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Contrast of Kind Versus Contrast of Magnitude: The Pragmatic Accomplishments of Irony and Hyperbole

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Verbal irony (e.g., "This is wonderful") and hyperbole (e.g., "This is the worst luck ever") perform pragmatic functions because they create contrasts between expected and ensuing events. Verbal irony uses contrasts of kind because positive comments are made about negative situations. Hyperbole uses contrasts of magnitude because very negative comments are made about moderately negative situations. This study assessed whether this difference enables prediction of the pragmatic accomplishments of the tropes. Experiment 1 tested how much verbal irony, hyperbole, and literal comments perform condemnation, humor, and speaker protection. Results indicated that verbal irony performs these functions more than hyperbole and literal comments, with no difference between the latter types. Experiment 2 evaluated whether gradations within contrasts of kind affect the extent of pragmatic function accomplishment. Strong verbal irony was more condemning, humorous, and speaker-protecting than was weak verbal irony. Implications of these results for verbal irony comprehension and interpretation theories are considered.

Although much of the past few decades' fruitful psycholinguistic research on figurative language has focused on comparisons of a single type of trope (e.g., verbal irony or metaphor) with literal comments, or occasionally on comparisons between metaphor and verbal irony, we believe that the simultaneous study of families of tropes is important because it is possible that some general psychological principles may underlie their comprehension and interpretation (see Ackerman, 1983; Andrews, Rosenblatt, Malkus, Gardner, & Winner, 1986; de Groot, Kaplan, Rosen-

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blatt, Dews, & Winner, 1995; Dews, Kaplan, & Winner, 1995; Dews & Winner, 1995; Gibbs & O'Brien, 1991; Gibbs, O'Brien, & Doolittle, 1995; Giora, 1995; Giora, Fein, & Schwartz, 1998; Glucksberg, 1995; Jorgensen, Miller, & Sperber, 1984; Katz & Lee, 1993; Katz & Pexman, 1997; Kreuz, Long, & Church, 1991; Kumon-Nakamura, Glucksberg, & Brown, 1995; Winner, 1988; Winner & Gardner, 1993; Winner, Levy, Kaplan, & Rosenblatt, 1989; Winner et al., 1987).

For instance, an emerging view in figurative language comprehension posits that the widespread psychological phenomenon of contrast explains, at least in part, how certain types of figurative language perform their pragmatic functions. The contrast employed by verbal irony (e.g., saying something generally positive about a negative topic) was first shown to enable better prediction than that provided by mere conversational implicature of the pragmatic accomplishments of verbal irony, understatement, and hyperbole (Colston, 1997a; Grice, 1975, 1978). A second study then demonstrated that the degree of contrast portrayed by such tropes (e.g., the degree of positivity of the utterance) is important in accounting for their interpretation (Colston & Keller, 1998). In a third study, the role of contrast was refined further. Results showed that a variety of pragmatic functions of ironic tropes, and the extent to which those functions are accomplished, is mediated by the widespread psychological phenomenon of a contrast *effect*, or making a topic appear more negative than it would seem in isolation by commenting on it with a positive utterance (Colston & O'Brien, 2000).

In this study, we sought to further delineate this approach by assessing how different types of contrast may explain trope comprehension and interpretation. Specifically, the different types of contrast utilized by various tropes might predict the degree to which those tropes perform various pragmatic functions. Contrasts of kind (e.g., positive comments made about negative situations [verbal irony]) could be more successful than contrasts of magnitude (e.g., very negative comments made about moderately negative situations [hyperbole]) in accomplishing a variety of pragmatic goals. The purpose of this study was, thus, to investigate the pragmatic accomplishments of verbal irony and hyperbole to determine whether such differences in contrast enable prediction of aspects of the tropes' comprehension.

To illustrate these different types of contrast, note that the relation among verbal irony, hyperbole, and literal comments made about unfortunate situations may be depicted as lying along a continuum (see Figure 1). Literal comments (e.g., "This is terrible") made about a negative situation (e.g., a student getting a failing grade on an important exam) are necessarily negative, as are hyperbolic comments (e.g., "This is the worst thing that has ever happened to me"). However, the hyperbolic comments would be nearer the extreme negative end of the continuum than the literal comments would be. Thus, hyperbolic comments present a contrast between the semantic or "utterance meaning" of the comments (Dascal, 1983, 1987, 1989) and the referent situation that is not presented by the literal comments. Note also that this contrast is one of magnitude because both the sit-

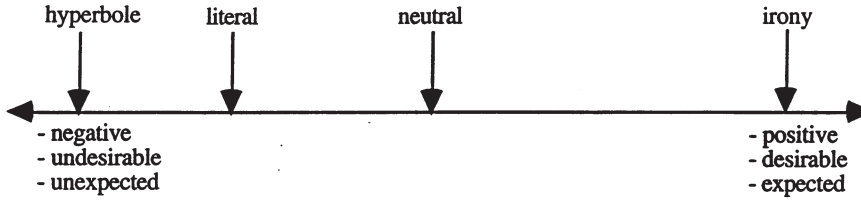

FIGURE 1 A depiction of the continuum on which hyperbolic, literal, and ironic comments vary with respect to potentially relevant dimensions of a negative situation.

uation and the comments are negative. Ironic comments, however, (e.g., "This is terrific") are typically positive when they refer to a negative situation. They would, thus, present a different type of contrast between the comments' utterance meanings and the referent situation, a contrast of kind.

This variation in the type of contrast portrayed by a speaker between his or her comment and its referent situation might affect how the comment is comprehended. The rationale for such a claim lies in the nature of effects caused by contrasts of kind and magnitude. Typically, contrasts of kind produce alterations in people's perceptions of target stimuli that are different from alterations caused by contrasts of magnitude. The alterations in judgments or perceptions are more extreme in contrast of kind contexts than in contrast of magnitude contexts. To demonstrate, consider the usual pattern of judgment alteration produced by contrasts of kind. If a person makes judgments about objects, quantities, qualities, amounts, and so forth, he or she will be influenced by the context in which the judgment takes place. Judgments made in contrast of kind contexts are usually altered to a greater extent than are judgments made in contrast of magnitude contexts. To give a concrete example, consider judgments made about the temperature of a liquid. If a person is estimating the temperature of a cool liquid after encountering a hot liquid, his or her judgment would be altered to a greater extent than making the same cool liquid temperature estimate after encountering a very cool liquid. The alteration in the former judgment would be shifted to the cold end of the continuum more than the judgment in the latter case would be shifted toward the warm extreme.

An enormous amount of psychological research has demonstrated differences of this sort in a variety of processes such as perception (e.g., Schiffman, 1990), judgments about one's emotional state (e.g., Manstead, Wagner, & MacDonald, 1983), judgments of humor (e.g., Alden & Hoyer, 1993; Nerhardt, 1975; Staley & Derks, 1995), performance ratings (e.g., Becker & Villanova, 1995), art appreciation (e.g., Temme & Gieszen, 1995), a wide variety of social psychological domains (Erdley & D'Agostino, 1988; Herr, 1986; Herr, Sherman, & Fazio, 1983; McKenna, 1984; Moskowitz & Skurnik, 1999; Newman & Uleman, 1990; Pelham & Wachsmuth, 1995; Petzold, 1992; Schwarz & Bless, 1992; Sherif & Hovland, 1961), and others.

