

Are Benign Violations Necessary for Humor?

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ABSTRACT. Despite humor's ubiquity and import, empirical work reveals little about the essential conditions for generating it. The benign-violation hypothesis is one of the few models of humor to specify necessary and sufficient conditions for laughter or amusement. Proponents of the hypothesis suggest that people find stimuli funny only when they perceive them as violating a specific norm but in a harmless way. They operationalize benign violations as the perception of stimuli as simultaneously "wrong" and "not wrong". Previous experiments on violations of moral norms fit the hypothesis well, but none have tested the necessity of these conditions or the potential for the model to apply to violations of norms that are not stereotypically moral. In the current experiment, we extend the hypothesis beyond moral norms to stimuli that violate norms that were less stereotypically moral. These results suggest that the benign-violation hypothesis can account for humor outside the domain of the stereotypically moral. We also show that some stimuli can generate laughter or amusement even when raters do not view them as particularly "wrong" or "not wrong". Thus, these conditions specified by the model appear sufficient but not necessary. For example, participants who did not rate a joke as "wrong" could still find it funny; some who did not rate a joke as "not wrong" also still found it funny. This evidence has implications for general theories of humor and applications for the generation of funny material.

Keywords: humor, benign violation hypothesis, jokes, funniness ratings, necessity



**1. INTRODUCTION.** Humor, a key component to social interaction, courtship, and creativity, has implications for mental and physical health, aesthetics, personality, and a host of other constructs relevant to the social sciences and humanities. Nevertheless, the topic remains understudied for many reasons (Martin 2007). Explaining humor has proven a challenge. Attempts began a few millennia ago (Plato 360 BCE), and have made considerable progress. Three popular theories concern incongruity-resolution (Suls 1972), superiority (Gruner 1997), and the release of tension (Freud 1928), but many more exist. Detailed reviews of these models appear elsewhere (Earleywine 2011; Martin 2007). No single theory appears to account for everything deemed funny. For example, incongruity-resolution rests on the idea that a setup for a joke or story generates a prediction. The punch line will reveal that this prediction is incorrect, and subsequent processing will resolve this incongruity in an intriguing way that generates laughter. This model offers a superb explanation for the humor found in many jokes. (An Emo Phillips classic serves as an example. “My grandfather died peacefully in his sleep, but the kids on his bus were screaming.” Listeners might expect an innocuous old man passing away tranquilly in his bed, but the punch line reveals that this prediction is far from correct. Additional information resolves the incongruity in a potentially humorous way.)

Despite its strengths, the incongruity-resolution model can fall short as an explanation for nonsense humor, which often contains unresolved incongruities. For example, Gary Larson’s infamous *Far Side* cartoon “Cow Tools” shows a heifer standing on two legs beside a workbench covered with instruments that look useless and vaguely udder-like. The drawing and caption generate laughter in Larson fans, but the incongruity of it all is never quite resolved. It appears that resolution might not be a necessary condition for humor, though its presence in many jokes is certainly common. Many available models also predict that some rather unfunny events should generate a laugh. As McGraw & Warren (2010) emphasize, unintentionally killing a loved one is certainly incongruous, could generate the feelings of domination inherent in superiority theory (Gruner 1997), and even release unconscious tension of a sort (Freud, 1928). Few, however, would find it funny.

The benign-violation hypothesis has the potential to sidestep some of the shortcomings of other theories of humor (McGraw & Warren 2010). Unlike many previous attempts to account for what is and isn’t funny, the hypothesis suggests that specific conditions are jointly necessary and sufficient to create humor. Few other theories make such explicit, testable claims. Based on

previous theorizing (Veatch 1998), the benign-violation hypothesis emphasizes that humor requires a specific situation-- one that suggests a threat or a norm violation while remaining essentially safe and harmless. McGraw & Warren (2010) operationalize this situation to suggest that humor arises when something is perceived as simultaneously “wrong” (i.e. violating a norm or creating a threat) and “not wrong” (i.e. clearly “okay” or “acceptable”). Note that specifying these necessary and sufficient conditions permit an analysis of humor that broader and looser definitions cannot approach. Data from previous work are consistent with the hypothesis. Multiple experiments presented written scenarios that focused on moral issues. Each did or did not include a violated moral norm. Those that contained a violated norm invariably struck participants as funnier than alternative versions that lacked such a violation. They were more likely to be considered funny if they were perceived as both “wrong” and “not wrong” (McGraw & Warren 2010).

