How Defaultness Shapes Our Language Production
A Usage-Based Study of Discoursal Resonance with Default Interpretations of Metaphor
and Sarcasm

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1. Introduction

This article focuses on default constructed *interpretations* (rather than coded *meanings*) and the way defaultness shapes our discourse production. It presents the Defaultness Hypothesis (Giora, Givoni, & Fein, 2015c), and tests its predictions with regard to the involvement of default interpretations in the way discourse unfolds. Within the framework of the Defaultness Hypothesis, defaultness is defined in terms of an unconditional, automatic response to a stimulus. Still, for an automatic response to be considered a **default**, utterances must meet the conditions for default (even if constructed) interpretations, which guarantee that potential ambiguity between literal and nonliteral alternatives is allowed a priori, so that items' preferred interpretation is allowable unconditionally (see 1.1 below).[1]

1.1 *Conditions for interpretations' defaultness – which kind of responses would be definable as default outputs*

For an interpretive preference, whether literal or nonliteral, to be allowed a priori,
a) utterance familiarity should be avoided, so as to block stimuli's (literal or nonliteral) responses coded in the mental lexicon (see Giora 1997, 2003), allowing, instead, their interpretive construction. And when negation is involved, negative items should not be Negative Polarity Items but should have an acceptable and meaningful affirmative counterpart, so that conventionality is avoided; additionally,
b) utterance internal cues, such as semantic anomaly or internal incongruity, should be avoided, given that they prompt nonliteral interpretations (see e.g., Beardsley, 1958; Partington, 2011); furthermore,
c) utterance external cues, such as specific contextual information, intonation, discourse markers, etc., should be excluded, so as to avoid biasing a response preference. (For a full list of constraints on such biases, see e.g., Giora et al., 2015c).

1.2 *The Defaultness Hypothesis - Predictions*

(i) Defining defaultness in terms of an unconditional, automatic response to a stimulus, the Defaultness Hypothesis predicts the speed superiority of default yet novel responses over equally novel nondefault counterparts (established as such

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[1] Note that defaultness is a matter of degree as there are default, less-default, and nondefault interpretations. So far, though, we have only studied default and nondefault counterparts, as they are statistically distinguishable. See, however, Veale's (2018) corpus-based study for results attesting to the gradedness of defaultness.

by a pretest), regardless of degree of figurativeness (literal - figurative), degree of negation (negation - affirmation), degree of novelty (salience-based – nonsalient, see Giora 2003), or degree of strength of contextual support (weak - strong).

(ii)   Based on the expected speed superiority of defaultness, the Defaultness Hypothesis further predicts the predominant effect of default compared to nondefault responses on shaping discourse production. In particular, if prior and/or upcoming contextual environment of stimuli resonates with their responses, it will reflect and resonate with their default rather than nondefault outputs, irrespective of degree of figurativeness or contextual fit[2] (Giora, Drucker, & Fein, 2014a; for the full range of predictions following from the Defaultness Hypothesis, see e.g., Becker & Giora, 2018); Filik, Howman, Ralph-Nearman, & Giora, 2018; Giora, in press; Giora, Givoni, & Becker, 2020; Giora, Cholev, Fein, & Peleg, 2018; Giora et al., 2015c; Giora, Givoni, Heruti, & Fein, 2017; Giora, Jaffe, Becker, & Fein, 2018; Giora, Livnat, Fein, Barnea, Zeiman, & Berger, 2013; Giora, Raphaely, Fein, & Livnat, 2014b).

According to prediction (ii) of the Defaultness Hypothesis, then, discourse production will be governed by defaultness. Specifically, target utterances' default responses, whether contextually appropriate or not, will feature dominantly in their neighboring utterances, which will resonate with and echo their default (rather than nondefault) interpretations. Indeed, according to Du Bois & Giora (2014), discoursal resonance "arises when a language user constructs an utterance modeled in part on the utterance of a prior speaker or author. Aspects of the prior speaker's words, structures, and other linguistic resources are selectively reproduced by the current speaker" (Du Bois & Giora, 2014: 352). Resonance thus alludes to the "activation of affinities across utterances uttered within and between speakers, appearing in both prior and future context (Giora 2007)", including that of the speaker's herself, while not repeating the utterance referred to (Du Bois, 2014; Du Bois & Giora, 2014: 352; Giora, 2007). Here, however, I will show that resonance itself is governed by defaultness, resulting in discourse production mirroring affinities among default (rather than nondefault) responses.

The focus in this study is on default *figurative* language, varying between metaphorical and sarcastic interpretations.[3] What is actually tested here is prediction (ii) of the Defaultness Hypothesis, expecting default interpretations to shape discourse production via discoursal resonance with these interpretations.

However, before testing prediction (ii), regarding contextual resonance with targets' default interpretations, it is necessary to test prediction (i), related to the speed superiority of default over nondefault interpretations, a factor that triggers the predicted role of defaultness in affecting discourse resonance. In section (2), then, I review findings supportive of prediction (i), attesting to the speed superiority of default interpretations over nondefault alternatives, regardless of degree of non/literalness, novelty,

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[2] Note that default literal interpretations of affirmative metaphor and sarcasm are not suppressed; given that they are functional in constructing the intended interpretation, they are retained, and therefore available for further processes, as shown by Giora, 2003; Giora, Fein, Laadan, Wolfson, Zeituny, Kidron, Kaufman, & Shaham (2007b)

[3] *Sarcasm* refers here to verbal irony.

negation/affirmation, or contextual fit. In section (3), I present findings supportive of prediction (ii), whereby it is resonance with targets' default interpretations that shapes our language production, regardless of contextual fit.

2. **On the speed superiority of default over nondefault interpretations**
2.1 *The speed superiority of default metaphorical interpretations of negative constructions over their nondefault literal counterparts*

To test the prediction of the Defaultness Hypothesis regarding the speed superiority of default over nondefault responses, Giora, Fein, Metuki, and Stern (2010) first established degree of defaultness by probing negative and affirmative items (meeting conditions a-c above) for degree of defaultness.[4] Results showed that, when presented in isolation, the preferred interpretation of the novel negative items ("You are not my boss") was metaphorical (*stop telling me what to do*, i.e., don't behave like you are my boss, because you are not); their nondefault nonpreferred interpretation was literal (*I work for someone else*, i.e., another person is my boss). In contrast, the default preferred interpretation of their equally novel affirmative counterparts ("You are my boss") was literal (*I work for you*); their nondefault nonpreferred interpretation was metaphorical (i.e., although you are not literally my "boss", in my eyes you are my boss, so *I will do what you tell me to do*).

Once degree of defaultness was established, Giora et al. (2013) weighed the processing speed of default vs. nondefault interpretations of negative items, embedded in equally strong contexts, supportive of their respective interpretations.[5] Results attested to the speed superiority of default over nondefault interpretations. Specifically, default negative metaphors were processed faster than nondefault negative literals.

