’ constructs, if the material targeted was previously mentioned in

23. On the other hand, radio studios provided near-laboratory settings, and so provided high quality recordings.

24. Duplicated [S1A-073#102] occurs in place of [S1A-073#247]; also duplicate [S1A-096#057-060] in place of [S1A-096#052-056].

the discourse exchange, it was cast as targeting a B-tier entity, and therefore assigned as type-\(\beta\) negation:

(133) Marketing … is concerned with understanding the marketplace – understanding your customers. Not just today’s customers

(134) Josephine Tey was a wonderful mixture of… romanticism … Josephine … was not only romantic in the proper use of the word

If on the other hand the targeted material was entirely new and had no prior reference in the preceding discourse context, it was classed as targeting a C-tier entity (thus type-\(\gamma\)):

(135) So, not only did the steps go missing

(136) Our first performance, which will be not just Vicky’s choreography

This given/new distinction also explains how an example like (137) below, which *prima facie* conforms to the standard definition of \(\beta\)-negation (*as not in the sense of\(-\)*) is actually a type-\(\gamma\) negation by virtue of occurring prior to even that which it modifies (and so pre-emptively blocks an unconstrained implicature):

(137) There’s a strong element almost uhm I mean not in an infantile sense, but of dressing up

At the other end of the scale, this given/new distinction further aided boundary allocations between types \(\alpha\) and \(\beta\), when we bear in mind the degree to which the material targeted by the negation was *explicitly* given.

6.2. \(\alpha\)–\(\beta\) boundary resolution

With the most explicit, uncontroversially *given* material belonging to the communicative A-tier, any propositional modification within the immediate scope of the negation indicated that the target was not strictly verbatim (and so wasn’t *explicitly* given in the most stringent sense), on account of which it was treated as targeting a B-tier specification (and so type-\(\beta\) negation):

(138) A: Now what do I mean by *atrophy*?
   B: It degenerates
A: Not specifically degenerates – it’s like it’s on its way to degenerate but degenerating implies that they’re actually dying [S1B-009#095]

(139) … and that target appears to die slightly –
I mean, not actually die, but become wasted [S1B-009#125]

This rather delicate boundary between type-α and β allocations is further demonstrated by the following, in which the negation features elements of direct quotation, but the means by which the antecedent material is instinctively propositionalized is betrayed by deictic substitution within the remit of the negation (on account of which it qualifies as type-β):

(140) You send pictures of you
No, I don’t send pictures of me. Other people send pictures of me [S1A-015#031]

(141) A: My dad’s bigger than your dad
B: Your dad is not bigger than my dad [S1A-085#159]

(142) A: Can they appoint me…?
B: They can’t appoint you [S1A-070#058]

Such deictic substitutions illustrate the means by which the material targeted by type-β is not linguistically given in the most explicit sense (compared with type-α), nor is it entirely new (compared with material targeted by type-γ). Indeed, by presenting a new take on a given entity, the material targeted by type-β in fact appears to lie somewhere in the middle of this supposedly binary distinction between given and new.

6.3. Given as gradient

I have proposed that the material targeted by type-α is considered to be most explicitly given, whereas material targeted by type-γ negation is for all intents and purposes linguistically and informationally new to the discourse domain. And yet, while linguistic givenness may be taken to play a considerable role in the allocation procedure, psychological givenness proves to be an altogether different matter, for it’s worth noting that various propositional embellishments [B] and wider contextual interpretations [C] may reasonably be assumed to have been sufficiently accessible in the mind of the speaker in order to be negated in the first place (cf. Giora 2007). Any conflation between the linguistic and psychological construals of ‘givenness’, ‘salience’ or even ‘accessibility’ is therefore likely to invoke something akin to the troublesome debate on what is said, or even explicit (cf. Pitts 2009:
40–42); hence Prince (1981: 225fn.) notes that an Old/New Information Workshop in 1978 soon became known as the ‘Mushy Information Workshop’.

6.4. Propositional embellishment and the syntactic constraint

In an attempt to distinguish between pragmatically derived interpretations within conversation, the communicative B-tier in figure 1 was promoted by Pitts (2009: chapter 3) as a propositional completion or development of the basic linguistic template, while the C-tier comprises all and any ‘syntactically unconstrained’ extrapolations over and above this. Since the material targeted by negation may be considered as psychologically salient in either case, this distinction between inferential ‘tiers’ in figure 1 may therefore be construed as a purely grammatical constraint. Certainly, this may seem fine for the following (constrained) negation of a B-tier embellishment in (143), overruling a highly (conventionally) salient interpretation of the lexical item ‘paid’:

(143) He had been paid – not in cash, but in kind

But while we might agree that such a concise propositional development qualifies as a B-tier embellishment, what if the manner of payment was instead delivered in a verbose and garrulous manner? When we bear in mind that technically anything can be incrementally added to an utterance as a propositional ‘development’, how can we really distinguish between a merely elaborate ‘propositional embellishment’ and a more diffuse ‘independent’ extrapolation – as in the allocated type-β examples below?

(144) ‘It would cause problems – not uhm in the sense of fantastic problems regarding the initial purchase’

(145) A: The men wear these extraordinary ties … what will the women wear? …
   B: I am sure we could develop a very tasteful chiffon scarf or some sort – not to put over our heads with our rollers underneath

Indeed, whereas small soundbite developments of local elements as in (143) above conveniently serve to illustrate the syntactic constraint upon which we may differentiate between B and C-tier material in figure 1, we find that lengthier, rambling iterative embellishments as in (144) and (145) can present something of a nuisance, since they are intuitively more akin to the diffuse realm of particularized implicature (i.e., C-tier material), and are therefore – arguably – better suited to a type-γ allocation instead. Subsequently,
when it comes to addressing the global interpretation of the proposition, the 'syntactic constraint' appears to be a rather evasive criterion for ring-fencing all and only developments of the linguistic form; not least when we bear in mind that technically any ('unconstrained') implicature [C-tier] cancellation may masquerade as a B-tier embellishment if the cancellation employs the character of not in the sense that–. In this way, characterising B-tier material as realising so-called 'unarticulated constituents' (cf. Recanati 2002) can also run into difficulties when conceding that all such interpretations – whether a propositional embellishment [B] or a broader inferential extrapolation [C] – are, by definition, essentially unarticulated in the prior discourse exchange. With types-β and γ negation both involving clarification of speaker commitment to some as yet (in its entirety) unexpressed proposition, type-γ implicature cancellation/blocking is therefore ultimately just another form of specification intended to guide pragmatic interpretation. Consequently, this rather arbitrary constraint on sentence/word meaning is clearly a sufficient, but certainly not a necessary condition when seeking to determine the global interpretation of an utterance in communication – and is precisely why Jaszczolt (2009) actually calls for the syntactic constraint to be abolished in determining what she refers to as the primary meaning.

A further difficulty in distinguishing between a propositional development and a functionally independent proposition arises when we consider the possibility that certain type-β allocations might only be accidentally so. For example, where a cognitively salient meaning just happened to converge on the propositional form – as perhaps in the following, treated as type-β (albeit cautiously) within the current venture:

(146) Seagram. Not owned by Seagram’s [S2A-005#242]
    but Seagram owned by Sir Eric Parker

What, then, is the defining difference between these different tiers of inferential additions or presumptive meanings (cf. Levinson 2000)? Who's to judge where the inferential B-tier really ends and the C-tier begins?

6.5. Mutual salience

Perhaps the best means for determining what belongs to the B-tier is through appealing to shared, prevalent, social defaults (cf. Jaszczolt 2005) between speakers; whereby the salience of B-tier material is reaffirmed through seeking shared conventions within and across a linguistic community, as with paid [in cash] in (143) above, and also the following:
Indeed, through appealing to mainstream publishers which might reasonably be expected to be known between speakers in the given exchange, (147) seems entirely acceptable as a salient type-\( \beta \) specification. But if on the other hand we substitute CUP/OUP with the rather less commercially mainstream (and perhaps less likely to be common ground within the exchange) Alyson publishing company, the strength of inference in terms of the likely shared association diminishes considerably – as it would if we similarly substituted the method of payment in (143) with some otherwise ‘obscure’ item of currency, such as purple pebbles; salient only in the mind of the speaker.

We could therefore characterise the distinction between types-\( \beta \) and \( \gamma \) negation as being borne of a distinction between established, societal norms shared between members of a given linguistic community; giving rise to the negation of B-tier embellishments (effectively a generalized or conventional implicature interpretation) compared with the negation of C-tier extrapolations, as entirely personal associations for an individual speaker; grounded within a collection of individual memories and experiences. Indeed, all language interpretation is of course ultimately an entirely personal matter. Yet crucially, and in the hope of any communicative success, within a theory of shared communication such personal interpretations are typically grounded within societal norms and conventions. Personal defaults simply aren’t enough on their own, which is why we so commonly end up appealing to the very ‘convention’ of linguistic form in the first place.

With regard to individual allocations within the ICE data, this sense of convention was subsequently retained in conjunction with the ‘syntactic constraint’ as the most feasible means of distinguishing between these communicative bands from Figure 6.1. Negotiable as both have proven to be, this enabled at least some means for compartmentalising such a broad communicative phenomenon, rather than facing a unified bundle of inferential possibilities. This underlies why I still endorse the so-called ‘syntactic constraint’ from a schematic perspective in accordance with my revised tri-chotomy, despite cautiously acknowledging borderline cases within actual use.

6.6. Diachronic semantics

A further caveat emerges when we bear in mind how, as a social phenomenon, linguistic meaning is by no means a static, programmed correspondence relation between word and thought, but is amenable to changing trends
in interpretation. This fluidity of the lexicon can be seen when a particular global interpretation of the sentence becomes so popular and familiar that it undergoes a semantic shift; gradually migrating from nuanced uses to become a more ‘standard’, conventional association encoded in the lexicon as part of the linguistic system. Indeed, the varied (and rather unpredictable) origins of even some ‘entrenched’ lexical conventions can be found, for example, through cockney rhyming slang. Further examples abound in familiar (lexicalized) idioms (cf. Clark and Clark 1977; Swinney 1979; and Cacciari and Tabossi 1988) and conventionalized (dead) metaphors; commonly processed in the same manner as ‘literal’ language (cf. Glucksberg, Gildea, and Bookin 1982; also Glucksberg 1995) – perhaps even more salient than a compositional derivation, as in the case of (148):

(148) He’s got your eyes

This consolidation of ‘salient’ meanings within the mental lexicon – where the unconstrained interpretation then becomes the conventionally salient reading (cf. also Giora’s graded salience hypothesis [Giora 1997, 2002, 2003]) – may thus help to explain the seemingly dubious use of literally in the following:

(149) “The crowd is literally going mental”
(Myleene Klass, reporting on X-Factor final, ITV1 [December 16th 2006])

(150) “Today is the day that Tony Blair steps literally into the history books”
(Tom Bradby, credited in The Independent media [December 31st 2007])

Such an ongoing and dynamic process of consolidation within the lexicon further illustrates the difficulty in drawing any concrete distinction between the upper (i.e., inferential) tiers from figure 1, for as certain nonce inferences and associations become more entrenched through use, they gradually migrate from the wholly pragmatic uppermost C-tier down through to the B tier – as below in Figure 6.5, whereby obsolete meanings may subsequently drop out of use altogether:

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26. Cf. Israel (2002), who claims that such use has ‘flourished’ since the late nineteenth century. Certainly, similar such ‘gaffes’ regularly contribute to Private Eye’s ‘Colemanballs’ feature.

27. For example, whereas ‘carnival’ once conventionally associated with ‘raising flesh’, and ‘nice’ [nyce] indicated foolishness, these terms certainly don’t invoke such meanings in the minds of most present day speakers.
A similar process is discussed by Traugott (2004: 547) in her exploration of ‘historical pragmatics’, wherein particularized conversational implicatures can become generalized conversational implicatures through time – eventually becoming ‘semanticized’ (i.e., coded) meanings in the language. Certainly, such diachronic considerations highlight the need to exercise caution with very term ‘implicature’ throughout the current venture; especially when we remember that the original, broad, Gricean sense of implicature encompassed any and every propositional development that wasn’t strictly ‘said’ (cf. Grice 1975, 1978) – proving to be a rather sensible move in its avoidance of the need to chase any vague boundary such as that posited between the present inferential [B and C] tiers within communication.28

These categories are therefore not sharply delimited, absolute plateaus, and their boundaries needn’t be wholly cut-and-dried. But when dealing with meaning in use we might reasonably expect some degree of subjectivity and flexibility, and as Levinson (2004: 107) notes, fuzzy borders to a phenomenon needn’t render our conceptual categories altogether obsolete.29 It’s not as though we are actually required to definitively ‘tick’ these boxes in real, everyday conversation, much in the same way that we don’t typically need to register what kind of speech act our every utterance is in order to understand its meaning. The outcome of the present categorisation isn’t therefore dependent on analysis beyond the descriptive statistics given earlier, but rather summarises observed tendencies in response to an honest and instinctive reaction to the theory and data encountered to date, in terms of the mental mechanisms at work when we negate or deny some entity within discourse.

28. Indeed, Grice himself (1978: 43) acknowledges that conversational implicatures may become conventionalized through time.
29. Take, for example, ‘assumed’ categorical distinctions such as colour terms: According to Brown and Lenneberg (1954), the human eye is capable of discriminating between up to 7.5 million colour differences, upon which we impose approximate categorical distinctions for basic coherence.
7. Previous corpus-based studies of negation

It is important to acknowledge at this point that there have however been a number of previous works on negation, initiated by the logical-syntactic works of Jespersen (1917), von Wright (1959) and Klima (1964), through to a more functional account distinguishing between denials, rejections and non-existence in Bloom (1970). Horn (1985) also suggests a more recent pragmatic treatise of negation, as does Foolen (1991) and similarly, Geurts (1998). But in terms of empirical studies of negation based on spoken corpus data, there appears to be little available.


Tottie (1982/1991 ch.2) appears to have employed the most similar approach to the present venture in her exploration of negation in English within corpus data. Appealing to the London-Lund Corpus of Spoken English, Tottie (1982/1991) promotes a distinction between two functional types of negation: Denials (of assertions) and rejections (or refusals of explicit suggestions); further distinguishing explicit from implicit denials “depending on whether what is denied has been explicitly asserted or not in the preceding context” (Tottie 1982: 88, 1991: 16). In this way, our type-α negation (also incorporating elliptical type-αε) corresponds with Tottie’s class of ‘explicit denial’ through targeting “a proposition which has explicitly been asserted” (Tottie 1982: 95, 1991: 21). This is supported by the following ‘explicit denials’ in Tottie (1991: 20):

(151) X: That dress must have been very expensive
    Y: It wasn’t [expensive]

(152) X: What a hypocrite you are!
    Y: I’m not [a hypocrite]

30. See Svartvik (1990) for more information.

31. Tottie (1991: 21) thus acknowledges a similarity with Bloom’s (1970) earlier three-way distinction (between denials, rejections and nonexistents), but proposes that nonexistents may be pragmatically assimilated within her class of (explicit/implicit) denials – as in the denial of an implicit (reasonable) expectation that something might otherwise obtain.

32. Bolinger (1977) appears to invoke a similarly motivated distinction between ‘external negation’ in which “the speaker denies something that has supposedly been affirmed” and a distinct [unnamed] form of negation, in which the thing denied is “not actually claimed”, but is that which the speaker “assumes that the other speaker might be thinking” (Bolinger 1977: 44).
On the other hand, Tottie’s ‘implicit denials’ target “propositions that can be textually inferred but which have not been explicitly asserted” (Tottie 1982: 95, 1991: 32). In doing so, Tottie’s implicit denials reasonably appear to correspond with our own inferential types-β and γ; as in the following ‘implicit’ denial from Tottie (1982: 95):

(153) A: John’s wife is a teacher  
B: John isn’t even married

Indeed Tottie (1991: 35–36) notes that her implicit denials “remain, by far, the largest category”; accounting for 67% of all assessed tokens. However, it’s important to bear in mind that her implicit class of denials subsumes both the negation of a syntactically constrained completion/development β and of an unconstrained extrapolation γ in my scheme. Any prima facie similarity between the occurrence of Tottie’s ‘implicit denial’ and my own type-γ negation (averaging 73% of allocations in tables 1 and 2) is therefore potentially misleading: Our data sets differ notably, for whereas I restrict my study to assessing and comparing the behaviour of ‘not’ and ‘-n’t’, Tottie also includes prefixally incorporated negation and so-called NO-negation within her exploration of negation in both speech and writing:

NOT-negation: I don’t have a clue  
NO-negation: I have no clue

The inclusion of these diffuse forms of negation may explain the higher frequency of Tottie’s explicit denials as comprising 14% (63/427) of the negative sentences under consideration in her spoken data (Tottie 1991: 35–36), whereas my own explicit type-α/αε accounted for just 6.79% of all assessed tokens (recall table 2). Further to this (and perhaps the most important typological distinction between our schemas) is that Tottie’s primary distinction between rejection and denial leads her to posit the following as rejections (Tottie 1991: 19):

(154) Would you care for some scotch?  
No thanks, I don’t drink

(155) Come and play ball with me  
No, I don’t want to

33. Delahunty (2006: 242fn.) further takes Not That sentences to function as implicit denials by Tottie’s criterion. But I’ve already noted that NTSSs can target the communicative A-tier as in (59) in §2.4.3, on the basis of which they may in fact vary between explicit and implicit denials, after all.
In comparison, the present three-tier classification of negation allocates these (to type-γ denial) by virtue of their negating inferential entities, and so arguably qualifying both as (loosely construed) denials all the same. Consequently, it appears that Tottie actually undermines her class of denials by treating a number of cases as singularly rejections; cases which, as above, may feasibly qualify as both. Indeed, Tottie’s own division between denial and rejection therefore fails to provide a watertight distinction between the two, whereby “denial relates to propositions and is normally dependent on linguistic means for expression, while rejection is a pragmatic category, not dependent on language and not necessarily relating to propositions (although capable of being expressed in natural language)” (Tottie 1991: 314).

Despite Tottie’s claim that her classification “is not a mere ad-hoc device” and is “independently motivated in several ways” (Tottie 1982: 96, also 1991: 22), I’m therefore not convinced by the utility of her functional distinction between rejection and denial – nor am I certain how Tottie’s approach would deal with our echoic shadow negatives and truth-conditional LEM; arguably functioning as neither a rejection nor a denial.

7.2. Volterra and Antinucci (1979)

An alternative functional classification can be found in a study by Volterra and Antinucci (1979), who derive four types of discourse negation on the basis of observing children interacting with adult carers over a period of time. The four types of negation that they posit are commands, statements, refusals and responses, for which Volterra and Antinucci posit a specific presupposition in each case: By commanding, the child presupposes that “the listener is doing or about to do P” (Volterra and Antinucci 1979: 284); in statements, “the child infers a certain listener belief or expectation” on the part of the adult (Volterra and Antinucci 1979: 287); refusals presuppose that the listener wants the speaker to do P (Volterra and Antinucci 1979: 288) and responses (to adult yes-no questions) arise in accordance with a presupposition that the listener wants the speaker to confirm or dis-
confirm a statement (Volterra and Antinucci 1979: 288). Like Tottie, Volterra and Antinucci therefore include so-called ‘No’–negation in their classification.