An example stimulus from initial experiments on the hypothesis might prove illustrative. One scenario draws on a story about the renowned guitarist and partier Keith Richards of The Rolling Stones. Keith’s dying father tells Keith to cremate his body and then do whatever he wants with the ashes. In one condition, the scenario continues as Keith decides to snort the ashes-- a clear norm violation. In the alternative version, Keith buries the ashes, an act considered more normative. Significantly fewer people found this second version worthy of a chuckle. Potential explanations for why the first scenario is humorous are disturbingly numerous. The benign-violation hypothesis emphasizes that what makes Keith’s action funny in the first scenario is that readers perceive it as both wrong and not wrong at the same time. Keith’s violation (snorting his father’s ashes) is wrong in the sense that it is so counter to accepted practice. But it is simultaneously not wrong (benign) for a number of reasons that are hard to articulate. The snorting is, in a sense at least, consistent with the surface meaning of his father’s instructions to “do whatever he wants” with the ashes. Keith also has a legendary reputation as a partier who has snorted many a gram of things, so snorting the ashes almost seems consistent with his other actions.

The benign-violation hypothesis generalized to other scenarios within the domain of potentially immoral behavior. Participants answered dichotomous questions about how wrong, not wrong, and funny various scenarios appeared. More people found the scenarios funny when they contained a norm violation. In contrast, few people found comparable situations that lacked

a norm violation funny. In addition, the simultaneous assessment of the situation as both wrong and not wrong helped account for perceptions of humor in each condition. The impact of the violated norm was partially mediated by ratings of how wrong and not wrong each scenario appeared. Although the scenarios they employed only contained violations of moral norms, McGraw & Warren (2010) mention that violations of other conventions could lead to humor as well. The violated norms could be linguistic or social, for example. Nevertheless, even in these violations of other norms, some aspect of the stimulus must be simultaneously wrong and not wrong, both norm-violating and benign.

**1.2. ROOTS AND IMPLICATIONS OF THE BENIGN-VIOLATION HYPOTHESIS.** The benign-violation hypothesis builds on other models of humor. Other theories have emphasized the potential presence of a threat (or the tension associated with it), which might parallel the violation of norms (Freud 1928, Gruner 1997, Provine 2000, Veatch 1998). The import of the benign also appears in other work, often stressing how a punch line provides cues that potential worries are not genuine threats (Apter 1982, Gervais & Wilson 2005; Ramachandran 1998, Rothbart 1973). Simultaneity is an essential part of many other models of humor as well (Apter 1982, Koestler 1964, Attardo & Raskin 1991, Veatch 1998, Wyer & Collins 1992). Nevertheless, rarely have proponents of alternative models operationalized and tested these same three conditions (“wrong,” “not wrong,” and simultaneity) as concomitantly necessary and sufficient for humor.

The hypothesis has novel implications for our understanding of the emotions associated with moral transgressions, revealing that reactions to these transgressions need not be universally negative. The hypothesis also offers a superb strategy for discovering what could make a benign situation become funny—the violation of a norm. Data confirm that the presence of a norm violation is funnier than a comparable situation without such a violation. In addition, the hypothesis makes helpful suggestions for how to make norm violations funnier--- make them more benign. McGraw & Warren (2010) show that violations are markedly funnier in scenarios that specify that they cause no harm. Participants also perceive norm violations as funnier if they are made more benign by increasing psychological distance. For example, a priming technique that creates more psychological distance led participants to perceive a norm violation as significantly funnier. Those who do not value the violated norm appear to view its violation as funnier, too.