Having established the speed superiority of default negative metaphors over nondefault negative literals (as predicted by (i) above), prediction (ii) of the Defaultness Hypothesis is tested in section (3), expecting targets' environment to resonate with their default (metaphorical) rather than nondefault (literal) interpretations.

2.2 *The speed superiority of default sarcastic interpretations of negative constructions over their nondefault literal counterparts*

To further test prediction (i) of the Defaultness Hypothesis, regarding the speed superiority of default over nondefault responses, in Giora et al. (2013), we first established degree of defaultness by probing negative utterances ("Ambitious she is not") when presented in isolation. Results showed that the negative targets were interpreted sarcastically, scoring high on sarcasm, significantly higher than 5 on a 7-point sarcasm scale. We then rated their degree of sarcasm when weighed against their affirmative counterparts ("Ambitious she is yes"[6]). Results showed that the novel negative items were rated as more sarcastic than their equally novel affirmative counterparts; these results established the defaultness of the sarcastic interpretation and the nondefaultness of

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[4] Items in all our experiments were in Hebrew.
[5] In all the experiments reported here, equal degree of items' novelty, degree of defaultness, and equal strength of contextual support were established by pretests.
[6] These Hebrew affirmative constructions feature an obligatory affirmative marker —"yes."

their literal interpretation of the negatives, on the one hand, and the defaultness of the literal interpretation and the nondefaultness of the sarcastic interpretation of the affirmatives, on the other.

Once degree of defaultness was established, Giora et al. (2013) measured the processing speed of default vs. nondefault interpretations of the negative items ("Ambitious she is not"), embedded in equally strong contexts, supportive of their default (sarcastic) and (nondefault) literal interpretations. Results attested to the speed superiority of defaultness over nondefaultness. Specifically, default negative sarcasm was processed faster than nondefault negative literalness.

Giora, Drucker, Fein, and Mendelson (2015a) studied another construction (X is not her/his forte; X is not her/his best attribute). As in Giora et al. (2013), when in isolation, results show that the default interpretation of the novel negative items ("Intelligence is not his forte/strong attribute") is sarcastic (meaning *he is not intelligent/he is stupid*); the nondefault interpretation of this construction is literal (suggesting *he has stronger attributes*). The default interpretation of the affirmative counterparts ("Intelligence is his forte/strong attribute") is literal (meaning *he is intelligent*); their nondefault interpretation is sarcastic (meaning *he is not intelligent/he is stupid*). Explicit sarcasm ratings further confirmed the defaultness of the sarcastic interpretation and the nondefaultness of the literal interpretation.

Hence, when bedded in equally strong contexts, supportive of their default sarcastic or nondefault literal interpretation, negative items were interpreted sarcastically by default: They were read faster than their equally strong, literally biased counterparts.

Note that the above studies further examined the effect of items' structural markedness (X s/he is not; X is not her/his forte/strong attribute) on generating sarcastic interpretations by default. Indeed, results of 2 experiments show that it is negation, strongly attenuating highly positive concepts, that affects sarcasm interpretation by default, even when items are structurally unmarked (as in *His/her forte is not Y*; e.g., *His forte/strong attribute is not Intelligence*; see also Giora et al., under review).

Giora et al. (2015c) also tested the predictions of the Defaultness Hypothesis, using, this time, a 4-way pattern of comparisons, aiming to show that defaultness reigns, regardless of degree of negation/affirmation, degree of novelty, degree of nonliteralness, or degree of contextual strength. To do that, we first established degree of defaultness of negatives and affirmatives when presented in isolation. Results showed that the default interpretation of novel negative utterances ("He is not the most mesmerizing actor", meaning *he is boring*) was sarcastic; their nondefault interpretation (*others were more exciting*) was literal. The default interpretation of their novel affirmative counterparts ("He is the most mesmerizing actor", meaning *he is exciting*) was literal; their nondefault interpretation was sarcastic (meaning *he is boring*). This was further confirmed by an explicit sarcasm rating experiment.

To test prediction (i), related to the speed superiority of default over nondefault interpretations, Giora et al. (2015c) embedded negative and affirmative items in contexts equally strongly supportive of their respective (sarcastic or literal) interpretations. Results showed that, as predicted,

(a) *default* negative sarcasm, embedded in sarcastically biasing context, was processed faster than *nondefault* negative literalness, embedded in equally strong,

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literally biasing context, and faster yet than *nondefault* affirmative sarcasm, embedded in equally strong, sarcastically biasing context.

Similarly,

(b) *default* affirmative literalness was processed faster than *nondefault* affirmative sarcasm, embedded in equally strong, sarcastically biasing context, and faster yet than *nondefault* negative literalness, embedded in equally strong, literally biasing context.

Defaultness, then, rules; it supersedes all factors known to affect processing such as negation, novelty, nonliteralness, or strength of contextual support.

Having established the speed superiority of default negative sarcasm over nondefault negative literalness and over nondefault affirmative sarcasm, alongside the speed superiority default affirmative literalness over nondefault affirmative sarcasm and over nondefault negative literalness, in section (3) below, prediction (ii) of the Defaultness Hypothesis will be tested. Accordingly, targets' environment is expected to resonate with default rather than nondefault interpretations, whether literal or nonliteral, contextually appropriate or inappropriate.

2.3 *The speed superiority of default literal interpretations of affirmative sarcasm over their nondefault literal counterparts*

There is plenty of evidence attesting to the speed superiority of default (often literal) interpretation of affirmative sarcasm, despite contextual support to the contrary, as anticipated by prediction (i). For instance, in Giora at al. (2015c), pretests first established the defaultness of the novel literal interpretations of affirmative utterances ("He is the most mesmerizing actor", meaning *he is exciting*) and the nondefaultness of their equally novel sarcastic counterparts (meaning *he is boring*). Hence, when embedded in equally strong contexts, supportive of their respective interpretations, default affirmative literalness was processed faster than nondefault affirmative sarcasm.

Fein, Yeari, and Giora (2015) and Giora, Fein, Laadan, Wolfson, Zeituny, Kidron, Kaufman, and Shaham (2007b) further show that, no matter how strong contextual bias is, whether supportive of the default literal or the nondefault sarcastic interpretation of the affirmative targets, it is always the default literal interpretation that is activated initially, even when contextually inappropriate.

This was also true of familiar affirmative ironies (as shown by e.g., Giora & Fein, 1999). Given that both, familiar ironies have 2 default meanings, figurative and nonfigurative, they both get activated initially, regardless of context fit (for more evidence see Giora, 2003 and references therein).

