How can you compare! On negated comparisons as comparisons

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Abstract

Results from 3 experiments argue in favor of the view that, when relevant to contextual information, negated concepts are retained rather than suppressed (Giora 2006, 2007; Giora et al. 2007). It is this retainability of negated information that allows for negated comparisons to come across as similarly appropriate as their affirmative counterparts (Experiment 1), and be as similarly sensitive to degree of prototypicality, as found earlier for affirmative statements (Experiments 2–3); it is also this retainability of negated information that accounts for the readings times of targets involving a prototypical property of the negated source, which were speedier than those involving a less prototypical one (Experiment 3).

1. Introduction

How are negated comparisons perceived? How are they processed? Do comprehenders establish and maintain a set of shared features as they do when presented with affirmative comparisons or does the negation marker invite the interpreter to discard such similarities? The received view in psycholinguistics assumes that negation prompts comprehenders to suppress information within its scope ("the suppression hypothesis"). For instance, while (in the absence of a specific context) "The train to Boston was no rocket" was initially represented as "The train to Boston was fast," this initial accessibility of the meaning of the negated concept ("fast") was not observed when comprehenders were allowed additional processing time, (Hasson & Glucksberg 2006; and see also Kaup, Lüdtke, & Zwaan 2006; MacDonald & Just 1989. For a review, see Giora 2006; Giora et al. 2007).

However, a look at natural examples suggests the opposite. For instance, the following visual work of art (1), which portrays a chopper and includes a linguistic (Hebrew) negative comparison—This is not a bird—

seem to require retention of information within the scope of negation. By using a negated category statement¹, Gur-Lavi (2002) evokes a set of features shared by the topic of the comparison—the helicopter—and its source domain to which it is compared—a bird—while further communicating a suggestion that humanity could be better off were the chopper a bird. The implicit wish that it were a bird, then, is not discarded, nor is the concept of "bird" and what it might entail ("peacefulness"; "freedom" etc.). Needless to say, this comparison is a lot more plausible than an alternative (true) statement that evokes no set of common features (e.g., This is not a book; see also Giora, Balaban, Fein & Alkabets 2005):



Example 1. This is not a bird (Gur-Lavi 2002)

That negated comparisons call for the same processes invited by affirmative comparisons is further illustrated by the following verbal examples (Zimmerman 2007; see also Giora 2007). In these examples (2–4), readers are alerted to the use of comparisons (e.g., "I hate to make the Nazi comparison"; "I am always very cautious with the Nazi analogy") while being further presented with the features of the negated concepts (italicized for convenience) that allow for the comparison or analogy:

(2) I hate to make the Nazi comparison because it's so tired, and Bush isn't Hitler. But forcing people to wear yellow stars was shocking at first. (Richard 2005).

- (3) I am always very cautious with the Nazi analogy, which is why I preface it—Bush isn't a Nazi. But there are thuggish and repressive aspects to his rule that merit at least some comparison with the tactics of fascists, from Peron to Mussolini to Hitler (and to other pigs like Stalin and Castro). (Richard 2005).
- (4) President Bush isn't Hitler. The United States of America isn't Nazi Germany. The War Against the Terror Masters isn't the Holocaust. Guantanamo isn't Auschwitz. (Anderson 2005).

Similarly, the following example (you're not necessarily a Nazi) couldn't be ironic weren't the features of the negated concept (Nazi) retained. These features ("seize power", "build concentration and death camps" etc.) could therefore be easily attributed to the topic of the comparison (Bush):

(5) Lately we're being told that it's either (a) inappropriate or (b) untrue to refer to Bush's illegitimate junta as Nazi, neo-Nazi or neofascist. Because, you know, you're not necessarily a Nazi just because you seize power like one, take advantage of a national Reichstag Firelike tragedy like one, build concentration and death camps like one, start unprovoked wars like one, Red-bait your liberal opponents like one or create a national security apparatus that behaves like something a Nazi would create and even has a Nazi-sounding name. All of those people who see a little Adolf in the not-so-bright eyes of America's homeland-grown despot are just imagining things.... (Rall 2005).