Volterra and Antinucci classify ‘I don’t know’ within responses, where in such cases the respondent negates “an implicit presupposition of every question, namely, that the listener is expected to know the answer” (Volterra and Antinucci 1979: 289). But this arguably demonstrates overlap between their functional categories, for although ‘I don’t know’ is classified as a response, it clearly shares the same underlying rational presupposition as a statement (as in §2.4.4 earlier). I would therefore question Volterra and Antinucci’s claim that the four posited types of negation each possess “a different presupposition or performative relationship” (Volterra and Antinucci 1979: 284). Instead (and as with Tottie’s primary distinction between rejection and denial), their classification is primarily based on the performative (i.e., speech function) status of the utterance (recall my earlier caution regarding speech act distinctions in §3.4); with the targeted proposition (as a presupposition) a mere by-product of assuming a coherent basis for negation in discourse. On this basis, both previous ‘corpus-based’ studies of negation considered here appear to prioritise speech act status over and above the functional character of the negation (specifically with regard to the discourse status of the material being negated), and may subsequently be viewed as falling short of what we seek when formulating a truly pragmatic classification of discourse negation.

8. On salience and enrichment in expressions of negation

Through employing the communicative programme advocated in Pitts (2009), the present study sought to identify instances of corresponding types-α, β and γ negation in ICE-GB, although it proved necessary to posit additional allocations for negative tokens failing to conform to the typology based exclusively on the proposed scheme. Borderline cases between allocations further served as a reminder of the inherent fluidity between categories when applying any such scheme to real data. Nevertheless, these potentially problematic cases would be no less real had we sought to apply these data to the original contextualist scheme mentioned earlier in §1; not least since we would have faced the further challenge of navigating the distinction between so-called ‘minimal’ proposition and ‘explicature’; otherwise dissolved within the communicative scheme employed here.

The overwhelming prevalence of type-γ negation within the corpus data was evident through tables 1–3 and charts 1–3, while brief comparisons between allocations for the full lexeme ‘not’ and enclitic ‘-n’t’ also gave rise to some noteworthy observations; namely the overwhelming tendency to employ the full lexeme ‘not’ in LEM constructs, and the considerably high-
er frequency of rhetorical negatives among enclitic ‘-n’t’ tokens. The behaviour of these variants (alongside a fuller consideration of the particular discourse settings of tokens under evaluation) certainly presents scope for future investigation.

Although the present paper presents little more than a cursory exploration of negation in a corpus of spoken English, central to the study was the means by which we identified different threads of negation in everyday discourse. This may in turn provide a novel approach (and potentially useful tool) for shedding light on theories of natural language negation, such as the purported descriptive/metalinguistic distinction discussed by Horn (1985) – which, though persuasive, has received no conclusive empirical validation to date. Bearing such future possibilities in mind, I hope that the present study may provide some small contribution towards better understanding the behaviour and effects of negation in everyday conversation.

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Chapter 7

Understanding acronyms: The time course of accessibility

Morton Ann Gernsbacher

1. Introduction

Literally, acronyms are the abbreviations comprising the first letters of two or more words (e.g., CD is the acronym for compact disc). However, on a more conceptual level, acronyms are often highly associated with objects or ideas that are not explicitly contained in the components of the acronym itself (e.g., CD is commonly associated with music). Which meaning is more accessible? The literal (component) meaning (e.g., disc) or the conceptual (associate) meaning (e.g., music)? Does the accessibility of either or both of those two meanings, literal-component meaning and the conceptual-associate, change over time? What happens when acronyms are processed as letter strings rather than lexical units? Is the accessibility of their literal-components or conceptual-associate attenuated? This chapter describes a series of six laboratory experiments conducted to answer these questions.

2. Understanding acronyms: The time course of accessibility

We know little about how people access the meanings of acronyms. The majority of previous psycholinguistic research on acronyms has focused on how people recognize individual letters within acronyms and what that tells us about how people recognize letters when they are reading actual words. For example, Staller and Lappin (1981) report that amid a briefly presented array of six letters, familiar acronyms, such as DVD, pop out as readily as do words, such as DID. Noice and Hock (1987) report that acronyms are privileged by the word superiority effect: It is easier to recognize an individual letter in a briefly presented word – or acronym – than it is to recognize the same letter in an unfamiliar string of letters (e.g., DYD; see also Laszlo and Federmeier 2007a). Furthermore, repeated acronyms, like repeated words, are easier to identify than repeated unfamiliar letter strings (Carr et al. 1979), and repeated acronyms, like repeated words, trigger a characteristic reduction in the N400 event-related brain potential (Laszlo and Federmeier 2007b).
Thus, prior psycholinguistic research has primarily investigated the identification and processing of the individual letters composing acronyms. Participants in these experiments have not been required to read acronyms in order to comprehend them (cf. Laszlo and Federmeier 2008). Indeed, most of these word-like effects also hold for pronounceable nonwords (so called pseudowords), such as *DED*, suggesting that these word-like effects derive from familiarity with the orthography (for acronyms) or with the phonology (for pronounceable pseudowords).

This shortcoming in the existing research becomes interesting as we notice the dichotomous nature of acronyms. Literally, acronyms are the abbreviations comprising the first letters of two or more words (e.g., *CD* is the acronym for *compact disc*). However, on a more conceptual level, acronyms are often associated with objects or ideas that are not explicitly contained in the components of the acronym itself (e.g., *CD* is commonly associated with *music*). For this reason, understanding acronyms can be considered a case of understanding figurative language. Just as puns, metaphors, and idioms are identified by both a literal meaning and a figurative, or conceptual, meaning, so too are acronyms.

For acronyms, several unanswered questions remain: Which meaning is more accessible? The literal (component) meaning (e.g., the *disc*-meaning of *CD*) or the conceptual (associate) meaning (e.g., the *music*-related connotation of *CD*)? Does the accessibility of the literal-component meaning or the conceptual-associate meaning change over time? When acronyms are processed as letter strings rather than lexical units, is the accessibility of their literal-components or conceptual-associate attenuated? This chapter describes a series of six laboratory experiments conducted to answer these questions.

### 3. Basic Experimental Task

To investigate whether the literal components or the conceptual associates of acronyms are more accessible, a standard priming-for-lexical-decision task was used. Participants viewed an acronym presented on a computer screen for an amount of time determined by the acronym’s length (16.67 ms multiplied by the number of characters in the acronym plus a constant 350 ms; e.g., a two-letter acronym appeared for 383 ms, a three-letter acronym appeared for 400 ms, and a four-letter acronym appeared for 417 ms). In priming-for-lexical-decision-task nomenclature, the acronym served as the prime. After the acronym-prime disappeared from the screen, a blank period intervened prior to the presentation of the target. The blank interval, otherwise known as the inter-stimulus interval, was manipulated across
three different experiments. Following the inter-stimulus interval, the target appeared. The target was a letter string to which participants performed a lexical decision task: As accurately and rapidly as they could, participants decided whether the letter string formed a word. Figure 7.1 graphically displays this sequence of events that occurred on each trial.

The priming-for-lexical-decision task is frequently used in cognitive psychology to index how quickly people can access the meanings of words. For example, in a classic experiment, Meyer and Schvaneveldt (1971) presented participants with letter strings, and the participants’ task was to decide rapidly and accurately whether each letter string formed a word (hence, the name “lexical decision”). Meyer and Schvaneveldt reported that participants can more rapidly decide that a letter string like nurse is a word when it is preceded by a related word, for example, doctor, as opposed to an unrelated word, such as butter. This classic finding, replicated numerous times, suggests that the speed with which participants responding to target words is affected by the primes that immediately precede them.

In the current experiments, the prime stimuli were familiar acronyms and the target words were either a literal component of the acronym prime or conceptual associate of the acronym prime. For example, for the acronym prime, CD, the literal-component target word was compact. The other target word was a conceptual associate of the acronym prime. For example, for the acronym prime, CD, the conceptual-associate target word was music.

The acronyms were identified by first compiling a list of approximately 140 acronyms and second by asking participants in a norming study to write out what each acronym stood for. The 24 familiar acronyms that served as prime acronyms in the current experiments were those for which 83% or
more of the participants in the norming study successfully wrote out what the acronym stood for. For each of the 24 familiar acronym primes, two target words were chosen: One target word was a literal component of the acronym prime, and the other target word was a conceptual associate of the acronym prime.

Because it might be possible that the two sets of target words chosen to serve as literal-component target words and conceptual-associate target words varied in how difficult they were to recognize, each target word also served as its own control target word in two other conditions of the experiment, as shown in Table 7.1. When a target word served as its own control, it was completely unrelated to its preceding acronym prime. For example, the conceptual-associate target word *music* was preceded in one condition by its associated acronym prime, *CD*. In this case, it served to test the experimental-conceptual relation. To assess a control condition for this target word, the same target word, *music*, was preceded by an unrelated acronym prime; for example, *DC*. Similarly, the literal-component target word *compact* was tested as both an experimental-literal target, preceded by the acronym prime, *CD*, and as a control-literal target, preceded by the unrelated acronym prime, *DC*. As demonstrated by this example, when a literal-component target word (e.g., *compact*) was put into a control condition, its initial letter (e.g., *c*) was a part of the preceding acronym (e.g., *DC*); however, the control target word was not a component of the acronym (e.g., *compact* is not a component of *DC*).

<table>
<thead>
<tr>
<th>Prime</th>
<th>Target</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD</td>
<td>music</td>
<td>Experimental-Conceptual</td>
</tr>
<tr>
<td>CD</td>
<td>compact</td>
<td>Experimental-Literal</td>
</tr>
<tr>
<td>DC</td>
<td>music</td>
<td>Control-Conceptual</td>
</tr>
<tr>
<td>DC</td>
<td>compact</td>
<td>Control-Literal</td>
</tr>
<tr>
<td>DC</td>
<td>Washington</td>
<td>Experimental-Conceptual</td>
</tr>
<tr>
<td>DC</td>
<td>District</td>
<td>Experimental-Literal</td>
</tr>
<tr>
<td>CD</td>
<td>Washington</td>
<td>Control-Conceptual</td>
</tr>
<tr>
<td>CD</td>
<td>District</td>
<td>Control-Literal</td>
</tr>
</tbody>
</table>

Thus, each experiment comprised four conditions. Each of the 24 acronym primes was followed by a literal-component target word or a conceptual-associate target word, and each literal-component or conceptual-associate words was tested as an experimental and as a control target word. Four material sets were constructed for each experiment, and each participant was exposed to only one material set. Therefore, each participant was exposed
only once to each acronym, and, similarly, each participant was exposed only once to each target word.

Consistent with a typical lexical-decision design, trials were also included in which the target string of letters did not form a word. These catch-trial target letter strings were pronounceable pseudowords like *reveme* and *discantful* and were preceded by a different set of acronyms than the experimental or control target letter strings. The filler catch-trial target letter strings were designed to resemble the experimental and control target word trials as much as possible. Thus, to mimic the Literal-component target word condition, the target letter strings in half of the catch trials were paired with acronym primes that shared a common letter (e.g., *RN* - *retrate* or *IRS* - *rilmely*).

To summarize, each experiment comprised four conditions. Each acronym-prime was followed by either a literal-component target word or a conceptual-associate target word. Additionally, each literal-component target word and each conceptual-associate target word was tested in both the experimental and the control condition.

The predictions for each experiment were very straightforward. If reading an acronym prime (e.g., *CD*) causes its conceptual associates to become accessible, then participants should respond significantly faster to conceptual-associate target words (e.g., *music*) when they are preceded by their experimental acronym primes (e.g., *CD*) than when they are preceded by their control acronym primes (e.g., *DC*). Similarly, if reading an acronym prime causes its literal components to become accessible, then participants should respond significantly faster to literal-component target words (e.g., *compact*) when they are preceded by their experimental acronym primes (e.g., *CD*) than when they are preceded by their control acronym primes (e.g., *DC*).

Figure 7.2 displays the 80 participants’ correct reaction times to the lexical decision target words when the inter-stimulus interval was extensive (i.e., 2500 ms). Analyses of variance (ANOVAs) on participants’ correct reaction times indicated that both conceptual-associate targets (e.g., *music*) and literal-component (e.g., *compact*) targets were responded to more rapidly when preceded by their experimental acronym (e.g., *CD*) primes than when preceded by their control acronym (e.g., *DC*) primes: $F(1,79) = 16.40, p<.001; F(1,23) = 5.61, p<.03$ for conceptual-associate targets; $F(1,79) = 10.27, p<.002; F(1,23) = 5.04, p<.04$ for literal-component targets. Thus, when the acronym primes were given substantial processing time, both the conceptual-associates’ meanings and the literal-components’ meanings were accessible. To our knowledge, this is the first investigation of how acronyms are understood, and this investigation suggests that after
adequate processing time, both the literal components and the conceptual associates of acronyms are equally accessible.

4. Time Course of Accessibility

Language is not a static commodity, and access to meaning is not static during language comprehension. What is accessible more than two seconds after processing an acronym is not necessarily what is accessible much earlier. Therefore, in a second experiment, the inter-stimulus interval was dramatically reduced. Participants in this second experiment also read acronym primes and responded to letter string targets in a lexical decision task; however, whereas the letter string targets in the first experiment were separated from the acronym primes by a 2500 ms interval (i.e., the lexical decision targets appeared after a 2500 ms inter-stimulus interval), the target letter strings in the second experiment were separated from the acronym primes by a much shorter, 250 ms, inter-stimulus interval.

Figure 7.3 displays the 96 participants’ correct reaction times to the lexical decision target words when the inter-stimulus interval was 250 ms. Just as with the much longer 2500 ms inter-stimulus interval, with a much shorter 250 ms inter-stimulus interval, both conceptual-associate targets (e.g., music) and literal-component (e.g., compact) targets were responded to more rapidly when preceded by their experimental acronym (e.g., CD) primes than when preceded by their control acronym (e.g., DC) primes.
Figure 7.3. Mean correct reaction times to lexical decision target words when the inter-stimulus interval was 250 ms (Experiment 2).

\[ F_1(1,95) = 5.63, p<.02; F_2(1,23) = 4.22, p<.06 \text{ for conceptual-associate targets}; F_1(1,95) = 3.45, p<.07; F_2(1,23)<2.0 \text{ for literal-component targets}. \]

However, statistically speaking, the priming effect observed on the literal-component targets was only marginally significant when participants were considered a random effect and failed to reach significance when target words were considered a random effect; therefore, a replication of the experiment was conducted.

Figure 7.4 displays the 92 participants’ correct reaction times to the lexical decision targets for this replication experiment. Again, both conceptual-associate targets (e.g., *music*) and literal-component (e.g., *compact*) targets were responded to more rapidly when preceded by their experimental acronym (e.g., *CD*) primes than when preceded by their control acronym (e.g., *DC*) primes \[ F_1(1,91)=14.01, p<.02; F_2(1,23)=5.97, p<.05 \text{ for conceptual-associate targets}; F_1(1,91)=3.37, p<.06; F_2(1,23)<2 \text{ for literal-component targets}. \]

And again the priming advantage for the literal-component targets was only marginally significant when participants were considered a random effect and failed to reach significance when target words were considered a random effect; however, the fact that the data from this experiment replicated that of the previous experiment, it is safe to assume that in both cases, with an inter-stimulus interval of 250 ms, both the conceptual-associates’ meanings and the literal-components’ meanings are salient aspects of understanding acronyms.
What about after very brief periods of processing? Are both the conceptual-associates and the literal-components of acronyms accessible immediately after an acronym is read? A third experiment explored that question by further reducing the inter-stimulus interval to 50 ms, and Figure 7.5 displays the 104 participants’ correct reaction times to the lexical decision targets.
when the inter-stimulus interval was the very brief 50 ms. In contrast to the results obtained when the inter-stimulus interval was the much longer 2500 ms or even the briefer 250 ms, when the inter-stimulus interval was the very brief 50 ms, only the literal-component (e.g., *compact*) targets were responded to more rapidly when preceded by their experimental acronym (e.g., *CD*) primes than when preceded by their control acronym (e.g., *DC*) primes \([F(1,103)=13.28, p<.001\) for literal-component targets; \(F(1,103)<2\) for conceptual-associate targets].

![Figure 7.6](image)

*Figure 7.6.* Time course of accessibility of conceptual-associates’ meanings and literal-components’ meanings (from Experiments 1, 2, 3, with Experiment 2’s replication, as indicated by the unfilled circle and square).

Putting these three experiments together, as illustrated in Figure 7.6, illustrates the time course of the literal components and the conceptual associates of familiar acronyms. Both are equally accessible more than two seconds after an acronym is processed (i.e., at the 2500 ms inter-stimulus interval). Both are also equally accessible only a quarter of a second after an acronym is processed (i.e., at the 250 ms inter-stimulus interval). However, immediately after an acronym is processed (i.e., at a very brief 50 ms inter-stimulus interval), only the literal meaning is accessible. According to Gio-
ra’s Graded Salience Hypothesis (1997, 2003), “more salient meanings,” that is, meanings “foremost on our minds,” should be accessed more rapidly than less salient meanings. Thus, at early stages of processing acronyms, the literal-components are most salient, but within only a short period, both literal-components and conceptual-associates are accessible in parallel, a state that remains for over two seconds.

5. Attenuating the Salience

Presumably the accessibility of both the conceptual associates and the literal components of acronyms is driven by acronyms being treated as familiar, lexical units. If so, we should be able to diminish the accessibility of both the conceptual associates and the literal components by treating the acronyms not as familiar lexical units but rather as simple strings of letters. Rather than reading the acronym primes, what if participants are told to focus on the letters within the acronym primes? To answer this question, in a fifth experiment participants performed a letter-detection task on the acronyms prior to performing the lexical-decision task on the target words.

In a typical letter-detection task, participants are given a particular letter to search for in a target. Participants respond “yes” if the specified letter appears in the target and “no” if it does not. Thus, in this experiment, the acronyms served as targets for the letter-detection task. However, because the experimental question was whether by focusing the participants’ attention on the letters of the acronym, as opposed to the acronym as a whole, the salience of the acronyms’ conceptual-associates and literal-components could be attenuated, in this experiment the acronyms also served as implicit primes for their subsequent lexical-decision targets, as they had served in the previous four experiments.

