

## On the priority of salient meanings: Studies of literal and figurative language<sup>☆</sup>

Rachel Giora\*

*Department of Linguistics, Tel Aviv University, Tel Aviv 69978, Israel*

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### Abstract

Instead of postulating the priority of literal meaning (see e.g., Grice, 1975; Searle, 1979), the present paper adduces evidence in support of the priority of salient meanings (for a similar view see Récanati, 1995). The salient meaning of a word or an expression is its lexicalized meaning, i.e., the meaning retrievable from the mental lexicon rather than from the context (e.g., the literal meaning of novel metaphors but not their intended, nonliteral meaning made available by context, see Giora, 1997). Factors contributing to (degrees of) lexical salience are e.g., conventionality, frequency, and familiarity. Research into the processes involved in comprehension of familiar and novel instances of metaphors, idioms, and irony demonstrates that salient meanings enjoy a privileged status: They are always accessed, and always initially, regardless of context. The findings reported here tie up with previous findings (e.g., Swinney, 1979; Gernsbacher, 1990; Rayner et al., 1994) which argue against the selective access view of context. They show that, contrary to the received view (see Gibbs, 1994, for a review), even rich and supportive contexts which are biased in favor of less salient meanings do not inhibit activation of salient meanings. © 1999 Elsevier Science B.V. All rights reserved.

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### 1. Introduction

Theories of language comprehension have always been concerned with the literal–nonliteral divide. Though literal and nonliteral meanings are rather complex and evasive concepts (see Gibbs et al., 1993), speakers seem to have strong intuitions about the difference between them. The study of their interpretation has never been deterred by their elusiveness.

Until two decades ago, most models of discourse comprehension (dubbed ‘the standard pragmatic models’) assumed the priority of literal over nonliteral meanings (e.g., Grice, 1975; Searle, 1979; and see Gibbs, 1994, for a review). The assumption

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<sup>☆</sup> Support for this research was provided by grants from The Israel Science Foundation and Lion Foundation. I would also like to thank Mira Ariel and an anonymous reviewer for their helpful remarks.

\* E-mail: giorar@ccsg.tau.ac.il

was that activation of literal meaning is obligatory. Comprehenders always compute the literal meaning of a word or a sentence first. By contrast, nonliteral meaning is activated only if there is a mismatch of literal meaning with context. On this view, then, activation of nonliteral meaning is optional, and occurs only after the literal meaning has been accessed (and possibly rejected as the intended meaning).

The assumptions of the standard pragmatic model have been contested both theoretically and empirically. Proponents of relevance theory (e.g., Sperber and Wilson, 1995 [1986]) and psycholinguists alike (e.g., Gibbs, 1994; Ortony et al., 1978; Inhoff et al., 1984) stressed the effect of context on selective access. In particular, psycholinguists argued that in a rich context, comprehenders access nonliteral meanings directly without having to process the literal meaning at all (e.g., Gibbs, 1986, 1994). Sperber and Wilson (1995 [1986]) argued that contexts are searched for, rather than given. Thus, comprehenders are said to access (only) those contextual assumptions that render an utterance relevant. A strictly literal construal of a nonliteral utterance such as *His ink is pale* is, therefore, “clearly ruled out: it is hard to see what relevance could attach to knowing the color of a poet’s ink” (1995 [1986]: 237);<sup>1</sup> for a different possible analysis of the relevance theoretic account see Giora, 1998b).

Empirical researchers embraced this direct access view. Based on e.g., equal reading times of utterances embedded in literally and nonliterally biasing contexts (e.g., Ortony et al., 1978; Inhoff et al., 1984; Gibbs, 1986), and on shorter reading times for utterances embedded in idiomatically versus literally biased contexts (Gibbs, 1980), researchers concluded that the literal meaning of an utterance can be bypassed: Comprehenders may derive the nonliteral meaning more or less directly. The sequential model assumed by the traditional pragmaticians has been, therefore, replaced by the direct access model.

However, the assumption that in a rich ecology, literal meanings can be bypassed and nonliteral meanings can be accessed directly did not gain support when on-line processes were tapped. For instance, Blasko and Connine (1993) showed that unfamiliar metaphors are always processed literally initially. Furthermore, they showed that even familiar metaphors are processed literally initially, in parallel to being processed metaphorically. In addition, a reanalysis of Gibbs’ (1986) findings (Giora, 1995) also suggests that comprehending ironic utterances involves activating their literal meanings first before activating their nonliteral, ironic meanings.