These examples seem to defy the view that information within the scope of negation is unconditionally discarded (Hasson & Glucksberg 2006; Kaup et al. 2006; MacDonald & Just 1989, among others). Instead, they are far more consistent with the claim that information within the scope of negation is as sensitive to discourse functions as non-negated information (Giora 2006). While it might be disposed of when disruptive to the interpretation process (Gernsbacher 1990), negated information will be retained if deemed relevant to or supportive of contextual information ("the suppression/retention hypothesis"; Giora 2006, 2007; Giora, Balaban, Fein & Alkabets 2005; Giora, Fein, Aschkenazi, & Alkabets-Zlozover 2007). Indeed, according to the suppression/retention hypothesis, accessible information is not unconditionally disposed of even when non-intended (e.g., the literal interpretations of metaphors and ironies). Instead, if assumed instrumental to the construal of the appropriate interpretation, it is retained (Giora 2003; Giora, Fein, Laadan, Wolfson, Zeituny, Kidron, Kaufman, & Shaham 2007). On this view, then, negated information should be no exception. If deemed relevant, it should be retained rather than suppressed (as shown by Giora 2006; Giora et al.

2007). Needless to say, this should hold for negated comparisons as well. They should be represented as affirmative comparisons and be as sensitive to contextual requirements and goals as their affirmative equivalents.

The goal of this study is to test this prediction by looking at how negated comparisons are processed and represented. To do that, we first presented Hebrew speakers with short (Hebrew) dialogue pairs which were comparable in every respect except for the negation marker which appeared in one but not in the other (6). Both versions ended in an utterance that rejected the comparison, while explicitly referring to it as a comparison (7):

- (6) A: Bush is/is not Hitler.
- (7) B: How can you compare!?

Our aim was to show that speakers' evaluation of the target (rejection) statements (7) will not be affected by the negation marker. They will be considered appropriate, regardless of whether their minimal-pair context is affirmative or negative.

2. Experiment 1

2.1. Method

- 2.1.1. *Participants*. Participants were 32 Linguistics students of Tel Aviv University (19 women and 13 men) aged 20–30. They were all native speakers of Hebrew who volunteered to participate in the experiment.
- 2.1.2. *Materials*. Materials were 16 experimental dyads (8a-b; 9a-b) and 16 similarly structured fillers (10), which at times exhibited medium coherence (11–12). The experimental dyads featured a speaker (A), who either made a negated or a non-negated comparison, and an addressee (B), who rejected the comparison. The items were composed based on natural examples found on the internet, mainly on forums and blogs (see also Appendix 1):
- (8a) A: Eddy Merckx was as great a cyclist as Lance Armstrong; He took part in all the grand tours and won them all.
 - B: Enough with the comparisons. Both were great.
- (8b) A: Eddy Merckx wasn't as great a cyclist as Lance Armstrong; He didn't win the Tour de France seven consecutive years.
 - B: Enough with the comparisons. Both were great.
- (9a) A: Saddam Hussein was like Hitler; both instigated war crimes, crimes against humanity and genocide.
 - B: Why must we compare every dictator to Hitler?

- (9b) A: Saddam Hussein wasn't Hitler, although both instigated war crimes, crimes against humanity and genocide.
 - B: Why must we compare every dictator to Hitler?
- (10) A: It's about time Shimon Peres retired from politics. He never wins anyway.
 - B: You're just jealous.
- (11) A: The film *Paradise Now* is morally wrong, because it makes the viewers identify with suicide bombers.
 - B: I've been feeling pretty suicidal recently.
- (12) A: The limitations the Shin-Bet placed on Mordechai Vanunu are unnecessary. The man has paid his debt to society.
 - B: My son's girlfriend is one hell of a bombshell.

2.2. Procedure

Participants were asked to rate on a 7 point appropriateness scale (7 = highly appropriate, 1 = inappropriate) the appropriateness / coherence / naturalness of the target (rejection) statement (B) to its earlier (either negative or affirmative) context statement (A).

2.3. Results and discussion

Results show no differences in appropriateness ratings between the two versions, as shown in both subject (t_1) and item (t_2) analyses. Both were significantly higher than the scale middle value (4). The affirmative statements scored 5.61 (SD = 1.12), and a one-sample t-test revealed it was significantly higher than 4, $t_1(31) = 8.82$, p < .01, $t_2(15) = 9.90$, p < .001. The negative statements scored 5.34 (SD = 0.86), and was also significantly higher than 4, $t_1(31) = 8.79$, p < .01, $t_2(15) = 7.26$, p < .001. The difference in scoring between the affirmative and the negative statements was not significant, $t_1(31) = 1.55$, p = .07, $t_2(15) = 1.28$, p = .11.