**1.3. FURTHER TESTS OF THE BENIGN-VIOLATION HYPOTHESIS.** Extending the hypothesis to violations of other norms, including social and linguistic standards for what is acceptable, would help test its generalizability. In addition, the data currently available do not prove that a norm violation is a necessary condition for humor, only that it is sufficient, and then only when it is perceived as benign. Norm violations might be one way to make a benign situation funnier, but some benign situations might be funny even in the absence of a violation of norms. We should emphasize that the specification of necessary and sufficient conditions in the hypothesis is more probabilistic than deterministic here. It seems unlikely that McGraw & Warren (2010) mean that every stimulus that satisfies these conditions will create a laugh in every person and in every situation. It should require more than a single person failing to laugh at a single joke to disprove the necessity of benign norm violations. Nevertheless, in the long run, on the average, stimuli perceived as benign-violations (simultaneously “wrong” and “not wrong”) will seem funnier than comparable stimuli perceived otherwise. We sought to generalize the benign-violation hypothesis to violations of norms that are not specifically moral. We also sought to test the necessity and sufficiency of norm violations in the creation of humor by using stimuli with the potential to be perceived as not at all “wrong”, nor particularly “not wrong”, but still be perceived as funny.

## **2. METHOD.**

**2.1. PARTICIPANTS.** Four hundred and eighty-seven undergraduates participated for course credit, including 267 (59%) women. Average age was 19.1 (SD=2.5). Most self-identified as Caucasian (58%); others were Asian (15%), African or Caribbean descent (13%), Hispanic/Latino (11%), or Mixed Race (2%). Only 1% chose not to report ethnicity. The majority were sophomores (71%).

**2.2. PROCEDURE.** Participants completed computerized questions on demographics and then received instructions comparable to those in McGraw & Warren (2010), explaining that some scenarios can be interpreted as “wrong” and “not wrong or okay”. Participants then rated scenarios from 0 “not at all” to 3 “very much” for how “wrong,” “not wrong or okay,” and

“funny” they were. McGraw & Warren (2010) used a dichotomous response format. We sought a greater range of responses for “funny” than previous work on the benign-violation hypothesis in hope of identifying more variance. The original experiments manipulated the presence of the norm violation; the current study focused on individual differences in the perception of the same scenarios only when the violation was present. We used the same, multiple-option, 0-3 response format for “wrong” and “not wrong” to simplify instructions and make the questionnaire as accessible as possible. Participants also rated how “aversive” each stimulus appeared, but these data were not relevant to the current hypotheses.

### 2.3. STIMULI.

MORAL TRANSGRESSION SCENARIOS. All written scenarios appeared in a random order. These included four of the scenarios from McGraw & Warren (2010) that clearly fit the benign-violation hypothesis. Participants in their experiments clearly perceived these as simultaneously “wrong” and “not wrong,” and considered them funny. These appear below, with shorthand for subsequent identification in parentheses:

(1) Before he passed away, Keith’s father told his son to cremate his body. Then he told Keith to do whatever he wished with the remains. Keith decided to snort his father’s ashes.

(KEITH)

(2) The servers and bartenders at a wedding are denied tips when the mother of the bride walks up to the bar and casually pockets the money in the tip jar. (WEDDING)

(3) Jenny’s family made some poor investments. Then her father lost his job. She wanted to help out, and so she decided to sell her virginity on eBay® to earn money to help pay off family debt. (EBAY)

(4) Jimmy Dean decides to hire a rabbi as their new spokesperson for the company’s line of pork products. (RABBI)

ALTERNATIVE SCENARIOS. We also included four written scenarios with the potential to test the necessity of the perception of a benign violation for humor. These all appeared to have a high likelihood for being rated as funny without being perceived as particularly “wrong” or “not

wrong”. These included the following, with their shorthand moniker in parentheses:

(1) Two atoms are walking down the street one day, and one of them says to the other:

"Hey, wait up a second. I think I lost an electron"

The first atom replied, "Are you sure?"

The second atom exclaimed, "Yes, I'm positive!" (ATOM)

(2) What do you call kinky sex with chocolate?

S&M&M. (M&M)

(3) Getting on a plane, I told the ticket lady, "Send one of my bags to New York, send one to Los Angeles, and send one to Miami."

She said, "We can't do that!"

