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Social Desirability and the Celebrity Attitude Scale

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The possibility of social desirability bias has often been neglected in the construction and evaluation of attitudinal scales and personality inventories in psychology and related disciplines. The present study aimed to explore the potential influence of such biases on respondents' self-reported celebrity worship. Specifically, we had a student sample ($n = 187$) complete a) measures of two different forms of social desirability bias (externally-oriented "Impression management" vs. internally-oriented "self-deceptive positivity") and b) the *Celebrity Attitude Scale* (CAS). Results showed that neither measure correlated significantly with the CAS. Furthermore, neither gender nor delivery mode (online vs. paper-and-pencil) mediated the non-significant relationships. Our results add to the confidence researchers might have in using this tool to measure attitudes toward one's favorite celebrity. Other results are generally consistent with previous studies using the CAS.

Social desirability is "the tendency to give answers that make the respondent look good" (Paulus, 1991, p. 17), so they might be viewed favorably by others (Jespersen et al., 2017). It is the tendency for test-takers to answer test items so as to obtain more desirable scores than they would have achieved had they responded honestly (Mesmer-Magnus et al., 2006). It can take the form of over-reporting good behavior or the under-reporting of undesirable behavior. Social desirability has been a

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potential problem since the 1930s in psychological assessment (Bernreuter, 1933). A major step in the direction of solving this problem was found in the work of Crowne and Marlowe (1964). They developed a scale consisting of 33 true-false items such as “I have never intensely disliked anyone,” and “I never hesitate to go out of my way to help someone in trouble.” It is a very rare human being who can truthfully say that they never intensely disliked anyone, or never hesitated to help someone in trouble. But if you are motivated to make yourself look like a wonderful person, you might be tempted to answer “true” to these and similar items. The rationale underlying the *Marlowe-Crowne Scale* is this: If the same people who score “high” on a particular measure of personality also tend to score high on the *Marlowe-Crowne Scale*, we might argue that the measure is not valid, because we can’t tell if their scores reflect their personality, their attempts to make themselves look good, or some unknown combination of the two. In other words, the predictive validity of a measure is threatened if social desirability has a strong presence in that measure (Mesmer-Magnus et al., 2006).

Attitudinal questionnaires and personality inventories often contain items for which some answers are socially desirable. Consider this fictitious item: “I have a great deal of self-control.” If respondents answer “true” to this item is it because they really do have a lot of self-control? Or, is it because the item appears on a personality inventory being used by a company to screen candidates for a wonderful job opportunity, and a “true” answer makes candidates look good? In spite of the obvious need to consider the possibility that social desirability may be contaminating attitudinal questionnaires and personality inventories, a review of almost 20 years worth of published research has shown that “social desirability bias has been consistently neglected in scale construction, evaluation, and implementation” (King & Bruner, 2000, p. 79; also see Larson, 2019).

The *Celebrity Attitude Scale (CAS)* was developed to measure the strength of a respondent’s admiration or worship of a favorite celebrity (McCutcheon et al., 2002). It consists of 23 items, and has been shown to have good psychometric properties over the course of several studies (Griffith et al., 2013; Greenwood et al., 2018; McCutcheon et al., 2004; Zsila et al., 2019; see Brooks, 2018 for a recent review). Although the psychometric qualities of the CAS have been well established, to our knowledge the social desirability of the scale has been measured only once, with satisfactory results. Specifically, scores on the CAS correlated $-.11$ with scores on the *Personal Practice Scale (PPQ)*, a measure of social desirability shown to correlate highly with the widely used *Marlowe-Crowne Scale* (McCutcheon et al., 2004). The CAS itself has yielded critical insights indicating its usefulness in psychological

research. For example, scores on the CAS are correlated with some aspects of cognitive functioning (McCutcheon et al., 2012; McCutcheon et al., 2003), body image in female adolescents (Maltby et al., 2005) and some dimensions of personality (Greenwood et al., 2018; McCutcheon et al., 2016).

Why attempt to measure social desirability bias in the CAS again? There are three reasons why. First, the initial sample size was relatively small ($n = 78$). Secondly, the initial attempt took place about 18 years ago. Since then a trend has been observed toward higher scores on the CAS (McCutcheon & Aruguete, submitted). Are persons more attracted to their favorite celebrities now than they were several years ago, or has it become more socially desirable to admit a strong admiration for one's favorite celebrity?