More specifically, prior to the presentation of each acronym, first a small warning box appeared, then a letter cue appeared. When the acronym appeared, participants indicated as rapidly and accurately whether the cued letter was contained in the acronym. And, then, as before, a letter string appeared to which participants performed a lexical decision task. Figure 7 graphically displays this sequence of events that occurred on each trial. To provide the heartiest test of the ability to diminish salience, an inter-stimulus interval (between the acronym and the lexical-decision target) of 2500 ms was used. This extensive inter-stimulus interval provided the most stringent test of the potential to diminish the salient meanings of the acronyms.
Figure 7.8 displays the 144 participants’ correct reaction times to the lexical decision target words when the inter-stimulus interval was extensive, 2500 ms, and the participants performed a letter-detection task on each acronym prime. Neither the conceptual-associate targets (e.g., music) nor the literal-component (e.g., compact) targets were responded to more rapidly when preceded by their experimental acronym (e.g., CD) primes than when preceded by their control acronym (e.g., DC) primes [F₁ and F₂<2 for conceptual-associate targets; F₁ and F₂<1 for literal-component targets]. Thus, when the acronym primes were treated as letter strings, by virtue of the letter-detection task, neither the conceptual-associates’ meanings nor the literal-components’ meanings were salient. To ensure that these results were reliable, the experiment was repeated with another set of 112 participants, and the results remained the same: Neither the conceptual-associate targets (e.g., music) nor the literal-component (e.g., compact) targets were responded to more rapidly when preceded by their experimental acronym (e.g., CD) primes than when preceded by their control acronym (e.g., DC) primes [F₁ and F₂<2 for conceptual-associate targets; F₁ and F₂<1 for literal-component targets].

Thus, the salience of acronyms can be attenuated when the acronyms are processed as letter strings rather than lexical units. In contrast, when acronyms are processed as lexical units, they lead to priming of their literal components at very short processing lags and to priming of both their conceptual associates and their literal components at longer processing lags.
Together, these data suggest that the literal components of acronyms are their more salient meanings, but that their conceptual associates can be accessed, in time and when the acronyms are processed as lexical units.

6. Notes

Author’s Acknowledgment: Martha Fuiten assisted in conducting several of the experiments reported in this chapter.

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Chapter 8
Graded salience: probabilistic meanings in the lexicon

Keith Allan

1. Introduction
This paper draws together ideas published in Allan (1976; 1980; 1981; 2000; 2001) which relate to a potential variety of senses for a given lexeme when it is listed in the lexicon (as a listeme), each sense being appropriate to a particular set of contexts of use. The problem for the lexicographer (if this is the correct term for someone modelling the mental lexicon) is how to tag the various senses such that they can be readily accessed in appropriate contexts. This tagging within the lexicon raises questions of salient and default meaning. Allan (2001 Chapter 3) and Allan (2006) give my model for the structure of a lexicon and its relation to a (mental) encyclopedia. In my view the encyclopedia is a general knowledge base of which the lexicon is a proper part which stores information about the formal, morphosyntactic, and semantic specifications of listemes.¹ The network of relationships among the components of a lexicon and the encyclopedia are shown in Figure 8.1, where formal data, F, is represented as a triangle, morphosyntactic data, M, by a circle, semantic data, S, is a rectangle, and encyclopedic data, E, is an ellipse. It illustrates my assumptions and the reader does not need to approve the supposed configuration because in this chapter I am only concerned with component S.

So far as is possible, a listeme should be monosemic; the different aspects of its meaning should be included together with an account of the probability and contextual conditions under which each aspect of the meaning is the preferred interpretation. These probabilistic meanings can be described as ‘grades of salience’. As a tool for ranking degrees of probability

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¹ These interrelationships are consistent with approaches like Frame Semantics, Cognitive Grammar and Construction Grammar; also the finding in Hagoort, Hald, Bastiaansen, and Petersson (2004: 440) that “word meaning and world knowledge are recruited and integrated very rapidly, within some 400 ms.”
I propose a credibility metric because bivalent truth conditions are inadequate (too simplistic) for practical use when communicating using natural language; likewise, the distinction in modal logic between the possible (diamond) operator and the necessary (box) operator is too gross an instrument. The credibility metric allows for an unbounded number of distinctions between 0 (undoubtedly false) and 1 (undoubtedly true). I present probabilistic meanings as nonmonotonic inferences, i.e. inferences that are not necessary entailments but are defeasible without self-contradiction. They are contextually affirmed or disconfirmed, either from the co-text or some other factor in the common ground. (Common ground is constituted from discourse context, situation of utterance, and input from relevant encyclopedic knowledge, see Allan (2001); Stalnaker (2002).)

In the rest of this chapter I define and distinguish salient from default meanings (§2). I use a discussion of the semantics of *bird* as a vehicle for introducing the credibility metric (§3); then apply the notion of graded salience to the semantics of the noun *bull* (§4) and the verb *climb* (§5). In §6 I return to the persistent misapprehension that countability is a characteristic of English nouns; I reaffirm the finding of Allan (1980) that identifiable contextual conditions render a noun countable or not, and the fact that different nouns respond to different conditions needs to be noted in the lexicon. The situation with respect to collective nouns and nouns that are collectivizable is somewhat similar (§7). I claim it is a matter of graded salience that some animal nouns are used to refer to either the animal’s meat or its pelt (§8). Then §9 returns to the much disputed semantics and pragmatics of *and* which can readily be accounted for using the notion of a monosemic semantics with a graded variety of differing interpretations that depend on context.

2. Salient meanings, default meanings, and the lexicon

Although it is not represented in the lexicon, one device that makes lexical meaning salient is “contrastive focus reduplication” (Ghomeri, Jackendoff, Rosen et al. 2004); examples (slightly adapted from http://www. 
umanitoba.ca/faculties/arts/linguistics/russell/redup-corpus.html) are bolded in (1)–(4).

(1) Do you want to go to the **BANK-bank**? [as opposed to an ATM]
(2) What’s the difference between brain-dead and **DEAD-dead**?
(3) People don’t love movie stars because they **KNOW-them-know-them**.
(4) Don’t think virgin Madonna, think **MaDONna-Madonna**.

These reduplications place heavy stress on the accented syllable within the first instance of the reduplicated item in order to focus on and make particularly salient the default reference rather than a peripheral one. They are a type of pragmatic regulator in the sense of Lasersohn (1999) in that they constrain meaning. For instance, if we ignore the potential lexical ambiguity, (1) focuses on the default reference for bank, “an establishment for the custody of money”, contrasted with the more peripheral “an outlet established by a bank”. (2) focuses on the default reference for dead, “now completely without life”, contrasted with the more peripheral “brain-dead”. The negative in (3) denies the default reference “have familiar personal acquaintance with”, reducing know to the more peripheral “be aware of, be cognizant of”; while the negative in (4) denies default reference to “the real Madonna, virgin mother of Christ”, transferring reference to the celebrity named after her, Madonna Louise Ciccone (b. 1958). As is clear from (1)–(4), contrastive focus reduplication invokes salient lexical meaning that arises from the semantic specification of the listeme in the lexicon, but it is not relevant to the specification of probabilistic meaning in the lexicon.

The preceding discussion refers to “making salient the default reference”. At first sight a salient meaning should be almost the opposite of a default meaning. Something that is salient jumps out at you; by contrast a default is the fall-back state when there is no contextual motivation to prefer any other. On a second look, what qualifies a state to become the default is its salience in the absence of any contextual motivation to prefer another. Giora (2003: 34, 37) defines salience on what is foremost in the mind based on “such factors as familiarity, conventionality, and frequency of occur-

2. In any normal situation *Sue arrived at three o’clock* is treated as true if she arrived close to thee o’clock; Lasersohn refers to this slackness as a “pragmatic halo”. A pragmatic regulator is an adverb such as precisely or exactly in *Sue arrived precisely at three o’clock* or *Sue arrived at exactly three o’clock* which restricts the slack in the interpretation. Unlike Lasersohn, I don’t believe the slack is erased, but it is certainly restricted.

3. Madonna’s first number one hit song ‘Like a virgin’ is evoked here (by Dylan addressing Jez in the 1997 film *Shooting Fish*).
Graded salience: probabilistic meanings in the lexicon

rence”. Clearly this applies to salience on a particular occasion, can it also apply to the condition of comparative decontextualization that is encountered with a lexicon entry? Typically, meanings in a lexicon are given so as to apply to as wide a range of contexts as possible and these are what I describe as default meanings; see (5).

(5) Default meanings are those that are applied more frequently by more people and normally with greater certitude than any alternatives.

Thus default meanings are largely similar to salient meanings except that the latter, according to Giora, are foremost in the mind of an individual: “Salience […] is relative to an individual. What is foremost on one’s mind need not necessarily be foremost on another’s” (Giora 2003: 37). We might here distinguish between a linguist’s model of the mental lexicon as an abstraction or generalization over the hypothetical lexicon of a typical individual and the real-life internalized lexicon of a particular individual in which certain meanings may indeed be salient because of that individual’s unique experience. The upshot of this perambulation is that what I describe as the representation and ranking of default meanings in the lexicon are based on my own intuitions about the relative saliency of those meanings – which Giora would refer to as “graded salience” (Giora 2003: 10); but I propose that my intuitions need to be replaced by objective rankings obtained after examining data from a wide variety of corpora and from questioning language users.

3. Birds, possibilities, and credibility

Birds are feathered, beaked, and bipedal. Most birds can fly. Applied to an owl this attribute of flight is true; applied to a penguin it is false. Birds are sexed, and a normal adult female bird can lay eggs. It is a defining characteristic that members of the female sex carry ova; I’ll label this function SXF (which can be glossed “sexual female”). Where they don’t, or the ova are non-viable, the organism can count for our purposes as a gendered female

4. Alternative definitions of ‘default’ are to be found in Jaszczolt (2006).
5. A search of ten corpora totalling about 10 million words turned out to neither confirm nor disconfirm any of my credibility ratings because there were mostly no occurrences of less common uses of a given listeme. The corpora were: the Australian corpus of English; Australian ICE; the Lancaster–Oslo/Bergen corpus of British texts; the London–Lund corpus; the Freiburg corpus of British texts; the Freiburg corpus of American texts; the Brown corpus of American texts; the Wellington corpus of written New Zealand texts; New Zealand ICE; Kenya–East Africa ICE.
(GENF) but not SXF. Mostly, sexual females are gendered females too; see (6) where → indicates semantic entailment.

(6) $\text{MOST}(x)[\text{SXF}(x) \rightarrow \text{GENF}(x)]$

Although we do speak of human eggs, nonetheless the default egg is from an oviparous genus such as a bird, so I’ll assume this is noted in the lexicon. Based on Allan (2001: 252) I propose that the semantic part of the lexicon entry for bird be (7), where $\land$ symbolizes logical conjunction, $\rightarrow$ indicates (defeasible) nonmonotonic inference – NMI, which in the past I have referred to as ‘implicature’, and which is cancelled for species such as emus and penguins; $\Diamond$ is the possibility operator.

(7) $\forall x \begin{cases} \text{BIRD}(x) \rightarrow \lambda y[\text{FEATHERED}(y) \land \text{BEAKED}(y) \land \text{BIPEDAL}(y)](x) \\ \text{BIRD}(x) \rightarrow \Diamond \text{FLY}(x) \\ \lambda z[\text{BIRD}(z) \land \text{SXF}(z) \land \text{ADULT}(z)](x) \rightarrow \text{OVIPAROUS}(x) \end{cases}$

The lambda-operator is useful to identify an individual as having a number of properties jointly, e.g. being a member of the set of creatures that are simultaneously feathered and beaked and bipedal. In (7) the line $\text{BIRD}(x) \rightarrow \Diamond \text{FLY}(x)$ identifies that a bird is most probably capable of flight. In the case of a sparrow the semantic component of the lexicon entry may look like (8); for a penguin, like (9) ($\neg$ is the negation operator).

(8) $\forall x \begin{cases} \text{SPARROW}(x) \rightarrow \text{PASSERINE}(x) \\ \text{PASSERINE}(x) \rightarrow \lambda y[\text{BIRD}(y) \land \Diamond \text{FLY}(y)](x) \end{cases}$

(9) $\forall x \begin{cases} \text{PENGUIN}(x) \rightarrow \text{SPHENISCIDA}(x) \\ \text{SPHENISCIDA}(x) \rightarrow \lambda y[\text{BIRD}(y) \land \neg \text{FLY}(y)](x) \end{cases}$

For both 0 and (9) the oviparity of SXF sparrows and penguins is an entailment of their being birds.

Here I’ll introduce a credibility metric for a proposition. The truth value of a proposition $p$ hinges on whether or not $p$ is, was or will be the case. What matters to language users is not so much what is in fact true, but what

6. One reconstruction of the Proto-Indo-European word for EGG is *h₂ō(w)iotom “bird-thing” from *h₂e(w)eit- “bird” (I am grateful to Olav Kuhn for this information).

7. Information about the typical appearance, habits, and habitat (etc.) will be located in the networked encyclopedia entry.
they believe to be true. The credibility of $p$ is what is believed with respect to the truth of $p$, or believed is known, or is in fact known of its truthfulness. Because most so-called ‘facts’ are propositions about phenomena as interpreted by whomever is speaking, we find that so-called ‘experts’ differ as to what the facts are (for instance, on the economy or what should be done about narcotics). Whether ordinary language users judge a proposition true or false depends not only on its pragmatic halo (see footnote 2) but also on how credible it is and this is reflected in the way that they use and understand language. There is a credibility metric such as that in Table 6.1, in which complete confidence that a proposition is true rates 1, represented $\text{CRED} = 1$, and complete confidence that a proposition is false rates $\text{CRED} = 0$; indeterminability is midway between these two, $\text{CRED} = 0.5$. Other values lie in between. ($\square$ is the necessity operator, and $\bigvee$ symbolizes exclusive disjunction.)

<table>
<thead>
<tr>
<th>$\text{CRED}$</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Undoubtedly true: $\square p$, I know that $p$</td>
<td>$\text{BIRD}(x) +&gt; \lozenge \text{FLY}(x)$ rates $\text{CRED} \geq 0.7$; in 0, $\text{PASSERINE}(x) \rightarrow \lozenge \text{FLY}(x)$ rates $\text{CRED} \geq 0.9$; in (9), $\text{Spheniscidae}(x) \rightarrow \neg \text{FLY}(x)$ rates $\text{CRED} = 1$. We may describe these as instances of graded salience.</td>
</tr>
<tr>
<td>0.9</td>
<td>Most probably true: I am almost certain that $p$</td>
<td></td>
</tr>
<tr>
<td>0.8</td>
<td>Probably true: I believe that $p$</td>
<td></td>
</tr>
<tr>
<td>0.7</td>
<td>Possibly true: I think $p$ is probable</td>
<td></td>
</tr>
<tr>
<td>0.6</td>
<td>Just possibly true: I think that perhaps $p$</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>Indeterminable: $(\lozenge p \geq 0.5) \bigvee (\lozenge \neg p \leq 0.5)$</td>
<td></td>
</tr>
<tr>
<td>0.4</td>
<td>Just possibly false: It is not impossible that $p$</td>
<td></td>
</tr>
<tr>
<td>0.3</td>
<td>Possibly false: It is not necessarily impossible that $p$</td>
<td></td>
</tr>
<tr>
<td>0.2</td>
<td>Probably false: It is (very) unlikely that $p$</td>
<td></td>
</tr>
<tr>
<td>0.1</td>
<td>Most probably false: It is (very) unlikely that $p$</td>
<td></td>
</tr>
<tr>
<td>0.0</td>
<td>Undoubtedly false: $\square \neg p$, I know that $\neg p$</td>
<td></td>
</tr>
</tbody>
</table>
4. Bulls

The salient bovine in (English language) children’s books is a cow: there are more cows than bulls not only where there is a dominant dairy industry, but also in the beef industry where one bull will service up to 35 cows to maintain stock levels. Thus, for economic reasons (milk production, reproductive value) cows are more common and more important than bulls. Consequently, the default connotation of *domestic bovine* is female; hence the salience of the term *cow*. In times past, when bovines were used as beasts of burden, the default term for them was *ox* – a castrated male. So it is that the gendered generics *cow* and *ox* are a function of the connotations of the animals denoted; i.e. they are effects of the pragmatics of bovine husbandry (Allan 2007). My interest here, though, is the lexicon entry for *bull*.

The first entry under *bull* in the *Oxford English Dictionary* (1989) is “The male of any bovine animal; most commonly applied to the male of the domestic species (*Bos Taurus*); also of the buffalo, etc.” Part of this is more formally stated in (10).

\[(10) \forall x[\lambda y[BULL(y) \land ANIMAL(y)](x) \rightarrow \lambda z[MALE(z) \land BOVINE(z)](x)]\]

I will ignore the facts in (11).

\[(11) MALE(x) \rightarrow GENM(x) \rightarrow SXM(x)\]

(10) is inaccurate because the noun *bull* is not restricted in application to bovines; it is also properly used of male elephants, male hippos, male whales, male seals, male alligators, and more. The initial plausibility of (10) is due to the fact that it describes the stereotypical bull. The world of the English speaker is such that *bull* is much more likely to denote a bovine than any other species of animal. Peripheral uses of *bull* are examples of semantic extension from bovines to certain other kinds of large animals; consequently they require that the context make it abundantly clear that a bovine is not being referred to. This is often achieved by spelling it out in a construction such as *bull elephant* or *bull whale* which is of greater complexity than the simple noun *bull* used of bovines – a difference motivated by the principle of least effort (Zipf 1949). There is no regular term for “the class of large animals whose males are called ‘bulls’, females ‘cows’, and young ‘calves’” so in Allan (2001: 273) I coined the term *bovine* to label this meaning. The semantics of English *bull* is given in (12) from which the implicated bovinity will be cancelled where the animal is contextually specified as giraffid, hippopotamid, proboscid, pinniped, cetacean, or crocodilian.
Once again we see a default interpretation being recorded in the lexicon because of the salience of this particular characteristic, viz. bovinity, of the default reference (i.e. the denotatum) for bull. In the second line of (12), the NMI $\lambda y[BULL(y) \land ANIMAL(y)](x) +\rightarrow BOVINE(x)$ yields a credibility rating of $CRED \geq 0.8$.

5. Climbing

Jackendoff (1985) identified some interesting characteristics of the verb climb. From (13) we understand that Jim climbed the mountain – contrast (13) with (14). We also understand that he used his legs and feet – contrast (13) and (14) with (15).

(13) Jim climbed the mountain.
(14) Jim climbed down the mountain.
(15) Jim climbed (down) the mountain on his hands and knees.

Snakes, airplanes, and ambient temperature lack legs and feet they can use when climbing (which is presumably a metaphorical extension with these actors), and they can’t normally be said to climb down, some other verb must be employed.

(16) The snake climbed the tree.
(17) The airplane climbed to its cruising altitude.
(18) The temperature climbed to 42.

In (19) I capture the fact that the default interpretation of climb presumes both upward movement, symbolized $\uparrow^8$, and the use of feet (and therefore legs, too). The nonmonotonic inference rates $CRED \approx 0.7$.