I said, "Why not? You did it last week!" (PLANE)

(4) "It was hell," said former child. (HELL)

**3. RESULTS.** Average ratings for “funny,” “wrong,” and “not wrong” and the correlations between the “wrong” and “not wrong” ratings appear in Table 1. Participants used the full range from 0 to 3 on all scales, suggesting that range restriction should not be an issue in any null results. Although mean ratings rarely exceeded “2” on the 0-3 scale, the ranges in average responses reveal considerable variation. “Funny” ranged from 0.39 to 1.49. “Wrong” ranged from 0.33 to 2.41, and “Not wrong” ranged from 0.42 to 1.78. These results suggest sufficient variation in perceptions of relevant variables to test the hypotheses. Note that the correlations between the “wrong” and “not wrong” ratings were all negative as well as statistically significant for all but the HELL scenario. Nevertheless, they are far from perfect inverses of one another, suggesting that some participants viewed scenarios as both “wrong” and “not wrong,” as the benign-violation hypothesis suggests. Thus, “wrong” is not simply the opposite of “not wrong”, or vice versa.

**3.2. CONFIRMING THE BENIGN-VIOLATION HYPOTHESIS.** First we wanted to confirm the benign-violation hypothesis using the moral transgression scenarios from McGraw & Warren (2010) to replicate previous results, and to ensure that the current sample was comparable to previous samples in their perceptions of humor. The McGraw & Warren (2010) experiment explicitly manipulated the presence of a norm violation in their investigation of the benign-violation

hypothesis. As an alternative, all of the current scenarios contained the norm violation. We relied on individual differences in the perception of this norm violation to test the hypothesis. Any response above zero was considered wrong for the “wrong” ratings; any response above zero was considered not wrong for the “not wrong” ratings as well. Alternative strategies for splitting these variables created sample sizes that were too small for some stimuli in some groups, crippling the power of the statistical tests. For example, few people viewed the ATOM scenario as “wrong.” In addition, few reported that the WEDDING scenario was “not wrong.”

Despite a different approach to ratings and no variation in the presence of a violated norm, the current data confirmed the benign-violation hypothesis for all four scenarios taken from the McGraw & Warren (2010) moral transgression stimuli. To test the hypothesis, we compared funny ratings for those who found the scenarios simultaneously “wrong” and “not wrong” (the simultaneous group; S) to the ratings for those who perceived the scenario otherwise (the non-simultaneous group; NON). As the benign-violation hypothesis would suggest, those in the S group considered the scenarios significantly funnier than those in the NON group. When Levene’s tests were significant, revealing different variances across groups, we used corrected degrees of freedom and corrected t-values for computing effect sizes. Cohen’s  $d$  ranged from .45 to 1.08, suggesting medium to large effects. Clearly, simultaneously perceiving a stimulus as “wrong” and “not wrong” leads to funnier ratings than other conditions (See Table 2.)

Two of the four new stimuli offered comparable support for the benign-violation hypothesis. The M&M and HELL scenarios were rated significantly funnier by those participants in the S group (who viewed them as both “wrong” and “not wrong”) than those in the NON group. Effects were not significant for the ATOM and PLANE scenarios. These null results might reflect limited power or other issues related to sample size. The number of participants who fell into the S Group for ATOM was markedly smaller than for any other scenario ( $N=18$ ), providing little statistical power and a potentially poor representation of the population funniness rating for this particular scenario among those who perceived it as wrong and not wrong. The PLANE scenario also had fewer individuals fall into the S group than any of the McGraw & Warren (2010) stimuli (97), but only 11 fewer than the WEDDING scenario. This single null result, however, hardly serves as a nail in the coffin of the benign-violation hypothesis. Perhaps not coincidentally, these two stimuli had the lowest average “wrong” ratings, potentially making them weaker tests of the hypothesis. It is hard to know if simultaneously viewing these scenarios

as “wrong” and “not wrong” makes them funny when so few people viewed them as “wrong.” This finding does beg the question, however, of whether or not perceptions of “wrong” are essential for humor.

**3.3. TESTING THE NECESSITY OF “WRONG.”** The data above generally support the idea that people who simultaneously perceive a stimulus as “wrong” and “not wrong” rate it as funnier than peers who do not see the stimulus the same way. The simultaneous perception of a scenario as “wrong” and “not wrong” appears sufficient for humor. The benign-violation hypothesis suggests that these components are not merely sufficient, but also necessary for humor. We sought to discover if participants could still perceive a scenario as funny without viewing it as particularly “wrong” or “not wrong.”