Most of the findings, then, seem to attest that the literal meaning of an expression or utterance is always activated initially. Such findings would support the hypothesis of the priority of literal over nonliteral meaning. However, there is another turn of the screw. The priority of literal meaning hypothesis is inconsistent with longer reading times found for nonconventional literal meanings of idioms (Gibbs, 1980) and for indirect requests (e.g., Gibbs, 1981, 1982, 1983). Here, conventional meaning seems to reign supreme.

<sup>1</sup> For a similar view see Gibbs (1986) and Vicente (1996) who seem to interpret Sperber and Wilson (1995 [1986]) as proposing a direct access model of comprehension. Note, however, that Sperber and Wilson are not quite clear about the comprehension model their theory assumes (Giora, 1998a,b).

Literal, nonliteral, and conventional meanings – which are obligatory, then? I have recently proposed that the obligatory meaning – the meaning that will always be accessed initially – is the most salient meaning (Giora, 1997). A meaning of a word is salient, if it is coded in the mental lexicon. The degree of salience of a meaning of a word, or an expression, is a function of its conventionality (e.g., Gibbs, 1980, 1982), familiarity (e.g., Blasko and Connine, 1993, Turner and Katz, 1997), or frequency (e.g., Hogaboam and Perfetti, 1975; Neill et al., 1988). The view of graded salience proposed in Giora (1997) is akin to Jurafsky's (1996), according to which each construction or meaning is augmented with probabilities.

Thus, if a word has two meanings retrievable directly from the lexicon, the meaning which is more popular, or more prototypical, or more frequently used in a certain community is more salient; or, the meaning an individual is more familiar with, or has just learned is the more salient; or, the meaning activated by previous context, or made predictable by previous context is the more salient. These are all factors which play a role in determining the degree of salience associated with a given meaning.

Context, however, has a limited role, especially initially. Though it may facilitate activation of a word's meaning, it does not inhibit the activation of highly salient (e.g., frequent) meanings. Evidence from eye fixation, for instance, shows that even when prior context is heavily biased in favor of the less salient (e.g., less frequent) meaning of an ambiguous word, subjects look at it longer than at its matched unambiguous control word. This finding suggests that the word's salient meaning has been activated as well, in spite of the bias of prior context in favor of the less salient meaning (Rayner et al., 1994). Evidence from research of individual differences also demonstrates that salient meanings have a privileged status. For instance, Miyake et al. (1994) and Gernsbacher and Robertson (1995) show that low-span and less skilled comprehenders fail to resolve ambiguities and to understand puns because they fail to suppress the salient meaning when the less salient meaning of an ambiguous word is intended. There is, then, considerable evidence attesting that even when the context is supportive of nonsalient meanings, salient meanings cannot be bypassed.

## 2. On the priority of salient meanings: The case of metaphors

According to the graded salience hypothesis (Giora, 1997), processing a familiar metaphor should activate its literal meaning in a context biasing the metaphor towards its metaphoric meaning, as well as in a context biasing it towards its literal meaning. The rationale is that familiar metaphors have (at least) two salient (e.g., conventional) meanings – the literal and the metaphoric. Hence, both meanings should be activated initially in both types of contexts. A conventional metaphor such as *step on one's toe* should activate both the 'offense' and 'footfinger' concepts initially upon processing this utterance both in a literally and in a metaphorically biasing context. Given this prediction, processing familiar metaphors should not be more difficult in a metaphorically than in a literally biasing context. Reading times for the literal and for the metaphoric interpretations of familiar metaphors should not differ.

Previous research indeed lends support to these predictions. Giora et al. (1997a) have found equal reading times for metaphoric targets in both literally and metaphorically biasing contexts. In addition, Giora and Fein (forthcoming a) have shown that, indeed, as predicted by the graded salience hypothesis, the salient metaphoric and literal meanings are activated in both types of context – in the context biasing the metaphor towards its metaphoric meaning (e.g., 1a) and in the context biasing it towards the literal meaning (e.g., 1b). The experiment we conducted involved a word fragment completion task. Having read either a literally biasing (Hebrew) text or a metaphorically biasing (Hebrew) text, participants had to complete a literally related fragmented word (e.g., *wound* presented as the correlate Hebrew for w-u-d) and a metaphorically related fragmented word (e.g., *effort* presented as the correlate Hebrew for e-f-t) with the first words that came to mind. Results showed that both meanings were activated in both types of contexts.<sup>2</sup> These findings were replicated with two additional sets of metaphors embedded in long (4–5 sentences) and short (1 sentence) contexts, and two different groups of primary school students (see Giora and Fein, forthcoming a for the statistical details).

