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# Are Aggressive Cartoons Really Funnier? A Replication

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Stefan Stieger<sup>1,2</sup> and Anton K. Formann<sup>2,†</sup>

## Abstract

Research has found that more aggressive cartoons are perceived as funnier. The current study ( $N = 106$ ; 16 cartoons) examined this finding in more detail by additionally including painfulness and cleverness rankings of cartoons, and by examining possible moderating effects of different humor styles, self-esteem (explicit, implicit), and social desirability. Aggressive or painful cartoons were not perceived to be funnier, but were rated as having a cleverer punch line. Effects were only weakly correlated with participants' humor styles, but were independent of self-esteem and social desirability. This suggests that aggressive cartoons are not in general perceived to be funnier than non-aggressive ones, and that there may be other moderators influencing this effect (e.g., the type of cartoons, definition of aggression and funniness, cultural aspects).

## Keywords

aggression, cartoon, humor styles, self-esteem, initial preference task, social desirability

One of the oldest humor theories claims that humor is a form of aggression (e.g., Hobbes, 1950). Support for this theory has been found for cartoons (e.g., Byrne, 1956). People seem to find aggressive cartoons funnier than non-aggressive ones. One of the strongest pieces of evidence for this effect was presented by McCauley, Woods, Coolidge, and Kulick (1983) in a series of six studies. They found that participants rated aggressive cartoons as funnier than non-aggressive ones regardless of participants' demographics (children, students, adults, native vs. foreign born, socioeconomic status) and the study material used (different cartoon sets). McCauley and colleagues (1983) correlated the mean rankings of the aggressiveness of a certain set of cartoons (rated by one group of participants) with the mean rankings of the funniness of the same set of cartoons (rated by a different group of participants) and found a strong positive correlation. Although further replications found some support for the connection between humor and aggressive or disparaging content in cartoons (Zillmann, 1983), other studies failed to do so (Deckers & Carr, 1986), and yet others have found negative correlations (Love & Deckers, 1989). This inconsistency suggests that there may be other factors (e.g., individual differences) influencing the connection between the aggressiveness and funniness of cartoons.

Indeed, some studies have found individual differences in the described effect. Women judged sexist cartoons to be less funny, regardless of how aggressive the cartoons were (Love & Deckers, 1989). Boys and girls who rated violent cartoon films as funnier also had higher scores on neuroticism, psychoticism, sensation seeking, and a higher sensitivity to reward (but not to punishment; Aluja-Fabregat &

Torrubia-Beltri, 1998). When using ratings of painfulness instead of aggression, men were found to rate painful cartoons as funnier (low positive correlation), whereas women were found to rate them as less funny (medium negative correlation; Barrick, Hutchinson, & Deckers, 1990). Although some of these studies used slightly different methods (e.g., Aluja-Fabregat & Torrubia-Beltri, 1998) compared with the original study by McCauley and colleagues (1983), more recent research suggests that the effect of aggressiveness on humor in cartoons is not as general as has been proposed, but may be moderated by individual differences (see also La Gaipa, 1968; Prerost, 1983).

The aim of the present study was to replicate the findings of the parent study of McCauley and colleagues (1983) and to further examine possible moderating effects. The following adjustments were made: (a) a larger sample size ( $n > 100$ ) was obtained than in the initial studies by McCauley and colleagues (1983; median = 20), resulting in higher statistical power; (b) participants had to also rate cartoons for painfulness, which has been found to have a higher variability than aggression ratings, leading to a more reliable correlation with funniness (Deckers & Carr, 1986); (c) funniness may also have something to do with the intelligence of the punch

<sup>1</sup>University of Konstanz, Germany

<sup>2</sup>University of Vienna, Austria

<sup>†</sup>The author Anton K. Formann is deceased.

## Corresponding Author:

Stefan Stieger, Department of Psychology, University of Konstanz, Universitätsstraße 10, 78464 Konstanz, Germany.  
Email: stefan.stieger@uni-konstanz.de



line; participants, therefore, also rated cartoons for their cleverness; (d) a within-subject design was implemented (in contrast to McCauley et al., 1983), where each participant ranked cartoons on all four dimensions (i.e., aggressiveness, funniness, cleverness, painfulness); (e) the order of administration of the four rankings was varied (i.e., four different pre-randomized orders), which allowed us to control for series effects (i.e., participants ranking cartoons for aggression may be reluctant to admit that they also find them funny; for example, Gollob & Levine, 1967).