What pragmatic goals might such contrast types enable verbal irony and hyperbole to perform? In an earlier work, we observed that comments that create

contrasts of kind against their referent situations are judged as more condemning, humorous, and protective of the speaker than are literal comments (Colston & O'Brien, 2000). Comments that use contrasts of kind are humorous because they highlight the incongruity between expected and ensuing events. Much humor research has emphasized the role of incongruity in humor appreciation (Alden & Hoyer, 1993; McGhee, 1971; Nerhardt, 1975; Staley & Derks, 1995). Comments that create contrasts of kind between expected and ensuing events are condemning because the speaker expresses an attitude about this discrepancy in a caustic manner. Comments that use contrasts of kind are also more protective of the speaker because of the typical ambiguous nature of such contrasts. For instance, if one utters a positive comment about a negative situation (e.g., saying "What a lovely dress!" about someone's quite ugly dress), the literal meaning of the comment is complimentary, not offensive. The speaker can thus always deny that he or she said something insulting by appealing to the literal meaning of the utterance. Thus, if one wishes to condemn, be funny, or protect oneself, tropes that make use of contrasts of kind (e.g., verbal irony) should accomplish these goals.

The question then becomes whether contrasts of magnitude would also accomplish these goals. We predict that the contrast of kind created by verbal irony would make verbal irony funnier, more criticizing, and more protective of the speaker than would hyperbolic comments, which rely on a contrast of magnitude. This prediction stems from the previous research that has shown how contrasts of kind create more extreme alterations in people's judgments than do contrasts of magnitude, as well as our previous work that has demonstrated the influence of contrast in the pragmatics of verbal irony.

In Experiment 1, we investigated the degree to which verbal irony (a contrast of kind), hyperbole (a contrast of magnitude), and literal comments (no contrast) perform three pragmatic functions: condemnation, humor, and protection of the speaker.

EXPERIMENT 1

This experiment tested the prediction that contrasts of kind are more successful than are contrasts of magnitude and literal comments in achieving certain pragmatic functions (e.g., verbal irony will be more successful than literal and hyperbolic comments). People were asked to rate the strength of three pragmatic functions performed by hyperbole, verbal irony, and literal comments: to condemn, be humorous, and protect the speaker.

A rating scale that measured the degree to which the comments portray a contrast against the events described in the scenarios was also included. This was done to check our intuitions that the utterance meanings of the comments, with the exception of literal comments, are indeed in contrast to what truly happened in the scenarios in the way we have described. Because only literal comments

genuinely reflect what happened, both hyperbolic and ironic comments should be considered more "contrasting of differences" than literal comments. Moreover, because hyperbole and verbal irony present different types of contrast, they should be significantly different from each other, with verbal irony being more contrasting of differences because it presents a contrast of kind.

Method

Participants. Sixty Lake Forest College undergraduates participated for extra course credit. All were native English speakers. None of the people participated in Experiment 2.

Materials. Twenty-one scenarios described situations in which something negative happens (see the following example). The last line of each scenario described a person making a comment about the situation. Each scenario had three versions. In one version the speaker made a literal comment, in another version the speaker used hyperbole, and in the third version the speaker made an ironic comment. The comments were selected according to the following procedure. Literal items were chosen that provided a direct semantic correspondence to the degree of negativity depicted in the scenario. Thus, they included modifiers such as "bad," "difficult," "really mean," and so on. Ironic items were chosen that would have provided a direct semantic correspondence to situations that would have been positive to the same degree that the current scenarios were negative. The terms included modifiers such as "great," "terrific," "very happy," and so on. Hyperbolic comments were generally built out of the literal items, but they were made to depict much more severely negative, and indeed literally unrealistic, situations. They, thus, used terms like *most evil guy ever, an inconceivable rip-off, the most awful situation anyone could every be in*, and so forth. Examples of each type of utterance follow. (Note: The labels "literal," "hyperbole," and "ironic" were not presented to participants):

> Fred is really looking forward to a relaxing day at the beach with his girlfriend. He picks her up, but then his car runs out of gas on an empty road on the way to the beach. He then remembers that his brother used the car the day before and probably didn't buy gas. Fred tells this to his girlfriend and says,
>
> "This is just terrible." LITERAL
> "This is the worst luck ever." HYPERBOLE
> "This is just wonderful." VERBAL IRONY

Three sets of scenarios were created with each set containing a different version of each scenario. For example, the first scenario in Set 1 would end with a literal comment, the same scenario in Set 2 would end with a hyperbolic com-

ment, and the same scenario in Set 3 would end with an ironic comment. Each participant received only one of the sets so that seven instances of each type of comment were presented to each participant. The order of scenarios in each set was random, and each set was presented to an equal number of participants. Five copies of each set were presented with one of four 8-point rating scales, resulting in four dependent variables. The first rating scale concerned how much the speakers' comments pointed out or contrasted differences. It ranged from 1 (*not at all contrasting of differences*) through 8 (*extremely contrasting of differences*). The second scale concerned the degree of condemnation expressed by the speakers' comments. This scale ranged from 1 (*not at all condemning*) through 8 (*extremely condemning*). The third rating scale inquired about the degree of humor participants perceived in the speakers' comments. It ranged from 1 (*not at all humorous*) through 8 (*extremely humorous*). The fourth scale asked about the degree to which the speakers' comments protected the speaker and ranged from 1 (*not at all protective of the speaker*) through 8 (*extremely protective of the speaker*). Fifteen participants were presented with each of the scales. Example items used in the experiments are provided in the Appendix.

For each of the four dependent variables (contrast, condemnation, humor, and protection), the design was one factor (comment type) with three levels (literal, verbal irony, and hyperbole) administered fully within-participants.

Procedure. Participants were told they would complete a task involving their perceptions about what people say. They were then presented with the 21 scenarios in a booklet with instructions on the cover. The instructions told the participants that the scenarios depicted a person who makes a comment in some situation. Participants were told to read each scenario carefully and to indicate his or her opinion about the comments made by the speakers in the scenarios by marking the rating scales. Each participant was fully debriefed after completion of the task.

Results and Discussion

All analyses of variance (ANOVAs) were conducted twice to enable generalization of significant effects across participant and item populations. ANOVAs treating participants as the random factor are referred to with F_1, and analyses treating items as the random factor are referred to with F_2.