These results are consistent with the view that negation does not unconditionally eliminate information within its scope from the mental representation (Giora 2006, 2007; Giora et al. 2007). Instead, when relevant to the discourse, such information is retained. It is this retention of negated information that allows for negated comparisons to come across as comparisons—as similarly appropriate as their affirmative counterparts.

To further test the view that negation does not necessarily suppress information within its scope, we focused on sensitivity to degree of prototypicality. We examined negative comparisons (A is not/is different

from B), which included less or more typical features of the source concept (the B term). For example, in *Bush is not Hitler*, Hitler—the source domain—is more strongly associated with "concentration camps" than with "eloquence". The assumption was that if information within the scope of negation is retainable then readers should find comparisons involving less typical/less salient features less appropriate or funnier than comparisons involving more prototypical/salient features (as shown for affirmative comparisons by e.g., Armstrong, Gleitman, & Gleitman 1983). If, however, information within the scope of negation were unconditionally suppressed then readers should find comparisons involving less prototypical/less salient features of the source concept as equally appropriate as comparisons involving prototypical/salient features.

In Experiment 2, we therefore presented speakers with discourses whose affirmative and negative versions introduced either a typical or an atypical feature of the comparison's source concept, weighing them against incoherent controls. We anticipated that, regardless of negation, discourses such as (13) would be rated as more coherent than discourses such as (14–15). While the former exhibits prototypical features of the source domain, the latter involve less salient features and should therefore be rated as less appropriate:

- (13) Bush is not Hitler—agreed, he's just not that psychotic. And he's not actively running extermination camps or openly preaching for the extermination of a group of people based on race. (Jman 2005).
- (14) Lately we're being told that it's either (a) inappropriate or (b) untrue to refer to Bush's illegitimate junta as Nazi, neo-Nazi or neofascist ... Of course, there are differences. Hitler, for example, was legally elected. And he had a plan—not one that I like, but a plan—for the period after the war. I'll be happy to stop comparing Bush to Hitler when he stops acting like him. (Rall 2004).
- (15) It's going a bit far to compare the Bush of 2003 to the Hitler of 1933. Bush simply is not the orator that Hitler was. (Lindorff, 2003).

3. Experiment 2

3.1. Method

3.1.1. *Participants*. Participants were 64 students of Tel Aviv University (41 women and 23 men) aged 19–32. They were all native speakers of Hebrew who volunteered to participate in the experiment.

- 3.1.2. *Materials*. Materials were 16 quartets (16a-d) made up of two negated comparisons based either on a prototypical/salient feature (16a) or a less salient feature (16b) of the source concept (Mona Lisa) and two incoherent/meaningless control comparisons (16c-d). The materials we composed were inspired by natural examples (see also Appendix 2).
- Susie's drawing is not the Mona Lisa. Susie's drawing is not a (16a) well-known masterpiece.
- Susie's drawing is not the Mona Lisa. Susie's drawing didn't war-(16b)rant a parody by Marcel Duchamp.
- Susie's drawing is not the armored corps. Susie's drawing is not a (16c)well-known masterpiece.
- Susie's drawing is not the armored corps. Susie's drawing didn't (16d)warrant a parody by Marcel Duchamp.

To control for the degree of the prototypicality of the selected features, 16 Hebrew speakers (9 women and 7 men) aged 26-57 were presented the 16 source concepts (Mona Lisa) followed by three kinds of features (see Appendix 3): a highly prototypical ("a well-known masterpiece"), a less prototypical ("parodied by Marcel Duchamp") and an unrelated control ("mountain goat"). Participants had to rank the prototypicality of the features—the extent to which this feature characterizes the concept from highest (1) through medium (2) to lowest (3). In addition they could add a highly prototypical feature that did not appear on the list. Results showed that two items did not meet our expectations for prototypicality and had to be replaced by more prototypical alternatives. The set as a whole was then administered to another 8 Hebrew speakers. This time the differences in prototypicality ratings were all significant and the set was used to make up our experimental items.

Four booklets were prepared so that each participant would be presented only one item of a quartet. One version included the prototypical/salient feature ("well-known masterpiece") of the source concept (Mona Lisa). The second version included the non-prototypical feature ("parodied by Marcel Duchamp"). The third version included the same prototypical feature, but this time the source of the negated comparison was the unrelated control ("mountain goat"). The fourth version included the non-prototypical feature and the unrelated control. All in all, each booklet included four items of each type.