2.4 *The speed superiority of default literal interpretations of affirmative metaphors over their nondefault literal counterparts*

The speed superiority of default contextually inappropriate literal interpretations of affirmative metaphors has also been attested to by e.g., Giora and Fein (1999), Giora, Fein, Kotler, and Shuval (2015b), Giora, Fein, Kronrod, Elnatan, Shuval, and Zur (2004), or Pexman, Ferretti, and Katz (2000). Given that novel metaphors have one default (often

literal) interpretation, this interpretation was activated initially when processing speed was measured. And although default meanings of familiar stimuli are not within the scope of this discussion, it is worth mentioning that familiar metaphors, which have two default, coded meanings – figurative and nonfigurative, involve activating both of them initially, regardless of context fit (as shown by e.g., Giora & Fein 1999).

Is it possible that both default and nondefault responses to the same stimulus be figurative? In Gibbs (1998), the default metaphorical "This one's really sharp" (meaning *The student is highly intelligent*), embedded in metaphorically biasing context (see example (1) below), is further embedded in a sarcastically biasing context (see example (2) below), resulting in a novel nondefault sarcastic interpretation (meaning, *this pair of scissors is blunt*). However, in Colston and Gibbs (2002), the context of the metaphorical *sharp*, referring to an intelligent student, is now presenting a student that is far from being intelligent, thus rendering sarcastic the default metaphorical target, whereby the student is ridiculed (meaning, *she is stupid*, see example (3) below):

(1) You are a teacher at an elementary school.
You are discussing a new student with your assistant teacher. The student did extremely well on her entrance examinations. You say to your assistant,
This one's really sharp.

(2) You are a teacher at an elementary school.
You are gathering teaching supplies with your assistant teacher. Some of the scissors you have are in really bad shape. You find one pair that won't cut anything. You say to your assistant,
This one's really sharp.

(3) You are an assistant to a teacher at an elementary school, and the two of you are discussing a new student.
The student did extremely poorly on her entrance examination.
The teacher said to you: "This one is really sharp."

Measuring reading times of targets in all these conditions, revealed that nondefault sarcastic responses took longer to process than default metaphorical counterparts, despite their equal share of nonliteralness (see also Pexman et al., 2000). Such results suggest that literal and nonliteral responses are involved in processing nondefault nonliteral counterparts on account of their defaultness. It is not degree of non/literalness or contextual fit that matters, but degree of defaultness.

2.5 *The speed superiority of default over nondefault counterparts is insensitive to degree of figurativeness*

Although the topic of this paper relates to default and nondefault nonliteral *interpretations* rather than default coded *meanings*, it is still necessary to highlight the fact that, as predicted by the Defaultness Hypothesis, default responses, whether familiar or unfamiliar, enjoy priority over nondefault counterparts, regardless of degree of

non/literalness. As an aside, then, consider the case of the novel *nondefault* literal "Know Hope" (which projects optimism). This *nondefault* literal collocation instantly activates its *default*, yet literal counterpart *No hope*, despite its inappropriateness (conveying 'pessimism'). Still these seemingly unrelated responses interact with each other, resulting in a meaningful innovative message.

Or take the *nondefault* metaphorical "Read my lipstick"[7], which harps on the *default*, yet metaphorical "Read my lips", or the *default* metaphorical *"Curl up and die"*, which is deautomatized by its nondefault literal counterpart "Curl up and dye" (see, Giora, et al., 2004, 2015b), all apparently unrelated to each other, yet they still intertwine, affecting creative messages. In all, such examples, initially activating default even if seemingly irrelevant meanings, result in those meanings partaking in the interpretation process. It is not degree of non/literalness that matters. Instead, it is degree of defaultness that counts.

3. Resonating with default interpretations
3.1 *Resonating with default metaphorical interpretations of negative constructions*

In this section prediction (ii) of the Defaultness Hypothesis is tested, expecting natural discourse to unfold via echoing or resonating with default rather than nondefault interpretations. Recall that discoursal resonance evolves via activating and retaining affinities across utterances, thus mirroring default (rather than nondefault) responses. In what follows, I present corpus-based data, collected from 8 corpus-based studies, showing that affinities across utterances are governed by defaultness, which plays a crucial role in discourse production. Indeed, our various studies of figurative/literal language use show that, as predicted, default interpretations affect the way discourse production unfolds. However, before looking into discourse resonance with defaultness, it is essential to establish the dominance of defaultness in language use.

Study 1: Distribution of default negative metaphoricity and default affirmative literalness

As shown earlier (see section 2), defaultness supersedes nondefaultness in terms of processing speed, regardless of degree of novelty, nonliteralness, negation, or contextual strength, as predicted by the Defaultness Hypothesis. Therefore, here, prediction (ii), regarding discourse production, is tested. However, before testing prediction (ii), we had to establish the default metaphoricity of negative constructions and the default literalness of their affirmative counterparts in language use. To that end, in Giora et al. (2010), we searched the internet for English, Russian, and German constructions, such as tested earlier for processing speed in Hebrew (see section 2). We therefore looked at the first ~50 occurrences of targets in both their affirmative and negative versions, using engines such as Google, Yahoo, Start, MSN, Walla, and Netex. Ratings of items in terms of degree of metaphoricity were collected.[8] Results showed that negative items in English (see Figure 1), Russian (see Figure 2), and German (see Figure 3) were rated as

significantly more metaphorical than their affirmative counterparts, which were rated as literal:
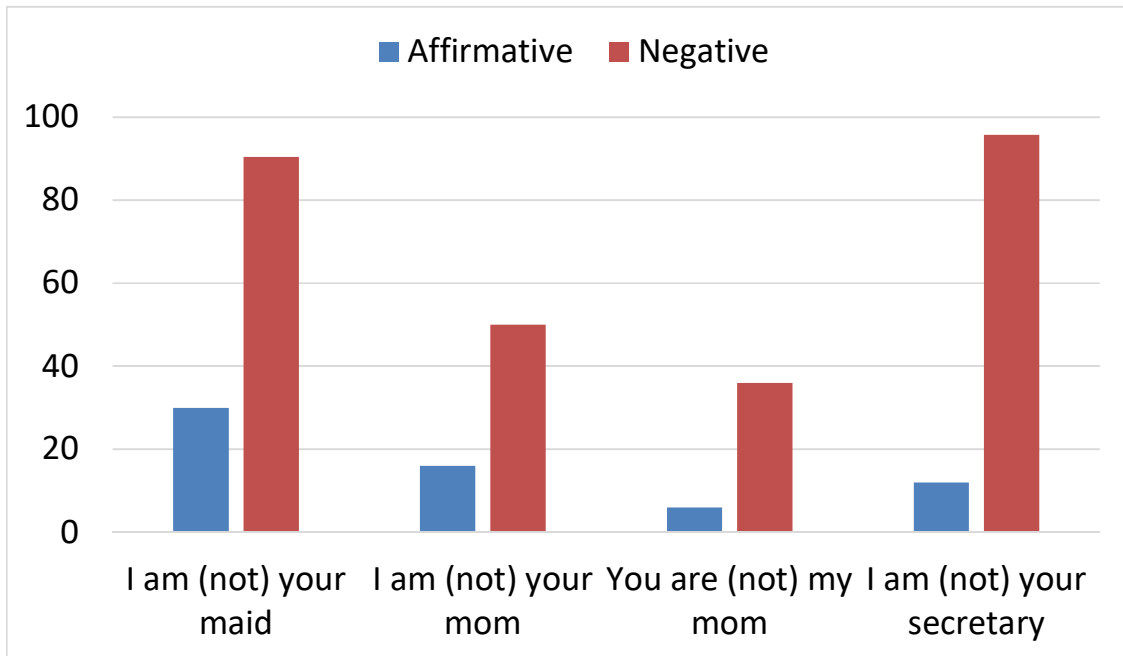