The mean contrast ratings for the four comment types are presented in the left-hand column of Table 1. Recall that we used a "contrasting of differences" rating scale to check our intuitions about whether the different comment types present a contrast with the events described in the scenario. We predicted that the comment types would significantly differ from one another, with literal comments being judged least contrasting of differences, followed by hyperbolic comments, with ironic comments being judged most contrasting of differences. The results sup-

TABLE 1
Success of Literal, Hyperbolic, and Ironic Comments
in the Performance of Four Pragmatic Functions (Experiment 1)

Comment Type		*Contrast*	*Condemnation*	*Humor*	*Protection*
Literal	*M*	2.97	4.33	2.33	4.19
	SD	1.00	1.30	0.88	1.06
Hyperbole	*M*	3.85	4.67	2.40	4.03
	SD	0.91	1.06	0.72	1.07
Verbal irony	*M*	6.53	4.77	3.64	4.94
	SD	0.97	1.52	1.36	1.25

Note. The contrast scale ranged from 1 (*not at all contrasting of differences*) to 8 (*extremely contrasting of differences*), the humor scale ranged from 1 (*not at all humorous*) to 8 (*extremely humorous*), the condemnation scale ranged from 1 (*not at all condemning*) to 8 (*extremely condemning*), and the protection scale ranged from 1 (*not at all protective of the speaker*) to 8 (*extremely protective of the speaker*).

ported this prediction. One-way ANOVAs revealed a significant difference in the degree to which participants thought the comments pointed out or contrasted differences, $F_1(2, 28) = 57.31$, $p < .001$; $F_2(2, 40) = 102.86$, $p < .001$. Subsequent pairwise comparisons revealed that verbal irony was significantly more contrasting of differences than literal, $F_1(1, 14) = 76.88$, $p < .001$; $F_2(1, 20) = 212.23$, $p < .001$, and hyperbolic comments, $F_1(1, 14) = 71.48$, $p < .001$; $F_2(1, 20) = 113.53$, $p < .001$. Hyperbole was also more contrasting of differences than literal comments, $F_1(1, 14) = 11.98$, $p < .01$; $F_2(1, 20) = 9.80$, $p < .01$.

The mean ratings given for the condemnation scale are presented in the second column of Table 1. No difference was found in how condemning participants found the comments to be. Recall that we predicted that verbal irony would be judged as more condemning than both hyperbole and literal comments and that there would be no difference between literal and hyperbolic comments. Thus, our predictions for this variable were not fully supported. Our predictions may have failed to take into account the particular nature of the pragmatic function of condemnation. Speaking hyperbolically about a negative situation is an example of a contrast of magnitude, yet it is also an instance of a person expressing a very negative attitude (as are literal comments). As such, it may be equally powerful in expressing condemnation as speaking ironically, which depends on a contrast of kind. To that extent, this particular dependent variable might not be useful in distinguishing between contrasts of kind and contrasts of magnitude.

The mean humor ratings for the four comment types are presented in the third column of Table 1. One-way ANOVAs revealed a significant difference in the degree to which participants thought the comments were humorous, $F_1(2, 28) = 13.94$, $p < .001$; $F_2(2, 40) = 27.11$, $p < .001$. Pairwise comparisons showed that verbal irony was judged as significantly more humorous than were literal com-

ments, $F_1(1, 14) = 13.01$, $p < .001$; $F_2(1, 20) = 45.92$, $p < .001$, and hyperbolic comments, $F_1(1, 14) = 15.50$, $p < .001$; $F_2(1, 20) = 38.85$, $p < .001$, with no difference being found between hyperbole and literal comments. These results support our predictions for this variable.

Finally, the protection ratings can be found in the right-hand column of Table 1. As predicted, an overall difference between the target types was obtained, $F_1(2, 28) = 4.01$, $p < .05$; $F_2(2, 40) = 9.62$, $p < .001$. Verbal irony was judged as more protective of the speaker than literal, $F_1(1, 14) = 4.41$, $p < .05$; $F_2(1, 20) = 8.92$, $p < .01$, and hyperbolic comments, $F_1(1, 14) = 9.08$, $p < .01$; $F_2(1, 20) = 29.99$, $p < .001$, with no difference between hyperbole and literal comments. These results also support our predictions.

Overall, the results of Experiment I generally support our prediction that hyperbole and literal comments would not differ in their ability to perform certain pragmatic functions because hyperbole depends on a contrast of magnitude instead of a contrast of kind. Thus, there were no differences between hyperbole and literal comments for the condemning, humorous, and protective of the speaker dependent variables. It remains possible, though, that stronger hyperbole (e.g., "This is the worst luck anyone has ever had") might produce a difference. Furthermore, because verbal irony depends on a contrast of kind, it was more successful in achieving two of these pragmatic functions (e.g., humor and protection of the speaker).

The overall result of this experiment, that contrasts of kind perform various pragmatic functions to a generally greater extent than contrasts of magnitude, raises a question about previous claims concerning the pragmatic accomplishments of verbal irony. Our earlier work claimed that more extreme contrasts would perform pragmatic functions to a greater extend than would more moderate contrasts (Colston & Keller, 1998; Colston & O'Brien, 2000). This claim was supported in the latter study by findings that verbal irony (e.g., "This is totally wonderful") performed several pragmatic functions more than understatement (e.g., "This is a minor annoyance"). A closer inspection of those items shows, however, that we had also unintentionally manipulated the type of contrast that was presented. Our instances of understatement, although presenting a more moderate contrast than our instances of verbal irony, were additionally examples of contrasts of magnitude. Although they presented more contrast than the literal comments (e.g., "This is a bad situation") that were consistent with the negative situations (e.g., a couple getting stranded on a remote, deserted road), they nevertheless were all negative comments. We, thus, had unintentionally confounded contrast type with contrast severity.

To retest our previous claim that more extreme contrasts would perform pragmatic functions to a greater extent than less extreme contrasts, we presented participants in a second experiment with instances of strong contrasts of kind (strong verbal irony) and instances of weak contrasts of kind (weak verbal irony), and asked the participants to rate the extent to which the comments performed the same pragmatic functions evaluated in the first experiment.

EXPERIMENT 2

This experiment compared two types of ironic utterances that both presented contrasts of kind (one strong and one weak) along with literal comments. The two ironic comments differed in how much contrast (of kind) they presented. To illustrate, imagine yourself in the following situation: You are looking forward to a visit from a friend, but when he arrives, he is in a terrible mood and is snapping and yelling at everyone. Consider three comments you could make in this situation: a literal comment such as "Aren't you in a bad mood?", a weak ironic comment such as "Aren't you in an agreeable mood?", or a more extreme ironic comment such as "Aren't you in a magnificent mood?" Each of the ironic comments is ironic in the sense that they state something positive about a negative situation. The comments differ, however, in how positive that statement is. The question is whether this increasing gradation in contrast of kind will be progressively more successful in achieving the pragmatic functions we have investigated (e.g., to condemn, be humorous, and protect the speaker).

Our predictions are straightforward and extend from our previous claims concerning the degree of contrast presented by tropes and how much the tropes will perform pragmatic functions. Strong verbal irony should perform pragmatic functions to a greater extent than should weak verbal irony, and both forms of verbal irony should perform pragmatic functions to a greater extent than should literal commentary.

Method

Participants. Sixty University of Wisconsin–Parkside undergraduates participated to fulfill a course requirement. All were native English speakers. None of the people participated in Experiment 1.

