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The Journal of Consumer Research, Vol. 23, No. 2 (Sep., 1996), 106-119.

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The Journal of Consumer Research
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Are Studies of Dark Side Variables Confounded by Socially Desirable Responding? The Case of Materialism

DAVID GLEN MICK*

Socially desirable responding (SDR) is the tendency of individuals to make themselves look good according to current cultural norms when answering researchers' questions. For over 50 years in the social sciences, SDR has been a complex and controversial issue, typically viewed as a contaminating response bias. Meanwhile, most consumer researchers have neglected SDR, including those studying sensitive "dark side" topics where SDR could have an especially detrimental impact on research conclusions. This article reviews conceptual, measurement, and statistical analysis issues related to SDR. Two surveys are then reported that explore the effect of SDR on testing propositions about the nomological network surrounding the materialism value. Implications and recommendations are discussed for investigating SDR in consumer research, including opportunities for future contributions.

In recent years the agenda of consumer research topics has widened considerably, becoming less managerial and more societal in nature (Belk 1995). One of the most important new areas concerns the negative side, or "dark side," of consumer behavior. Its impetus has come from several scholars (e.g., Belk [1983]; Moschis [1987]; most dramatically in Hirschman's [1991] ACR presidential address), and includes such issues as materialism, drug and alcohol addiction, compulsive buying, shoplifting, gambling, cigarette smoking, and prostitution. Overall, this work is still in nascent stages, building the nomological nets surrounding these varied constructs and behaviors.

Necessary and laudable as the new dark side research is, it also raises the specter of an important methodological matter that consumer researchers have historically undervalued, namely, socially desirable responding (SDR). Socially desirable responding has been widely viewed as the tendency for people to present themselves favorably according to current cultural norms when answering researchers' questions (Paulhus 1991). This response bias may particularly occur when respondents are unable or

unwilling to report accurately on sensitive topics (Fisher 1993). Because prior dark side research has emphasized self-reports and the issues are typically of a touchy personal nature, the risk that consumers will conceal their dark side attitudes and behaviors seems substantial. If it is, SDR could have a hidden and deleterious effect on research conclusions.

This article explores the role of SDR in conducting research on dark side consumer behavior, focusing on the materialism value as a case in point. Specific goals are twofold. First, in outlining the history, nature, and controversies of SDR, the article seeks to sensitize consumer researchers to this important, complex area of social science. It is hoped that this will spur additional research within our field. Second, through two surveys the article examines how and to what extent SDR might influence dark side research, specifically the testing of several propositions about the consequences of materialism.

CONCEPTUAL OVERVIEW

Socially Desirable Responding

Long considered one of the most pervasive response biases, SDR has also been one of the most studied and most controversial. It has been a particularly salient concern among psychologists in the assessment of personality, psychopathology, attitudes, and sensitive behavior (Paulhus 1991). Early on, SDR was considered a tendency to overreport desirable behaviors (e.g., helping someone in trouble) and underreport undesirable behaviors (e.g., "playing sick" to avoid something), according to con-

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temporary cultural mores. Hence, SDR has most often been associated with dissimulation, including such stronger notions as lying or deception of others. As research evolved, other SDR labels appeared, such as "moralistic hypocrisy" (Cattell, Pierson, and Finkbeiner 1976) and "impression management" (Paulhus 1984). For consistency, this article will favor Paulhus's (1984) less pejorative term, "impression management," which highlights respondents' attempts to shape their answers purposefully to reflect the most positive social image.

Socially desirable responding can be either a response set or a response style.¹ As the former, SDR is a temporary reaction to a situational demand such as time pressure or expected public disclosure of answers. Assuring respondents of their anonymity has been the most common method to control for SDR sets (see, e.g., Fisher 1993). The structure or ordering of questionnaire items may also induce an SDR set as a context effect (see Tourangeau and Rasinski 1988).