3.2. Procedure

Participants were asked to rate on a 7 point appropriateness scale (7 = highly appropriate, 1 = inappropriate) the appropriateness /

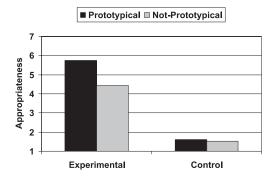


Figure 1. Appropriateness ratings of negated comparisons with prototypical and notprototypical attributes (Experiment 2)

coherence / naturalness of the second statement in relation to its earlier negative context statement.

3.3. Results and discussion

Results are illustrated by Figure 1. They show that negated comparisons featuring a prototypical attribute were rated as significantly more appropriate (scoring 5.76, SD = 0.77) than those featuring a less-prototypical attribute (scoring 4.43, SD = 1.20), $t_1(63) = 9.26$, p < .0001, $t_2(15) = 5.56$, p < .0001. Both, however, were viewed as significantly more coherent than their respective unrelated controls. The prototypical attribute comparison scored more than its control (which scored 1.60, SD = 0.75), $t_1(63) = 33.04$, p < .0001, $t_2(15) = 24.85$, p < .0001. The less-prototypical attribute comparison also scored more than its control (which scored 1.52, SD = 0.71), $t_1(63) = 19.46$, p < .0001, $t_2(15) = 11.86$, p < .0001.

These results support the retention hypothesis. They testify to the preservation of the concept within the scope of negation which allows salient features to be more accessible than less salient ones. When salient features are referred to, this affects high appropriateness ratings. When, however, salient features are not referred to but, instead, less salient features are engaged, the comparisons are rated as less appropriate. Speakers, then, are sensitive to degree of prototypicality, regardless of negation.

To further support the hypothesis that negated concepts are not suppressed unconditionally, we ran Experiment 3 in which we recorded reading times of the stimuli used in Experiment 2. Given the retention hypothesis, we expected statements featuring salient attributes to be read faster than those featuring less salient ones. Such differences in reading times will support the view that negation need not trigger unconditional

suppression of the concepts within its scope and will therefore exhibit sensitivity to degree of prototypicality.

4. Experiment 3

4.1. Method

- 4.1.1. *Participants*. Participants were 60 Psychology students of The Academic College of Tel Aviv Yaffo (46 women and 14 men) aged 21–29. They were all native speakers of Hebrew who participated in the experiment for course credit.
- 4.1.2. *Materials*. Materials included 24 experimental quartets made up of the 16 quartets used in Experiment 2 plus another 8 quartets which were pre-tested in the same way as before (see Experiment 2). In addition there were 12 filler and 5 trial items for each booklet. Four electronic booklets were prepared. While each contained the filler and the trial items, they were further divided into two types so that 2 booklets contained comparisons including salient and less salient features (16a, 16b) and 2 booklets included the control items (16c, 16d).
- 4.1.3. *Procedure.* The strings, made up of two sentences, were centrally displayed sentence by sentence. Participants were each seated in front of a computer screen and were instructed to read each sentence and press the space bar after they had read and understood the sentence. Pressing the space bar suppressed the displayed sentence while allowing for the next one to appear. Reading times of the second (target) sentence of the string were measured. Following each string, a 7 point appropriateness scale (7 = highly appropriate, 1 = inappropriate) was displayed, which appeared following the second press of the space bar. Participants were asked to rate the appropriateness / coherence / naturalness of the second (target) statement to its previous negative context statement. Rating times were not measured. Once the rating number was keyed in and the space bar pressed for confirmation, the first sentence of the next string was displayed. The experiment lasted about 10 minutes.

4.2 Results and discussion

4.2.1. *Reading times.* RT's above 2 SD of the mean of each subject were discarded from the analyses. Overall, 54 RT's out of 1440 were discarded (3.8%).

Not-Prototypical	
2607 (647) 2876 (689)	
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Table 1. Mean Reading Times of Target Sentences in Experiment 3 (SD in parentheses)

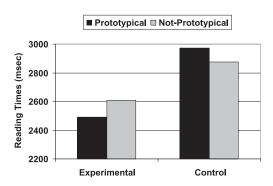


Figure 2. Reading times of target sentences (Experiment 3)

Results are presented in Table 1 and illustrated by Figure 2. They support the retention hypothesis: Reading times of the two types of target statement differed significantly: statements featuring prototypical attributes were read faster than those featuring less-salient ones, $t_1(29) = 1.56$, p = .067, $t_2(23) = 1.70$, p < .05. Both types were read faster than their controls, $t_1(58) = 2.71$, p < .01, $t_2(23) = 5.61$, p < .001 (prototypical), $t_1(58) = 1.56$, p = .067, $t_2(23) = 3.92$, p < .0005 (not-prototypical).