Figure 1: Percentage of Metaphorical Interpretations of Negative vs. Affirmative Utterances – English Data
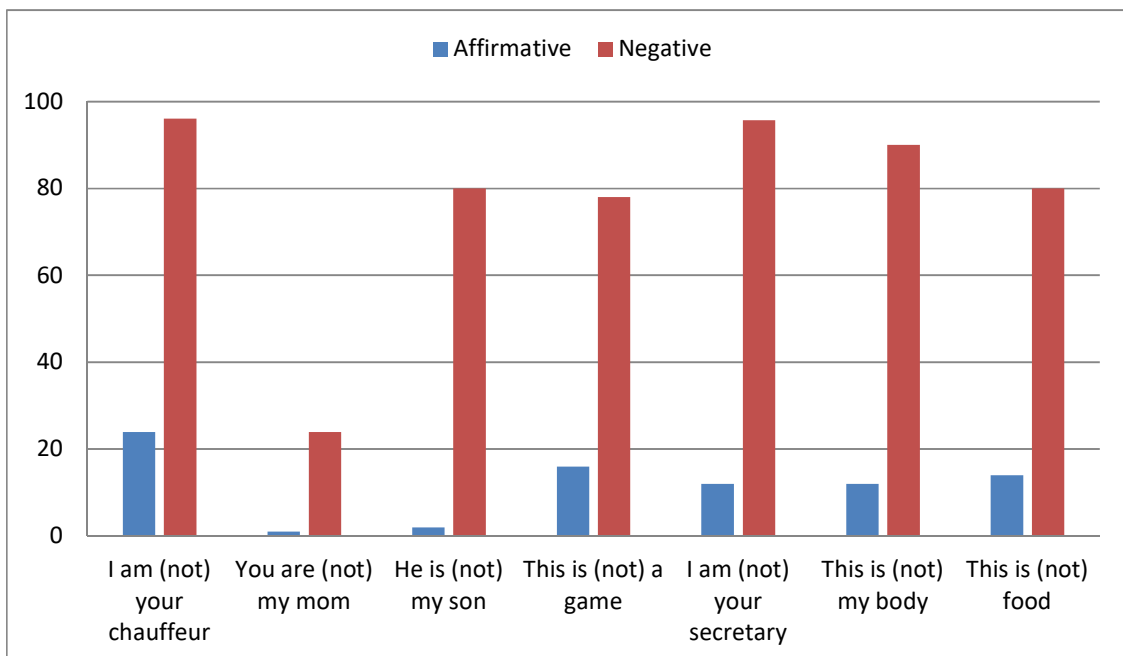

Figure 2: Percentage of Metaphorical Interpretations of Negative vs. Affirmative Utterances – Russian Data
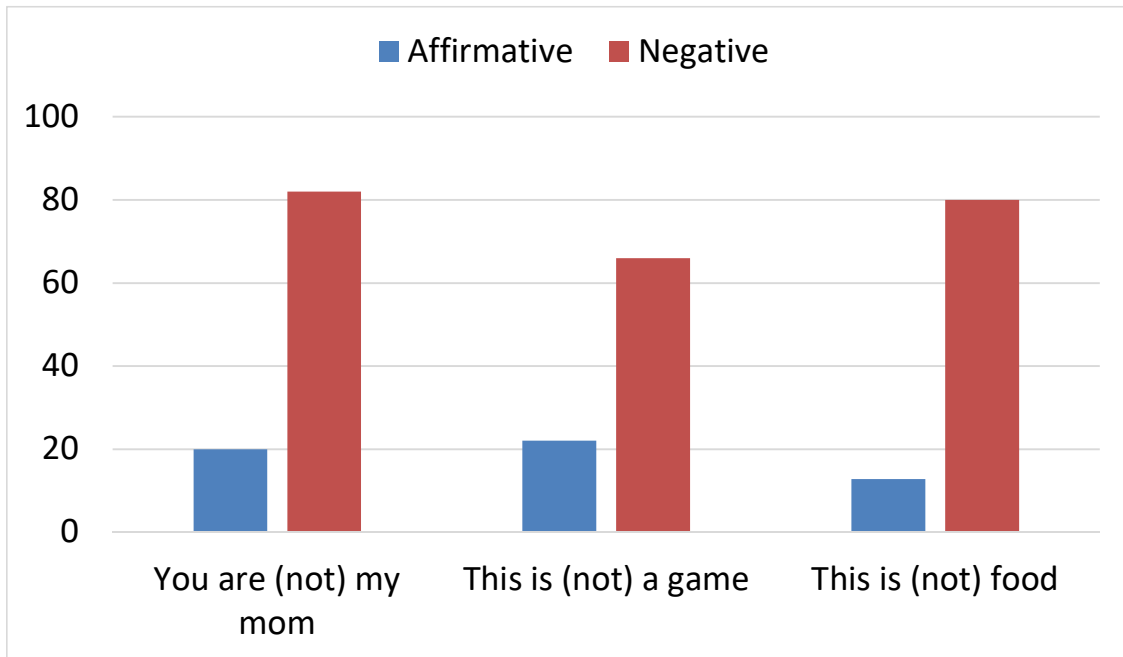
Figure 3: Percentage of Metaphorical Interpretations of Negative vs. Affirmative Utterances – German Data

As shown above, in Giora et al. (2010, 2013), the metaphoricity of the negative constructions was established as their default interpretation, both experimentally and via usage-based studies; examining their affirmative counterparts in the same manner resulted in establishing their literalness as their default interpretation in various languages, such as English, Russian, and German. Such findings allow us to move on to testing prediction (ii), according to which, defaultness plays a major role in shaping resonance in language production (see section 3.1).

Study 2: Distribution of type of resonance with default metaphorical interpretations of negative constructions

Having established the defaultness of the metaphorical interpretation of the negative constructions studied here (see Study 1 above), we expect their environment to resonate with their default metaphorical rather than their nondefault literal interpretation.