The focus of this article is on SDR as a response style. It exists when individuals consistently engage in SDR across time, situations, and assessment instruments (Wiggins 1973). As with response sets, respondent anonymity has also been examined as a possible means of reducing the SDR style, but the results have been mixed. Sometimes the reductions have been significant (see, e.g., Paulhus 1984), while at other times they have been small or nonexistent (see, e.g., Edwards 1957; Paulhus 1992). Edwards (1957) argued that the inclination to provide socially desirable responses is a relatively stable personality trait that appears independent of whether the researcher is able to identify the individual's specific responses. Observation also suggests that people are inclined to present a favorable social image through their words and actions even when others nearby are strangers (e.g., while waiting in a grocery store line). Hence, the basic concept of dissimulation or impression management may hold even in anonymous research contexts. Nonetheless, SDR under anonymous conditions has remained a debatable issue because it is less clear in whose eyes the respondent is seeking to look good. Controlling for the response style has usually involved the administration of an SDR-style scale and then partialing out SDR from correlations between focal content variables (see, e.g., Moorman and Podsakoff 1992).

Several measures of the SDR style have been developed, the most popular being the Marlowe-Crowne Scale (Crowne and Marlowe 1960). Most of these scales involve statements about behaviors that are desirable but rare or undesirable but common, to which the individual indicates whether (or how much) the items personally apply. Higher total scores (after accounting for reverse-scored items) are interpreted as stronger tendencies for impression management bias.

Over the years the construct validity of SDR measures has been debated. Edwards's (1957) scale, for instance, is confounded with psychopathology because of the content of the items. Some researchers have alleged that virtually all SDR scales confound the person's frankness with sociopsychological adjustment (e.g., social conventionality, virtuousness) and self-knowledge of personal characteristics (see, e.g., Nunnally 1978). Crowne and Marlowe themselves initially developed their scale to assess SDR as a contaminating response style, but later concluded that SDR was a broad personality trait reflecting a person's need for approval. They noted that the goals of the approval-dependent individual include "social recognition and status, protection and dependency, love and affection" (Crowne and Marlowe 1964, p. 202).

More contemporary scales of SDR have explicitly sought to separate impression management from adjustment constructs and self-knowledge issues (see, e.g., Paulhus 1992). Also, recent conceptual papers have refined the meaning of SDR and uses of associated measures. For instance, Zerbe and Paulhus (1987) maintain that the manner in which SDR fits into the researcher's theoretical focus should determine whether the response style represents contamination or need for approval and, thereby, whether SDR ought to be statistically controlled. If need for approval overlaps conceptually with one or more of the content (i.e., focal) variables of interest in a given theoretical context (e.g., conformity), then SDR is not a contaminant and should not be controlled because content variance would be otherwise discarded indiscriminately. In contrast, if need for approval does not overlap conceptually with key content variables, then SDR may be a contaminant and should be controlled.

The Dimensionality of SDR. For several years researchers have questioned whether SDR is unidimensional or multidimensional (e.g., see Messick 1960). Paulhus (1984) recently conducted factor analytic studies of SDR measures (e.g., the Eysenck Lie Scale, the Edwards Social Desirability Scale, and the Marlowe-Crowne Scale) and showed that the scales clustered around two factors. The first factor represents the conventional view of SDR as a form of impression management. The second factor, according to Paulhus (1984), signifies an unconscious inclination to perceive oneself in a favorable light, manifested in positively biased but honestly believed self-descriptions (e.g., never regretting past decisions). Following Sackheim and Gur (1979), Paulhus (1984) labeled this second factor self-deception. It represents, in part, the inaccuracies of self-knowledge that have confounded prior interpretations of SDR in terms of strict impression management bias. It is interesting that empirical evidence suggests that self-deception is characteristic of well-adjusted individuals who are prone to ignore minor criticism, discount failures, and hold high expectations of success in new projects (Paulhus 1986).

In Paulhus's (1984) work the Marlowe-Crowne Scale loaded on both the impression management and self-de-

¹Some researchers use the terms "response set" and "response style" interchangeably. This article follows Paulhus (1991) and keeps the terms separate.

ception factors, although somewhat higher on the first, while at the item level the scale did not separate cleanly into the two factors. This suggests that tests of SDR that use the Marlowe-Crowne Scale may not effectively isolate the degree to which impression management is contaminating the results. Moreover, Zerbe and Paulhus (1987) argue that impression management (as either dissimulation or need for approval) and self-deception should both be considered within the theoretical context of a given research setting before controlling for either or both factors. In their view, self-deception should never be controlled when psychological adjustment constructs are involved (e.g., self-esteem, achievement motivation) because, as noted, self-deception is characteristic of well-adjusted people. Controlling for self-deception while studying such adjustment constructs may partial out important content variance related to the personality factors of interest.