We turn first to the necessity of a violation by focusing on participants who did not view a scenario as “wrong”. In a sense, these stimuli are not perceived as violations. Participants who had given a zero rating on “wrong,” did give average funniness ratings that were significantly higher than zero (effect sizes ( $d$ ) ranged from 0.98 to 1.72; all  $p$ -values  $< .05$ ). Nevertheless, it is faint praise to say that a scenario is funnier than nothing. With this large a sample, refuting the necessity of a violation with evidence that funniness ratings exceeded zero seemed like a straw man argument. The current sample size would require a  $d$  of only .12 or more to be statistically significant from zero—an effect size that many might find unimpressive even when testing assertions about necessity. We used an alternative approach by comparing the new stimuli with those used in previous work. First, we selected participants who had given a rating of zero for how “wrong” each of the new scenarios (ATOM, M&M, PLAN, and HELL) appeared. We then compared mean funniness ratings of each of the four new scenarios to the average funniness rating of the other four scenarios (RABBI, EBAY, KEITH, and WEDDING) from McGraw & Warren (2010) for the same individuals. This gave us an opportunity to compare a scenario not perceived as “wrong” to four that clearly fit the benign-violation hypothesis in our own data and in previous work.

For example, we compared the “funny” ratings for the ATOM scenario to the average “funny” rating for the four McGraw & Warren (2010) in those who gave a zero rating on “wrong” for the ATOM scenario. Thus, for a scenario to be considered funny even among those who did not perceive it as wrong, that scenario’s funniness rating must be significantly higher

than the same participants' average funniness ratings of the McGraw & Warren (2010) scenarios. This approach asks if a scenario that is not "wrong" can be funnier than a scenario that was considered "wrong" in previous work and in the current sample. As Table 3 reveals, three of the four scenarios received significantly higher funniness ratings than the average of the four McGraw & Warren (2010) stimuli, despite the fact that the scenario was not perceived as "wrong." These results suggest that scenarios might appear funny even when they are not interpreted as "wrong," questioning the necessity (though not the sufficiency) of this aspect of the model, as we will discuss below.

**3.4. TESTING THE NECESSITY OF "NOT WRONG."** We used a comparable approach to see if perceiving a scenario as "not wrong" was essential for it to be funny. We chose participants who gave a rating of zero on "not wrong" for each of the four new stimuli and compared their funniness ratings to the average funniness rating of the four stimuli used in McGraw & Warren (2010). This approach provided an opportunity to compare a scenario that was not perceived as "not wrong" to four that clearly fit the benign-violation hypothesis in our own data and previous work. Again, three of the four scenarios were perceived as significantly funnier than the McGraw & Warren (2010) stimuli, suggesting that scenarios might appear funny even when they are not interpreted as "not wrong". The necessity (though not the sufficiency) of this aspect of the model might also be worthy of question.

### **3.5. DISCUSSION.**

**EXTENDING BENIGN VIOLATION.** The benign-violation hypothesis asserts that the simultaneous perception of a stimulus as harmless (yet counter to a norm) will make it appear funny. Essentially, being "wrong" (a violation) and "not wrong" (benign) is necessary and sufficient for humor. Initial work on the hypothesis focused on violations of moral norms that were perceived as relatively harmless-- both "wrong" and "not wrong". Participants in McGraw & Warren's (2010) initial tests of the model were more likely to rate benign scenarios as funny (on a dichotomous, yes/no scale) if they contained violations of moral norms. Ratings of the scenarios as simultaneously "wrong" and "not wrong" (on dichotomous response scales) mediated the link between the presence of a norm violation and the perception of its humor. Other theories of

humor do not make these exact predictions, and many fail to specify such testable assertions about necessary and sufficient conditions.

We replicated the initial findings relating benign violation to humor using an alternative approach; we also extended the hypothesis to new stimuli. We presented four of the scenarios used in previous work but always included the norm violation, relying on natural variation in perceptions of “wrong” and “not wrong” on a larger (0-3) scale. Our results confirmed the benign-violation hypothesis, revealing that those who viewed these scenarios as both “wrong” and “not wrong” rated them as funnier (on a 0-3 scale) than peers who did not view the same scenarios comparably. We also showed similar results in new scenarios that did not contain violations of moral norms but did challenge linguistic or social norms. Participants who viewed these new scenarios as simultaneously “wrong” and “not wrong” rated them as funnier than participants who did not view the scenarios this way, extending the benign-violation hypothesis.