- (1) a. In order to solve the math problem, the student *broke her head*.  
 b. Because she was so careless when she jumped into the pool, the student *broke her head*.

Measures which tap on-line processing also demonstrate that processing familiar metaphors activate the salient literal and metaphoric meanings initially (Williams, 1993).

However, to validate the priority of the salient over the less salient meaning, it is also necessary to examine less familiar metaphors (e.g., 2). According to the graded salience hypothesis, less familiar metaphors should induce different responses. First, they should involve a sequential process. The rationale is that less familiar metaphors have only one salient meaning – the literal one. It should, therefore, be evoked first, before the less salient metaphoric meaning is activated. Findings by Giora et al. (1997a) indeed show that utterances interpretable as less familiar and unfamiliar metaphors take longer to read in a metaphorically (2a) than in a literally (2b) biasing context.

- (2) a. Mary: My husband is terribly annoyed by his new boss. Every day he comes home even more depressed than he had been the day before. Somehow, he cannot adjust himself to the new situation.  
 Jane: *Their bone density is not like ours*.  
 b. Our granny had a fracture from just falling off a chair and was rushed to the hospital. I told my sister I never had fractions falling off a chair. She explained to me about elders. She said: *Their bone density is not like ours*.

<sup>2</sup> In the literally biasing context, the metaphoric meaning seemed less available, presumably as a result of suppression.

As for meaning activation, according to the graded salience hypothesis, processing less familiar metaphors should activate the salient literal meaning in both types of context – in the literally as well as in the metaphorically biasing contexts. However, in the literally biasing context, the salient literal meaning should be the only one activated. Findings indeed show that the salient literal meaning was activated in both types of contexts. In contrast, the less salient metaphoric meaning which was activated in the metaphoric context (though to a lesser degree than was the literal meaning) was not active in the literally biasing context.<sup>3</sup>

Measures which tap on-line processing also demonstrate that, with the exception of apt metaphors, processing novel metaphors activates the salient literal meaning initially, long before the metaphoric meaning becomes available. Processing novel and apt metaphors also induce immediate activation of the metaphoric meaning (Blasko and Connine, 1993).

### 3. On the priority of salient meanings: The case of idioms

According to the graded salience hypothesis, processing familiar idioms should activate their idiomatic meaning in the idiomatically as well as in the literally biasing contexts, because their idiomatic meaning is more salient than their literal meaning. In the idiomatically biased context, however, the idiomatic meaning should be the only one activated, because it is the intended meaning. Processing less familiar idioms should be similar to processing less familiar metaphors. It should activate their salient literal meaning in both types of contexts. However, in the literally biasing context, the literal meaning should be the only one activated. In Giora and Fein (forthcoming a) we tested these hypotheses by using a word fragment completion task. Findings, indeed, support the graded salience hypothesis. They show that the salient idiomatic meaning of familiar idioms was activated in both types of contexts. Moreover, the idiomatic meaning was the only one activated in the context biased towards the idiomatic meaning. Processing less familiar idioms also elicited the predicted response pattern. The salient literal meaning was activated in both types of context. However, in the literally biasing context it was almost the only one activated. Word fragment completion task, however, is an off-line measure, and may not be sensitive to initial processes. Other more sensitive measures such as reading times corroborate these findings. In McGlone et al. (1994) conventional idioms were processed faster than their less conventional variants, in both specific, highly supportive contexts, as well as in general less supportive but still appropriate contexts, as predicted by the graded salience hypothesis. In Gibbs (1980), idioms were read faster in idiomatically than in literally biasing contexts.

In sum, findings from metaphor and idiom comprehension research demonstrate that salient meanings enjoy a privileged status: they are always activated and always initially, regardless of the type or length of context.

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<sup>3</sup> This prediction, however, was not confirmed for unfamiliar metaphors. We suspected that the unpredicted findings were a result of ambiguous probes.

#### 4. On the priority of salient meanings: The case of irony

According to the graded salience hypothesis, processing an utterance such as *What a lovely day for a picnic* should activate its salient, literal meaning ('nice day') initially, not only in a context biasing its reading towards the literal (e.g., sunny day), but also in the context biasing it towards the ironic (e.g., stormy day) meaning. However, in the literally biasing context, it should be the only one activated. In contrast, conventional ironies whose ironic as well as literal meanings are coded in the lexicon should activate both their meanings initially and in both types of biasing contexts.