The Extent of SDR Contamination Effects. The degree of SDR contamination in social science research remains unresolved. For example, in organizational research several empirical articles have concluded that SDR had minimal effects on reported findings (e.g., Brief and Aldag 1978; Ganster, Hennessey, and Luthans 1983; Moorman and Podsakoff 1992). In contrast, Thomas and Kilman (1975) and Arnold, Feldman, and Purbhoo (1985) found that SDR biased some of their measures and would have confounded their conclusions if it had not been controlled. Zerbe and Paulhus (1987) suggest several reasons why SDR contamination may often be underestimated. Among them is an insufficient analysis of SDR, focusing only on differences in mean SDR scores or on simple correlations between SDR and other content variables. In addition, there has been a consistent failure to select measures and constructs on an a priori basis that are likely to be contaminated by SDR, with researchers opting instead for "grab bags" of measures or post hoc explanations.

Over the years marketing and consumer researchers have treated SDR with benign neglect. Consider, for example, that less than 10 percent of the 120 scales in Bearden, Netemeyer, and Mobley (1993) were validated with any consideration given to SDR. Following tradition, consumer researchers who have addressed SDR have typically done so to check the discriminant validity of their measures, usually administering their measures along with the Marlowe-Crowne Scale under anonymous conditions (see, e.g., Childers, Houston, and Heckler 1985; Friedman and Churchill 1987; Richins and Dawson 1992). Inspecting the simple correlations with the Marlowe-Crowne Scale, virtually all have concluded that SDR was not a problem in their research (for an exception see Hunt et al. [1994]).

Overall, the need for increased knowledge and investigation of SDR effects in consumer research appears manifest (Bearden et al. 1993). Nowhere may this be more true than in the burgeoning domain of dark side consumer research, where the social norms governing the issues

(e.g., materialism, addictions, shoplifting) appear strong and capable of evoking the impression management bias that characterizes SDR. To examine these concerns in more detail, the article now focuses specifically on SDR and materialism research as the precursor to reporting two empirical studies.

Socially Desirable Responding and the Study of Materialism

Potential Effects of SDR on Materialism Measurement.

Belk (1985) characterizes materialism as the importance a consumer attaches to worldly possessions, while Richins and Dawson (1992) maintain that materialism is a value representing the individual's orientation toward the role of possessions in life, serving to guide the types and quantities of goods purchased. There are several reasons why materialism is a worthy topic for exploring SDR effects. First, research attention to materialism is growing rapidly (see, e.g., Belk 1985; O'Guinn and Faber 1989; Richins 1994; Richins and Dawson 1992; Rudmin and Richins 1992). Second, materialism harbors deep-seated tensions. Religious writings, for example, imply that "humans feel a powerful attraction to acquisitiveness but a profound disenchantment with its results" (Belk 1983, p. 514). A psychological dissonance of this proportion may well make many individuals anxious about confessing their materialistic yearnings and behaviors.

Nonetheless, the normative acceptability of the materialism value is likely to ebb and flow over time in a given society. Richins and Dawson (1992) found that their materialism scale was uncorrelated with a shortened version of the Marlowe-Crowne Scale. However, in the high-spending "me" decade of the 1980s, when they collected much of their data, the norms guiding the acceptability of materialism may have been quite different from the norms of the 1990s.² Indeed, recently in America there is evidence of an attitudinal backlash against materialism, a postmodern sullenness about buying and owning (Borgmann 1992; Popcorn 1992). For instance, syndicated columnists are pointing out that many new consumer technologies are "retarded" because they entice people "to do things that don't need doing at all" (Samuelson 1992, p. 45). In effect, it may be socially desirable to deny the materialistic value in 1990s America, even though it is one of the most materialistic countries in the world. If so, SDR and materialism would be negatively correlated, and controlling for SDR in related research would be appropriate.