**SUFFICIENCY AND NECESSITY.** These results confirm the assertion that the simultaneous perception of a stimulus as both “wrong” and “not wrong” is sufficient for humor. Nevertheless, additional tests of the necessity of these conditions challenge aspects of the benign-violation hypothesis. The new stimuli applied in this study revealed that some scenarios can be perceived as funny even when they are not considered “wrong” or “not wrong”. Selecting all participants who gave a zero rating on how “wrong” a scenario appeared revealed that they still viewed the scenario as funny on average. Their average funniness ratings not only exceeded zero; they also exceeded their average funniness rating for the scenarios we used to replicate the original McGraw & Warren (2010) experiments. Comparable results appeared when selecting participants who gave scenarios a zero for “not wrong”. Thus perceptions of “wrong” or “not wrong” do not appear necessary for humor. Although benign violations are clearly sufficient for humor, they do not seem to be a requirement.

**LIMITATIONS, IMPLICATIONS, AND FUTURE DIRECTIONS.** The current data have important limitations related to generalization. The raters were college students, most of whom were Caucasian. It is unclear how the hypothesis and the current results would generalize to other samples. In addition, the stimuli appeared in a within-subjects design and provided no formal definitions of “wrong” and “not wrong”. Mixing violations of moral norms with violations of

linguistic and social norms might have altered results in unexpected ways. For example, the ATOM scenario, which few people perceived as particularly “wrong,” might have shown more variance if all the other stimuli were violations of linguistic norms and no other type. In a sense, the presence of other scenarios might create a setting—a form of expectation for what is and is not particularly “wrong” or “not wrong”. This setting might contribute to funniness ratings. The presence of an extremely “wrong” scenario likely makes other scenarios seem less “wrong” by contrast, potentially altering their humor. The obvious implications for future work include a version of this same experiment presenting scenarios that violate linguistic norms only.

The absence of formal definitions of “wrong” and “not wrong,” although possibly limiting, does have the potential to provide more external validity. McGraw & Warren (2010) did not specify elaborate definitions of “wrong” and “not wrong” in their research on violations of moral norms. Identifying what is “wrong” and “not” in the violation of linguistic norms might have increased the variance in responses to the new stimuli. Nevertheless, it might have created an odd form of demand and a potentially artificial laboratory situation. Most sources of humor in everyday life do not accompany direct definitions for how they should be interpreted. This absence of formal definitions does suggest implications for set and setting in the interpretation of “wrong” and “not wrong”. The appropriateness of the norm violation inherent in a joke likely varies with setting. For example, jokes that ridicule specific groups often rely on norm violations that are perceived as relatively benign when told within the group but flagrantly inappropriate when told by people who are outside the group. (For example, Jews can tell jokes about Jews among other Jews and get rousing laughter. The same joke told to the same crowd by a priest might lead to no laughs or something markedly worse). The situational specificity of how “wrong” or “not wrong” the norm violation appears has the potential to account for more variance in perceived humor, and seems an ideal target for further work.

These data have additional implications for humor production as well as humor theory. The benign-violation hypothesis extends beyond violations of moral norms, suggesting that applying it to more scenarios (particularly other violations of linguistic and social norms) should prove heuristic. Further work on the benign-violation hypothesis using violations of other norms, especially those that vary in import across different samples, will help reveal how perceptions of “wrong” and “not wrong” function in the generation of humor. Including cartoons, musical jokes, and a range of other stimuli seems one obvious extension of the hypothesis as well. The

hypothesis also provides a nice framework for ways to make both innocuous and offensive situations funnier. Adding a violation of a norm has the potential to make a benign scenario funny. Toning down an offensive situation by increasing distance or otherwise decreasing the import of the violated norm can also increase humor. Scenarios might appear less offensive as a target audience gets to know a depicted character, or when a comic with a specific reputation tells a tale that would seem offensive if told by anyone else. (For example, the WEDDING scenario might appear less “wrong” if Jack Benny told of swiping the tips during the period of his career when he had a cheapskate persona).