To examine individual differences, measures of explicit (i.e., conscious, deliberate) and implicit (i.e., automatic, habitual) self-esteem and a measure of humor styles were administered because their correlation with humor has consistently been reported in past studies (e.g., Kuiper & Martin, 1993; Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003; Stieger, Formann, & Burger, 2011). For example, individuals using affiliative humor (e.g., telling jokes to amuse others) or self-enhancing humor (e.g., having a humorous outlook on life) tend to have higher self-esteem compared with individuals using aggressive humor (e.g., sarcasm, teasing) or self-defeating humor (e.g., amusing others by saying denigrating things about oneself). Therefore, a possible hypothesis would be that individuals using positive humor styles, such as affiliative or self-enhancing humor, will find aggressive cartoons less funny, whereas individuals using negative humor styles, such as aggressive or self-defeating humor, will find aggressive cartoons funnier. Furthermore, when individuals rank cartoons both on humor and aggression, these rankings could be in danger of being influenced by impression management or social desirability concerns. Therefore, a measure of social desirability was additionally included.

## Method

### Participants

Participants ( $N = 106$ ; 51 men) were mainly from Austria (83%; Germany 17%) and had a mean age of 29.3 years ( $SD = 11.6$ ; range = 14-69 years).

### Measures

**Cartoon ranking task.** Eighteen cartoons were randomly selected from a single cartoonist (www.nicht-lustig.de). A single cartoonist was explicitly used to avoid influences from different cartoon characteristics, for example, color versus black-and-white and fictitious physiques versus real humans or animals. The cartoons were checked for their appropriateness (e.g., variation in aggressiveness) by the authors and research assistants, which resulted in the exclusion of two cartoons. Finally, 16 cartoons were used for the study. Cartoons were color-printed, laminated, and numbered on the back. Participants had to rank all cartoons from 1 to 16 in descending order (without ties) according to

funniness, aggressiveness, painfulness, and cleverness, respectively. Except for the funniness ranking, all ranking tasks were accompanied with a definition to prevent ambiguity—Aggressiveness: “Are the cartoon figures showing aggressive facial expressions or gestures? Are they acting aggressively (i.e., provocation) or are they forcing someone to do something?” Painfulness: “Is there any physical and emotional harm as a consequence of violence of the comic figures against others or themselves?” Cleverness: “How surprising or clever is the punch line?”.

**Humor Styles Questionnaire (HSQ).** The 32-item HSQ (Martin et al., 2003; German form: Stieger et al., 2011) assesses four styles of humor: affiliative, self-enhancing, aggressive, and self-defeating humor ( $\alpha = .85, .73, .72, .72$ ) using a 7-point Likert-type scale (1 = *totally disagree*; 7 = *totally agree*).

**Rosenberg Self-Esteem Scale (RSES).** The RSES (Rosenberg, 1965; German form: von Collani & Herzberg, 2003) is a 10-item measure of explicit self-esteem using a 4-point Likert-type scale (0 = *totally disagree*; 3 = *totally agree*;  $\alpha = .78$ ).

**Initial preference task (IPT).** With the IPT (Kitayama & Karasawa, 1997), participants rated the letters A to Z on a 7-point Likert-type scale (1 = *I don't like at all*; 7 = *I like*). Individuals rate their initial name letters superior to non-name letters (i.e., name-letter effect). This effect has been proposed as a measure of implicit (i.e., automatic, unconscious, habitual) self-esteem. As recommended, a duplicate administration was used and the name-letter effect was calculated separately for the first and last name initial (Stieger, Voracek, & Formann, 2012). To control for possible series effects, four pre-randomized lists of letters were used ( $r_{tt,first\ name} = .82$ ;  $r_{tt,last\ name} = .77$ ).

**Social Desirability Scale-17 (SDS-17).** The SDS-17 (Stöber, 2001) comprises 17 items with a true/false response format ( $\alpha = .76$ ) and is a widely used scale for measuring social desirability.

### Procedure

Several research assistants recruited participants from the general population through their personal contacts (e.g., friends, relatives) and by word-of-mouth, resulting in a community-based sample. After a brief instruction, participants performed the cartoon ranking tasks (each participant was assigned to one of the four pre-randomized different orders), followed by the first administration of the IPT, then a second cartoon ranking task, the SDS-17, RSES, HSQ, third cartoon ranking task, the second administration of the IPT, and finally the fourth cartoon ranking task followed by basic demographic questions (sex, age, nationality, initial letter of first and last name).

**Table 1.** Spearman Rank-Order Correlations Between Median Rankings of Cartoons.

	1	2	3
1. Funniness			
2. Aggressiveness	.12		
3. Painfulness	-.09	.73***	
4. Cleverness	.55***	.47***	.23*

Note.  $n = 16$  cartoons.

\* $p < .05$ . \*\*\* $p < .001$  (one-tailed).

## Analysis

Following the procedure of McCauley and colleagues (1983), the median ranks for aggressiveness, funniness, painfulness, and cleverness were calculated separately for each cartoon (i.e., analysis on cartoon level). Next, Spearman rank-order correlations were computed for these median ranks for all of the four ranking dimensions (see Table 1).