To exemplify resonance with default metaphorical interpretations of negative constructions, on the one hand, and nondefault literal interpretations of such constructions, on the other, consider examples (4-5). In (4), the default interpretation of the negative utterance "You are not my boss" is metaphorical. Consequently, this interpretation is reflected by prior and late context via reference to this interpretation (*Don't ever tell me that "I better do something on my blog"*; *so don't tell me what to write*). In (5), the nondefault interpretation of the negative utterance ("you're not my boss") is literal. Its prior context (*I quit*) resonates with this nondefault literal interpretation:

(4) *Don't ever tell me that "I better do something on my blog".* **You are not my boss** *so don't tell me what to write.* (*Joan,* 2008).

(5) "I told you, *I quit*. That means **you're not my boss**". (James, 2015)

Corpus-based findings regarding the kind of contextual resonance with negative metaphors (of various languages) are presented in Tables 1-3 and Figures 4-5:

Table 1. Distribution of different types of resonance in the environment of ~ 100 negative utterances in English and results of exact binominal probability test for the superiority of metaphorical resonance.

English	Only Metaphorical resonance	Only Literal resonance	Both Metaphorical and literal resonance	No resonance	p-values
I am not your maid	61.7% (29/47)	12.8% (6/47)	12.8% (6/47)	12.8% (6/47)	*p*<.0005
You are not my mom	55.6% (10/18)	5.6% (1/18)	27.8% (5/18)	11.1% (2/18)	*p*<.01
I am not your secretary	79.5% (35/44)	4.5% (2/44)	9.1% (4/44)	6.8% (3/44)	*p*<.0005

Table 2. Distribution of different types of resonance in the environment of 138 negative utterances in German and results of exact binominal probability test for the superiority of metaphorical resonance.

German	Only Metaphorical resonance	Only Literal resonance	Both Metaphorical and literal resonance	No resonance	p-values
Ich bin nicht deine Mutter (I am not your mom)	58.6% (17/29)	3.5% (1/29)	13.8% (4/29)	24.1% (7/29)	*p*<.0005
Du bist nicht meine Mutter (You are not my mom)	63.4% (26/41)	4.9% (2/41)	17.1% (7/41)	14.6% (6/41)	*p*<.0005
Das ist kein Essen (This is not food)	40% (14/35)	5.7% (2/35)	14.3% (5/35)	40% (14/35)	*p*<.005
Das ist kein Spiel (This is not a game)	54.5% (18/33)	3% (1/33)	15.2% (5/33)	27.3% (9/33)	*p*<.0005

Table 3. Distribution of different types of resonance in the environment of 70 negative utterances in Russian and results of exact binominal probability test for the superiority of metaphorical resonance.

Russian	Only Metaphorical resonance	Only Literal resonance	Both Metaphorical and literal resonance	No resonance	p-values
Я не твоя секретарша (I am not your secretary)	20% (4/20)	5% (1/20)	5% (1/20)	70% (14/20)	*p*=.19
Я не твоя мама (I am not your mom)	12% (6/50)	0% (0/50)	2% (1/50)	86% (43/50)	*p*<.05

In Figures 4-5 below, "metaphorical resonance" refers to the sum of "only metaphorical resonance" and "both metaphorical and literal resonance"; "literal resonance" refers to the sum of "only literal resonance" and "both metaphorical and literal resonance". As shown by both figures, in all the cases, the environment of the negative constructions exhibited a significantly higher level of resonance with metaphorical than with literal interpretation.
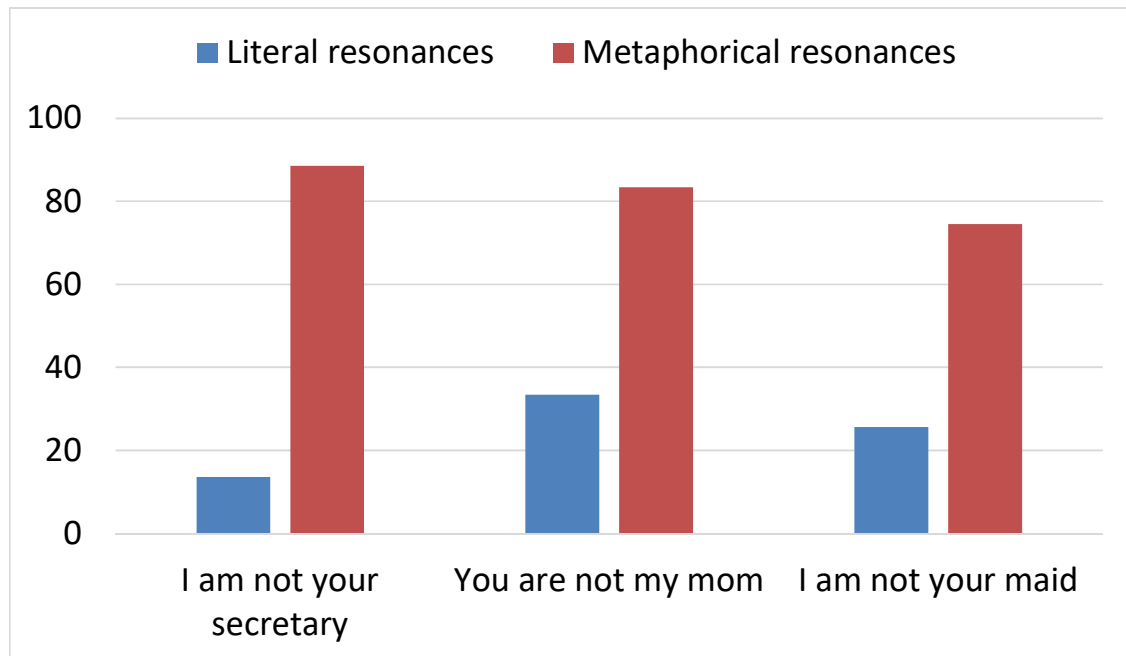