The evidence that perceptions of “wrong” or “not wrong” might not be necessary for humor (despite their sufficiency) has implications for humor theory. Some of these implications might rest on the distinction between a norm violation and more general incongruity. Several models of humor suggest that competing scripts, unexpected juxtapositions, or unsuitable pairings play an important role in generating laughter (Attardo 2008, Deckers 1993, Suls 1972, Veatch 1998). These forms of incongruity can lead to humor and often do, particularly when nonsense humor is included. In contrast, they can also create puzzled responses with little laughter, sometimes in unpredictable ways. It is unclear if every norm violation is necessarily an incongruity or vice versa. The evidence that some stimuli can appear funny without being “wrong” or “not wrong” suggests multiple paths to humor with many sufficient conditions but few necessary ones. Nevertheless, these data confirm that the simultaneous perception of “wrong” and “not wrong” is certainly one path to creating humor. The pursuit of necessary conditions appears to require continued research.

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TABLE 1. Mean (SD) ratings of “Funny,” “Wrong,” and “Not Wrong” (N=487).

STIMULUS	FUNNY	WRONG	NOT WRONG	R
RABBI	1.13 (0.96)	1.21 (1.01)	0.96 (0.91)	-.28*
EBAY	0.65 (0.92)	2.17 (1.00)	0.49 (0.75)	-.35*
KEITH	0.45 (0.82)	2.41 (0.94)	0.42 (0.79)	-.36*
WEDDING	0.39 (0.73)	2.14 (1.12)	0.50 (0.86)	-.41*
ATOM	1.49 (0.96)	0.07 (0.34)	1.78 (1.24)	-.13*
M&M	1.35 (0.99)	0.45 (0.71)	1.28 (1.00)	-.11*
PLANE	1.30 (1.13)	0.33 (0.65)	1.47 (1.15)	-.17*
HELL	0.73 (0.80)	0.44 (0.71)	1.26 (0.98)	-.08

\*  $p < .05$

TABLE 2.

STIMULUS	S-Group		NON-Group		Effect Size (d)
	N	Funny M (s.d)	N	Funny M (s.d)	
KEITH	117	0.95 (0.97)	370	0.30 (0.70)	1.08**
WEDDING	108	0.74 (0.89)	378	0.29 (0.65)	0.82**
EBAY	153	0.97 (0.92)	332	0.51 (0.88)	0.49**
RABBI	224	1.35 (0.85)	260	0.93 (1.00)	0.45**
ATOM	18	1.22 (0.73)	469	1.50 (0.96)	-0.70
M&M	136	1.55 (0.90)	346	1.27 (0.90)	0.26*
PLANE	97	1.25 (0.96)	386	1.31 (1.17)	-0.07
HELL	130	0.95 (0.84)	352	0.66 (0.76)	0.47*

S-Group = participants who found scenario both “wrong” and “not wrong”

NON-Group = participants who found scenario either not “wrong”, not “not wrong” or neither

TABLE 3. Funniness Ratings for “Wrong”=0 on Target vs. Average M&amp;W Rating.

Stimulus	N	Stimulus Rating M (SD)	M&W Rating M (SD)	Effect Size
Atom	461	1.51 (0.96)	0.64 (0.57)	0.84 **
M & M	314	1.31 (1.00)	0.67 (0.58)	0.58**
Plane	364	1.36 (1.18)	0.67 (0.55)	0.60**
Hell	318	0.66 (0.75)	0.67 (0.57)	-0.11 NS

M&W Rating = funniness rating for the four scenarios from McGraw and Wong (2010)

Effect sizes were computed based on means and standard deviations and their within-subjects correlations.

\*\*  $p < .001$

TABLE 4. Funniness Ratings for “Not Wrong”=0 on Target vs. Average M&amp;W Rating.

Stimulus	N	Stimulus Rating M (SD)	M&W Rating M (SD)	Effect Size
Atom	123	1.32 (1.07)	0.64 (0.57)	0.83**
M & M	124	0.90 (0.99)	0.58 (0.57)	0.41*
Plane	128	0.82 (1.06)	0.53 (0.48)	0.60*
Hell	134	0.52 (0.71)	0.64 (0.56)	-0.17 NS

\*  $p < .01$

\*\*  $p < .001$