4.2.2. Coherence ratings. Not surprisingly, the rating results replicated those found in Experiment 2. As shown by Figure 3, strings featuring a prototypical property were rated as significantly more appropriate (scoring 5.21, SD = 0.79) than those featuring a less-prototypical one (scoring 3.84, SD = 0.97), $t_1(29) = 11.67$, p < .0001, $t_2(23) = 8.03$, p < .0001. Both, however, were significantly more appropriate than the controls. The prototypical attribute comparison scored more than its control (which scored 2.16, SD = 0.86), $t_1(58) = 14.27$, p < .0001, $t_2(23) = 25.45$, p < .0001. The less-prototypical attribute comparison also scored more than its control (which scored 2.07, SD = 0.93), $t_1(58) = 7.36$, p < .0001, $t_2(23) = 10.47$, p < .0001.

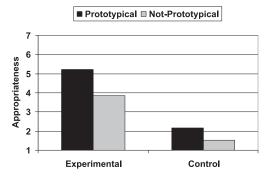


Figure 3. Appropriateness ratings of negated comparisons with prototypical and notprototypical attributes (Experiment 3)

5. General discussion

Results from 3 experiments, involving Hebrew speaking participants, argue in favor of the view that, when relevant to contextual information, negated concepts are retained rather than suppressed (Giora 2006, 2007; Giora et al. 2007). It is this retainability of negated information that (a) allows for negated comparisons to come across as similarly appropriate as their affirmative counterparts (Experiment 1), and (b) be as similarly sensitive to degree of prototypicality, as found earlier for affirmative statements (Experiments 2–3); it is also this retainability of negated information that (c) accounts for the readings times of targets involving a prototypical property of the negated source, which were speedier than those involving a less prototypical one (Experiment 3).

Taken together, these findings question the received view (tested out of a specific context) which holds that negation is primarily, if not exclusively, a suppression operator (Hasson & Glucksberg 2006; Kaup et al. 2006; MacDonald & Just 1989, among others). Instead, they are consistent with the assumption that suppression and retention of negated information follow a more general principle according to which information is retained if it is deemed relevant to context (Gernsbacher 1990), regardless of whether it is negated or not (Giora 2006).

Indeed, a number of studies have adduced evidence supporting this view (for an extensive review, see Giora 2006). For example, Giora et al. (2007) have shown that in the presence of either an early or a late relevant context, negated information is retained even for as long

as 750–1000 ms. However when context is irrelevant (e.g., involves a topic shift), this information is dampened, as also found for non-negated information (Gernsbacher 1990). Additionally, Giora, Balaban, et al. (2005) and Giora, Fein, et al. (2005) have shown that negation often functions as a mitigation rather than suppression operator, thus keeping intact information within its scope (see also Fraenkel & Schul, this volume).

That suppression is not obligatory but conditional on various factors has also been shown by Schul and his colleagues. For instance, Mayo, Schul, and Burnstein (2004) have shown that when the task was judgments of congruence with prior negated information (not tidy), and when this negated information had an alternative opposite ("messy"), Hebrew speaking participants represented this contextual information in terms of its opposite. However, when no opposite was available (not adventurous), this negated information was not suppressed but retained. This has been replicated by Schul, Mayo, and Burnstein (2004) under conditions which induced distrust—a nonverbal negation maker. In this study, Schul et al. have shown that distrusting comprehenders followed the same strategy, (suppressing while) replacing negated information with an available opposite. When such an alternative was not available, negated information was retained.

Kaup and colleagues have also adduced evidence supporting the view that suppression following negation is not mandatory. For instance, Kaup and Zwaan (2003) demonstrated that a contextual factor such as the presence of the negated concept in the situation described led to its preservation in memory. And in a recent ERP study, involving German speaking participants, Lüdtke, Friedrich, de Filippis, and Kaup (2008) show that information within the scope of negation may prime a matching albeit contextually inappropriate pictorial probe. Similarly, Kaup, Dijkstra, and Lüdtke (2007) show that negation does not reduce the accessibility of information within its scope, although this effect may vary with the kind of antecedent and the kind of anaphoric expression used to retrieve this information.