For the analyses of individual differences, all rankings of each participant were correlated with each other, thus resulting in six Spearman rank-order correlations (i.e., analysis at the participant level). These correlations were transformed to Fisher's  $z$  prior to analysis. Funniness–cleverness and aggressiveness–painfulness correlations were excluded from further analyses because they were not central to the research question. IPT effects were calculated separately for the first and last name initial (Stieger et al., 2012) using the recommended  $I$  algorithm (LeBel & Gawronski, 2009).

## Results

### Cartoon Characteristics: Are Aggressive Cartoons Funnier?

Order of rankings had no effect onto correlations (all  $F$ s < 1.72, all  $p$ s > .17) and was therefore not considered in the following analyses. The cartoons showed large variance regarding their mean ranks on funniness (funniest cartoon = 4.8, least funniest cartoon = 10.5), aggression (most aggressive = 5.3, least aggressive = 13.4), painfulness (most painful = 3.3, least painful = 13.6), and cleverness (most clever = 5.5, least clever = 10.5). So in every category, there was a clear tendency toward the most and least funny, aggressive, painful, and clever cartoon (all Kruskal–Wallis tests:  $p < .001$ ). This suggests that the used cartoons were heterogeneous enough on aggressiveness, funniness, painfulness, and cleverness to establish effects.

The assumed rationale that aggressive cartoons are perceived as funnier (McCauley et al., 1983) was not replicated (Table 1). In addition, painfulness rankings, which have been suggested as a more appropriate measure (Deckers & Carr, 1986), were not correlated with funniness.<sup>1</sup> As expected, cartoons that were perceived to be cleverer were also perceived as funnier, and more aggressive cartoons were found to be more painful. Interestingly, cartoons that were rated as being

cleverer were also rated as more aggressive and more painful. This can be interpreted as mild support for the hypothesis of McCauley and colleagues (1983), insofar as more aggressive (which may be similar to painful) cartoons were also perceived as being cleverer (which may be similar to funniness).

### Person Characteristics: Is the Effect Moderated by Individual Differences?

Order of rankings had no impact on the present study's variables (all  $F$ s < 1.91, all  $p$ s > .13) and Spearman rank-order correlations were not sex-specific (all  $|t$ s| < 1.16,  $p > .25$ ). Hence, the following analyses were not separated for different orders of rankings and participant sex.

There was high variability within Spearman rank-order correlations (range =  $-.60$  to  $1.00$ ), suggesting that individual differences may have had an influence on the basic effect on the cartoon level, which was anticipated based on past research results. Out of 36 possible moderating effects tested (see Table 2), only two significant correlations were found (both for the self-enhancing humor style). Participants with higher self-enhancing humor found painful cartoons funnier but aggressive cartoons less funny.

## Discussion

The effect that aggressive cartoons are funnier was not replicated in the present study, even though the design used had higher statistical power than the initial studies (McCauley et al., 1983), insofar as we used 5 times more participants ( $N = 106$  vs.  $n_{\text{mean}} = 20$ ) and 45% more cartoons ( $n = 16$  vs.  $n_{\text{mean}} = 11$ ). Our results corroborate those of Deckers and Carr (1986), who also did not find a significant correlation ( $r = .22$ ,  $ns$ ) when using a different set of cartoons than McCauley and colleagues (1983). Furthermore, Deckers and Carr (1986) found an effect with painfulness ( $r = .30$ ,  $p < .05$ ), although of much lower size than the aggressiveness correlation of McCauley and colleagues (1983;  $r_{\text{mean}} = .65$ , range =  $.49$ – $.90$ ). Again, this effect could not be replicated with the current study. What was found instead were significant correlations between cleverness and painfulness, as well as between cleverness and aggression. Cleverness was defined by the question “How surprising or clever is the punch line?”

**Table 2.** Relationship of Spearman Rank-Order Correlations With Humor Styles, Self-Esteem, Social Desirability, and Age ( $N = 106$ ).

	Aggressiveness–funniness	Painfulness–funniness	Aggressiveness–cleverness	Painfulness–cleverness
HSQ: Affiliate	-.07	.14	-.05	-.02
HSQ: Self-enhancing	-.20*	.22*	-.01	.04
HSQ: Aggressive	.17 <sup>†</sup>	.04	-.08	.08
HSQ: Self-defeating	-.13	.10	-.03	-.03
IPT first name (implicit SE)	-.11	-.08	-.01	-.07
IPT last name (implicit SE)	-.06	.06	.02	-.13
RSES (explicit SE)	-.01	-.01	.10	-.04
SDS-17	-.01	-.12	-.08	-.04
Age	-.07	.02	.09	-.09

Note. HSQ = Humor Styles Questionnaire; IPT = Initial Preference Task; RSES = Rosenberg Self-Esteem Scale; SDS-17 = Social Desirability Scale–17; SE = Self-Esteem.