Nevertheless, whether SDR is necessarily a contaminant in materialism research must be considered further. Because materialists define success and social progress through the goods they buy and own (Ward and Wackman 1971), the characteristics of materialists may also include a higher need for approval, evinced through the image

²I am indebted to Marsha Richins for suggesting this line of reasoning.

they attempt to project with their possessions (Derber 1979). Indeed, the desire to impress others with goods is a significant aspect of the materialism value (Richins and Dawson 1992). Hence, it is plausible that materialists have a higher need for approval, which would be evidenced by a positive correlation between SDR and materialism. If so, SDR would represent content variance (not contamination) because it is conceptually related to materialism. Therefore, controlling for SDR would be inappropriate in related materialism research.

Crucial substantive questions about materialism concern its influence in daily life (e.g., on gift giving [Belk 1985], possession meanings [Richins 1994], and compulsive buying [O'Guinn and Faber 1989]). Materialism research is generally correlational, and it is difficult, if not impossible, to specify precisely whether materialism is an antecedent or consequence of other measured variables (cf. Belk 1985; Richins and Dawson 1992). However, in order to examine SDR effects in a theory-oriented context, it will prove valuable to specify materialism as either cause or effect. Several researchers (e.g., Leiss 1976) have conceptualized certain personality traits, attitudes, and behaviors as consequences of the materialism value. This reasoning is partly supported by the fact that cultural values and their symbols are woven throughout the socio-economic structures and practices of everyday life, which predate the appearance of any given individual (Mick 1986). Therefore, the empirical portion of this article focuses on variables that represent potential consequences of materialism, and whether SDR confounds the understanding of those relationships.

Potential Effects of SDR on Studying Materialism and Its Consequences. In general, the SDR bias may influence the assessment of any nomological relationship in three alternative ways (Ganster et al. 1983), explicated here in specific reference to materialism and its consequences. These three categories of SDR effects are discussed here in relation to the graphic illustrations in Figure 1. In the spuriousness effect (*panel a*), SDR amplifies or actually creates correlations between materialism and its consequences. It is most likely to occur when, for example, the simple correlations among materialism, a consequence, and SDR are all medium to large and statistically significant. In this case, the correlation between materialism and the consequence may be partly or wholly due to shared variance in SDR, rather than solely shared variance between materialism and its outcome. This pattern of intercorrelations would lead the researcher to calculate a partial correlation between materialism and the consequence, holding SDR constant. If the partial correlation is smaller than the simple correlation, then SDR was inflating the relationship, even creating a spurious relationship if the partial correlation is statistically nonsignificant and/or near zero.

An amplified relationship on account of SDR is quite possibly a result of self-generated validity (Feldman and Lynch 1988). That is, a sensitive scale in a questionnaire

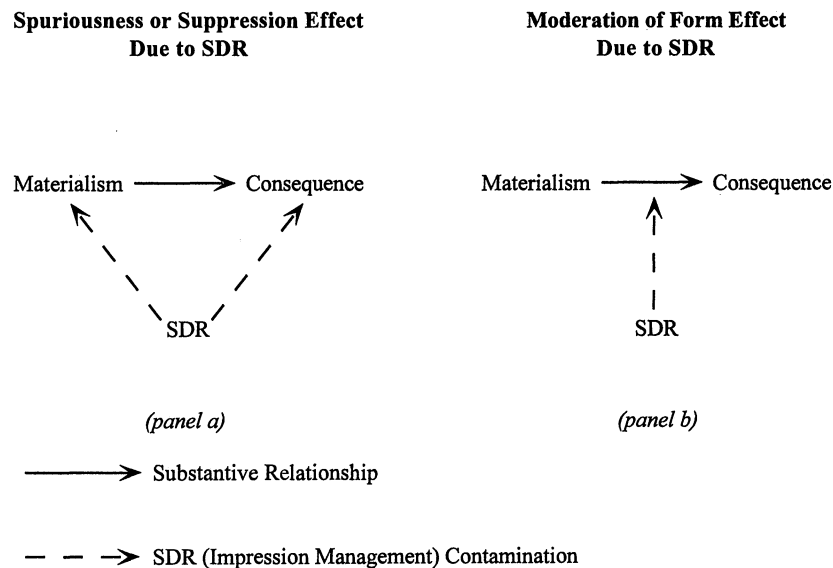
(e.g., a dark side measure or personality test) might make SDR particularly salient, especially to individuals who exhibit SDR tendencies. According to Feldman and Lynch (1988), this heightened cognitive activation of SDR might then be especially diagnostic for answering further sensitive scales, leading to an increased consistency in responses across the scales that ultimately raises the observed correlations. As a result, the perceived relation between materialism and its consequences would be overestimated, perhaps even artifactually constructed by the measurement process and the individual's SDR style.