In a number of studies we tested these hypotheses. In Giora and Fein (forthcoming b), we tested these hypotheses, using a word fragment completion task. Participants (aged 9–11) were presented with stories that biased the targets either towards the literal or towards the ironic meaning. They were then presented with two fragmented words: one related to the ironic meaning of the target and one related to its literal meaning. They were asked to complete one of two fragmented words with the first word that came to mind. The target words were related either to the ironic or to the literal meaning of the target sentence, so that activation of the different meanings could be assessed. Findings supported the graded salience hypothesis. They showed that irony interpretation involves processing the salient literal meaning in both types of context. However, the literal interpretation of the irony does not involve accessing the less salient ironic meaning.

Response times also demonstrate that processing irony involves the activation of the salient (literal) meaning initially, before activating the less salient (ironic) meaning (Giora et al., 1998). In our study, we presented participants with ironies embedded in either ironically or literally biasing contexts displayed on a computer monitor. The targets (ironies) were displayed for as long as they had scored in a pretest which measured their reading time out of context. After the target sentence was displayed, the screen went blank for an interstimulus interval of either 150, 1000 or 2000 msec. Then a test word (an ironically or a literally related word, or a non-word) was displayed. The participants had to respond by pressing one of two (yes/no) keys, indicating whether the letter string was a word or non-word. The latency between the onset of the word/non-word and the pressing of the key was measured by the computer and served as response-time. Results support the graded salience hypothesis. They showed that the literal meaning was activated immediately in both types of context. In contrast, the ironic meaning was available only in the ironically biased context, and only after a delay of 2000 msec.

This study, which allows us an insight into the time course of understanding irony, was further augmented by reading times measure. According to the graded salience hypothesis, utterances should take longer to read in an ironically than in a literally biasing context. Given that irony has only one salient meaning – the literal one – deriving the ironic meaning should involve a sequential process. The ironic meaning should be activated after the salient literal meaning has been accessed and rejected as the intended meaning. Indeed, reading of utterances embedded in ironically biasing contexts took longer than reading them in a literally biasing context (Giora et al., 1998 and see also the reanalysis of Gibbs' 1986 findings in Giora, 1995).

In Giora and Fein (1998) we tested the graded salience hypothesis regarding familiar ironies. We measured response times to ironically-related (e.g., *annoying*) and literally-related (e.g., *amusing*) test words presented either 150 or 1000 msec. after the target sentences (embedded in either ironically 3a or literally 3b biasing contexts) were displayed:

- (3) a. Iris was walking on her own in the dark alley, when all of a sudden a hand was laid on her back. Startled, she turned around to find out that the hand was her young brother's who sneaked behind her to frighten her. She said to him: 'Very funny'.
- b. Tal and Ortal, the twins, wanted to go to the movies. Their mother recommended a movie she had seen shortly before. When they came home, she was eager to know how they found the movie. They both agreed: 'Very funny'.

As predicted, familiar ironies and their literal counterparts were processed similarly under both time constraints. There was no difference between contextually compatible and incompatible responses in all the conditions. Given the coded, salient status of both the literal and the ironic meanings of familiar ironies, they were both activated initially, regardless of context, as predicted by the graded salience hypothesis (Giora, 1997) and indirect negation view (Giora, 1995).

In all, these findings support the graded salience hypothesis. They show that salient meanings are always processed initially, regardless of contextual information. The *salient* literal meaning of less familiar ironies was the only one instantly available in the ironically biased context, even though it was incompatible with contextual information. Similarly, the *salient* literal meaning of familiar ironies was instantly available in the ironically biased context in spite of mismatch with contextual information. Further, familiar ironies facilitated their *salient* albeit contextually incompatible ironic meaning in the literally biasing contexts. These findings are consistent with the view that nonlexical contextual information should not affect initial access (cf. Fodor, 1983; Swinney, 1979). Indeed, context did not pre-select the meaning compatible with it, nor did it block the meaning incompatible with it. Salient information was accessed directly, regardless of contextual bias.