8. $\uparrow$, at $90^\circ$, is the prototype for “upward” which covers any angle greater than $0^\circ$ and less than $180^\circ$. 
∀x CLIMB(x) → \( λy[GO(y)↑ ∨ USE_FEET(y)[CAUSE(y)][MOVE(y)↑]](x) \)
\[ \{CLIMB(x) +> \lambda y[GO(y)↑ ∧ USE_FEET(y)[CAUSE(y)][MOVE(y)↑]](x) \} \]

In this and the two previous sections I have shown that a lexicon entry can be constructed to indicate the necessary components of meaning for the entry and also the most probable additional components of meaning that obtain for most occasions of use but which may be cancelled as a function of contextual constraints. This proposal goes beyond what is found in other lexicographical models such as the generative lexicon (Pustejovsky 1995) or FrameNet (http://framenet.icsi.berkeley.edu). For each lexicon entry the semantic identity of the listeme is presented as a meaning postulate; for instance, the noun \textit{bull} is semantically represented by the predicate \textsc{bull} ranging over a variable for the entity denoted. This is not decomposed into semantic primitives but gives rise to certain inferences some of which are necessary semantic entailments, others are probabilistic nonmonotonic inferences. Similar conditions apply to the verb \textit{climb}. They apply quite generally. In the examples given so far, the semantic identity of content words is presented in the metalanguage in the graphological form they have in English, but this is not quite the case with grammatical listemes such as \textsc{plural} and \textsc{past\_tense}.

6. Nouns and countability

In English, countable denotata are denumerable by the quantifiers \textit{a(n), one, two} (and all natural numbers), \textit{(a) few, several, many, each, every, both}. Uncountables can be quantified by e.g. \textit{much, little}. The English number system (to which quantifiers are linked) simply contrasts \textsc{plural} “more than one” with \textsc{singular} “one”. It has been shown by, for instance, Weinreich (1966), Allan (1980) and Bunt (1985) that a noun is countable or uncountable only within the context of a particular NP. All English NPs are either countable or uncountable. The principal motivation for countability is to identify the individual from the mass as in (20)–(21); compare the two uses of \textit{oak} and \textit{lamb} respectively.

(20) \[ \text{An oak}_{\text{NP}_1} \text{ is the source for } \text{oak}_{\text{NP}_2}. \]
(21) \[ \text{It is because I like } \text{lamb}_{\text{NP}_1} \text{ that I don’t like } \text{lamb}_{\text{NP}_2}. \]

Typically, uncountable referents are perceived as an undifferentiated unity, NP\textsubscript{2} in (20)–(21); whereas countables are perceived as discrete but similar entities, NP\textsubscript{1} in (20)–(21). In (21) the animals as individuals implicitly contrast with their meat – the edible stuff which they embody. An animal noun that heads an uncountable NP is used to refer to the meat when it is usual for
the consumer to eat only part of the animal at a sitting. Much the same applies to NPs denoting other kinds of food. Where more than one object is eaten at a sitting, a countable NP is used (Allan 1976). These nonmonotonic inferences are shown in (22)–(23).

(22)
For dinner we are having \{ lamb, rabbit, chicken, goat \} 
\[\Rightarrow\] Eater consumes part of the animal at one sitting

(23)
For lunch we are having \{ pilchards, oysters, an egg, sandwiches \} 
\[\Rightarrow\] Eater consumes one or more at one sitting

The NMIs in (22)–(23) explain the grammaticality judgements in (24).

(24) Would you like another \{ oyster, ??lamb, \} or have you had enough?

Cancellation of the NMI of (22) is possible in generics like (25)–(26), which show that form and context together indicate the proper interpretation to be given to a lexical item.

(25) Hindus don’t eat cows, and Muslims don’t eat pigs.
(26) Those people won’t eat lambs, but they do eat goats.

(25) shows that it is animal-nouns and not meat-nouns that are countable in (25)–(26), otherwise (25) would name \textit{beef} and \textit{pork}; indeed these are also acceptable, but only as uncountables (mass nouns), cf. (27).

(27) Hindus don’t eat beef, and Muslims don’t eat pork.

The difference between (25) and (27) is that – in line with (22) – example (27) presents the situation in respect of individual Hindus and Muslims, whereas (25) identifies what is tabooed behaviour among the collected plurality of Hindus and the collected plurality of Muslims. The question arises whether the properties I have been discussing of the nouns denoting foodstuffs should be noted in the lexicon. Perhaps before making a decision we should further investigate nouns and countability.
In English, grammatical number is registered in several ways. Prototypically, number is indicated by the absence or presence of plural inflexion on the NP head, as in (28).

(28) cats, oxen, mice, data, phenomena, lacunae, croci, cherubim, teeth; these, those.

In (29) the noun sheep is uninflected, but recognizably plural because of NP-internal number registration on the italicized demonstrative and NP-external number registration on the verb and the possessive pronoun in bold type.

(29) Those sheep are wiggling their ears.

NP-internal number registration is normally concordant, cf. *a chair vs a chair; these chairs vs *these chair. Allan (1980; 2001) identified four syntactic tests for countability preferences in English nouns. Although each test identifies whether or not a NP is countable, head nouns vary in the number of countable environments they occur in: some nouns are to be found in more types of countable NP than others, thus revealing the scale of countability preference shown in Table 8.2.

Table 8.2. Countability preferences among English nouns

<table>
<thead>
<tr>
<th>MOST COUNTABLE</th>
<th>LEAST COUNTABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>car &gt; oak &gt; cattle &gt; Himalayas/scissors &gt; mankind &gt; admiration &gt; equipment</td>
<td></td>
</tr>
</tbody>
</table>

Test A. If (a(n) or one concatenates with a singular head noun, the NP is countable (e.g. A car is a great blessing; Every livestock farmer has at least one sheep and *one cattle).

Test B. The NP is countable if a plural head noun is preceded by a fuzzy denumerator such as (a) few, several, many, a dozen or so, about fifty, and high rounded numbers (e.g. 700,000 cattle died in the drought; George is vying for *several admirations at the same time).

Test C. If the NP takes external plural number registration, it is countable (e.g. “Mankind are my favourite species,” said Dr Who; *Admiration(s) are what an academic craves).

Test D. If all concatenates with a singular head noun and the NP has singular external concord, the NP is uncountable (e.g. All equipment must be registered with the Dean’s office; *All car is a mode of transport).

The strongest evidence that a noun prefers a countable environment is where it succeeds in both Test A and Test B. Nouns like car and oak are
shown to be most countable, but the countability of ?Himalayas/scissors is
dubious. As I said earlier, it is always the case that a given occurrence of an
English NP will be either countable or uncountable, but no noun listeme is
intrinsically countable or uncountable; this is why the interpretation of the
two occurrences of the lexeme oak in (20) and of lambs and lamb in (21) is
different. Nevertheless, the semantics of the noun does interact with the se-
manics of countability with meaningful effects.

Allan (1976; 2001) proposed the Principle for N0 usage for English in
(30).

(30) N0, the form of the noun unmarked for number, is used when the refer-
ence of the NP of which N0 is the head is perceived not to consist of
a number of significant similar units.

The reference to “similar units” is to account for use of N0 in uncountable
NPs headed by words like furniture, equipment, crockery, and silverware or
cutlery. Where several pieces of furniture are similar in form and function,
they are labelled using a countable NP such as chairs, beds, tables; similarly
for spoons, forks, etc. Although what we call furniture or silverware con-
ists of perceivably discrete objects, these are typically dissimilar in form
and function (Wierzbicka 1988). Consider some mass nouns such as coffee,
wheat, sugar, and sand. As the term ‘mass noun’ suggests, the denotata are
only significant en masse. In uncountable NPs, such nouns denote a mass of
perceivable natural units such as coffee beans or grains; grains, ears, spike-
lets, or stalks of wheat; granules of sugar; grains of sand. The natural units
which compose the denotata of mass nouns are conventionally perceived to
be too insignificant as individuals to merit labelling individually. Of course,
language does permit us to label the components of the mass, but not by
using a simple noun that uniquely labels them. Instead they are denoted by
composed phrases such as coffee bean, grain of sand, which employ
listemes like bean, grain, coffee, and sand each with a broader meaning. As
remarked earlier, a less complex label tends to be used for things which are
significant within the everyday life of a community (and so tend to be fre-
quently referred to); a more complex label is used for less significant things.
Where contextually identifiable artificial units exist (normally by social
convention), so-called ‘mass’ nouns readily and very naturally occur in
countable NPs, as in (31).

(31) Give me two beers, coffees, sugars, please.
Furthermore, although nouns such as wine, wheat, and coffee readily occur in the uncountable NPs of (32), they equally happily occur within the countable NPs of (33) to denote a variety, kind, or species.

(32)  
(a) All wine is acidic.  
(b) All wheat is highly nutritious.  
(c) Coffee is grown at a lower altitude than tea.

(33)  
(a) We have fifty wines on our list, madam.  
(b) Up in Nyeri, you need a wheat that likes a high altitude.  
(c) The Arabica and Robusta coffees provide most of the world trade in coffee.

Notice how the differentiation between singular and plural of mass terms is exploited for additional semantic effect. Such semantic exploitation of different grammatical forms is common across languages.

The upshot of this discussion of countability is that nouns in the English lexicon need to be marked with the seven degrees of countability recognized in Table 8.3, from 0 countability to those nouns ranked at level 6, which are countable in a majority of environments.

Table 8.3. Countability rankings among English nouns in the lexicon

<table>
<thead>
<tr>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>car &gt; oak &gt; cattle &gt; Himalayas / scissors &gt; mankind &gt; admiration &gt; equipment</td>
<td></td>
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</tbody>
</table>

The rankings in Table 8.3 are correlated with grammaticality in the particular morphosyntactic contexts identified in Tests A–D; they can be correlated with the credibility metric of Table 1 if expressed by the graded salience shown in (34).

(34)  
[NPCOUNTABLE [X NNP-HEAD [car] Y]] CRED ≥ 0.99  
[NPCOUNTABLE [X NNP-HEAD [oak] Y]] CRED ≥ 0.75  
[NPCOUNTABLE [X NNP-HEAD [cattle] Y]] CRED ≥ 0.7  
[NPCOUNTABLE [X NNP-HEAD [scissors] Y]] CRED ≤ 0.6  
[NPCOUNTABLE [X NNP-HEAD [mankind] Y]] CRED ≤ 0.5  
[NPCOUNTABLE [X NNP-HEAD [admiration] Y]] CRED ≤ 0.2  
[NPCOUNTABLE [X NNP-HEAD [equipment] Y]] CRED ≤ 0.02

It would, however, seem preferable to be more precise about the specific conditions under which each noun may be countable: for instance, cattle is uncountable in the environment that obtains under Test A, but countable...
under the environments described in Tests B, C, and D; mankind is countable under A and C but uncountable under B and D; and so forth.

7. Collectives and collectivizing

Allan (1976; 2001) discusses the semantics of collective nouns such as admiralty, aristocracy, army, assembly, association, audience, board, class, clergy, committee, crowd, flock, government and collectivized nouns such as those italicized in (35)–(36).

(35) These three elephant my great-grandfather shot in 1920 were good tuskers, such as you never see today.

(36) Four silver birch stand sentinel over the driveway entrance.

Collective nouns allow reference to be made to either the set (collection) as a whole or to the set members. In many dialects of English (but not all) the different interpretations are indicated by NP-external number registration; consider (37).

(37) The herd\{is\}_\{are\} getting restless and \{it is\}_\{they are\} beginning to move away.

Whereas singular NP-external registration indicates that the set as a holistic unit is being referred to, cf. (38), the plural indicates that the set members are being referred to, (39). In these and later examples X and Y are (possibly null) variables for NP constituents; NP\(_{so}\) is a singular NP while NP\(_{pl}\) is plural; x, y, z are sets, either unit sets (individuals) or multimember sets, so one should understand from (38) and (39) that \(\forall x[\exists y[y \subseteq x]]\).

(38) \(\forall x[NP_{so}[X N\_HEAD[\lambda y[MANY(y) \land COLLOCATED(y)](x)] Y] \rightarrow COMBINED\_MEMBERSHIP(x)]\)

(39) \(\forall x[NP_{pl}[X N\_HEAD[\lambda y[MANY(y) \land COLLOCATED(y)](x)] Y] \rightarrow CONSTITUENT\_MEMBERSHIP(x)]\)

Thus, (40) identifies the composition of the committee, while (41) identifies dissension among the membership of the committee.

(40) The committee\{is\}_\{are\} composed of many notable scholars.

(41) The committee\{?*is\}_\{are\} at odds with each other over the new plan.
NPs denoting institutions, e.g. the company I work for, the BBC, the university must be singular when the institution as a building, location, or single constituent body is referred to, as in (42), but can have plural NP-external registration when the people associated with it are referred to, (43).

(42) The library is located in the new civic centre.

(43) The library charges a heavy fine on overdue books.

The facts with respect to such collective nouns are represented in (44)–(46).

(44) \( \forall x \exists z \left[ N[LIBRARY(x)] \rightarrow \lambda y \left[ MANY(y) \land BOOK(y) \land COLLOCATED(y)(z) \land x \ni z \right] \right. \left. \rightarrow \exists x \left[ NP_{pl}[X NHEAD[LIBRARY(x)] Y] \land INSTITUTION(x)] \right. \right. \)

(45) \( \forall x \left[ NP_{pl}[X NHEAD[INSTITUTION(x)] Y] \rightarrow CONSTITUENT\_BODY(x) \lor SITE(x)] \right. \)

(46) \( \forall x \left[ NP_{pl}[X NHEAD[INSTITUTION(x)] Y] \rightarrow STAFF\_MEMBERS(x)] \right. \)

There is no evidence in (37)–(46) of probabilistic representation being required in the lexicon.

In a plural NP headed by N0 (see (30)), the absence of plural inflexion on the head noun marks ‘collectivizing’. Consider the italicized nouns in (35)–(36) and (47)–(50).

(47) A three month shooting trip up the White Nile can offer a very good mixed bag, including, with luck, Elephant, Buffalo, Lion, and two animals not found elsewhere: Nile or Saddle-back (Mrs, Gray’s) Lechwe and White-eared Kob. (Maydon (ed.) 1951: 168)

(48) On the way back to camp we sighted two giraffe on the other side of the river, which were coming down to the water’s edge to drink. (Arkell-Hardwicke 1903: 285)

(49) These cucumber are doing well; it’s a good year for them.

(50) The cat-fishes, of which there are about fifty distinct forms arranged in four families, constitute the largest group, with probably the greatest number of individuals per species. In some parts of the country where nets are little used and fishing is mainly done with traps and long lines, at least three-quarters of the annual catch is of cat-fish. (Welman 1948: 8)
The plural NP “cat-fishes” at the beginning of (50) refers to species of catfish whereas the singular NP at the end refers to individuals caught by fishermen. Collectivizing of trees and other plants is much less common than collectivizing animals – from which it, perhaps, derives. Vermin are never collectivized, although individual speakers may differ over what counts as vermin. Early uses of the collectivized form were applied to animals hunted for food or trophies. Today, collectivizing occurs in contexts and jargons of hunting, zoology, ornithology, conservation, and cultivation where $N_0$ is characteristically used of referents that are NOT perceived to be significant as individuals. Contributing factors to the establishment of $N_0$ as the mark of collectivizing might have been the unmarked plural of deer – which once meant “wild animal, beast” – and the fact that meat nouns are $N_0$ (discussed in §8 below). Despite the fact that there is a good deal of variation in the literature (see Allan 1976: 100f), collectivizable nouns should be marked in the lexicon. Reference will need to be made to the discourse domain being one of the contexts identified above and vermin will need to be excluded. The kind of entry I envisage is (51).

\[(51) \quad \text{IF Domain = conservation THEN } \forall x[N_{pl}[X N_0[\text{giraffe}(x)] Y]]; \text{ CRED } \approx 0.6\]

Clearly, more work is needed.

8. Animals for food and fur

In this section I take up a discussion from Allan 1981. Look at the sentences in (52)–(53).

\[(52) \quad \text{Harry prefers lamb to goat.}\]
\[(53) \quad \text{Jacqueline prefers leopard to fox.}\]

I believe that it is most likely that you will interpret the animal product nouns in (52) to refer to meat, such that (52) is paraphrasable by (54), whereas the animal product nouns in (53) refer to animal pelts and (53) is therefore paraphrasable by (55).

\[(54) \quad \text{Harry prefers eating lamb to eating goat.}\]
\[(55) \quad \text{Jacqueline prefers leopard skin to fox fur.}\]

The converses are unlikely, especially, Jacqueline prefers eating leopard to eating fox. The predicate prefer in (52)–(53) offers a neutral context permitting the default animal product to rise to salience. This suggests that the lex-
icon entries for *lamb* and *goat* should include a specific application of the formula in (57); so will that for *whale* in (56).

(56) In Tokyo, whale gets ever more expensive!

\[
\forall x \left[ \lambda y [N_{\text{MASS}}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{PRODUCT}_{\text{OF}}(x) \right]
\]

The lexicon entries for *leopard* and *fox* should include a specific application of the formula in (59); so will all of the italicized animal product nouns in (58).

(58) (a) Jacqueline was wearing *mink*.
    (b) Elspeth’s new handbag is *crocodile*, I think.
    (c) This settee’s made of *buffalo*.
    (d) The tannery has loads of *impala* right now.

\[
\forall x \left[ \lambda y [N_{\text{MASS}}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{PRODUCT}_{\text{OF}}(x) \right]
\]

An uncountable NP headed by an animal noun will refer to the pelt of the animal denoted by that NP when there is in the clause an NP head or clause predicate describing apparel, accessories to apparel, furniture, the creation of an artefact, or any object likely to be made from leather and any place or process that involves pelts, hides, or leather such that these constrain the domain for the interpretation of N0. Thus the nonmonotonic inference in (57) is cancelled by the implications of the lining in (60); from (59) the NMI is cancelled by the predicate *eat* in (61).

(60) I prefer the lining to be made of lamb, because it’s softer.
(61) All we had to eat was leopard.

Rather more subtle interpretations are required in (62)–(65).

(62) A plate of lamb can be worn by no-one.
(63) The girl holding the plate was wearing rabbit.
(64) The girl who wore mink was eating rabbit.
(65) Because she decided she preferred the lamb, Hetty put back the pig-skin coat.
In (62) “plate of lamb” identifies meat. Although the most likely interpretation of a plate of steel is “a plate made of steel” (CRED ≥ 0.95), a plate of lamb is, with similar credibility, interpreted as “a plate bearing food”. The predicate “wearing rabbit” in (63) identifies the rabbit pelts as apparel (again, CRED ≥ 0.95) and, likewise, “wore mink” in (64) identifies mink as apparel while the predicate in “eating rabbit” coerces the reference to rabbit meat. In (65) “the lamb” is most likely to be interpreted as meat (CRED ≥ 0.8) until this is revealed as a ‘garden-path’ misinterpretation expressed by the preference for a porcine pelt in the second clause which cancels this implicature replacing it with the coerced interpretation ‘lambskin coat’.