Figure 4: Percentage of Metaphorical vs. Literal Resonance in the Environment of Negative Utterances – English
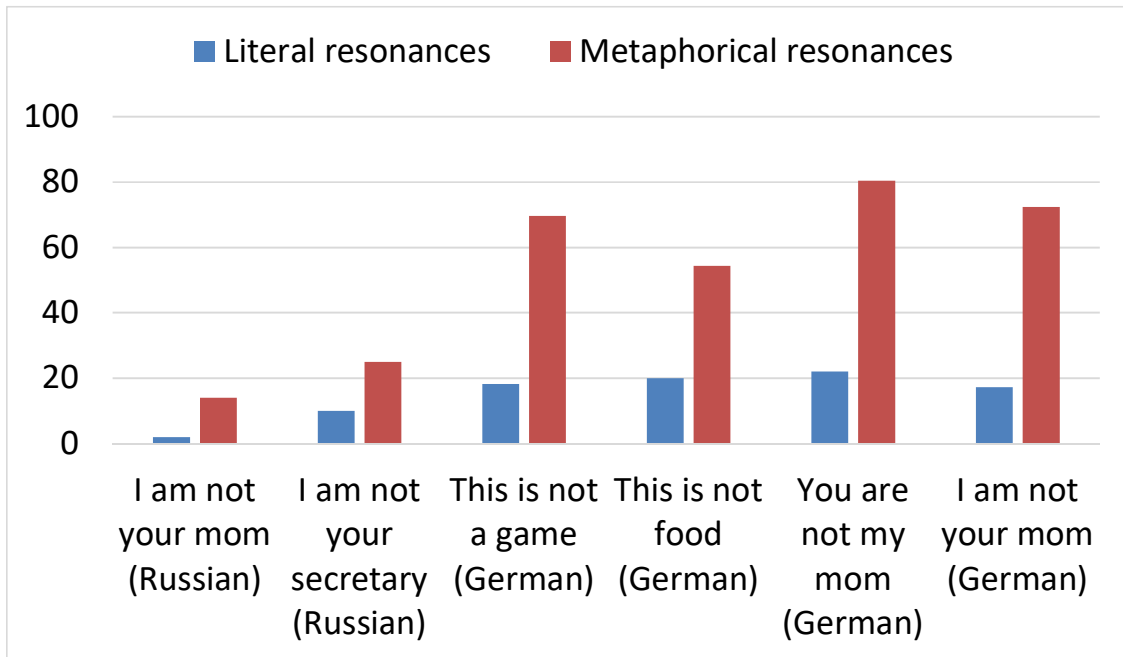
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Figure 5: Percentage of Metaphorical vs. Literal Resonance in the Environment of Negative Utterances – German and Russian

In sum, as anticipated by the Defaultness Hypothesis (see section 1), both experimental studies in Hebrew and corpus-based studies in English, German, and Russian attest to the role of defaultness in discourse production. Having established the superiority of default metaphorical interpretations of negative items, such as "You are not my boss", "I'm not your maid", "This is not food", over their nondefault literal interpretations, both in terms of processing speed and natural usage (as predicted by the Defaultness Hypothesis), this superiority of default interpretations was tested with regard to prediction (ii), related to discoursal resonance. Indeed, findings show that, as predicted, the discoursal environment of default interpretations of novel negative metaphors of the form X is not Y, involving no semantic anomaly (as per Beardsley, 1958) or internal incongruity (as per Partington, 2011), echo and reflect their default figurative interpretation, thus affecting discourse production via discoursal resonance. They show that both, prior and ongoing discourse evolve via activating and retaining affinities across utterances, mirroring default (rather than nondefault) responses.

3.2 Resonating with default sarcastic interpretations of negative constructions

So far we have seen how default metaphorical interpretations of negative constructions affect language production by triggering contextual resonance with default interpretations. Here we will look into default sarcastic interpretations of negative constructions and the way their environment resonates with these interpretations. As before, here too, I provide corpus-based evidence for the priority of default sarcastic interpretation over nondefault literal counterparts (prediction (i)). Then, I examine the

way their discoursal environment resonates with their default interpretation (prediction (ii)).

Study 3: Distribution of default negative sarcasm and default affirmative literalness of the form X s/he is not

Having established experimentally the speed superiority of default sarcastic interpretations of negative utterances (of the form "X s/he/it is not") over their nondefault literal interpretation (see section 2.2), in Giora et al. (2013) we further sought to corroborate these online findings with corpus-based data. We therefore studied the first ~50 occurrences of 10 constructions both in their negative and affirmative versions ("X s/he/it is yes"), using engines such as Google, Zooloo, and Walla. Results showed that most of the negative constructions (95%) were intended sarcastically; their affirmative counterparts were always intended literally (100%). Such findings confirm the defaultness of negative sarcasm and affirmative literalness.

Having established the defaultness of the sarcastic interpretation of the negative items, we expect their environment to respond to and resonate with their default (sarcastic) rather than nondefault (literal) interpretation (see Study 4 below).

Study 4: Distribution of type of resonance with default sarcastic interpretations of negative constructions of the form X s/he is not

Consider examples (6-7) below. In (6), the target utterance ("Smart she is not") is intended sarcastically; its environment, therefore, resonates with this default sarcastic interpretation (*a walking joke*, *too stupid, too dumb*). In (7), what is exemplified is resonance with a nondefault literal interpretation of the same sarcastic construction ("Smart it is not"), explicitly addressing *Intelligence* (resulting in creating a pun while resonating with prior context):

(6) A skilled politician wouldn't be instrumental in the death of her own political party, as she certainly is . . . **Smart she is not**, or she wouldn't be a *walking joke*. The confidence comes from being *too stupid* to know she hasn't got a chance, and fearless only because she's *too dumb* to be embarrassed by her *village idiot* tag. (icurahuman2 in Goldenberg, 2008).

(7) "Intelligence": – **smart it is not**[9]

To test prediction (ii) of the Defaultness Hypothesis, expecting default rather than nondefault interpretations to be mirrored by such items' discoursal environment, Giora et al. (2013) examined the contexts of 169 such naturally occurring instances. Results show that, as predicted, the environment of 109 instances were echoed by their environment. Out of these 109, 100 cases (92%) were echoed via their default sarcastic interpretation; only in 9 cases (8%) did the discoursal environment resonate with their nondefault literal interpretation. Additionally, in 23 cases, the environment did not reflect any of the interpretations, while the rest of the cases were reflected by both the default sarcastic and the nondefault literal interpretation. Such findings support the Defaultness Hypothesis

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[9] https://www.fxp.co.il/showthread.php?t=14113764 (A review of a series. In Hebrew)

regarding the prevalence of resonance with default rather than nondefault interpretation of negative constructions, such as those studied here.

Study 5: Distribution of default negative sarcasm and default affirmative literalness of the form X is not her/his forte/best attribute

Recall that in Giora et al. (2015a; see also section 2.2), we studied another negative construction (X is not her/his forte; X is not her/his best attribute). Findings showed that the default interpretation of the novel negative items ("Intelligence is not his forte/strong attribute") was sarcastic (meaning *he is stupid*); their nondefault interpretation was literal (suggesting *he has stronger attributes*). In contrast, the default interpretation of the affirmative counterparts ("Intelligence is his forte/strong attribute") was literal (meaning *he is intelligent*); their nondefault interpretation was sarcastic (meaning *he is stupid*). Explicit sarcasm ratings further confirmed the defaultness of the sarcastic interpretation of the negative constructions.

When testing the speed superiority of default negative sarcasm over nondefault negative literalness, negative items were faster to read than their equally strongly biased nondefault literal counterparts. Such results support prediction (i) of the Defaultness Hypothesis.