## 5. On the priority of salient meanings: Evidence from irony and metaphor comprehension following hemispheric damage

Processes that require interpretations of nonliteral meanings seem to selectively involve the right hemisphere (e.g., Bihrlé et al., 1986; Brownell et al., 1983 et al., 1986; Chiarello, 1988; Zaidel, 1979). As shown by Brownell et al. (1983), right brain damaged (RBD) individuals are sensitive to rule violation (e.g., the surprise endings of jokes), but insensitive to error-correction (e.g., the punchline which reconciles the rule violation). It is, therefore, plausible to assume selective right hemisphere contribution to irony understanding. Recall that according to the graded

salience hypothesis, irony comprehension involves a sequential reinterpretation process. It, therefore, predicts that RBD individuals should perform worse than both normal and left brain damaged (LBD) individuals on irony tests. Indeed, Kaplan et al. (1990) showed that RBD individuals are biased towards the literal interpretation, and are less able than normal individuals to derive an ironic intent.

In Giora et al. (1997b), we presented LBD and RBD and normal individuals with the Sarcasm subtest of the Hebrew adaptation of The Right Hemispheric Communication Battery developed by Gardner and Brownell (1986). The Sarcasm subtest comprises 6 vignettes, each followed by a factual question and a metalinguistic question, asking the subject whether the critical remark is 'sarcastic', a 'lie', a 'mistake', or 'true'. The subjects were tested individually. They listened to a recorded version of the vignettes, one at a time. When the recording of each vignette was over, they were presented with a comprehension question. When they have answered it, they were presented with the four distractors. They were asked to select the most suitable one. It was predicted that RBD individuals would perform worse than normals and LBD individuals on this subtest. Findings, indeed, support this prediction. Further, they show that understanding irony is correlated with discourse comprehension rather than with prosody (i.e., detection of ironic intonation).

The graded salience hypothesis has different predictions concerning understanding of conventional metaphors. It assumes that when multiple meanings are similarly salient, as in the case of the literal and metaphoric meanings of conventional metaphors, they should be processed in parallel (cf. section 2). Indeed, conventional metaphors were shown to trigger parallel activation of both their literal and metaphorical meanings (Blasko and Connine, 1993). Processing such metaphors should be selectively associated with the left hemisphere, where most of our linguistic capacity is represented.

In Giora et al. (1997b), we presented LBD, RBD and normal individuals with the Verbal Metaphor subtest of the Hebrew adaptation of The Right Hemispheric Communication Battery (Gardner and Brownell, 1986). The test contains 4 highly conventional, clichéd metaphors: *broken heart*, *warm heart*, *lend a hand*, *a hard man*). The subjects had to provide oral verbal explications of the four metaphoric phrases.

Unlike LBD individuals, normal and RBD individuals exhibited understanding of conventional verbal metaphors. These results support a selective contribution of the left hemisphere to understanding conventional verbal metaphors. These findings are inconsistent with the prevailing consensus. For example, Brownell et al. (1984) adduced evidence that RBD individuals are biased towards the literal meaning of verbal metaphors. In addition, their LBD subjects showed a preserved sensitivity to metaphoric interpretation, and their normal controls displayed flexible sensitivity to both aspects of meaning. However, our study includes a larger sample of both left and right brain damaged patients and stricter patient selection criteria than any of the previous studies.

We correlated the performance of LBD and RBD individuals on the Sarcasm and Verbal Metaphor with localization of damage (extent of anterior and posterior lesions). RBD patients showed no localization, whereas LBD patients revealed posterior localization for Verbal Metaphor, and anterior localization for Sarcasm. These



facts further support the dissociation between irony and conventional metaphor comprehension.

## 6. Conclusions

Taken together, the studies reviewed here show that salient meanings have priority over less salient ones: They are always accessed, and always initially, before less salient meanings are processed. Further support to the graded salience hypothesis comes from a more recent study. Turner and Katz (1997) looked into the processes involved in understanding familiar and unfamiliar proverbs. They found that familiar proverbs are understood as easily as their literal interpretation, alluding to the availability of the salient figurative meaning of proverbs. In contrast, unfamiliar proverbs whose salient meaning is the literal meaning were more difficult to understand in a figuratively biasing context.

The findings reported here tie up with previous findings which argue against the effect of context on selective access (e.g., Swinney, 1979; Gernsbacher, 1990; Rayner et al., 1994). Contra e.g., Gibbs, (1986, 1994), Glucksberg et al. (1986), and Jones (1991), they show that salient meanings cannot be bypassed even when occurring in supportive contexts.

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**Rachel Giora** is Associate Professor of Linguistics at Tel Aviv University. Her research areas include discourse coherence, cognitive pragmatics, language and ideology, and women and language. Her recent work focuses on figurative language understanding (particularly, irony, joke and metaphor) and on the notion of salience.