A third reason is more complex. Since the development of the *Marlowe-Crowne Scale* further study using factor analysis has revealed that there are two clusters of social desirability measures. One factor has been labeled "impression management," and it describes persons who are purposefully manipulating their answers to create a positive social image. The *Marlowe-Crowne Scale* (and by extension the *Personal Practice Scale*) loads high on impression management, with items such as "I am always courteous, even to people who are disagreeable." Is there really anyone who can truthfully say that they are always courteous? Persons who answer "true" to that item are probably trying to manage the impression they make on others. The second factor has been called "self-deceptive positivity" because it describes persons who are trying to be honest, but are deceiving themselves into thinking that they are somehow better than they really are. Razo and Pratarelli (2016) characterized persons who score 'high' on this sort of social desirability as persons who lie to themselves by often saying that they will commit to doing something worthwhile, but then failing to follow through. Furthermore, these persons believe that they behave more ethically than they really do (Razo & Pratarelli, 2016). So the third reason for the conceptual replication of the earlier study is that the PPQ is probably not a good measure of the 'self-deceptive positivity' type of social desirability.

Fortunately, Schuesler, Hittle, and Cardascia (1978) have provided such a measure. The *Responding Desirably* (RD-16) scale contains 16 items such as "I find that I can help others in many ways" and "The future looks very bleak" (disagree scores one point). The RD-16 loads high on the "self-deceptive positivity" factor, thus it appears to measure a type of social desirability bias that is mostly not covered by the PPQ (Paulus, 1991). We consider this research to be exploratory, so we made no predictions about the outcome.

METHOD

Participants

An a priori power analysis using the GPower computer program (Erdfelder et al., 1996) indicated that a total sample size of 128 (assuming equal group sample sizes) would be needed to detect a moderate effect size of $d = .5$ (Cohen, 1988) with 80% power using an independent t -test with alpha at .05, two tails.

We recruited 200 participants from universities located in four states: Kansas ($n = 49$), Massachusetts ($n = 46$), California ($n = 39$), and Iowa ($n = 66$). Of these, 13 failed to complete one or more of the study measures and were removed from subsequent analyses. Our final sample consisted of 140 females, 46 males, and 1 who did not respond. The number of participants who responded online was 122 (65.2%) and those who responded via paper-and-pencil was 65 (34.8%). The mean age for the total sample was 21.35, $SD = 4.54$. The majority of them were White ($n = 122$, 65.2%), followed by Latinx ($n = 31$, 16.6%), and African-American ($n = 12$, 6.4%). A minimal amount of course credit was awarded to each participant.

Measures

Celebrity Attitude Scale The response format for the 23-item version of the CAS is a 5-point scale with anchor points being “strongly agree” equal to 5 and “strongly disagree” equal to 1. High scores suggest a person who strongly admires a favorite celebrity, and very high scores, especially on items like “I often feel compelled to learn the personal habits of my favorite celebrity, and “I am obsessed by details of my favorite celebrity’s life,” may indicate the presence of neuroticism (Maltby et al., 2003; Maltby et al., 2011), approval of celebrity stalking (McCutcheon et al., 2016; McCutcheon et al., 2006), and failed attempts to cope with one’s daily life (Maltby et al., 2001; McCutcheon et al., 2016). Across several studies total scale Cronbach’s alpha values ranged from .84 to .96 (Aruguete et al., 2019; Browne et al., 2019; McCutcheon et al., 2004). Cronbach’s alpha for the CAS in the current study was .92.

Personal Practice Scale The *Personal Practice Scale* is a 21-item, true-false measure mostly of the ‘impression management’ type of social desirability (McCutcheon et al., 2004). Sample items include “I am always ready to help people who need help” (T = 1 point), “There have been times when I’ve felt like punching or hitting someone” (F = 1), and “When people talk to me I always listen carefully” (T = 1). Scores can range from 0 to 21, and high scores suggest a person who is motivated to make a good impression on others. The PPQ correlated .89 with the widely used *Marlowe-Crowne Scale* (McCutcheon et al., 2004). Test retest scores on the PPQ (with a four-week interval) and split-half

reliability both yielded correlation coefficients of .81, and no sex difference was found. The PPQ did correlate .51 with a measure of diversity believed to be highly contaminated with socially desirable items (unpublished data). Reliability (KR-20) in the present study was .70.

Responding Desirably-16 The *Responding Desirably* (RD-16) scale contains 16 agree-disagree items such as “I find that I can help others in many ways” (agree = 1 point) and “At times I feel that I am a stranger to myself” (disagree = 1 point). Scores can range from 0 to 16, and high scores indicate more desirable responding of the ‘self-deceptive positivity’ type (Schuessler et al., 1978). Discriminant validity was shown by low correlations with the *Marlowe-Crowne Scale*, a finding consistent with the idea that RD-16 measures a different kind of social desirability than the *Marlowe-Crowne Scale* (Schuessler et al., 1978). An alpha of .64 was obtained in their original study. Reliability (KR-20) in the present study was .60.

Procedure

After we obtained permission from the IRBs of our respective universities, we administered the CAS, PPQ, and RD-16 in several different orders of presentation to reduce the likelihood of a systematic order effect. Participants filled out paper-and-pencil copies of the three scales in groups of 46 or less in classrooms on their home campus. Others filled out the three scales online. When they finished responding to all three scales they handed the survey in, or submitted the completed survey (if completed online), and were thanked for their participation.