Having established experimentally the defaultness of the negative sarcastic interpretations and the nondefaultness of their literal counterparts, in what follows, predictions (i) and (ii) of the Defaultness Hypothesis are tested, based on natural use. The aim is to reestablish the defaultness of negative sarcasm in natural discourse and further test the way these sarcastic utterances are reflected by their environment.

Following Giora et al. (2014a), prediction (i) of the Defaultness Hypothesis is examined here first, expecting negative constructions ("Intelligence is not his forte/strong attribute") to be predominantly sarcastic when in natural use; their affirmative versions will be mostly used literally, conveying their literal interpretation. To test these predictions, in Giora et al. (2014a) we used a Google search. We collected the first 141 occurrences of negative constructions and the first 155 occurrences of affirmative counterparts, both in Hebrew and English. Results show that (90%) of the negative targets were intended sarcastically; about (97%) of affirmative counterparts were intended literally. Given this support to prediction (i), we move on to testing prediction (ii).

Study 6: Distribution of type of resonance with default sarcastic interpretations of negative constructions of the form X is not her/his forte/ best attribute

Study 6 tests prediction (ii) of the Defaultness Hypothesis, related to the contextual environment of the negative utterances, shown to convey a sarcastic interpretation by default (see Study 5). Will this environment, then, resonate with their default sarcastic interpretation rather than their nondefault literal interpretation? In (8) below, the target utterance ("Patience is not my forte" meaning *I am impatient*) is echoed by references to the default sarcastic interpretation in prior context, indicating speeding up things (*I am a woman who wants everything now*!). In (9) below, however, literal affinities to *patience* in prior context are activated (*calm down and wait*; *patience*).

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(8) *I am a woman who wants everything now*! **Patience is not my forte**.[10]

(9) A lot of people do something like this by sending their dog to his bed to *calm down and wait*, and it does teach them *patience*. I do not know how young you can start with that length of time--Capri was about 5 months when I started with her with decent results (though she is a different dog, and **patience is not her forte**). (melbrod, 2010)[11]

In Giora et al (2014a), the contexts of 127 such naturally occurring negative instances are examined. Findings show that of 83 cases involving resonance, the environment of 73 (88%) resonates with their default sarcastic interpretation; only in 10 cases (12%) does it resonate with the nondefault literal interpretation. Resonance in text production, then, is based on affinities with default interpretations.

Study 7: Distribution of default negative sarcasm and default affirmative literalness of the form X is not the most Y

In Giora et al. (2015c), we tested another negative construction of the form "X is not the most/not really/not very/not particularly Y" and its affirmative counterpart ("X is the most/really/very/particularly Y"). Results show that, when out of context, the novel negative items ("He is not the most mesmerizing actor/ He is not really a mesmerizing actor/ He is not a very mesmerizing actor/ He is not particularly a mesmerizing actor") were interpreted sarcastically (meaning *he is boring*), thus establishing the defaultness of their sarcastic interpretation, while further substantiating the nondefaultness of their literal interpretation (*others are more mesmerizing than him*). Their affirmative counterparts were interpreted literally by default (*he is very exciting*), thus further establishing the nondefaultness of their sarcastic interpretation (*he is boring*). These findings were further corroborated by explicit sarcasm rating. Consequently, when embedded in contexts equally strongly supportive of their respective interpretations, negative sarcasm was faster to process than negative literalness; affirmative literalness ("He is the most mesmerizing actor") was faster to process than affirmative sarcasm.

Usage-based studies by Giora (in press) further corroborate these results. Preliminary results, based on inspecting the Hebrew TenTen corpus (henceforth HeTenTen; see Jakubíček, Kilgarriff, Kovář, Rychlý, & Suchomel, 2013), show that, of the 151 negative constructions surveyed, 72% conveyed a sarcastic interpretation. Such results establish the defaultness of negative sarcasm and the nondefaultness of negative literalness. Based on these results, Giora (in press) further moved on to testing prediction (ii) of the Defaultness Hypothesis, examining the way the discoursal environment of such default and nondefault interpretations relates to these interpretations.

Study 8: Distribution of type of resonance with default sarcastic interpretations of negative constructions of the form X is not the most Y

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[10] https://tinyurl.com/y9wgztvw
[11] http://www.dobermantalk.com/general-training-obedience/37864-near-misses-obedience-training-lol.html

Given the prevalence of the default sarcastic interpretations of negative constructions (see Study 7), Giora (in press), then, set out to test prediction (ii) of the Defaultness hypothesis. Accordingly, the environment of target utterances is expected to resonate with their default rather than nondefault interpretations. Preliminary results indeed show that, of the 151 negative constructions collected, based on searching HeTenTen, 109 were rated as sarcastic; of these 109, 55 were found to be echoed by their discoursal environment. As predicted, in all these 55 (100%) cases, the environment of these utterances resonated with their default sarcastic interpretation only. (For resonance with default affirmative literalness, see section 3.3)

To exemplify resonance with default sarcastic interpretations of the negative constructions tested here, consider example (10), in which the environment of the negative targets (["He was] not really kindhearted", meaning *he was cruel*) resonates with its sarcastic interpretation (alluding to even *worse* people):

(10) [He] was nationalist and anti-Semitic **not really kindhearted** although already during his time there were *worse* people than him (originally in Hebrew).[12]

So far I have reviewed findings attesting to dialogic resonance with default, yet contextually appropriate figurative interpretations (for an exception see section 2.5). This on its own is innovative, given that the metaphorical and sarcastic interpretations of the items tested here are unfamiliar/nonsalient (see also Giora et al., 2015c). Still, it is also necessary to examine resonance with default yet contextually inappropriate interpretations in order to reduce the possibility that it might be contextual fit rather than defaultness that shapes our text production (via resonance).

3.3 Resonating with default literal interpretations of affirmative metaphor and sarcasm

There is plenty of evidence attesting to the speed superiority of default (often literal) interpretation of affirmative metaphors and ironies, despite contextual support to the contrary, as anticipated by prediction (i). For instance, in Giora at al. (2015c), pretests first established the defaultness of the novel literal interpretations of affirmative utterances ("He is the most mesmerizing actor", meaning *he is exciting*) and the nondefaultness of their equally novel sarcastic counterparts (meaning *he is boring*). Hence, when embedded in equally strong contexts, supportive of their respective interpretations, default affirmative literalness was processed faster than nondefault affirmative sarcasm. This is also true of familiar affirmative ironies (as shown by Giora Fein, & Schwartz, 1998) and of familiar affirmative metaphors (as shown by Giora & Fein, 1999). Given that both, familiar metaphors and ironies have 2 default interpretations, figurative and nonfigurative, they both get activated initially, regardless of context fit.