Materials. The same 21 scenarios from Experiment 1 that described situations in which something negative happens were used in this experiment, along with three additional scenarios to enable the addition of a second two-level factor to be crossed with comment type (see next). The last line of each scenario described a person making a comment about the situation. Each scenario had three versions. In one version, the speaker makes a literal comment; in another, the speaker makes a weak ironic comment; and in the third, the speaker makes a strong ironic comment. The same literal terms from Experiment 1 were used in this experiment, along with three additional literal terms to go with the three new scenarios. Weak and strong ironic items were chosen that would have provided a direct semantic correspondence to situations that respectively would have been less positive (for weak irony) and more positive (for strong irony) than the degree to which the current scenarios were negative. The terms included modifiers such as "agreeable," "good," "pleased," and so forth for weak irony and "magnificent,"

"absolutely brilliant," "more happy than anyone," and so forth for strong irony. Examples of each type of utterance follow (the labels LITERAL, WEAK VERBAL IRONY, and STRONG VERBAL IRONY were not presented to participants):

> Sheila was looking forward to her boyfriend Walter's visit. When Walter arrived, he was in a terrible mood and was snapping and yelling at Sheila and her housemates. Sheila turned to him and said,
>
> "Aren't you in a bad mood?" LITERAL
> "Aren't you in an agreeable mood?" WEAK VERBAL IRONY
> "Aren't you in a magnificent mood?" STRONG VERBAL IRONY

Counterbalancing of items was done in the same manner as in Experiment 1. The instructions and scenarios used were also the same as those in Experiment 1 and are provided in the Appendix along with example comment types. As with Experiment 1, the different dependent variables were administered between-subjects, and the independent variable was administered within-subjects.

To enable a fine-grained analysis of the effect of the strength of the contrast presented by the types of comments, the 24 scenarios with each of their three comment types were shown to a group of 10 norming participants who did not otherwise participate in the experiments. These participants were asked to rate how much difference they perceived between the "weak" and "strong" examples of verbal irony for each scenario by marking an 8-point rating scale ranging from 1 (*slightly different*) to 8 (*extremely different*). The overall median rating was then calculated and the scenarios were divided into two equally sized groups: one group for which the verbal irony pairs had a relatively low difference and another group for which the pairs had a relatively high difference. This then became a second factor in our analyses.

Procedure. The procedure for Experiment 2 was the same as that used in Experiment 1.

Results and Discussion

As with Experiment 1, ANOVAs treating participants as the random factor are referred to with F_1, an analyses treating items as the random factor are referred to with F_2. Omnibus two-way ANOVAs with comment type (literal, weak verbal irony, and strong verbal irony) and irony contrast difference (low and high) as factors were first run for each dependent variable. Each of these analyses resulted in a significant interaction, indicating that the pattern of difference in the degree to which the comment types performed pragmatic functions changed depending on whether the two levels of irony were relatively similar or relatively different from one another in the amount of contrast they provided, $F_1(2, 28) = 11.54$, $p < .001$;

$F_2(2, 44) = 7.29$, $p < .01$, for contrast; $F_1(2, 28) = 4.03$, $p < .05$; $F_2(2, 44) = 4.03$, $p < .05$; for condemnation; $F_1(2, 28) = 8.07$, $p < .01$; $F_2(2, 44) = 9.72$, $p < .001$, for humor; and $F_1(2, 28) = 13.05$, $p < .001$; $F_2(2, 44) = 5.30$, $p < .01$, for protection.

Thus, the scenarios for which the difference between the ironic items was rated as low were separated from the scenarios for which the difference between the ironic items was rated as high, and subsequent analyses were conduced on the four dependent variables separately for the two groups of items. The ratings given for the low-difference ironic items are presented in Table 2, and the ratings given for the high-difference ironic items are presented in Table 3.

The mean contrast ratings for the three comment types when the difference between the ironic items was rated as low are presented in the left-hand column of

TABLE 2
Success of Literal and Two Types of Verbal Irony Comments in the Performance of Four Pragmatic Functions, Low Difference in Ironic Types (Experiment 2)

Comment Type		*Contrast*	*Condemnation*	*Humor*	*Protection*
Literal	*M*	1.73	3.85	2.09	2.80
	SD	1.03	1.44	0.93	1.31
Weak	*M*	5.61	5.36	2.93	5.61
Verbal irony	*SD*	1.18	1.45	1.36	1.52
Strong	*M*	5.26	5.04	2.55	4.70
Verbal irony	*SD*	0.97	1.65	1.36	1.45

Note. The contrast scale ranged from 1 (*not at all contrasting of differences*) to 8 (*extremely contrasting of differences*), the humor scale ranged from 1 (*not at all humorous*) to 8 (*extremely humorous*), the condemnation scale ranged from 1 (*not at all condemning*) to 8 (*extremely condemning*), and the protection scale ranged from 1 (*not at all protective of the speaker*) to 8 (*extremely protective of the speaker*).

TABLE 3
Success of Literal and Two Types of Verbal Irony Comments in the Performance of Four Pragmatic Functions, High Difference in Ironic Types (Experiment 2)

Comment Type		*Contrast*	*Condemnation*	*Humor*	*Protection*
Literal	*M*	2.09	3.79	2.09	2.42
	SD	1.08	1.54	1.29	1.20
Weak	*M*	6.02	4.97	3.42	5.37
Verbal irony	*SD*	1.23	1.70	1.38	1.37
Strong	*M*	7.21	5.98	4.56	6.45
Verbal irony	*SD*	1.17	1.49	2.37	1.34

Note. The contrast scale ranged from 1 (*not at all contrasting of differences*) to 8 (*extremely contrasting of differences*), the humor scale ranged from 1 (*not at all humorous*) to 8 (*extremely humorous*), the condemnation scale ranged from 1 (*not at all condemning*) to 8 (*extremely condemning*), and the protection scale ranged from 1 (*not al all protective of the speaker*) to 8 (*extremely protective of the speaker*).

Table 2. One-way ANOVAs revealed a significant difference in the degree to which participants thought the comments pointed out or contrasted differences, $F_1(2, 28) = 63.44$, $p < .001$; $F_2(2, 22) = 63.53$, $p < .001$. The results of pairwise comparisons had the following pattern (LITERAL < WEAK IRONY = STRONG IRONY). Both types of verbal irony were significantly more contrasting of differences than literal comments—literal versus weak irony, $F_1(1, 14) = 75.70$, $p < .001$; $F_2(1, 12) = 115.97$, $p < .001$; literal versus strong irony, $F_1(1, 14) = 95.13$, $p < .001$; $F_2(1, 12) = 74.20$, $p < .001$. The difference between weak irony and strong irony, though, was not significant.

The pattern of differences was identical for the other three dependent variables (LITERAL < WEAK IRONY = STRONG IRONY) except for humor, in which the pairwise difference between literal and strong irony was not large enough to reach significance. The mean ratings given for the condemnation scale when the difference between the ironic items was rated as low are presented in the second column in Table 2. The mean humor ratings are presented in the third column in Table 2. The mean protection ratings can be found in the right-hand column of Table 2.