In the suppression effect (also Fig. 1, *panel a*), SDR masks the true correlation between materialism and its consequences (i.e., the opposite influence of the spuriousness effect). The suppression effect can occur in cases where the simple correlation between materialism and a consequence may or may not be statistically significant, and SDR is correlated with either or both of those variables. The suppression effect is also investigated through partial correlation, with SDR held constant. Partialing may then change the correlation between materialism and a consequence from zero to nonzero (classical suppression) or enlarge a nonzero correlation (net suppression). For example, suppose that SDR was negatively correlated with materialism but not with one of its potential consequences (e.g., a person's income savings rate). This would not be unusual because the SDR style is unlikely to be related to an objective assessment of an individual's savings rate. In this scenario, SDR might then attenuate the relationship between materialism and savings rates, as evinced in a simple correlation that is lower than the partial correlation in which SDR is controlled.

A third possible effect of SDR must also be examined. It involves the analysis of the form of the relationship between materialism and its consequences as a function of SDR (Fig. 1, *panel b*). The question is, Does a change in the materialism value make the same amount of difference in a materialism consequence for lower SDR scorers as it does for higher SDR scorers? This question can be addressed by using hierarchical regression analysis (Arnold 1982). Some researchers have suggested that this moderation-of-form effect due to SDR occurs when higher SDR respondents evoke "implicit theories" (DeNisi and Pritchard 1978) or stereotypes (Arnold et al. 1985) about variable relationships as they answer survey questions. Applying this logic here, there may be a common belief among American consumers, for example, that materialists are more likely to engage in compulsive buying. To the degree that some respondents answer related survey questions in a socially desirable manner, their self-reports on materialism and compulsive buying will be biased away from their true opinions and more toward their stereotyped conceptions. If so, SDR's effect would evince itself through a steeper-sloped regression line for materialism (X) and compulsive buying (Y) among higher-SDR respondents as compared to lower-SDR respondents (cf. Arnold et al.'s [1985] results). Thus, SDR

FIGURE 1

ALTERNATIVE EFFECTS OF SDR ON RELATIONS BETWEEN MATERIALISM AND ITS CONSEQUENCES



would be moderating the form of the relationship between materialism and compulsive buying.³

STUDY 1

Prior empirical research has found that materialism is inversely related to self-esteem (Richins and Dawson 1992) and positively related to compulsive buying (Faber and O'Guinn 1992; O'Guinn and Faber 1989). The first finding suggests that materialists become discontented with their lives and with themselves because they are caught in an unending cycle in which the pleasure of new acquisitions is rapidly replaced by a desire for more. The second finding implies that materialistic individuals—oriented toward the acquisition of goods as a means to happiness and success—are more prone to engage in chronic, repeated buying activity that develops into a main response to negative events or feelings. Study 1 reexamined these two prior findings on materialism in the context of exploring SDR effects.

³A fourth potential effect of SDR deserves mentioning. It involves an analysis of whether SDR moderates the degree of the relationship between two variables, X and Y (see Arnold 1982). Answering this question requires the comparison of the magnitude of correlation coefficients (r_{xy}) for different subgroups (e.g., lower vs. higher scorers on an SDR scale) by way of a Z or χ^2 test. However, the moderation-of-degree effect should be tested and interpreted cautiously. Theoretical explanations for correlational differences between subgroups are often lacking, while empirical differences may often be predicated on extraneous sources of error such as measurement reliabilities, sampling error, and range restriction (Schmidt and Hunter 1978). If a researcher observes apparent moderation of degree by SDR, competing explanations must be ruled out, including (at the least) differential variances and reliabilities on the predictor and criterion variables across the subgroups.