In this section of the chapter I have claimed that animal nouns in uncountable NPs that denote a product from the dead animal typically refer to either the animal’s flesh or its pelt, but this probabilistic inference can be cancelled by certain contextual elements that condition the domain for interpretation. Credibility rankings can be assigned along the lines illustrated in (66).

(66) \[\lambda y[\text{LAMB}\text{MASS}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{MEAT}_\text{OF}(x); \text{CRED} \geq 0.8\]
    \[\text{IF NOT MEAT}_\text{OF}(x) \text{ THEN PELT}_\text{OF}(x)\]
\[\lambda y[\text{GOAT}\text{MASS}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{MEAT}_\text{OF}(x); \text{CRED} \geq 0.7\]
    \[\text{IF NOT MEAT}_\text{OF}(x) \text{ THEN PELT}_\text{OF}(x)\]
\[\lambda y[\text{RABBIT}\text{MASS}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{MEAT}_\text{OF}(x); \text{CRED} \geq 0.7\]
    \[\text{IF NOT MEAT}_\text{OF}(x) \text{ THEN PELT}_\text{OF}(x)\]
\[\lambda y[\text{LEOPARD}\text{MASS}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{PELT}_\text{OF}(x); \text{CRED} \geq 0.9\]
    \[\text{IF NOT PELT}_\text{OF}(x) \text{ THEN MEAT}_\text{OF}(x)\]
\[\lambda y[\text{FOX}\text{MASS}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{PELT}_\text{OF}(x); \text{CRED} \geq 0.9\]
    \[\text{IF NOT PELT}_\text{OF}(x) \text{ THEN MEAT}_\text{OF}(x)\]
\[\lambda y[\text{MINK}\text{MASS}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{PELT}_\text{OF}(x); \text{CRED} \geq 0.9\]
    \[\text{IF NOT PELT}_\text{OF}(x) \text{ THEN MEAT}_\text{OF}(x)\]
\[\lambda y[\text{BUFFALO}\text{MASS}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{PELT}_\text{OF}(x); \text{CRED} \geq 0.8\]
    \[\text{IF NOT PELT}_\text{OF}(x) \text{ THEN MEAT}_\text{OF}(x)\]
\[\lambda y[\text{CROCODILE}\text{MASS}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{PELT}_\text{OF}(x); \text{CRED} \geq 0.8\]
    \[\text{IF NOT PELT}_\text{OF}(x) \text{ THEN MEAT}_\text{OF}(x)\]
\[\lambda y[\text{IMPALA}\text{MASS}(y) \land \text{ANIMAL}(y)](x) \rightarrow \text{PELT}_\text{OF}(x); \text{CRED} \geq 0.7\]
    \[\text{IF NOT PELT}_\text{OF}(x) \text{ THEN MEAT}_\text{OF}(x)\]

It would seem obvious that there should be some generalization over nouns that can refer to either meat or pelts; one might refer to these two alternatives as “graded salience” (Giora 2003: 10), but this notion is yet more relevant in the lexicon entry for and.
And may conjoin all sorts of sentence constituents and whatever is felicitously conjoined is grouped together such that there is always some plausible reason for the grouping. With the exception of some conjoined NPs that I will refer to as NP-*COM-Conjunction (and briefly exemplify in (70)–(74)), the conjoined constituents are synonymous with a conjunction of sentences, e.g. in (67)(e) “Two is a number ∧ Three is a number”.

(67)  (a) Sue is tall and slim.
       (b) Eric was driving too fast and hit a tree.
       (c) Elspeth always drove slowly and carefully.
       (d) Joe and Harriet are tall.
       (e) Two and three are numbers.

I have never seen any convincing evidence which demonstrates that the semantics of $\Phi$ and $\Psi$ is other than is shown in (68) – on the assumption that $\Phi$ and $\Psi$ are well-formed (combinations of) propositions expressed as well-formed conjunctions in English. There is, in addition, a series of non-monotonic inferences that exemplify Giora’s “graded salience” (Giora 2003: 10); they are listed with the strongest contextually-possible inference as the first to be considered.

(68)  $\Phi$ and $\Psi \leftrightarrow \Phi \land \Psi$

- IF CRED($\Phi \rightarrow \neg \Psi$) $\geq 0.9$ ∧ CRED(cause($\Phi, \Psi$)) $\geq 0.8$, THEN $\Phi$ and $\Psi$ $\Rightarrow \Phi$ causes $\Psi$ (e.g. Flick the switch and the light comes on; cause $\prec$ effect) ELSE

- IF CRED(enable([$DO(\emptyset, \Phi)], \Psi)) $\geq 0.9$ ∧ CRED($\neg \Phi \rightarrow \neg \Psi$) $\geq 0.8$,
  THEN $\Phi$ and $\Psi$ $\Rightarrow \Phi$ enables the consequence $\Psi \lor \Phi$ is a reason for $\Psi$ (e.g. Stop crying and I’ll buy you an ice-cream; action $\prec$ consequence) ELSE

- IF CRED($\Phi \prec \Psi$) $\geq 0.8$, THEN $\Phi$ and $\Psi$ $\Rightarrow \Phi$ and then later $\Psi$ (e.g. Sue got pregnant and married her boyfriend) ELSE

- IF CRED(enable($\Phi, [DO(S, [SAY(S, \Psi)])]$) $\geq 0.8^{10}$, THEN $\Phi$ and $\Psi$ $\Rightarrow \Phi$ is background for $\Psi$ (e.g. There was once a young prince, and he was very ugly) ELSE

---

9. $\Phi \prec \Psi$ means “$\Phi$ precedes $\Psi$ (chronologically)”

10. $S$ identifies the speaker, here and below.
Φ and Ψ ⇔ Φ is probably more topical or more familiar to S than Ψ (e.g. On Saturdays my mum cleans the flat and Sue washes the clothes)

Note the conditional relations in (69):

\[(69) \quad (Φ \text{ causes } Ψ) \rightarrow (Φ \text{ is a reason for or enables the consequence } Ψ) \rightarrow (Φ \text{ temporally precedes } Ψ)\]

Whether the last two discourse based NMIs of (68) are part of this sequence remains to be discovered. Consider (from (68)) Sue got pregnant and married her boyfriend: it is false (CRED = 0) that Sue’s getting pregnant literally causes her to marry her boyfriend, though it may be her reason for doing so, CRED ≈ 0.4; but it is quite probable (CRED ≈ 0.75) that her marriage to the boyfriend is a consequence of her being pregnant, whether or not he is the biological father-to-be. It is almost certain (CRED ≥ 0.9), even though defeasible, that Sue’s pregnancy precedes her marriage. Out of any natural context of use it is not possible to determine whether or not saying Sue got pregnant is a background for going on to say that she married her boyfriend. This aside, it has been possible to propose a (partial) lexicon entry for and which includes its implicatures in grades of salience. There seems to be no good reason to treat and as multiply ambiguous semantically when one core meaning can be identified (logical conjunction) and all other interpretations can be directly related to that as a hierarchy of nonmonotonic inferences processed algorithmically.

In NP-*COM-Conjunction, *COM is a ≥2-place predicate with a sense “is added to, is mixed or combined with, acts jointly or together with, is acted upon jointly or together with” (Allan 2000: 196). It is found in (70), which is not semantically equivalent to (71) – contrast the latter with (67)(e).

\[(70) \quad \text{Two and three are five.} \]
\[(71) \quad \text{Two is five } \land \text{ Three is five} \]

A revealing recipe-like paraphrase of (70) is (72), which accounts for the fact that (73) is a paraphrase of (70).

\[(72) \quad \text{Take two}_x \text{ and take three}_y, \text{ combine them } (*\text{COM}(x,y)), \text{ and you get five}_w, \text{ cf. Mix flour, and water, to make paste}_w. \]

11. Kasia Jaszczolt (p.c.) has questioned whether temporal precedence is applicable with statives such as She is underage and can’t drive. I don’t strongly disagree but I think being underage is prior to inability to drive and this is evident in She is no longer underage and can now drive.
(73) Two and three make five.

NP-*COM-Conjunction is recognized when a conjunction of sentences either cannot apply or is unlikely to apply as in (70) and (74).

(74) Joe and his wife have a couple of kids.

The subject NP of (74) is most likely NP-*COM-Conjunction whereas that of (75) is not.

(75) Joe and his sister have a couple of kids.

(75) is, given social constraints on incest, most likely an infelicitous manner of expression where the conjunction is intended to be $\Phi$ and $\Psi$ with the weakest of nonmonotonic inferences.

10. Probabilistic meanings in the lexicon

In this chapter I have (once again) argued that probabilistic meanings need to be entered into the lexicon. So far as is possible, a listeme should be treated as monosemic and different aspects of its meaning should be included together with an account of the probability of each different interpretation being the preferred interpretation and in what circumstances. These probabilistic meanings can be seen as grades of salience. As a tool for ranking degrees of probability I proposed the credibility metric. Bivalent truth conditions alone are inadequate for practical use in natural language communication and the distinction in modal logic between the possible (diamond) operator and the necessary (box) operator is also too gross an instrument. My credibility metric in principle allows for an unbounded number of distinctions between 0 and 1, even though in practice it uses a decimal scale.

I have presented probabilistic meanings as nonmonotonic inferences. One may wish to call them conversational implicatures, implicitures, or even explicatures; whatever they are to be called, they are defeasible inferences and not necessary entailments. They are contextually affirmed, whether from co-text or some other factor in the common ground. The integration of such pragmatic factors in semantic interpretation is justified by the findings of, for instance, Hagoort, Hald, Bastiaansen, and Petersson (2004) or Terkourafi (2009), in addition to the arguments advanced here and in my previous work. It will be interesting to discover how lexicographic models like FrameNet might be adapted, as they ought to be, to incorporate my proposals.
Graded salience: probabilistic meanings in the lexicon

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Chapter 9
Practices and defaults in interpreting disjunction

Michael Haugh

Jerry: What exactly did you say when you asked her out?
George: I said, “Would you like to go for a walk or something?”
Jerry: Oh, a walk, well…
George: Or something. I said, “Or something”!
Jerry: Or something. Yeah, that’s a date.
(“The Soup”, Seinfeld, Season 6)

1. Introduction

The distinction between default and nonce inference, and its place in the interpretation of (speaker) meaning, has become the focus of considerable debate at the borderline between semantics and pragmatics ever since Grice ([1975]1989) drew his distinction between generalized and particularized implicatures. Much of this debate has arisen as a result of the sketchy nature of Grice’s original proposals about generalized implicature, in which he offered only a few worked examples. A generalized conversational implicature was initially defined as instances where “the use of a certain form of words in an utterance would normally (in the absence of special circumstances) carry such-and-such an implicature or type of implicature” (Grice [1975]1989: 37, emphasis added). One of the most contested examples of generalized conversational implicature, and the only one which Grice himself really discussed at length, was the use of the disjunctive particle or.

Grice ([1978]1989) claimed that “one who says that A or B, using or truth-functionally, could be shown in normal circumstances to implicate (conversationally) that there are non-truth-functional grounds for supposing that A \lor B” (p. 46, emphasis added); for instance, the speaker does not know whether that A or that B.

Grice’s analysis of natural language or was, in retrospect, quite radical in some ways, yet inherently conservative in others. On the one hand, in invoking what implicatures would be carried in “normal circumstances” Grice was laying the foundations for a default-based perspective on implicature, the development of which remains an ongoing project at the interface of semantics and pragmatics. On the other hand, in making reference to the formal device for disjunction, \lor, in analysing or, following long-standing views on logical discourse connectives in philosophy, Grice assumed that
Boolean logic could be productively deployed in the analysis of natural language connectives. Both of these moves have subsequently generated considerable discussion in semantics and (philosophical-cognitive) pragmatics.

The first debate revolves around whether the interpretation of or really does involve defaults. Much of the controversy about the default status of generalized conversational implicatures has turned on the assumption that default interpretations in these instances involve local defaults attached to particular lexical items. This view is perhaps more properly attributable to Levinson (2000) rather than Grice himself, who only invoked “normal circumstances” in characterising defaults (Grice [1975]1989: 37, [1978] 1989: 46-49). Indeed, it has been argued by some that Grice was intending to make reference to default contexts rather than default inferences that are computed locally (Horn 2009: 22-23; Terkourafi 2003, 2005). In other words, default inferences should not be attached to particular lexical items (including or) per se, but instead should be analysed as arising at the level of utterances and beyond (Garret and Harnish 2009; Geurts 2010; Jaszczolt 2005). On this view, defaults are processing “shortcuts” that are “grounded in experience and associative links” (Capone 2011: 1748). This latter position is consonant with the recent move towards rethinking how we might better define and delimit relevant defaults in the interpretation of both said and unsaid meaning at the discourse level (Jaszczolt 2008).

The second debate involves the semantic grounding of Grice’s account, which is consequential for the kinds of generalized conversational implicatures that can be attributed to the speaker in using the disjunctive particle. Grice’s assumption that the base sense of or is inclusive disjunction (\(\lor\)), a truth-functional concept, has been rejected by those who claim it is better understood as a modal concept that is used to indicate conjunctive lists of epistemic possibilities (Geurts 2005; Jennings 1994; Mauri 2008; Mauri and van der Auwera in press; Zimmerman 2000). An examination of the different senses of natural language or indicates that it is not only used to indicate logical disjunction, but also to indicate free choice permission, preferences, and relations, as well as in adverbial constructions, among other things (Blakemore 2007; Davis 1998; Geurts 2005; Jennings 1994; Simons 2005; Zimmerman 2000). However, as Bultinck (2005: 19) points out, “it is not enough to know all the ‘types’ of meanings a linguistic item may have, we also need information about the number of ‘tokens’ of each type” in order to properly analyse defaults. He goes on to argue that we can identify the conventional meaning of a lexical item through identifying its most frequently occurring sense (or senses) in natural language use, a position that is broadly consistent with that of Giora’s (2003) Graded Salience Hypothesis. The question of whether one treats or as a truth-functional or a modal concept is substantive for any pragmatic analysis of disjunction, as the denotation of or can impact upon the kinds of implicatures that may be understood to arise.
from its use in discourse, and thus impacts on any examination of defaults associated with its use.\(^1\) In other words, an examination of (discourse) defaults in the case of *or* cannot proceed without due attention being paid to issues of lexical salience. It appears, then, as Jaszczolt argues (2008: 26, this volume), that the definition and delimitation of defaults themselves requires further work at both the discourse and lexical level, with any such explanation needing to precede further empirical testing of default inferences.

It is proposed, in this chapter, that close examination of a particular discursive practice, namely, “not-saying”, and its accomplishment through disjunction interrogatives, can contribute to ongoing debates about the roles that defaults play in the interpretation of the discourse connective *or*, both at the level of utterances and context (discourse defaults), as well as at the level of individual expressions (lexical salience). The practice of not-saying more generally encompasses instances where the speaker leaves the interpretation of what is meant open to the recipient (see also Clark 1997; Jaszczolt 1999: 85). It is argued in this chapter that not-saying through utterance-final (and near-final) disjunction interrogatives constitutes a recurrent and recognisable practice in conversational interaction in English. Given the view that sociocultural defaults are created through associative links in Default Semantics (Capone 2011: 1748), it is proposed here that we can ground claims about such defaults in analyses of discourse practices. In this way, not only is fresh light shed on defaults that have received considerable attention in the literature, but also new defaults may be systematically identified.

However, as Searle (1992) points out, “the identification of patterns by itself explains nothing. In order to be explanatory the form of the pattern must exemplify a rule or some other form of intentional causation” (p.145). While the interactional approach to pragmatics advocated here eschews proposing rules *per se* or reducing all meaning to (attributing) speaker intentions, the point is taken that an explanation of the sociocognitive roots of this practice should be offered. It is argued here that these roots can be explored through an analysis of the practice of not-saying in the context of the actions (i.e., offering candidate understandings) and evaluations (i.e., politeness), together with which it (often) arises in discourse. In this way, we can move from a description of a particular discursive practice to a deeper understanding of the sociocultural defaults (Jaszczolt 2005, this volume) which are involved in the interpretation of disjunction interrogatives.

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1. At least on Grice’s definition of implicature as what is communicated (or speaker-meant) less what is said (Sadock 1978: 282), the kinds of implicatures that can be attributed to the use of *or* by the speaker are contingent on what one understands to be “said” through *or*. 
In this chapter, the (neo-)Gricean approach to disjunction, and the implicatures that are claimed to arise by default from the use of or are first reviewed in greater detail. The key challenges to the (neo-)Gricean account are next outlined. The various ways in which or is deployed in discourse in English are then briefly outlined, before introducing the discursive practice of not-saying through disjunction interrogatives. The sociocultural defaults which appear to be involved in interpreting the meanings, actions and evaluations that standardly arise when the disjunctive particle is used in utterance-final position in English are then explicated. Finally, the implications of this move to ground the postulation of interpretative defaults in an analysis of discursive practices are considered.

2. Disjunction and implicature

2.1. Logical disjunction and conversational implicature

Interest in so-called logical discourse connectives and quantifiers can be traced back to Aristotle’s treatise on the principal types of logical relations using the Apuleian Square of Opposition (Horn 2009). It was Grice’s ([1975]1989, [1978]1989) seminal work on conversational logic, however, that saw quantity scales shifted into the realm of implicature, and thus into the emerging field of pragmatics, rather than remaining an issue solely of interest to logicians and semanticists.2 It has long been assumed that natural language or is closely related to the basic logical operators of disjunction, namely, inclusive and exclusive disjunction. The two types of disjunction are represented in traditional logic as either inclusive (1110) or exclusive (0110) using the following truth tables (‘1’ represents true, 0 represents ‘false’), although exclusive disjunction does not belong to the language of propositional logic proper:

Inclusive disjunction (\(\lor\)):

<table>
<thead>
<tr>
<th>p</th>
<th>q</th>
<th>p \lor q</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
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Exclusive disjunction ($\lor$):

<table>
<thead>
<tr>
<th>$p$</th>
<th>$q$</th>
<th>$p \lor q$</th>
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<tr>
<td>1</td>
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(Adapted from Jennings 1994: 5-6)

In other words, inclusive disjunction ($\lor$) refers to instances where $p$ or $q$ is true if $p$ is true, $q$ is true, or both are true, while exclusive disjunction ($\lor$) refers to instances where $p$ or $q$ is true if either $p$ is true or $q$ is true, but not both. Mauri and van der Auwera (in press) give the following examples to illustrate these two types of (logical) disjunction:

1. To play Bardot the actress needs to be sensuous or seductive.
2. At the moment, Jack is waiting at the airport or he is flying over the Alps.