The mean contrast ratings for the three comment types when the difference between the ironic items was rated as high are presented in the left-hand column of Table 3. One-way ANOVAs revealed a significant difference in the degree to which participants thought the comments pointed out or contrasted differences, $F_1(2, 28) = 98.38$, $p < .001$; $F_2(2, 22) = 75.36$, $p < .001$. The results of pairwise comparisons revealed the following pattern (LITERAL < WEAK IRONY < STRONG IRONY). Both types of verbal irony were significantly more contrasting of differences than were literal comments—literal versus weak irony, $F_1(1, 14) = 138.18$, $p < .001$; $F_2(1, 12) = 36.90$, $p < .001$; literal versus strong irony, $F_1(1, 14) = 129.19$, $p < .001$; $F_2(1, 12) = 433.28$, $p < .001$. The difference between weak irony and strong irony was also significant, $F_1(1, 14) = 11.48$, $p < .01$; $F_2(1, 12) = 18.12$, $p < .01$.

The pattern of differences was identical for the other three dependent variables (LITERAL < WEAK IRONY < STRONG IRONY). The mean ratings given for the condemnation scale when the difference between the ironic items was rated as low are presented in the second column in Table 3. The mean humor ratings are presented in the third column in Table 3. Finally, the protection ratings can be found in the right-hand column of Table 3.

The overall results of Experiment 2 clearly follow the predicted pattern. When instances of verbal irony present different levels of contrast of kind, they perform the pragmatic functions of condemnation, humor, and protection of the speaker to accordingly different degrees (e.g., strong verbal irony performs these functions more than weak verbal irony; see Table 3). When instances of verbal irony do not provide different levels of contrast, they do not differ in the extent to which they perform pragmatic functions (see Table 2). Moreover, despite how much contrast the types of verbal irony present, they nearly always exceed literal comments in ac-

complishing pragmatic functions (see Tables 2 and 3 with the exception of the literal–strong verbal irony comparison on humor in Table 2, in which difference was marginally significant, $p = .14$ and .12 by participants and items, respectively).

Thus, our original claim (Colston & O'Brien, 2000) that tropes that present a strong contrast with their referent situations (e.g., verbal irony) are better at accomplishing pragmatic functions than tropes that present weaker contrasts (e.g., understatement) does hold. The earlier findings supporting that claim were not due to a confound between contrast degree (strong vs. weak) and contrast type (kind vs. magnitude).

GENERAL DISCUSSION

The results may be briefly summarized as follows. In general, tropes that present contrasts of kind (e.g., verbal irony) perform certain pragmatic functions to a greater extent than tropes that present contrasts of magnitude (e.g., hyperbole) against their respective referent situations (Experiment 1). Also, within the domain of contrasts of kind, tropes that present stronger contrasts (e.g., strong verbal irony) perform pragmatic functions to a greater extent than do tropes that present relatively weak contrasts (e.g., weak verbal irony; Experiment 2).

Before considering how these results affect theories of verbal irony and figurative language comprehension, one issue must first be addressed. One potential problem with the results of both experiments is that the level of common ground (Clark & Carlson, 1981) between the speakers and the participants was not strictly controlled and could have affected the results. To provide variety in the structure of the comments, some were constructed so that the participant in the experiment was the addressee (e.g., "Your friend Kerri broke the strings on her guitar right before she was to perform at a coffee shop, and she didn't have any replacements. She turned to you and said"), whereas others positioned the participant as an overhearer (e.g., "Jenny got out of basketball practice eager to get home soon. She walked out in the freezing cold to wait for her mom to pick her up. She waited and waited, but her mother didn't show. After an hour had passed, Jenny looked at her watch and said"). It is possible that the participants inferred greater common ground between themselves and the speaker in the former type of scenario, which could have enhanced the performance of pragmatic functions in those contexts. Although random distribution of the comment types across these two types of scenarios suggests that any effect of common ground would have been evenly spread across the comment types, it remains possible that common ground had an effect on participants' ratings.

To test this possibility, the scenarios were divided into two groups, those that treated the participant as an addressee and those that treated the participant as an overhearer. Comparisons of these two groups were then made using the ratings given on each of the four dependent measures from each experiment. No signifi-

cant differences were found between the addressee and overhearer scenarios on any of the dependent measures in the two experiments, nor were any interactions obtained with the other independent variables. It, thus, appears that, although common ground is a viable factor that likely would affect the degree to which pragmatic functions are performed (see Clark & Gerrig, 1984; Gibbs, 2000), the difference in the way participants were positioned in the scenarios in the present experiments (e.g., as addressee or as overhearer) did not appear to influence inferred common ground.

Next, let us consider how the findings of this study enable better understanding of aspects of figurative or indirect language comprehension. The first issue concerns why people speak figuratively or indirectly. The findings outlined here help us better understand this question. Previous research has shown that people opt for figurative or indirect ways of speaking because these forms of language can often perform various functions for speakers that literal forms of speech cannot accomplish or cannot accomplish easily (Colston, 1997a, 1997b; Colston & Keller, 1998; Colston & O'Brien, 2000; Dews, Kaplan, & Winner, 1995; Dews & Winner, 1995; Kreuz, Long, & Church, 1991; Roberts & Kreuz, 1994). This advantage of figurative and indirect language warrants the greater risk of misunderstanding that speakers undertake when they speak figuratively or indirectly. With regard to this study, we have observed evidence that particular tropes will serve some pragmatic goals better than others. For some pragmatic goals (e.g., to be funny or self-protect), employing a contrast of kind (e.g., using verbal irony) will work better than will employing a contrast of magnitude (e.g., using hyperbole). For other goals—for instance, to make interpretation of surprise easier (Colston & Keller, 1998) or when speakers wish to perform the humor or self-protection pragmatic functions to only a moderate degree—contrasts of magnitude might work better. People can also enhance or diminish the pragmatic effectiveness of these tropes by adjusting the degree of contrast the tropes provide against their referent situations (Colston & Keller, 1998 [hyperbole]; Experiment 1 in this study [verbal irony]). This work is consistent with previous research that has shown an increase in perceived degree of irony as the degree of contrast provided by hyperbole and verbal irony against their referent situations increases (Kreuz & Roberts, 1995).

The next issue concerns the differential advantage of contrasts of kind versus magnitude. As indicated in this study, some of this variance in the success of different tropes is mediated by the type of contrast the different tropes use (e.g., contrast of kind for verbal irony or contrast of magnitude for hyperbole). This raises the question of why contrasts of kind are more effective than contrasts of magnitude in performing pragmatic functions for tropes. One possibility is that contrasts of kind provide a greater degree of indirectness. Put more formally, speakers might be flouting more Gricean maxims (e.g., quality, manner, and relevance) or flouting the maxims to a greater extent, when using contrasts of kind than contrasts of magnitude (e.g., quality and manner alone). The greater extent

of these pretend violations might then authorize interpreters to infer the more extensive pragmatic meaning (e.g., surprise, humor, protection, etc.) indicated by the use of the trope. Although previous work has not supported the idea that the "mere inconsistency" of conversational implicature accounts for all pragmatic aspects of figurative language comprehension (Colston, 1997a), this work did not address the number or extent to which different maxims were violated.