RESULTS

Table one shows the means and standard deviations for all participants on each scale, as well as the correlations between them. Neither the PPQ ($r = -.09$) nor the RD-16 ($r = .01$) correlated significantly with the CAS.

Though we made no predictions about these findings, we found that students who filled out the questionnaires online were significantly older (Mean = 22.47 yrs., $SD = 5.23$) and closer to graduation than those who filled it out using paper-and-pencil (Mean = 19.31, $SD = 1.42$), $t(147.22) = 6.19$, $p < .001$, equal variances not assumed. Of course it makes sense that older students would be closer to graduation. However, online students scored significantly higher (Mean = 66.39, $SD = 19.66$) on the CAS than those who filled it out by paper-and-pencil (Mean = 56.57, $SD = 13.89$, $t(170.69) = 3.58$, $p < .001$, equal variances not assumed). Table two shows that for those responding online vs those responding by pencil-and-paper, correlations were also unrelated to CAS scores.

Table three shows that neither of the two social desirability measures was significantly correlated with CAS scores when separated by gender. There were modest correlations between the two social desirability scales shown in all three tables.

Table 1. Total means, standard deviations, and correlations between scales used in the study

	Mean	SD	CAS	PPQ	RD-16
CAS	62.97	18.44	--	-.09	.01
PPQ	10.37	3.48		--	.28***
RD-16	12.35	2.39			--

Note: *** $p < .001$

We found that the top three favorite celebrity categories (not mutually exclusive) were acting (47.6%), music (43.3%), and sports (21.4%).

Table 2 Correlations between scales separately for those responding online vs those responding by pencil-and-paper.

	CAS	PPQ	RD-16
CAS	--	-.06	.07
PPQ	-.10	--	.36***
RD-16	-.16	.13	--

Note: Correlation coefficients on the upper right are for online respondents; coefficients on the lower left are for paper-and-pencil respondents. *** $p < .001$

Table 3 Correlations between scales separately for males and females

	CAS	PPQ	RD-16
CAS	--	-.10	-.08
PPQ	-.10	--	.24
RD-16	.03	.29**	--

Note: Correlation coefficients on the upper right are for males; coefficients on the lower left are for females. ** $p < .01$

DISCUSSION

King and Bruner (2000) pointed out the need for attitudinal scales to be free from contamination by social desirability. In the introduction we cited three reasons why the CAS should be tested again to determine if it was contaminated by social desirability. The initial sample was small ($n = 78$), but the sample in the present study was more than twice as large ($n = 187$). Furthermore, that initial sample was taken about 18 years ago, and we pointed out earlier that there seems to be a trend toward higher CAS scores, as compared to 18 years ago. Finally we pointed out that a measure has been developed to test a second type of social desirability bias, namely self-deceptive positivity. Our main results showed non-significant correlations between the CAS and both measures of social desirability bias. Furthermore, results were essentially the same for males

as for females, and essentially the same whether participants responded online or by pencil-and-paper. These findings suggest that researchers can continue to use the CAS with some degree of confidence in its validity. These results are important because the CAS has been widely used, with signs of increasing popularity of studies involving celebrity worshippers (Williams et al., 2020). Furthermore, the importance of having a reliable and valid measure of celebrity worship is underscored by the growing body of research linking celebrity worship to problematic attitudes and behaviors (see Brooks, 2018, for a review).

The mean of the CAS that we obtained is slightly higher than means obtained in the earliest studies in which the CAS was used (McCutcheon et al., 2004), but consistent with means obtained in more recent years (Aruguete et al., 2019; Collisson et al., 2020; McCutcheon & Aruguete, submitted). The fact that online participants scored significantly higher on the CAS than those who participated via paper-and-pencil is consistent with three recent studies in which CAS scores were quite high when data were collected online (Aruguete et al., 2019; Collisson et al., 2020; Martinez-Berman et al., 2020). The finding that the three most popular categories of choice for one's favorite celebrity were acting, music and sports is consistent with previous studies (McCutcheon et al., 2004; 2016; Zsila et al., 2018). Furthermore, we were not surprised to find that the two measures of social desirability correlated moderately with each other. Although they attempt to measure different types of social desirability bias, the fact that they correlated positively with each other, combined with the aforementioned similarities between our research and that of previous studies using the CAS strongly suggests that our participants did not take our study frivolously.

One limitation of the present study is the fact that our sample consisted of college students, leaving open the possibility that the results might not generalize well to older, non-student populations or in middle adolescence when there is a greater exploration of identity. Age was confounded with delivery method, although correlation coefficients were so close to .00 that age seems unlikely to be a significant mediator between social desirability and CAS scores. Reliability coefficients for the two social desirability measures were marginal in the present study. Finally, African-Americans were somewhat underrepresented in our sample. Future research should address these limitations.

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