In the case of example (1), while being either sensuous or seductive would qualify an actress to play Bardot (among other things), having both of these qualities would not be a problem. This counts, therefore, as an instance of inclusive disjunction. In example (2), however, Jack clearly cannot be in both places at the same time, and so it counts as an instance of exclusive disjunction. Grice’s innovation was to try to avoid assigning two or more different senses to the same word, where at all possible, through the mechanism of conversational implicature. Thus, instead of treating inclusive and exclusive disjunction as arising from two different senses of or, he claimed that exclusive disjunction arises as a quantity implicature, namely, ‘not both $p$ and $q$’ or more formally, $\neg(p \land q) \land (\neg p \land \neg q)$, while assuming the meaning of or itself is synonymous with inclusive disjunction. Grice then went further and claimed that this quantity implicature is (conversationally) implicated by default. On a Gricean account, in the case of example (2) above, for instance, the speaker would implicate in “normal circumstances” that “there is an implicature (providing the speaker is not opting out) that he is not in a position to make a stronger statement” (Grice [1978]1989: 46), that is, not $p$ and $q$ or more formally $\neg(p \land q)$. In the case of example (1), this implicature is blocked or otherwise does not arise.

Grice did not, however, detail the mechanisms by which such default inferences would be defeated, and so his analysis does not appear to resolve

3. Specifically, the first Quantity submaxim: “Make your conversation as informative as is required (for the current purposes of the exchange)” (Grice [1975]1989: 26).
the choice between the exclusive and inclusive interpretation of *or* (Jaszczolt 2005: 210). Moreover, while Grice claimed the exclusive interpretation occurs more commonly than the inclusive interpretation, since he characterized the former as the one arising in “normal circumstances” (Grice [1975]1989, [1978]1989), his intuitions about the semantics of *or* have come under serious fire, as we shall discuss further in the following section.

Grice also proposed in his analysis of natural language *or* that a further implicature arises by default (in “normal circumstances”) from the Quality maxim, ⁴ namely, that “the speaker thinks that there are non-truth-functional grounds for accepting A or B” (Grice [1978]1989: 46). This is generally interpreted as the speaker indicating he or she is not sure which of the disjuncts is true. Atlas (2005), for instance, claims the Gricean argument for a generalized implicature of epistemic uncertainty goes as follows:

1. S asserted that \[ p \text{ or } q \]
2. S did not assert the logically stronger \( p \) or assert the logically stronger \( q \).
3. A good reason for not asserting a statement \( z \) is not having adequate grounds for asserting \( z \).
4. So the speaker, is presumed, does not have adequate grounds for asserting \( p \) and does not have adequate grounds for asserting \( q \).
5. If so, then the speaker does not know \( p \), and the speaker does not know \( q \).
6. So the speaker means to imply in asserting \([ p \text{ or } q ]\) that the speaker does not know that \( p \) and does not know that \( q \).   (Adapted from Atlas 2005: 53)

It is essential to note, however, that Grice made the important proviso that such implicatures arise when “using *or* truth-functionally”, thus anticipating contexts where this is not the case. And while the generalized quality implicature of epistemic uncertainty (i.e. the speaker does not know which of the disjuncts is true) is generally contingent on first implicating a generalized quantity implicature of exclusive disjunction (i.e. not both \( p \) and \( q \)), this should not be taken to mean that the quality implicature here entails the quantity implicature, as argued by Atlas (2005: 54). Even if the speaker implies he does not know whether \( p \) or \( q \), it does not necessarily always follow that he is implying exclusive disjunction (i.e. not both \( p \) and \( q \)). While they often co-occur, these two implicatures are arguably independent.

Grice’s initial proposals about the role of implicatures in interpreting natural language *or*, including its relationship with the formal logical devices for disjunction, were later developed in more detail by some of his followers, the so-called neo-Griceans. It is to these developments we now turn.

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⁴ Specifically, the second Quality submaxim: “Do not say that for which you lack adequate evidence” (Grice [1975]1989: 26).
2.2. Neo-Gricean accounts of disjunction implicatures

Grice’s treatment of exclusive disjunction as arising in the form of a generalized quantity implicature was formalised through Horn’s (1972, 1989) proposal that the first submaxim of Quantity motivates the establishment of quantity scales, for example: <and, or>, <all, most, many, some>, <the, a>. According to Horn, such scales obviate the need to invoke lexical ambiguity as “scalar values are lower-bounded by their literal meaning (‘what is said’) and upper-bounded by quantity-based implicature” (Horn 2009: 5). In using a relatively weaker value on a quantity scale the speaker thereby implicates “she was not in the epistemic position to have asserted any stronger value” (Horn 2009: 6). For instance, if one asserts “He’s a knave or a fool”, the logical operator or is lower-bound through an inclusive interpretation (i.e. “and perhaps both”) and upper-bound through implicature (i.e. “but not both”) (Horn 2009: 6).

Grice’s proposal that epistemic uncertainty arises as a quality implicature is re-interpreted by Horn (1972, 1989, 2009) as the epistemic strength of the scalar implicature. Horn argues that speakers who assert that p or q implicate that they do not know or believe that p and q (more formally, ¬K_a(p) ∧ ¬K_a(q)), a weak epistemic position. This contrasts with the strong epistemic position that speakers are implicating they know or believe that p and that q is not the case (i.e., K_a(¬(p) ∧ K_a(¬(q))). The latter strong epistemic implicature only arises when the recipient assumes the speaker has full knowledge of the situation. For instance, in Grice’s ([1975]1989: 46-47) example where a speaker utters the “The prize is either in the attic or in the garden” in the context of a treasure hunt, the recipient can infer a strong epistemic implicature on the part of the speaker. However, in most cases the weak epistemic position holds (Geurts 2009, 2010; Horn 1989, 2009; Sauerland 2004; cf. Gazdar 1979; Levinson 2000).

Horn’s treatment of exclusive disjunction as a scalar implicature is reiterated in Levinson’s (2000) theory of generalized conversational implicature, where he assumes such implicatures are induced from inferences about ranked sets of alternates. He diverges from Horn’s treatment of epistemic uncertainty as a scalar implicature, however, in drawing from Gazdar’s (1979) claim that the latter arise in the form of a clausal implicature (cf. Atlas 2005: 97). He formalises these claims by postulating sets of ranked alternates (scalar quantity implicatures) and sets of contrasts (clausal quantity implicatures), both of which are governed by the Q-Principle:

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5. Horn (1984) reformulates the Q(uantity) maxim into “Make your contribution sufficient” and “Say as much as you can”. 
Do not provide a statement that is informationally weaker than your knowledge of the world allows, unless providing an informationally stronger statement would contravene the I-principle. Specifically, select the informationally strongest paradigmatic alternate that is consistent with the facts. (Levinson 2000: 76)

Notably, unlike Grice and Horn, Levinson also proposes a recipient’s corollary for the Q-Principle. He thus presumes that (generalized) implicatures can be equated not only with what the speaker intends, but also with what the recipient infers has been implied by default. Levinson (2000) thus attempts to ground the neo-Gricean account of speaker-meant generalized conversational implicatures (including those arising from or), within an account of the inferential work of recipients. Bach (2006, in press) argues that Grice was not intending to make any claims about how communication itself proceeds or its cognitive basis, and thus focused neither on how such defaults should be conceptualized, nor on how such implicatures actually arise in discourse (although see Grice 2001). Thus, while some neo-Griceans have continued with Grice’s philosophical program in much the same vein (most notably Bach and Horn), others have attempted to move Gricean pragmatics into a more empirically-testable context, including Levinson’s (2000) theory of generalized conversational implicature, as part of the more general cognitive turn in pragmatics. Yet despite widespread acceptance of the general thrust of such views, a number of significant challenges to (neo-)Gricean accounts of disjunction and implicature have emerged in recent years. In the following section, each of these challenges are discussed in turn.

2.3. Challenges to (neo-)Gricean accounts of disjunction implicature

One key challenge facing (neo-)Gricean accounts of disjunction implicatures emerges from the apparent slippage between an account of default implicatures as arising from whole utterances as opposed to local computations on single lexical items (in this case or). On Levinson’s (2000) account, for instance, scalar implicatures are computed locally by default. This move to treating scalar implicatures as local default inferences arose in response to the observation that they can arise in embedded sentences (e.g. Tom believes that some of the boys came), which is inconsistent with the claim that conversational implicatures do not fall under the scope of logical operators, since they are standardly treated as non-truth-conditional meanings (Cohen 1971). A variety of approaches to the processing of scalars have emerged, including not only neo-Gricean accounts (Levinson 2000), but also structural accounts (Chierchia 2004).
However, while there is strong experimental evidence to support the assumption that default inference can indeed be distinguished from nonce pragmatic inference (Evans 2003; Sloman 1996), the local computation model of scalars has not received strong support to date in psycholinguistic experiments. There is now significant experimental evidence mounting against Levinson’s (2000) view that implicatures arising from the disjunctive particle *or* are computed locally by default (Breheny, Katsos and Williams 2006; Chevallier et al. 2008; Paris 1973; Pijnacker et al. 2009). This has been interpreted by relevance theorists as vindicating their view that scalar implicatures do not arise by default but rather are only generated when the weaker term on a scale fails to meet the hearer’s expectation of relevance (Carston 1995, 2002; Sperber and Wilson 1995). Others, however, regard such results as only falsifying the local default view, and not necessarily supportive of the relevance theoretic account (Bezuidenhout and Cooper 2002; Bezuidenhout and Morris 2004; Breheny, Katsos and Williams 2006; Katsos in press).

Notably, Storto and Tanenhaus (2005) have found experimental support for the neo-Gricean account. The seemingly contradictory nature of such results in contrast to other studies is less puzzling, however, if one takes the position that scalar implicatures arise from utterances in default contexts, not locally from particular lexical items (Geurts 2009, 2010; Horn 2009; Jaszczolt 2005). As Jaszczolt (2005) argues “the processing of sentential disjunction gives rise to more and less salient interpretations but these interpretations are based on the content of the sentence. If there are defaults, they are not defaults for *or* but rather defaults for the *sentence*” (p.211). According to this view, then, the results of most experiments to date do not actually mitigate against a default interpretation account because they only test whether the implicatures arise locally from particular lexical items (Garret and Harnish 2007, 2009; Horn 2009). The study by Storto and Tanenhaus (2005) is the only exception to this trend in that it also tests for scalar implicatures arising from *or* relative to default contexts. Experimental evidence which “falsifies the claim that these expressions prompt upper-bounding inferences by default” (Geurts 2009: 61) thus arguably only goes to show that we should be examining defaults relative to utterances in discourse contexts.

Another significant challenge to (neo-)Gricean accounts of disjunctive implicatures is that the range of implicatures which can be observed to arise from usage of *or* in discourse are more diverse than commonly acknowledged by (neo-)Griceans. The claim that exclusive disjunction (i.e., “not both”) arises as generalized conversational implicature from the speaker asserting *p or q*, for instance, has been questioned on the grounds that other kinds of exclusive interpretation can be shown to exist, including *p or else q* and *p or equivalently q* (Davis 1998). An example of an *or else*-type exclu-
sive interpretation arises, for instance, when a teacher says to a student, “You will take the final or fail the course”, thereby implicating “Not taking the course will guarantee failing the course” (a warning) (Davis 1998: 146). Atlas (2005) also points out that or can be used by the speaker to implicate other things. For instance, the form p or p (e.g. “You may have tartufo or you may have tartufo”) can be used by the speaker to implicate “or nothing” (Atlas 2005: 54).

The other key (neo-)Gricean claim that epistemic uncertainty (i.e., “not sure which”) arises as generalized conversational implicature from the speaker asserting p or q has also been labelled a “misguided intuition” by Atlas (2005):

When I assert (R) My car keys are either in my pants pocket or on my desk, it is true that an explanation for my act of asserting (R) may appeal to my not knowing which, but I do not think that I should be interpreted to imply, convey, suggest, or mean by, in or when asserting the disjunctive sentence (R) that I do not know which, anymore than in asserting It’s raining Moore actually intended to convey, suggest, or imply in, when, or by asserting that sentence that he believed that it was raining. (Atlas 2005: 53, original emphasis)

Indeed, in some instances exclusive and epistemic implicatures are not implicated concurrently by the speaker asserting p or q, as illustrated in the example below.

(3) A: Where is Kathy going this summer?
   B: France, or Germany, or some other European country.
   (Davis 1998: 146)

Davis (1998) argues that while B’s response can be understood as implying that B does not know which country Kathy is going to visit (epistemic uncertainty), the exclusive interpretation of or (i.e., “not both/all”) is not implied (Davis 1998: 146). In a recent, very comprehensive study of quantity implicatures, Geurts (2010) proposes that at least three different types of Qc-implicatures (which are “derived on the basis of closed sets of alternatives”) are licensed by or, namely, scalar implicatures, ignorance inferences, and free choice inferences (p.127). This suggests that (neo-)Gricean accounts of disjunction implicatures place too much emphasis on exclusive disjunction and epistemic uncertainty implicatures at the expense of other possible types of implicature, which brings into possible question the default status of such implicatures.

A third significant challenge to (neo-)Gricean accounts of disjunction implicatures involves doubts about Grice’s assumption that inclusive dis-
junction (\(\lor\)) is the conventional meaning of or. Studies have indicated that non-logical disjunctive uses of or have often been misidentified as instances of exclusive disjunction, and that in reality logical disjunctive uses of or constitute only a small proportion (less than 5%) of all occurrences of or in English (Jennings and Hartline 2008: 8-9; Jennings 1994). However, while Barrett and Stenner (1971) point out that it is difficult (if not impossible) to find examples of truth-functional use of exclusive disjunction (\(\lor\)) in English, free choice permission utterances can nevertheless give rise to exclusive interpretations. Atlas (2005: 53-54) argues, for instance, that by asserting “You can have chocolate or vanilla” the speaker can implicate “but not both”.

A final, related challenge to (neo-)Gricean accounts of disjunctive connective or is the move to “semanticize” disjunction implicatures. Allan (2000), for instance, argues that or on its own standardly means “or else”, and thus the lexical entry for or should include the quantity implicature (i.e., “not both p and q”). In other words, the most salient meaning of or is exclusive disjunction, which he defines as follows:

In the particular situation in the world and time spoken of, if \(\varphi\) or \(\psi\) is grammatical, \(\varphi\) or \(\psi\) is true only if it is true that either \(\varphi\) is true or \(\psi\) is true or both \(\varphi\) and \(\psi\) are true. \(\varphi\) or \(\psi\) implicates that either \(\varphi\) or else \(\psi\) is true, but not both and not neither. (Allan 2000: 190)

Inclusive disjunction, on the other hand, in constituting a less salient sense of or, is argued by Allan (2000) to be usually indicated through and/or in English. He further suggests that the exclusive interpretation of or constitutes a probabilistic meaning arising through nonmonotonic inference, and so it is both defeasible and contextually affirmed (see also Allan this vol.). In moving such quantity implicatures into the lexicon, Allan is thereby rejecting the standard (neo-)Gricean account of implicature based on reasoning to best explanation of the speaker’s intentions. A rationalistic account of the interpretation of or is thus better replaced by a probabilistic approach according to Allan (2000, this vol). He nevertheless appears to retain the assumption that logical disjunction remains at the heart of the meaning of or.

In contrast, it is argued by others that epistemic uncertainty (i.e., “not sure which”) is encoded by or. This constitutes a radical shift from the traditional definition of or as a truth-functional concept to a treatment of it as a modal concept (Geurts 2005; Mauri 2008; Mauri and van der Auwera in press; Simons 2005; Zimmerman 2000). Zimmerman (2000: 255), for instance, claims that disjunctions are conjunctive lists of epistemic possibilities, and thus “the essential contribution of ‘or’ is merely to present a list of alternatives…disjunctions are to be treated as conjunctions of modal propo-
Practices and defaults in interpreting disjunction

This means, returning to example (2) for a moment, that when a speaker says “At the moment, Jack is waiting at the airport or he is flying over the Alps”, she is asserting that as far as she knows “Jack may be waiting at the airport, or Jack may be flying over the Alps, and there are no other places where Jack might be”. This can be formalized as $p \lor q \models \Box p \land \Box q$ (Mauri and van der Auwera in press). Mauri (2008) also characterises disjunction in terms of the modal dimension of epistemic possibility, but goes further in suggesting that it also involves a discourse dimension of “speakers’ regarding hearers’ reactions to their utterance, which may or may not result in a choice” (Mauri and van der Auwera in press). She distinguishes between “simple disjunction”, where two states of affairs are presented as equivalent possibilities without any need for choice (typically in the case of declaratives), and “choice-aimed disjunction”, where the speaker expects the hearer to make a choice between two states of affairs (typically in the case of interrogatives) (Mauri 2008).

One obvious drawback of a truth-functional account of the semantics of or is that truth-values cannot be assigned to utterances in the interrogative mood (and other non-indicative moods), yet questions are frequently “disjoined” with or, for instance. However, accepting a modal account of or does not necessarily entail that implicatures do not arise from its use, or that default inferences are not involved. Interpreting the saying of $p \lor q$ as equivalent to asserting that $\Box p \land \Box q$ does not entail that the speaker does not know which of $p$ or $q$ is the case. For instance, if a speaker claims “Harry is either in Antwerp or in Brussels” in the context of “an undoubtedly boring game in which the addressee has to guess where Harry is”, then an implicature of epistemic uncertainty will not arise because “the game presupposes that the speaker knows where Harry is” (Geurts 2010: 20). This example mirrors the one originally given by Grice ([1978]1989: 44-45), which suggests that Grice’s original intuition that epistemic uncertainty arises through defeasible inference from or rather than being encoded holds firm (at least in the case of declaratives). A modal account of or, moreover, does not account for the defeasible scalar inference of exclusive disjunction (i.e. “not both”) or “or else” implicatures that arise from the saying of $p \lor q$.

It thus appears Grice’s original claim that implicatures (or at least implications) of exclusive disjunction and epistemic uncertainty arise from truth-functional uses of or (in assertions of the form $p \lor q$) remains viable. However, there appears to be a greater range of implications that may arise from the use of or in English discourse than originally outlined by Grice, and there is also strong evidence against the view that such implications are computed locally by default. Moreover, Grice’s assumption that the conventional meaning of or can be equated with inclusive disjunction appears problematic on some accounts. Thus, whether the account of disjunction
implicatures as generalized conversational implicatures first advanced by Grice and subsequently developed by various neo-Griceans remains viable has become open to question.

In the following section, it is proposed that this question of the status of defaults in interpreting disjunctive connectives is more productively approached through an analysis of *or* grounded in the context of particular discursive practices.