Another possibility is that contrasts of kind are fundamentally different from contrasts of magnitude because of the categorical difference they supply. When speakers mention a domain that provides a contrast of kind with the referent situation (e.g., describing the weather as "toasty warm" when it is, in fact, cool), the mentioned and referent domains belong to different categories (e.g., warm things and cold things). Indeed, this observation can be said to underlie the popular lay account of verbal irony that speakers say the opposite of what they mean. When speakers use contrasts of magnitude, however (e.g., describing the weather as "totally freezing" when it is cool), the two domains belong to the same, or at least a more similar, category (e.g., cold things). This observation might also underlie the lay account of hyperbole that speakers exaggerate or "stretch" what they mean.

This explanation is not incompatible with the previous one based on the number or extent of Gricean maxim violations, mentioning a separate category might violate additional maxims (e.g., relevance) than mentioning the same category as the referent situation. The "categorical difference" explanation could also be independent of the previous explanation, however, and could account for the expression of pragmatic meaning through some mechanism of conceptual mapping, suppression, negation, and so forth of aspects of the separate and referent categories. For instance, mentioning a separate category from the one that applies to the referent (e.g., saying, "This sure is a comfortable sofa" when the referent sofa is in fact a very uncomfortable one) may force (a) a conceptual mapping between the categories (Graesser, Gernsbacher, & Goldman, 1997), (b) suppression of the separate category (Gernsbacher & Robertson, 1999), or (c) negation of the separate category (Giora, 1995; Giora, Fein, & Schwartz, 1998).

A final possibility is that contrasts of kind might cause contrast effects, whereas contrasts of magnitude would cause assimilation effects (Colston, 2000). A long history of research on contrast and assimilation effects has shown that contrast effects are stronger and more robust than assimilation effects, which would be consistent with the findings on the tropes (Abele & Gendolla, 1999; Avant, 1971; Beck, 1966; Bevan & Turner, 1964; Campbell, Hunt, & Lewis, 1957; Erdley & D'Agostino, 1988; Herr, 1986; Herr, Sherman, & Fazio, 1983; Jordan & Haleblian, 1988; Jordan & Uhlarik, 1985; Judd, Kenny, & Krosnick, 1983; Lombardi, Higgins, & Bargh, 1987; Martin, Seta, & Crelia, 1990; McMullen, 1997; Moskowitz & Skurnik, 1999; Murakami & Shimojo, 1996; Newman & Uleman, 1990; Parducci & Marshall, 1962; Pelham & Wachsmuth, 1995; Sherif & Hovland, 1961; Sherif, Taub, & Hovland, 1958; Shigeno, 1991; Sugita, 1995; Watson, 1957; Wilson, 1972). For instance, contrasts of kind might make the referent cat-

egory look especially negative because of a contrast effect. Making a referent look very negative is one ready means to express condemnation. Contrasts of magnitude, though, might make the referent category look relatively positive because of the usually weaker impact of an assimilation effect. In making the referent look relatively less negative, one would thus lessen condemnation.

The next issue concerns our claims regarding underlying cognitive principles in trope comprehension. Our studies have demonstrated that general cognitive principles help explain the relation between different tropes. For example, *contrast effects* help describe the relation among verbal irony, understatement, and literal comments (Colston & O'Brien, 2000; Experiment 2 in this study); *contrast types* help explain the relation among verbal irony, hyperbole, and literal comments (Experiment 1 in this study); and *contrast constraints* help explain the relation between hyperbole on less-than-expected magnitudes versus on more-than-expected ones (Colston & Keller, 1998). These results suggest that there may be families of tropes in which relations can be described by basic cognitive principles.

One goal of future research could be to test whether other figures might be brought into the fold of these contrast principles (e.g., asyndeton, "Been there, done that" or polysyndeton, "I've worked and worked and worked and worked, and I still can't afford a down payment") in terms of predicting how their syntactic structure and the type or degree of contrast it provides against referent situations enable prediction of the type and extent of pragmatic accomplishments. For instance, the syntactic structure of asyndeton is minimalist relative to normal utterances, whereas that of polysyndeton is grossly redundant. These figures, thus, provide varying degrees of syntactic contrast against what might be the expected syntactic structure and could, thus, produce contrast or assimilation effects that would, in turn, predict pragmatic accomplishments.

The question of whether other families of tropes, figures, and indirect speech forms can be identified and grouped according to other underlying cognitive or perceptual principles is also an interesting issue. For instance, constructs such as the Gestalt principles (e.g., good continuation) might help explain the relation between members of another family of indirect forms (viz., hints, innuendo, etc.) that support discourse inferences. The figure ground reversal phenomenon of perception might also underlie aspects of the pragmatic accomplishments of a family of tropes (e.g., metaphor, analogy, and simile). Or consider primacy, recency, and frequency memory effects in accounting for the pragmatic accomplishments of the figure epanalepsis (e.g., "Boys will be boys," "Say what you're gonna say," etc.). These issues might also be born out by future research.

One last issue stemming from these results is that of the time-course debate concerning the comprehension of indirect language. This study and other similar ones may be interpreted as advocating seriality in figurative or indirect language processing. Because we make note of and demonstrate the contribution of something akin to the literal meaning of an utterance (e.g., as in the "utterance meanings" of verbal irony, hyperbole, understatement, etc.) in the ultimate comprehension of the

utterance, we might be seen as espousing the view that such "literal" or "utterance" meanings are primary and require initial processing prior to the final comprehension of the intended meanings of utterances.

This is not the conclusion we wish to advocate. Indeed, in borrowing such general principles as contrast from other domains in psychology to explain the pragmatic accomplishments of figurative or indirect language, we import the notion espoused by one-stage, direct access models. The intended meaning of figurative or indirect language can be directly comprehended without initial processing of literal meaning. When one considers that the robust phenomenon of a contrast effect in other domains of psychology does not require claims about seriality (e.g., as in arguing that people first judge the size of a biasing object prior to judging the size of the target object when both objects are presented simultaneously), this point is clear. Our view is that people, although not necessarily doing so in all circumstances, are certainly capable of simultaneous processing of multiple meanings of utterances as well as some of the entailments of such utterances to arrive at speakers' intended meanings, and that this process need not take longer than processing of "literal" meaning. Such a view is consistent with much of the data on figurative language processing as well as the massively parallel nature of neural structure. Although certainly some deconstructable components of utterance meaning (e.g., literal meaning, semantic meaning, entailments, contrast of these with the context, etc.) can influence comprehension, as we and others have shown, they need not necessarily do so sequentially.

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REFERENCES

Abele, A. E., & Gendolla, G. H. E. (1999). Satisfaction judgments in positive and negative moods: Effects of concurrent assimilation and contrast producing processes. *Personality and Social Psychology Bulletin, 25*(7), 883–895.

Ackerman, B. P. (1983). Form and function in children's understanding of ironic utterances. *Journal of Experimental Child Psychology, 35*, 487–508.

Alden, D. L., & Hoyer, W. D. (1993). An examination of cognitive factors related to humorousness in television advertising. *Journal of Advertising, 22*(2), 29–37.