Along the same lines, findings in Levine and Hagaman (this volume), involving English speaking participants, further attest to the availability of the concept within the scope of negation. When prototypical, this concept interfered with anaphor resolution even when not intended as an antecedent. Thus, on account of its accessibility, a negated prototypical member such as apple was considered during anaphor resolution (the fruit in *Justin bought a mango but not an apple. He ate the fruit.*), although it was a non-antecedent. Its availability, however, slowed down the disambiguation process.

That participants are considering negated concepts during anaphor resolution is also demonstrated by Shuval and Hemforth (this volume). Using visual probes that are either related or unrelated to two-sentence French stimuli comprehenders were listening to, Shuval and Hemforth show that non-negated referents were gazed at longest. Notwithstanding, negated referents were also gazed at significantly long—longer than unrelated controls—suggesting they were accessible enough to be considered during the disambiguation process.

In sum, recent findings involving various languages and accumulated by various tools and methodologies argue against the view that negation is necessarily a suppression operator. Instead, they help formulate the conditions under which information within the scope of negation might be either retained or suppressed.

Appendix 1: Sample items of Experiment 1

Experimental items

- (1a) A: I think humans are nobler than other creatures.
 - with all due respect to humans, why make such a comparison?
- A: I think humans are not nobler than other creatures. (1b)
 - with all due respect to humans, why make such a comparison?
- The barrier that Israel is building in the west bank is just like (2a) A: the Berlin wall.
 - B: I detest this comparison.
- The barrier that Israel is building in the west bank is not the (2b) Berlin wall.
 - I detest this comparison. B:
- The Israeli film industry is flourishing; it's just like (3a) A: Hollywood.
 - Isn't this comparison a bit ridiculous? B:
- The Israeli film industry is flourishing, but it's not like (3b)A: Hollywood.
 - Isn't this comparison a little ridiculous? B:
- Sharon, like Ben-Gurion, was motivated by the well-being of (4a) A: the state, and not by opinion polls.
 - Irrelevant to talk about both of them in the same terms. B:
- Sharon, unlike Ben-Gurion, was motivated by the well-being (4b)A: of the state, and not by opinion polls.
 - Irrelevant to talk about both of them in the same terms. B:

Filler items

- (1) A: It's about time Shimon Peres retires from politics. He never wins anyway.
 - B: You're just jealous.
- (2) A: Saddam Hussein's trial is just a show. It's clear they'll execute him eventually.
 - B: Is it okay to remove my gas mask?

Appendix 2: Sample items of Experiments 2–3

- (1) a. George Bush is not Adolph Hitler; Bush didn't exterminate any Jews.
 - b. George Bush is not Adolph Hitler; Bush is not a great orator.
 - c. George Bush is not a Dalmatian; Bush didn't exterminate any Jews.
 - d. George Bush is not a Dalmatian; Bush is not a great orator.
- (2) a. Saddam Hussein was not Bin Laden; Saddam was not the head of an Islamic Terrorist Group.
 - b. Saddam Hussein was not Bin Laden. Saddam is no longer in hiding.
 - c. Saddam Hussein was not a crate of beer-bottles. Saddam was not the head of an Islamic Terrorist Group.
 - d. Saddam Hussein was not a crate of beer-bottles. Saddam is no longer in hiding.
- (3) a. Susie's drawing is not the Mona Lisa. Susie's drawing is not a well-known masterpiece.
 - b. Susie's drawing is not the Mona Lisa. Susie's drawing didn't warrant a parody by Marcel Duchamp.
 - c. Susie's drawing is not the armored corps. Susie's drawing is not a well-known masterpiece.
 - d. Susie's drawing is not the armored corps. Susie's drawing didn't warrant a parody by Marcel Duchamp.

Appendix 3: Sample items of Prototypicality-Test (Experiment 2):

Adolph Hitler was ...

a big orator

responsible for the extermination of the Jews in concentration camps a Dalmatian

Osama Bin Laden is ... a crate of beer-bottles the head of an Islamic terrorist group hiding from the Americans

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Note

1. In general, the terminology used here (e.g., "comparisons", "category statements") is not intended to reflect any theoretical position. Similarly, when referring to the constituents of the comparisons, notions prevalent in metaphor research are used, regardless of whether the comparisons are metaphoric or not. For instance, "topic" is used when referring to the topic of the comparison (here helicopter) and "source"—when referring to the concept to which the topic is compared (bird).

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