### 3. Exploring defaults through explicating discursive practices

Following Jaszczolt (this volume), defaults are broadly defined here as salient, frequent, and automatic meanings ascribed to the speaker by the addressee. At the discourse level, defaults arise relative to interlocutors and (minimal) contexts, not locally from linguistic forms (Arundale 1999; Bach 1984, 1995, 1998; Haugh 2008a; Jaszczolt 1999, 2005, 2008; Terkourafi 2003, 2005). At the lexical level, defaults are arguably better conceptualised as salient meanings that are activated faster due to their relative conventionality, frequency, familiarity or prototypicality in processing discourse (Giora 2003, this volume). It follows from this perspective that default interpretations always arise in the context of the accomplishment of interactionally consequential actions and interpersonally consequential evaluations (Haugh in press). The importance of considering these actions and evaluations, which arise coordinate with meanings in discourse, is lent support by recent experimental work indicating that utterance processing involves the recognition of illocutionary force (Holtgraves 2008), as well as interpretations of face and evaluations of im/politeness (Bonnefon and Villejoubert 2006; Bonnefon, Feeny and Villejoubert 2009; Demeure 2010; Demeure, Bonnefon and Raufaste 2008, 2009). In defining and delimiting the default inferences underlying the interpretation of meaning, then, it is argued here that we need to consider not only their cognitive-intentional underpinnings, but also examine how they are conventionally involved in the accomplishment of actions and evaluations in discourse. In other words, we can gain insight into discourse and lexical defaults through an examination of discursive practices, a source of potential insight into defaults that has remained relatively untapped to date.

A practice refers to a usual (or regular) action or way of doing something. In relation to discourse, regular ways of constructing (sequences of) utterances (or turn-constructional units in conversation analytic parlance) afford the production and understanding of meanings (Bilmes 1993: 387), as well as actions (Schegloff 1997) and evaluations (Haugh 2003; Terkourafi 2003, 2005). What makes (sequences of) utterances interpretable as affording particular meanings, actions or evaluations is they are **expected** in the sense that “they are apposite in this particular interaction” (Mey 2010: 445).
Such expectations form part of a “structural form of social memory” through the ongoing renewal of patterns in interaction and discourse within social networks (Arundale 1999: 141). Since social memory cannot be reduced, at least not without remainder, to the psychological processes or memory of individuals (Krippendorf 2009), these practices do not necessarily constitute part of the conscious metapragmatic awareness of individual language users. But they are nevertheless demonstrably recognisable to users through the practices they themselves deploy in interaction and discourse. The term practice is thus used here to refer to recurrent and recognisable ways of constructing (sequences of) utterances that afford particular meanings, actions and evaluations. These practices are described as discursive to emphasize that such practices do not exist in isolation, as Foucault (1972) argues, but rather are always defined in relation to other discursive practices, drawing upon them in complex ways.

While such a perspective might seem prima facie at odds with (neo-)Gricean accounts of generalized conversational implicatures, it is instructive to note that Grice himself made reference to the deployment of or in discourse when advancing an account of “indicative conditionals” in the 1967 William James Lectures (although this work remained unpublished until 1989). Specifically, he suggested that “a standard (if not the standard) employment of ‘or’ is in the specification of possibilities (one of which is supposed by the speaker to be realized, though he does not know which one), each of which is relevant in the same way to a given topic” (Grice 1989: 68), and that in the case of declaratives it is “characteristically employed to give a partial (or pis aller) answer to some ‘W’-question, to which each disjunct, if assertible, would give a fuller, more specific, more satisfactory answer” (ibid.: 68). He goes on to argue that “anyone who uses the ‘or’ form implicates or suggests thereby (other things being equal) that he is addressing himself to some explicit or implicit ‘W’-question” (ibid.: 69).

While one might question the methodological route by which Grice came to this conclusion (presumably through observation and introspection), the point stands that Grice’s claims about the implicatures, which the assertion of $p \text{ or } q$ gives rise to in “normal circumstances” (Grice [1978] 1989: 46), rests on an appeal to regular ways of doing things in discourse.

Grice’s claim that or can be used to specify possibilities is echoed in a number of different, but inter-related approaches to characterising the use of or in discourse and interaction. Mauri (2008), for instance, characterises or as indicating “replaceable possibilities” (as mentioned in the previous section), Jennings (1994) sees the primary function of or as “offering alternatives”, while Schiffrin (1987) argues that or marks “options” for a hearer. The appositional use of or in discourse, usually to offer equivalents in defining or modifying noun phrases (Blakemore 2007; Jennings 1994: 294-295), can be regarded as parasitic on this primary function. Thus, while each ac-
count is grounded in a different underlying approach to analysing connectives in discourse, namely, as a modal (Mauri 2008), an adverbial (Jennings 1994), or a discourse marker (Schiffrin 1987), the use of or to indicate possibilities/options emerges as a common theme.

Schiffrin (1987) provides the most detailed analysis of the use of or in spoken interaction (which is the focus of this chapter). She argues that it is generally used to mark inclusive options, namely, where the speaker “provides hearers a two-way choice between accepting only one member of a disjunct, or both members of a disjunct” (p.177), a point echoed in Mauri’s (2008) notion of “choice-aimed disjunction”. The advantage of interpreting or as inclusive rather than exclusive, according to Schiffrin (1987), is that the former interpretation “creates more of an evidential choice” (p.178). This increases the potential for one’s claim to be accepted in arguments or discussions where speakers are advancing a particular stance, “because it minimizes the cost that rejection of any single piece of evidence might have” (Schiffrin 1987: 178).

In the following example, the speaker is giving reasons why she prefers going out with her partner alone rather than with other couples.6

(4) F: We prefer eating alone.
   Cause: what we like- what we like, most other people
   either don’t want t’go: for it,
   or, um … you feel responsible if you suggest a place.
   (adapted from Schiffrin 1987: 179)

Both the fact that others might not want to go to the same place (“don’t want t’go: for it”), or the speaker may feel responsible if others do not enjoy the restaurant (implied by “you feel responsible if you suggest a place”), are sufficient reasons in their own right to support Freda’s attested stance. Interpreting or here as inclusive means, however, that the two reasons have a joint effect, thereby strengthening the apparent “credibility” of the speaker’s stance, as well as spreading the risk of the recipient rejecting that stance across two distinct lines of reasoning (Schiffrin 1987: 179).

The recurrence of this discursive practice in instances where speakers advance particular stances along with accompanying explanation or reasoning for those stances, indicates that the inclusive interpretation of or may constitute the default interpretation in such instances, and thus that the implicature of “exclusive disjunction” does not constitute a default in such discourse contexts.7 However, the fact that the inclusive interpretation of or is

6. For transcription conventions see the appendix at the end of this chapter.
7. In discourse where or is used in defining or modifying concepts (appositional usage) the exclusive interpretation of or is also less likely to constitute a de-
strongly context-dependent, even within argumentative or stance-taking discourse contexts, indicates that “a residue of logical meaning” remains in the use of or in discourse (Schiffrin 1987: 189), and thus such defaults remain defeasible. It is also worth noting here that an implication of epistemic uncertainty does not appear to arise in the case of uses of or in such contexts, although this is consistent with the general finding that implications of epistemic uncertainty are generally contingent on first implicating exclusive disjunction, as discussed in section 2.1.

Notably, while (neo-)Griceans have remained firmly focused on declaratives and the indicative mood, it is quite clear that or is also used in interrogatives (Jennings 1994; Geurts 2010; Mauri 2008; Schiffrin 1987). However, although Jennings (1994) claims an adverbial account of or that replaces the implicature account is “bound to be required as soon as we lose our philosophical preoccupation with the indicative mood” (p.282), Geurts (2010) argues that despite non-declarative speech acts being thoroughly ignored in accounts of implicature thus far, it does not necessarily follow that “non-declarative speech acts don’t have Q-implicatures” (p.32). The question thus arises as to what implicatures, if any, can arise from the use of or in interrogatives.

Channell (1994) distinguishes between “approximation” uses and “alternative” uses of or, which are marked through intonation, in interrogatives (as well as in indicatives). Examples of each are illustrated in examples (5) and (6) respectively (upward/downward stress is indicated through arrows).

(5)  Would you like one or ↓two lumps of sugar?

(6)  Would you like ↑one or ↓two lumps of sugar?

(adapted from Channel 1994: 55)

According to the first intonation pattern (p or ↓q?), where there is downward stress on only one of the alternatives, the question can be interpreted as asking whether the recipient would like approximately one or two lumps of sugar. In Mauri’s (2008) terms, this is a case of simple disjunction where one lump and two lumps of sugar are presented as equivalent possibilities without the need for choice between them. In other words, this involves an inclusive interpretation of or. In such cases there is also not necessarily an implication of epistemic uncertainty between theses two possibilities on the part of the speaker, that is, it is not implied that the speaker ¬K_s(p) ∧ ¬K_s(q). There is, of course, clearly a display of epistemic uncertainty on the fault, although this is argued only in principle by Blakemore (2007) rather than through the provision of naturally-occurring data.
part of the speaker as to whether the recipient wants to have sugar in the first place, that is, $\neg K_a(p \land q)$.

According to the second intonation pattern ($\uparrow p$ or $\downarrow q$?), however, where both alternatives are stressed (the first with upward, the second with downward intonation), the question can be interpreted as an attempt by the speaker to elicit a choice on the part of the recipient. In other words, it is a choice-aimed disjunction (Mauri 2008), where an exclusive interpretation of $or$ is occasioned, $\neg(p \land q)$, and an implication of weak epistemic uncertainty also arises, $\neg K_a(p) \land \neg K_a(q)$. In this case, the speaker is assuming the recipient wants some sugar, i.e., $K_a(p \lor q)$. It appears, then, that intonation patterns may also be involved in occasioning default interpretations of disjunction interrogatives. Such interpretive complexities illustrate that Grice’s initial claims about the truth-functional use of $or$ in indicatives may also need careful re-examination.

Schiffrin (1987) notes that the second type of choice-aimed disjunction interrogative can be strategically deployed in place of yes-no (or polar) questions in order to increase the possibility that the speaker will procure an answer from the recipient. Open-ended disjunction can be used to either increase the number of response options, or to generalize response options, as illustrated in the two examples below respectively.

(7) D: Do you go down the shore? Like Atlantic City or Wildwood, or Cape May?

(8) D: Are y- are these people around, from the block, from the neighbourhood… or where.
(Schiffrin 1987: 181)

As Schiffrin (1987) notes this “interactional advantage” is increased when recipients interpret $or$ as inclusive, although exclusive interpretations remain possible. And while in both cases the speaker indicates epistemic uncertainty in offering options, this degree of epistemic uncertainty is increased through the open-ended disjunction in example (8), where the range of possible responses is left much more open than in the case of the question in example (7), where the range of candidate responses is restricted (without contradiction) to only three.

The appearance of both inclusive and exclusive instances of $or$ in disjunction interrogatives in the examples given above suggests that (neo) Gricean scalar-based defaults may not be straightforwardly mapped onto the use of $or$ in interrogatives. Moreover, interpretations of epistemic uncertainty also appear to be uncoupled from interpretations of exclusive disjunction in the case of interrogatives, as the relative degree of epistemic uncertainty
can be modulated through the deployment of disjunctive particle in utterance-final as opposed to utterance-medial position.

The instance of open-ended disjunction above in example (8) also poses challenges for traditional intention-based accounts of or-based disjunction in that it arguably constitutes an instance of not-saying where the speaker leaves the interpretation of what is meant open to the recipient: in this case, the range of possible responses encompassed by the open-ended “or where” tag. In the following section, it is suggested that not-saying through utterance-final disjunction interrogatives is a recurrent and recognisable discursive practice in casual spoken interaction in English. It is suggested that implications of epistemic uncertainty play a crucial role in the interpretation not only of the meaning of such utterances, but also in the actions and evaluations which they give rise to. It is proposed that this regularity in interpretation constitutes grounds for postulating interpretive defaults.

4. Defaults in interpreting not-saying: the case of disjunction interrogatives

Default interpretations are argued by Jaszczolt (1999) to arise through “appeals to people’s general expectations about how language is commonly used in given situations” (p.48, emphasis added). This position is represented from an interactional perspective in Arundale’s (1999: 143) default interpreting principle: “If an expectation for default interpreting is currently invoked, and if no conflicting interpreting is present, recipients formulate the presumed interpreting(s) for any current constituent consistent with the expectation” (p.143, emphasis added). Thus, if interlocutors expect that a default inference will be invoked by the occurrence of a particular utterance type in a minimal context, an implicature (or more broadly implication) will arise unless there is something that otherwise blocks or terminates this inference, for example, through non-standard formulation of that utterance-type, or through the addition of particular contextual information that modulates the minimal context. In the preceding section, it has been argued that we can identify such expectations in a principled manner through an analysis of discursive practices. Building on the preliminary discussion in Haugh (2008a: 59-60) of utterance-final disjunctive particles in English as a potential site for default interpretations (specifically, default implicatures), it is argued in this section that such expectations can be teased out through an analysis of this particular utterance type (i.e. p or?), and the discursive practice with which it is closely associated, namely, not-saying.

To briefly recap, Haugh (2008a: 59) suggested that in the following example, the utterance-final disjunctive in line 2 appears to give rise to a de-
fault implicature, namely, the opposite state or condition to that which pre-
cedes the disjunctive particle."

\( (9) \) ERCH: 11:07 (Chris and Emma have been talking about Emma’s acu-
puncture business)

1 C: how do you go generally with most of your
2 customers "are they happy or"
3 (0.8)
4 E: ↑YEAH
5 C: Yeah
6 E: Yeah I’ve been getting (0.6) most of my business
7 actually now (0.2) now that it’s gaining (0.2) momentum
8 is um word of mouth
9 C: Mmm
10 E: From (.) patients telling other patients
11 C: Right (0.5) (Haugh 2008a: 59-60)

In claiming this implicature involves default inference, it was assumed that utterance types of the form \( p \) or? regularly give rise to the interpretation not \( p \), at least in discourse contexts where interlocutors are seeking or clarifying (personal) information. In the above case, not \( p \) can be interpreted as something like “not so happy”. This claim was justified on two grounds. First, Emma’s affirmative response (line 4) orients to Chris’s utterance in lines 1-
2 as a polar question (i.e., a yes-no question of the form \( p \) or not \( p \)?) rather
than an alternative question (i.e., \( p \) or \( q \)?). Second, the observation that
Emma’s affirmative response was marked with a rising tone and louder vol-
ume (line 4), and accompanied by a warrant for this response, namely, her
business is growing through word of mouth (lines 6-8, 10), indicates that
Emma was orienting to possible impoliteness implications arising from
Chris’s question (i.e., that some people may not be happy or satisfied with
the treatments Emma offers). Such impoliteness implications are more con-
istent with an implication of not \( p \), which constitutes a negative assessment
(of Emma) rather than \( q \). In other words, Emma displays an understanding
of Chris’s question as potentially giving rise to impoliteness implications
(although this is not to say they are treated by Emma as intended by Chris),
which is only possible if what is left unsaid is interpreted as a negative as-
sessment, that is, not \( p \) (cf. Haugh 2008a: 60).

It is also worth noting that while at first glance it might be thought this
default interpretation could be treated as an instance of speaking elliptically

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8. If one defines implicature as speaker-intended (Bach 2006, in press; Grice
[1975] 1989: 24), then this unsaid meaning more properly counts as the hear-
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(Stainton 2005: 399), more specifically, so-called “pragmatic ellipsis” (Sag and Hankamer 1977; Stanley 2000), closer examination indicates that this does not yield a satisfactory account.9 This is due to the fact that this inference violates the condition of recoverability (Clapp 2005: 127; Merchant 2010): whether what is left unsaid by Chris (the speaker) should be interpreted as not p or q is left open to interpretation by Emma (the recipient). The “recovery” of “not so happy” (or some other equivalent of not p) is thus clearly defeasible since “satisfied” (i.e., a partial synonym for “happy” or some equivalent of q) constitutes another possible interpretation of Chris’s utterance.

In order to more carefully examine instances of not-saying through disjunction interrogatives (where the interpretation of what has been implied is left open to the recipient), a collection of 20 tokens of utterance-final or near-final disjunction interrogatives were assembled from naturally-occurring interactions.10 In this section, after briefly reviewing accounts of question design and interpretation in Conversation Analysis (section 4.1), the discursive practice of not-saying through utterance-final disjunction interrogatives is carefully analysed, building on these insights as well as the previous discussion of (neo-)Gricean and alternative accounts of disjunction (section 4.2). Potential interpretive defaults underlying this form of not-saying are then teased out (section 4.3).

4.1. Questioning, preference, epistemics and dis/affiliation

There are three main question types in English, polar questions, Q-word questions, and alternative questions. Polar questions are those that make “relevant affirmation/confirmation or disconfirmation” as they consist of a “proposition with two possible answers in semantic terms: true/the case versus not true/not the case” (Stivers and Enfield 2010: 2621). They commonly occur in the form of declarative questions (e.g. “You’re going to work now?”), interrogative questions (“Are you going to work now?”), and tag questions (“You’re going to work now aren’t you?”). In Q-word questions

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10. The collection draws from a number of corpora of spoken Australian English, including 60 informal conversations between family and friends taken from the Australian component of the International Corpus of English (ICE-AUS) and the Griffith Corpus of Spoken Australian English (GCSAusE) (approximately 620 minutes), and 18 conversations between unacquainted Australians, the Australians Getting Acquainted corpus (AGA) collected by the author (approximately 200 minutes). This is not to suggest, however, that this discursive practice is limited to speakers of Australian English.
“part of a proposition is presupposed, and the utterance seeks the identity of one element of the proposition” (Stivers and Enfield 2010: 2621). Finally, alternative questions involve “the proposal of a restricted set of alternative answers in their formulation” (Stivers and Enfield 2010: 2621).

Speakers make relevant specific candidate answers, thereby constraining the terms of responses, when formulating polar and alternative questions (Pomerantz 1988). For example, if I ask “Do you want coffee?” in an attempt to offer a drink to you, I am proposing “coffee” as the candidate answer for the more general question about what you would like to drink. These constraints on responses involve two key preference structures. First, confirmations are preferred over disconfirmations in response to polar questions in English (Heritage 1984; Raymond 2003; Sacks 1987; Stivers 2010), where confirmations are defined as “responses aligned to the polarity of the question and confirmatory of the proposition predicated in the question” (Heritage and Raymond forthcoming: 2-3). Second, “answers which accept the terms of the question, and accept reduced agency over them, are preferred over those that resist either of these dimensions” (Stivers 2010: 2778), no matter which question type is involved (Raymond 2003; Heritage and Raymond forthcoming; Stivers 2011; Stivers and Hayashi 2010). Through proposing candidate answers in formulating polar and alternative questions, then, speakers can display their knowledge or familiarity with the topic in question, and display their attitudes towards or expectations of the recipient or some other relevant person (Pomerantz 1988: 372). The former is primarily a matter of epistemics (Heritage 2009; Heritage and Raymond forthcoming), while the latter is a matter of relationships and dis/affiliation (Pomerantz 1988; Steensig and Drew 2008), although the two are clearly inter-related.