Andrews, J., Rosenblatt, E., Malkus, U., Gardner, H., & Winner, E. (1986). Children's abilities to distinguish metaphoric and ironic utterances from mistakes and lies. *Communication and Cognition, 19*, 281–297.

Avant, L. L. (1971). Contrast and assimilation effects in judgments of line configurations containing the Muller-Lyer figure. *Perception and Psychophysics, 10*(6), 437–440.

Beck, J. (1966). Contrast and assimilation in lightness judgments. *Perception and Psychophysics, 1*(10), 342–344.

Becker, G. A., & Villanova, P. (1995). Effects of rating procedure and temporal delay on the magnitude of contrast effects in performance ratings. *Journal of Psychology, 129*, 157–166.

Bevan, W., & Turner, E. D. (1964). Assimilation and contrast in the estimation of number. *Journal of Experimental Psychology, 67*(5), 458–462.

Campbell, D. T., Hunt, W. A., & Lewis, N. A. (1957). The effects of assimilation and contrast in judgments of clinical materials. *American Journal of Psychology, 70*, 347–360.

Clark, H. J., & Carlson, T. B. (1981). Context for comprehension. In J. Long and A. Baddeley (Eds.), *Attention and performance* (pp. 313–330). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Clark, H. H., & Gerrig, R. J. (1984). On the pretense theory of irony. *Journal of Experimental Psychology: General, 113*, 121–126.

Colston, H. L. (1997a). I've never seen anything like it: Overstatement, understatement and irony. *Metaphor and Symbol, 12*(1), 43–58.

Colston, H. L. (1997b). Salting a wound or sugaring a pill: The pragmatic functions of ironic criticism. *Discourse Processes, 23*, 25–45.

Colston, H. L. (2000). Contrast and assimilation effects in verbal irony comprehension. Manuscript submitted for publication.

Colston, H. L., & Keller, S. B. (1998). You'll never believe this: Irony and hyperbole in expressing surprise. *Journal of Psycholinguistic Research, 27*, 499–513.

Colston, H. L., & O'Brien, J. E. (2000). Contrast and pragmatics in figurative language: Anything understatement can do, irony can do better. *Journal of Pragmatics*, *32*, 1557–1583.

Dascal, M. (1983). *Pragmatics and the philosophy of mind I: Thought in language.* Amsterdam: Benjamins.

Dascal, M. (1987). Defending literal meaning. *Cognitive Science, 11*, 259–281.

Dascal, M. (1989). On the roles of context and literal meaning in understanding. *Cognitive Science, 13*, 253–257.

de Groot, A., Kaplan, J., Rosenblatt, E., Dews, S., & Winner, E. (1995). Understanding versus discriminating nonliteral utterances: Evidence for a dissociation. *Metaphor and Symbolic Activity, 10*, 255–273.

Dews, S., Kaplan, J., & Winner, E. (1995). Why not say it directly? The social functions of irony. *Discourse Processes, 19*, 347–367.

Dews, S., & Winner, E. (1995). Muting the meaning: A social function of irony. *Metaphor and Symbolic Activity, 10*, 3–19.

Erdley, C. A., & D'Agostino, P. R. (1988). Cognitive and affective components of automatic priming effects. *Journal of Personality and Social Psychology, 54*, 741–747.

Gernsbacher, M. A., & Robertson, R. R. W. (1999). The role of suppression in figurative language comprehension. *Journal of Pragmatics, 31*(12), 1619–1630.

Gibbs, R. W. (2000). Irony in talk among friends. *Metaphor and Symbol, 15*, 5–27.

Gibbs, R. W., & O'Brien, J. E. (1991). Psychological aspects of verbal irony understanding. *Journal of Pragmatics, 16*, 523–530.

Gibbs, R. W., O'Brien, J. E., & Doolittle, S. (1995). Inferring meanings that are not intended: Speakers' intentions in irony comprehension. *Discourse Processes, 20*, 187–203.

Giora, R. (1995). On negation and irony. *Discourse Processes, 19*, 239–264.

Giora, R., Fein, O., & Schwartz, T. (1998). Irony: Graded salience and indirect negation. *Metaphor and Symbol, 13*(2), 83–101.

Glucksberg, S. (1995). Commentary on nonliteral language: Processing and use. *Metaphor and Symbolic Activity, 10*, 47–57.

Graesser, A. C., Gernsbacher, M. A., & Goldman, S. R. (1997). Cognition. In T. A. van Dijk (Ed.), *Discourse as structure and process: Discourse studies: A multidisciplinary introduction* (pp. 292–319). London: Sage.

Grice, H. P. (1975). Logic and conversation. In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics: Volume 3: Speech acts* (pp. 41–58). New York: Academic.

Grice, H. P. (1978). Further notes on logic and conversation. In P. Cole (Ed.), *Syntax and semantics: Volume 9: Pragmatics* (pp. 113–127). New York: Academic.

Herr, P. M. (1986). Consequences of priming: Judgment and behavior. *Journal of Personality and Social Psychology, 51*, 1106–1115.

Herr, P. M., Sherman, S. J., & Fazio, R. H. (1983). On the consequences of priming: Assimilation and contrast effects. *Journal of Experimental Social Psychology, 19*, 323–340.

Jordan, K., & Haleblian, J. (1988). Orientation specificity of length assimilation and contrast. *Perception and Psychophysics, 43*(5), 446–456.

Jordan, K., & Uhlarik, J. (1985). Assimilation and contrast of perceived length depend on temporal factors. *Perception and Psychophysics, 37*(5), 447–454.

Jorgensen, J., Miller, G. A., & Sperber, D. (1984). Test of the mention theory of irony. *Journal of Experimental Psychology: General, 113*, 112–120.

Judd, C. M., Kenny, D. A., & Krosnick, J. A. (1983). Judging the positions of political candidates: Models of assimilation and contrast. *Journal of Personality and Social Psychology, 44*(5), 952–963.

Katz, A. N., & Lee, C. J. (1993). The role of authorial intent in determining irony and metaphor. *Metaphor and Symbolic Activity, 8*, 257–279.

Katz, A. N., & Pexman, P. M. (1997). Interpreting figurative comments: Speaker occupation can change metaphor to verbal irony. *Metaphor and Symbolic Activity, 12*, 19–41.

Kreuz, R. J., Long, D. J., & Church, M. B. (1991). On being ironic: Pragmatic and mnemonic implications. *Metaphor and Symbolic Activity, 6*, 149–162.

Kreuz, R. J., & Roberts, R. M. (1995). Two cues for verbal irony: Hyperbole and the ironic tone of voice. *Metaphor and Symbolic Activity, 10*(1), 21–31.

Kumon-Nakamura, S., Glucksberg, S., & Brown, M. (1995). How about another piece of pie: The allusional pretense theory of discourse irony. *Journal of Experimental Psychology: General, 124*, 3–21.

Lombardi, W. J., Higgins, E. T., & Bargh, J. A. (1987). The role of consciousness in priming effects on categorization: Assimilation versus contrast as a function of awareness of the priming task. *Personality and Social Psychology Bulletin, 13*(3), 411–429.

Manstead, A. S. R., Wagner, H. L., & MacDonald, C. J. (1983). A contrast effect in judgments of own emotional state. *Motivation and Emotion, 7*, 279–290.