<sup>†</sup> $p < .10$ . \* $p < .05$  (two-tailed).

which is very similar to funniness. Thus, the aggressiveness–funniness relationship found by McCauley and colleagues (1983) could be reinterpreted as an aggressiveness–cleverness or painfulness–cleverness relationship.

Thus, the basic effect does not seem to be as general as reported (McCauley et al., 1983). Moreover, it must be noted that research on the topic lacks exact definitions and clear demarcations of what is meant by aggressiveness, funniness, painfulness, or cleverness. Aggression (e.g., verbal aggression, physical aggression) and funniness (e.g., duration of laughing, surprise of the punch line; see Martin, 2007) are both broad concepts that can be operationalized in many different ways.

Furthermore, a number of general humor theories propose that individuals prefer jokes or cartoons in which the target person is unaffiliated (i.e., a member of a social out-group rather than an in-group member; see Ferguson & Ford, 2008). The current study entirely used fictional cartoon figures. Thus, it may have been that participants did not perceive the cartoon figures as group members at all (neither in-group nor out-group).

Furthermore, regarding Ruch's factor-analytical investigations, three types of humor can be classified: incongruity-resolution humor (i.e., classical humor), nonsense humor (e.g., Gary Larsen cartoons), and sexual humor (see Martin, 2007). McCauley et al.'s cartoons were rather of the first type, whereas our cartoons were of the second type, which could also be the reason for the nil effect.

Another possibility could be related to the social perception of the cartoon figures. Gutman and Priest (1969) found that jokes from socially acceptable aggressors were perceived as funnier than jokes from socially unacceptable ones. This also applies to the victim of the joke, but the rationale is switched. Jokes about socially unacceptable victims are found to be funnier (i.e., “deserves” the aggression; Gutman & Priest, 1969) than jokes about socially acceptable victims. Although these results only apply to jokes and not cartoons, it could be that participants in the present study did not judge

the cartoon figures in relation to social acceptability at all, because cartoon figures were fictional. This may have lowered the chances of detecting a possible funniness–aggression link.

Finally, although we avoided using cartoons from different cartoonists, the cartoons we used nevertheless differed in several respects that we did not control for. For example, having a look at the cartoons from nichtlustig.de, some are scatological, others are cute or represent dark humor, some involve animals, and some only humans. We judged the cartoons used on these dimension and found that none of them had scatological phrases or can be regarded as “cute.” One cartoon can be regarded as representing dark humor, six depicted only animals, and five showed animals as well as humans. Although post hoc analyses were not possible because of the too low sample size, future research might try to take further moderating cartoon characteristics into account.

From the individual perspective, only the self-enhancing humor style showed significant correlations. Interestingly, participants with a self-enhancing humor style found painful cartoons funnier, but aggressive cartoons less funny. Self-enhancing humor is characterized by generally humorous outlook on life and maintaining a humorous perspective even in the face of stress and hardship (Martin et al., 2003). This humor style is positively associated with openness to experience, self-esteem, and psychological well-being, and represents a positive form of humor (contrary to the negative forms such as aggressive and self-defeating humor styles). This might be the reason why participants with this humor style did not judge aggressive cartoons as funnier. In the same vein, these participants also judged painful cartoons as funnier. Aggressiveness was defined as violent or aggressive acts against others whereas painfulness was defined as harm to others or oneself. So aggressiveness was clearly defined as other-related, whereas painfulness was unspecific about the target. Although this rationale sounds reasonable, it should be treated with caution because correlations were weak and

only these 2 of our 36 correlations reached statistical significance. Thus, the uncovered results may also reflect a statistical Type I error.

Although the uncovered results are mainly nil findings, this study adds to the current literature in two respects. First, aggressive cartoons may be not as funny as has been proposed and, second, although the high variability within correlations proposes individual differences, this variability may be rather due to other potential variables (e.g., type of cartoons, definitions of aggression).

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### Note

1. It is reasonable to assume that the relationship between aggressiveness and funniness might be not linear, but rather inversely *U* shaped. Overly aggressive cartoons might be experienced as too extreme, which in return reduces their funniness again. Indeed, a curve estimation analysis found that a quadratic model explains more variance than a linear model ( $R^2_{\text{linear}} < .01$ ;  $R^2_{\text{quadratic}} = .14$ ), but both models were still not significant ( $F < 1.07$ ,  $p > .37$ ).

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### Author Biographies

**Stefan Stieger** is a research resident in the Department of Psychology, University of Konstanz. His research interests include methods of Web-based research and the measurement of implicit social cognitions.

**Anton K. Formann** was a Professor of Psychology in the School of Psychology, University of Vienna. He is renowned for his contributions to item response theory (Rasch models), latent class analysis, and categorical data analysis.