Heritage (2009) suggests that interrogatives (as well as indicatives) invoke an “epistemic order”, which involves “what they [i.e. speakers] know relative to others, what they are entitled to know, and what they are entitled to describe or communicate” (Heritage 2009: 309). In the case of interrogatives, the speaker establishes a “negative epistemic gradient” between him/herself and the recipient (ibid.: 309). However, Heritage and Raymond (forthcoming) point out that the depth of this epistemic gradient can be adjusted through differential question design. For instance, the speaker can index different levels of commitment to or certainty about the candidate answer contained in the question through its design. Adjusting the epistemic gradient through turn design is also consequential for indexing affiliation or disaffiliation between interactants (Steensig and Drew 2008). When speakers offer candidate answers by asking questions, for instance, recipients are given the opportunity to affiliate or disaffiliate with that speaker’s stance through their response. Responses that conform with the candidate answer
endorse the speakers stance, and are consequently interpreted as affiliative for the most part. Responses that do not conform with the candidate answer are generally interpreted as disaffiliative.

It is argued in the following section that this ability to adjust the epistemic gradient lies at the heart of the practice of not-saying through utterance-final (and near-final) disjunction interrogatives. Through this discursive practice, the speaker increases the depth of the epistemic gradient, which not only reduces the possibility of eliciting a disaffiliative response, but also increases the likelihood of occasioning evaluations of politeness. Crucially, this practice is accomplished through implications of epistemic uncertainty, leading us full circle to the (neo-)Gricean account of disjunction.

4.2. Utterance-final disjunction interrogatives

While the disjunctive particle can appear in both polar (p or not?) and alternative questions (p or q?) in utterance-medial position in English, it can also appear in utterance-final position (p or?, p or q or? etc.) or near-final position (p or something?, p or q or something? etc.). The focus in this analysis is on disjunctive particles in utterance-final position, as this utterance type is arguably equivocal as to whether it is to be interpreted as a polar or alternative question, especially when it appears in an utterance with only one candidate answer (‘p or?’). For example, if I ask “Do you want coffee or”, this can be interpreted as either “Do you want coffee or not?” or “Do you want coffee or something else?” (such as tea or water etc.). In other words, this utterance type can be interpreted as either a polar question or an alternative question by the recipient. There are a number of implications that arise as a consequence of this particular question design.

First, if an utterance of the form p or? is interpreted as a polar question, then the disjunctive particle must (logically) receive an exclusive interpretation ¬(p ∧ ¬p). If it is interpreted as an alternative question, on the other hand, it can be understood as either inclusive or exclusive. If one takes the (neo-)Gricean line that the exclusive interpretation (“not both”) constitutes a quantity implicature, then it appears that exclusive implicature arises in instances where this utterance type (p or?) is interpreted by the recipient as a polar question. However, this implicature is not licensed by what the speaker has said, since the speaker relinquishes his/her rights to determine whether the question is interpreted as polar or alternative through this particular turn design (cf. Heritage and Raymond forthcoming), and hence might be better termed an inference rather than an implicature. This interpretive equivocality is exploited by speakers to avoid implying, and thus being held

11. Here “something” is used as placeholder for any approximator that leaves the range of options relatively open-ended for the recipient.
Second, the deployment of utterance-final or allows the speaker to increase the depth of the epistemic gradient in allowing that there may be other candidate answers than that which has been explicitly offered. This increase in epistemic gradient is arguably accomplished through an implicature of weak epistemic uncertainty that increases the range of allowable responses, i.e., ¬Kₐ(p) ∧ ¬Kₐ(¬p) or ¬Kₐ(p) ∧ ¬Kₐ(q). By doing so the speaker decreases his/her level of commitment to this particular candidate answer (’p’), thereby invoking relational aspects of the epistemic order (Heritage and Raymond 2005; Raymond and Heritage 2006). More specifically, in postulating a more equivocal candidate answer, the speaker decreases the risk of eliciting a disaffiliative response (Steensig and Drew 2008). The speaker also displays concern for the epistemic territory of the recipient, which is interpretable as an indexing a polite stance, at least in Anglo varieties of English (Wierzbicka 2006). In this way, the probability that evaluations of politeness will be occasioned is also increased. Notably, no matter whether the recipient ultimately interprets the speaker’s utterance as a polar or alternative question, epistemic uncertainty is nevertheless still generally implied by the speaker.

In a comprehensive study of question-response sequences across a number of different languages, Stivers and Enfield (2010) suggest in passing that the utterance type p or? is “routinely treated as a practice for asking a polar question as evidenced by regularly receiving answers” (p.2622). The collection of tokens of utterance-final disjunction interrogatives examined here provides further substantive support for this claim. The two examples below represent the two main response types to the 17 tokens of the utterance type p or? in this collection. In both cases, the recipients displayed an understanding of this utterance type as a polar question through their responses.

The example below represents the most frequent response type in this collection, namely, a type-conforming response (either yes or no), where the recipient displays an interpretation of the utterance as a polar question. Up until this point in the conversation, Ben and Alex have been talking about Ben’s fellow student in Chinese, who is ethnic Chinese and had some degree of prior familiarity with Chinese language, and so entered directly into second year Chinese classes. Alex attempts to better understand just how well she speaks Chinese by asking whether she is able to talk with the teacher (in Chinese).

(10) GCSAusE09: 2:28
106 A: she must be alright “for” sure-
107 (0.6)
While the disjunction interrogative on line 113 could be interpreted as either a polar or an alternative question, Ben receipts it as a polar question by responding with a type-conforming response in line 115 (‘yeah’) that is aligned with the polarity of Alex’s question. The disjunctive particle or is thus interpreted by Ben as exclusive. Through his question design Alex displays uncertainty about whether being able to talk with the teacher is an appropriate candidate answer for the more general question about the classmate’s degree of proficiency in Chinese. This is accomplished through an implicature of epistemic uncertainty, i.e., ¬K_a(ψ) \land ¬K_a(¬ψ). Through this implicature Alex also indexes a polite stance as such epistemic uncertainty reduces the risk of impinging on the epistemic territory of the recipient, an important dimension of their face (Arundale 2010). In this way, Alex’s question may also occasion evaluations of politeness. Ben aligns with this candidate answer through his type-conforming response, thereby indexing affiliation. The latter is premised on an exclusive interpretation of or in that he receipts Alex’s utterance as a polar rather than an alternative question. This lends analytical support to the analyst’s inference that Ben has evaluated Alex’s utterance as polite, since Alex and Ben are reciprocating displays of concern for each other’s stances in relation to the classmate’s proficiency in Chinese.

Non-type-conforming responses were also observed in this collection. In the next example, Chris is asking Emma about her knowledge of acupuncture before she went to Japan.

(11) ERCH: 0:31
20 C: so did you know acupuncture before you went? or
21 E: UMM I GRADUATED from college here
22 in Brisbane.
23 C: Mmm
24 E: And then umm
25 C: [just] a acupuncture college is it?
26 E: (0.3)
27 E: Ye[::ah]
While the disjunction interrogative in line 20 could be interpreted as either a polar or an alternative question, Emma arguably treats it as a polar question through her non-type-conforming response in lines 21-22. In her response, however, Emma resists the terms of the question formulated by Chris (i.e., whether she knew acupuncture or not before going to Japan). Instead, she offers a reformulation of the candidate answer (i.e., she had graduated from college). In this way, the terms of the question are transformed by Emma from being a matter of whether she “knew” acupuncture, in the sense of having sufficient expertise to treat patients, to a question of her educational background in acupuncture (i.e., whether she had graduated or not) (cf. Heritage and Raymond forthcoming; Stivers and Hayashi 2010). This response is marked as dispreferred through its delay by an uncertainty particle (‘um’), and through the louder volume, which contrasts her response with the candidate answer offered by Chris. Since Emma’s transformative answer displays an understanding of Chris’s utterance as a polar question, the disjunctive particle or is thus once again interpreted here as exclusive. Chris also increases the epistemic gradient here through an implicature of epistemic uncertainty, in the same way as seen in example (10), thereby indexing a polite stance in displaying concern for the epistemic territory of Emma.

Out of the 17 tokens of this utterance-type, twelve occasioned type-conforming responses and four occasioned non-type-conforming responses (relative to an interpretation of the utterance as a polar question). There was just one example where the non-type-conforming response was not marked as dispreferred, and thus the response displayed an interpretation of the utterance as an alternative question. In the following excerpt, Ben and Tiffany have been talking about Ben’s studies in Chinese. Tiffany is asking about the relative difficulty of learning Chinese (as a second language).

(12) GCSAusE11: 1:06
61 T: So is it (0.3) your second year
62 B: Chinese?
63 T: =so is it? (. ) is it easy? or
64 B: [like what]
65 T: [second year Chinese yeah.=
66 B: [it’s har: ]d
67 (0.5)
68 T: ‘cause the (. ) (‘cause) (. ) I ↑wanna learn an Asian
69 language but like the characters (0.5) is what
70 makes me kind of (0.4) not ↓want to?
While the disjunction interrogative in line 64 could be interpreted as either a polar or an alternative question, Ben arguably treats it as an alternative question in reformulating the candidate answer (“easy or [not easy]”) as “hard” in line 66. In other words, through his response Ben displays an interpretation of \( p \text{ or?} \) (“easy or?”) as \( p \text{ or } q \) (“easy or something?”) rather than \( p \text{ or not?} \) (“easy or not?”). Notably, Tiffany latches “like what” on to her utterance (line 65), thereby making it an alternative question at the same time as Ben displays an interpretation of it as an alternative question in his overlapping response (line 66). Ben’s candidate answer (“hard”) presupposes an exclusive interpretation of \( or \) although an exclusive interpretation of \( or \) is not entailed by interpreting this utterance type as an alternative question (in contrast to interpretations of it as a polar question). An implicature of epistemic uncertainty also arises (i.e., \( \sim K_a(p) \wedge \sim K_a(q) \)), and thus Tiffany is able to index a polite stance through deploying this utterance type.

In summary, then, utterance-final disjunction interrogatives are almost always treated as polar questions despite the option being left open to the recipient to interpret them as alternative questions. In the majority of cases, the disjunctive particle \( or \) is interpreted as exclusive, weak epistemic uncertainty is implied, and a polite stance is also indexed by the speaker. It is suggested here that the regularity of this inter-related set of interpretations of this particular discursive practice may constitute grounds for treating them as default interpretations. In the following section, these interpretive defaults are discussed in more detail.

4.3. Defaults in interpreting disjunction interrogatives

A number of candidate interpretive defaults have emerged in the course of this analysis of the discursive practice of not-saying through utterance-final disjunction interrogatives. These interpretive defaults are associated with the utterance-type \( p \text{ or?} \) in the minimal context of seeking (interpersonal) information (or initiating other-repair in a small number of cases), for the most part in conversations where the participants are not well acquainted. In other words, it is a discursive practice that occurs in contexts where there is likely to be a perceived need for the speaker to show sensitivity towards the epistemic territory of the recipient.

First, the disjunctive particle \( or \) is overwhelmingly interpreted as exclusive in utterance-final (or near-final) disjunctive interrogatives. This exclusivity interpretation (i.e., “not both”) is not considered to be a part of the semantic content of \( or \) in either the (neo-)Gricean treatment of \( or \) as a truth-functional concept, namely, inclusive disjunction \( (\lor) \), or alternative accounts of \( or \) as a modal concept that indicates conjunctive lists of epistemic possibilities, which may be presented as equivalent (simple disjunction) or
not equivalent (choice-aimed) according to Mauri and van der Auwera (in press). An interpretation of exclusivity thus arises through inference on both truth-functional and modal accounts of disjunction. In the case of utterance-final disjunction interrogatives, it appears that there are strong grounds for assuming this inference arises by default in the minimal context of seeking (interpersonal) information. This is consistent with the analysis of disjunction in Default Semantics, where it is proposed that the exclusive meaning of or is obtained via a sociocultural default (Jaszczolt 2005: 211).

Second, utterance-final or disjunction interrogatives are overwhelmingly interpreted as indicating greater epistemic uncertainty about the candidate answer than that which standardly accompanies polar questions. While utterances of the form $p? \equiv \neg K_a(p)$, the utterance-type examined here, $p \text{ or } ?$, was interpreted by recipients as the speaker indicating he does not know whether $p$ is the case (i.e., $\neg K_a(p)$), the utterance-type examined here, $p \text{ or } ?$, was interpreted by recipients as the speaker indicating he does not know whether $p$ or not $p$ ($\neg K_a(p) \land \neg K_a(\neg p)$) or alternatively, he does not know that $p$ or $q$ ($\neg K_a(p) \land \neg K_a(q)$). There was no indication that recipients inferred strong epistemic uncertainty on the part of the speaker, namely, where the speaker knows or believes that $p$ and that $q$ is not the case ($K_a(p) \land K_a(\neg q)$). In the case of utterance-final disjunction interrogatives, then, it also appears that there are strong grounds for assuming this inference of weak epistemic uncertainty arises by default in the minimal context of seeking (interpersonal) information. This is consistent with the claim that a clear distinction needs to be drawn between weak and strong epistemic uncertainty in analysing disjunction (Geurts 2009, 2010; Horn 1989, 2009; Sauerland 2004).

Third, utterance-final or disjunction interrogatives are overwhelmingly interpreted as indexing a polite stance on the part of the speaker, and thus may occasion evaluations of politeness. This polite stance arises through an implicature of epistemic uncertainty, which increases the epistemic gradient between the speaker and the recipient, thereby showing concern for the epistemic territory of the recipient. In the case of utterance-final disjunction interrogatives, then, it also appears that there are strong grounds for assuming this evaluation of politeness arises by default in the minimal context of seeking (interpersonal) information. This type of politeness has been termed anticipated or unmarked politeness in earlier work (Haugh 2003, Terkourafi 2001, 2003, in press). The association of politeness implications with utterance-types in minimal contexts, for instance, is a key claim made in the frame-based approach to politeness developed by Terkourafi (2001, 2003, 2005, in press). Terkourafi treats such implications as utterance-type meanings that are presumed in minimal contexts (GCI\textsubscript{mc}), in contrast to standard Gricean generalized conversational implicatures (GCI), which are utterance-type meanings that are presumed in all contexts ceteris paribus (Terkourafi 2005: 312). The move to analysing politeness defaults at the discourse level is thus consistent with Terkourafi’s notion of GCI\textsubscript{mc}.
Whether these three different default inferences (exclusivity, epistemic uncertainty, anticipated politeness) should be treated as implications, implicatures or even part of the lexical entry for *or* depends, in part, on one’s theoretical stance in regards to (1) implicatures as speaker-intended or interactionally achieved, and (2) the semantic, encoded meaning of *or*. On Haugh’s (2007) account of politeness implicatures as interactionally achieved, where speakers can only be held accountable for what they *imply*, epistemic uncertainty constitutes an implicature (i.e., the speaker can be held accountable for this interpretation), while exclusivity and anticipated politeness constitute implications (i.e., the speaker cannot necessarily be held accountable for these interpretations). On a (neo-)Gricean account, on the other hand, they would all be treated as generalized conversational implicatures, although perhaps relative to minimal contexts rather than across all contexts (at least on Horn’s and Terkourafi’s accounts). On the semantic account offered by Allan (2000), exclusivity constitutes the most salient (in his view, probabilistic) meaning of *or*. No matter the terminology, however, there is arguably broad agreement that these constitute default interpretations arising from nonmonotonic inference at the discourse level.

While the current analysis does not decisively resolve the issue of what is the most salient meaning of *or* (i.e., the default interpretation of disjunctive particle at the lexical level), the characterisation of the exclusivity as a default inference in the interpretation of utterance-final disjunction interrogatives, alongside Schiffrin’s claims about the “interactional advantages” of the inclusive interpretation of *or* in stance-taking discourse indicates that inclusive listing of possibilities/options is the most likely candidate for the core or salient meaning of *or*. However, more analysis of disjunctive particles across a range of different minimal contexts is necessary to better ground this claim.

5. Conclusion

The distinction between generalized and particularized conversational implicatures was introduced by Grice because he considered it of strategic importance. As Geurts (2010) points out, one of Grice’s main concerns was to point out the tendency of overloading words with meaning. He suggests it is this tendency that has led some authors to suppose that it is due to the lexical content of “or” that “φ or ψ” usually implies that the speaker doesn’t know whether φ and doesn’t know whether ψ. One of Grice’s main concerns is to show that this kind of reasoning is precipitate, and that such inferences are better treated as conversational implicatures. And to acknowledge the fact that such inferences can be pretty much standard, he dubs them “generalized conversational implicatures.” (Geurts 2010: 18-19)
The (neo-)Gricean account has come under recent fire, however, on grounds that these attested defaults are not been supported in empirical testing, particularly from those working within a relevance theoretic perspective, where the generalized/particularized distinction is largely dismissed.

However, it has been the contention in this chapter that those arguing against the existence of default inferencing have been locating defaults in the wrong place. Rather than existing at a decontextualised, lexical level, defaults are better characterised as arising relative to (minimal) contexts and speakers. Moreover, while experimental work can be used to test the scope and validity of candidate defaults, it cannot generate them in the first place. Introspection-based tests of reasoning have also proven somewhat unreliable. In order to characterise such discourse defaults, then, it has been suggested that we look to discourse to establish these potential interpretative defaults. In particular, it has been proposed that the analysis of discursive practices offers fertile ground for explicating potential interpretive defaults. An analysis of discursive practices assumes that default interpretations of meaning may, at times, involve co-ordinately achieving actions and evaluations. In the case of not-saying through utterance-final disjunction interrogatives, an analysis of the various implicatures (or implications) associated with this utterance-type has revealed that they arise in an interdependent, coordinate manner with particular interpretations of actions (questioning: offering candidate answers) and evaluations (interpersonal stance: politeness) in conversational interaction. In other words, the interpretation of what is meant by a speaker deploying a disjunction interrogative depends in part on the recipient’s interpretation of the question type (i.e., action) and associated evaluations of politeness. This suggests there needs to be greater consideration of the role that actions and evaluations play in the interpretation of meanings (Haugh in press).

Finally, since the focus in the analysis of disjunction interrogatives in this chapter has been on data from spoken interaction in English, there remain questions about the cross-linguistic validity of this analysis. While Geurts (2010: 17) suggests that default inferences arising from disjunction cross over numerous languages, the work of Mauri (2008) on disjunction across languages suggests that it would be unwise to assume that conclusions about default interpretations drawn from an analysis of a discursive practice in one language can be straightforwardly applied cross-linguistically. Although such defaults are likely to occur in languages that have analogous means of expressing disjunction to English, there remains considerable work to ascertain what other default interpretations may be associated with disjunction in other languages, especially in languages where there is more than one word for representing disjunction. It is only through such work that may establish whether there are any cognitive (and
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thus universal) defaults, as opposed to just sociocultural discourse defaults, involved in the interpretation of disjunction.

Transcription conventions

[ ] overlapping speech
(0.5) numbers in brackets indicate pause length
(0) micropause
:' elongation of previous vowel or consonant sound
- word cut-off
. falling or final intonation
? rising intonation
, ‘continuing’ intonation
= latched utterances
underlining contrastive stress or emphasis
CAPS markedly louder
° ° markedly softer
↓ ↑ sharp falling/rising intonation
> < talk is compressed or rushed

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