Martin, L. L., Seta, S. J., & Crelia, R. A. (1990). Assimilation and contrast as a function of people's willingness and ability to expend effort in forming an impression. *Journal of Personality and Social Psychology, 59*(1), 27–37.

McGhee, P. E. (1971). Cognitive development and children's comprehension of humor. *Child Development, 42*, 123–138.

McKenna, F. P. (1984). Assimilation and contrast in perceptual judgments. *Quarterly Journal of Experimental Psychology: Human Experimental Psychology, 36A*(3), 531–548.

McMullen, M. N. (1997). Affective contrast and assimilation in counterfactual thinking. *Journal of Experimental Social Psychology, 33*(1), 77–100.

Moskowitz, G. B., & Skurnik, I. W. (1999). Contrast effects as determined by the type of prime: Trait versus exemplar primes initiate processing strategies that differ in how accessible constructs are used. *Journal of Personality and Social Psychology, 76*(6), 911–927.

Murakami, I., & Shimojo, S. (1996). Assimilation-type and contrast-type bias of motion induced by the surround in a random-dot display: Evidence for center-surround antagonism. *Vision Research, 36*(22), 3629–3639.

Nerhardt, G. (1975). Rated funniness and dissimilarity of figures: Divergence from expectancy. *Scandinavian Journal of Psychology, 16*(2), 156–166.

Newman, L. S., & Uleman, J. S. (1990). Assimilation and contrast effects in spontaneous trait inference. *Personality and Social Psychology Bulletin, 16*(2), 224–240.

Parducci, A., & Marshall, L. M. (1962). Assimilation vs. contrast in the anchoring of perceptual judgments of weight. *Journal of Experimental Psychology, 63*(5), 426–437.

Pelham, B. W., & Wachsmuth, J. O. (1995). The waxing and waning of the social self: Assimilation and contrast in social comparison. *Journal of Personality and Social Psychology, 69*(5), 825–838.
Petzold, P. (1992). Context effects in judgments of attributes: An information-integration approach. In H. G. Geissler & S. W. Link (Eds.), *Cognition, information processing, and psychophysics: Basic issues* (pp. 175–205). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
Roberts, R. M., & Kreuz, R. J. (1994). Why do people use figurative language? *Psychological Science, 5*, 159–163.
Schiffman, H. R. (1990). *Sensation and perception: An integrated approach* (3rd ed.). New York: Wiley.
Schwarz, N., & Bless, H. (1992). Constructing reality and its alternatives: An inclusion/exclusion model of assimilation and contrast effects in social judgment. In L. L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 217–245). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
Sherif, M., & Hovland, C. I. (1961). *Social judgment: Assimilation and contrast effects in communication and attitude change.* New Haven, CT: Yale University Press.
Sherif, M., Taub, D., & Hovland, C. I. (1958). Assimilation and contrast effects in anchoring stimuli on judgments. *Journal of Experimental Psychology, 55*, 150–155.
Shigeno, S. (1991). Assimilation and contrast in the phonetic perception of vowels. *Journal of the Acoustical Society of America, 90*(1), 103–111.
Staley, R., & Derks, P. (1995). Structural incongruity and humor appreciation. *Humor: International Journal of Humor Research, 8*(2), 97–134.
Sugita, Y. (1995). Contrast and assimilation on different depth planes. *Vision Research, 36*(7), 881–884.
Temme, J. E. V., & Gieszen, C. A. C. (1995). Contrast effects and social desirability in art appreciation. *Empirical Studies of the Arts, 13*, 171–181.
Watson, W. A. (1957). Contrast, assimilation, and the effect of central tendency. *American Journal of Psychology, 70*, 560–568.
Wilson, M. (1972). Assimilation and contrast effects in visual discrimination by rhesus monkeys. *Journal of Experimental Psychology, 93*(2), 279–282.
Winner, E. (1988). *The point of words: Children's understanding of metaphor and irony.* Cambridge, MA: Harvard University Press.
Winner, E., & Gardner, H. (1993). Metaphor and irony: Two levels of understanding. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed., pp. 425–443). Cambridge, England: Cambridge University Press.
Winner, E., Levy, J., Kaplan, J., & Rosenblatt, E. (1989). Children's understanding of nonliteral language. In H. Gardener & D. N. Perkins (Eds.), *Art, mind, and education: Research from project zero* (pp. 51–63). Urbana: University of Illinois Press.
Winner, E., Windmueller, G., Rosenblatt, E., Bosco, L., Best, E., & Gardner, H. (1987). Making sense of literal and nonliteral falsehood. *Metaphor and Symbolic Activity, 2*, 13–32.

APPENDIX

Example Items Used in Experiment 1

1. Fred is really looking forward to a relaxing day at the beach with his girlfriend. He picks her up, but then his car runs out of gas on an empty road on the way to the beach. He then remembers that his brother used the car the day before and probably didn't buy gas. Fred tells this to his girlfriend and says,

   "This is just terrible." LITERAL
   "This is the worst luck ever." HYPERBOLE
   "This is just wonderful." VERBAL IRONY

2. Jenny got out of basketball practice eager to get home soon. She walked out in the freezing cold to wait for her mom to pick her up. She waited and waited, but her mother didn't show. After an hour had passed, Jenny looked at her watch and said,

   "It is so annoying when she does this to me." LITERAL
   "This is the worst thing she's ever done to me." HYPERBOLE
   "It's just great when she does this to me." VERBAL IRONY

3. Sheila was looking forward to her boyfriend Walter's visit. When Walter arrived, he was in a terrible mood and was snapping and yelling at Sheila and her housemates. Sheila turned to him and said,

   "Aren't you in a rotten mood today?" LITERAL
   "Aren't you in the worst mood ever?" HYPERBOLE
   "Aren't you in a pleasant mood today?" VERBAL IRONY

Example Items Used in Experiment 2

1. Fred is looking forward to a relaxing day at the beach with his girlfriend. He picks her up, but then his car runs out of gas on an empty road on the way to the beach. He then remembers that his brother used the car the day before and probably didn't buy gas. Fred tells this to his girlfriend and says,

   "This is terrible." LITERAL
   "This is nice." WEAK VERBAL IRONY
   "This is absolutely fabulous." STRONG VERBAL IRONY

2. Jenny got out of basketball practice eager to get home soon. She walked out in the freezing cold to wait for her mom to pick her up. She waited and waited, but her mother didn't show. After an hour had passed, Jenny looked at her watch and said,

   "It's so annoying when she does this." LITERAL
   "It's so nice when she does this." WEAK VERBAL IRONY
   "It's just outstanding when she does this." STRONG VERBAL IRONY

3. Sheila was looking forward to her boyfriend Walter's visit. When Walter arrived, he was in a terrible mood and was snapping and yelling at Sheila and her housemates. Sheila turned to him and said,

   "Aren't you in a rotten mood?" LITERAL
   "Aren't you in an agreeable mood?" WEAK VERBAL IRONY
   "Aren't you in a magnificent mood." STRONG VERBAL IRONY