Fein et al. (2015) and Giora et al. (2007b) studied novel noncoded affirmative ironies. They show that, no matter how strong contextual bias is, whether supportive of the default literal or the nondefault sarcastic interpretation of the targets, it is always the

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[12] https://tinyurl.com/ya4r6hng

default literal interpretation that is activated initially, even when contextually inappropriate (as in the case of the unfamiliar affirmative sarcasm in Giora et al., 2015c). It is not degree of figurativeness or contextual fit that matters, instead it is degree of defaultness that makes a difference.

Study 9: Distribution of type of resonance with default literal interpretations of affirmative sarcasm

Given the speed superiority of the default literal interpretation of unfamiliar noncoded affirmative sarcasm, in Giora et al. (2014b) we test prediction (ii) of the Defaultness Hypothesis. According to this prediction, discoursal resonance is expected to relate to default albeit contextually incompatible literal interpretations of affirmative sarcastic utterances rather than to nondefault contextually compatible sarcastic counterparts.

Consider, for instance, example (11) below. Here, describing hundreds of funerals in Gaza as a token of the "splendid job" "of our fine pilots", although intended sarcastically, in fact, resonates with what is mentioned previously in the context, when the cited speaker genuinely compliments Israeli Air force pilots for doing that "splendid job":

(11) "Hooray to the Israeli Air Force pilots doing a splendid job" effused Brigadier General Avi Benayahu, the IDF spokesperson, talking to Yonit Levy – white turtleneck against a background of tanks, vis à vis hundreds of funerals in Gaza – a token of the "splendid job" of our fine pilots (Levy, 2008b).

Harvesting ~1600 instances of affirmative ironies, based on natural language use in newspapers' articles, shows that 46% of them were addressed via reference to their default contextually incompatible literal interpretation; resonance with their nondefault contextually compatible ironic interpretations occurred in 8% of the cases. The environment of the rest either did not resonate with any of their interpretations (43%), or resonated with both their compatible and incompatible interpretations (3%). Such results support the view that, text production involves activating and retaining default albeit contextually inappropriate interpretations.

Resonating with default literal interpretations of affirmative sarcasm, even if incompatible, is significantly more prevalent than with contextually compatible yet nondefault sarcastic interpretations. Defaultness then reigns.

Study 10: Distribution of type of resonance with default literal interpretations of affirmative metaphors

Given the similarity between novel and familiar metaphors in terms of activation of default yet contextually incompatible literal responses, attested to by Giora and Fein (1999), Giora and Balaban (2001) aimed to further substantiate that via a corpus-based study. Materials were metaphors collected from newspaper articles. Thirty involved echoing their default literal interpretation, as in (12a,b) below, where "a fight" is echoed by "weapons", and "an island" is echoed by "sea", and 30 did not, as in (13a,b) below:

(12) a. The strikes in the Education system took place when the Union was **putting up a fight** against the government. *In this fight, threats, sanctions and even a general strike were the weapons*. (Ha'aretz, 4.9.97)

b. In this situation, the Treasure looks like **an island of sanity** in a *sea* of unconstrained demands. (Ha'aretz, 12.9.97)

(13) a. He lost his health, and **his spirit broke**. (Ha'aretz, 1.9.97)

b. Every honest and benevolent person should have **given a shoulder** to the minister of Treasure so that he can succeed in implementing his plan. (Ha'aretz, 4.9.97)

Results of familiarity ratings (ranging on a 7-point scale), collected from 40 participants, showed that affirmative metaphors, whose contextually incompatible metaphorical and literal responses were echoed and elaborated on by their following context (see 12a,b), were not rated as more or less familiar than those whose literal response was not reflected by their ongoing environment (see13a,b). Importantly, the number of metaphors rated as most familiar did not distinguish the two sets of items from each other; they included 15 metaphors from the group of 30 which were followed by discoursal resonance (12a,b), and 17 instances from the group of (30) whose literal interpretation was not elaborated on (see (13a,b). Even highly familiar affirmative metaphors, whose literal (and metaphorical) responses are processed directly (see Giora, et al., 1998), involved their default responses, even if incompatible, in discourse production, regardless of contextual support.

Poetic language thrives on resonating with default yet contextually incompatible interpretations. Consider, for instance, the fragments in (14) below, taken from a speech, delivered in Tel Aviv, by Rela Mazali (2006) during a demonstration against the siege of Gaza, in 2006. The environment of novel *fire* metaphors (in bold)—"Food shortages kill. Denying food is **fire**. . . . Water shortages kill. Denying water is **fire**")—resonates with their default literal uses, related to gunfire, in both prior and ongoing context. In prior context, *fire* is used literally, referring to military attacks against the Gazans: "Israel's *fire* at Gaza has not ceased. There is no Israeli cease*fire* in Gaza." In the context that follows these novel metaphors, an additional novel metaphor emerges, constructed on the basis of this yet another metaphorical use of *fire*, referring to rage as heat: "Both Gaza and the West Bank will go on **igniting under fire**." Here "igniting under fire" is polysemous. It activates and resonates with the literal gunfire, thereby gets across the metaphorical rage, which is "bullet-less" fire – another novel metaphor:

(14) Let's be clear about this: Israel's *fire* at Gaza has
not ceased. There is no Israeli cease*fire* in Gaza.
There is no Israeli cease*fire* even when Israel's
soldiers aren't *shooting a single bullet* in Gaza. . .
There are food shortages in Gaza. Israel is denying
Gaza food. . . .
Food shortages kill. Denying food is **fire**.
There's a shortage of potable water in Gaza. . . .

Water shortages kill. Denying water is **fire**.
Both Gaza and the West Bank will go on **igniting**
under fire, till they *kindle* Sderot[13]
again too. The **bullet-less fire** that Israel is **shooting**
at the dispossessed of Gaza is *fire* that it is also
shooting, by proxy, at the dispossessed of Sderot. (Taken from Mazali, 2006)

As predicted by the Defaultness Hypothesis (see section 1), various findings, based on natural language use, converge on the view that text production is affected by resonance with default interpretations, irrespective of degree of negation/affirmation, degree of novelty, degree of non/literalness, or degree of contextual fit. (For similar findings with regard to resonance with default yet incompatible literal interpretations in conversations among friends, see Giora & Gur, 2003 and Kotthoff, 2003 with regard to irony, and Giora, 2012 with regard to metaphor).

4. Conclusions

This study reviews the way discourse production unfolds. It tests the Defaultness Hypothesis, predicting that text production will evolve via resonating with default interpretations, regardless of degree of negation, novelty, non/literalness, or contextual fit. To test this prediction, the studies reviewed here focus on resonance in production including novel and familiar figurative language. They show that resonance with default interpretations affects discourse production significantly. This is true even when default responses are contextually incompatible. Resonance, then, is shaped by defaultness which further shapes our discourse production.

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[13] Sderot is an Israeli town next to Gaza.

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