Data Collection, Measures, and Sample

Questionnaires were distributed to a quota-convenience sample of predominantly adult consumers by 54 marketing research students during semester break (cf. Belk 1985). Firm guidelines for respondent eligibility were established to ensure a range of individuals and backgrounds (e.g., no full-time college students under age 30; only one parent could participate; two of each student's five respondents had to be the opposite gender of the student; two had to be unmarried; one had to be living alone; and one had to be over the age of 60). Each questionnaire was accompanied by a blank envelope and a detailed cover letter describing the project as a study of consumer behaviors and opinions. In accordance with past research on dark side consumer behavior or the SDR style, respondents were assured anonymity. They were instructed to seal their completed questionnaire in the envelope before returning it to the student, and they were promised that the professor directing the project would be responsible for opening the envelopes.

Materialism was measured with Richins and Dawson's (1992) 18-item scale, and compulsive buying was assessed by Faber and O'Guinn's (1992) seven-item scale and scoring equation. Self-esteem was measured by Rosenberg's (1965) 10-item scale. Socially desirable responding was measured in study 1 with Crowne and Marlowe's (1960) 33-item scale because, despite its shortcomings, it is still the most widely used SDR scale. Also, its use permitted a direct comparison with Richins and Dawson's (1992) findings, which involved the Marlowe-Crowne Scale and their materialism scale.

A total of 266 respondents completed questionnaires.

TABLE 1
STUDY 1: DESCRIPTIVE STATISTICS AND CORRELATIONS WITH SDR

Scale	α	\bar{X}	SD	Correlation with SDR
Materialism	.88	51.73	11.65	-.40***
Self-esteem	.87	41.36	6.0	.26***
Compulsive buying	.75	-.91	1.63	-.31***
SDR	.80 ^a	16.34	5.68	

NOTE.—Socially desirable responding is measured by the Marlowe-Crowne Scale.

^aKuder-Richardson (KR-20) formula.

*** $p < .001$.

Ages ranged from 18 to 85 ($\bar{X} = 43.2$), 50.8 percent were female, 47.7 percent were currently married, and 88.7 percent were Caucasian. Regarding family incomes, 20.1 percent were at or below \$20,000, 41.1 percent were between \$20,001 and \$50,000, and 38.8 percent were above \$50,000.

Results

Prior to data analysis, respondents' compulsive buying equation scores were reversed so that those with a higher compulsive buying tendency had more positive scores (to parallel the materialism scale). Table 1 reports the reliabilities of the measures in study 1 and related descriptive statistics, along with their intercorrelations with the Marlowe-Crowne Scale. As Table 1 shows, all three of the key variables in study 1 were significantly related to SDR. It is most notable that materialism was negatively correlated with SDR, suggesting that SDR biased materialism scores downward.⁴ A similar finding emerged for the compulsive buying variable as well. By Cohen's (1988) standards for behavioral research, these correlations can be considered medium size (within the range of $|.30|$ to $|.49|$). Self-esteem was positively correlated with SDR, suggesting that these American respondents sought to present the socially favorable view of liking themselves. That is, their self-esteem scores appeared to be biased upward due to impression management. There is, however, another interpretation of this latter finding, which will be discussed shortly.

Simple Correlations between Content Variables. Table 2 shows the simple correlations among the three substantive variables. As expected and replicating prior research, materialism was negatively correlated with self-esteem and positively correlated with compulsive buying. In addition, compulsive buying and self-esteem were also

⁴Richins and Dawson's (1992) materialism scale is composed of three subscales that, in accordance with their approach, were summed in study 1. The correlations of the subscales with the Marlowe-Crowne Scale were $-.24$ (success), $-.30$ (centrality), and $-.41$ (happiness).

TABLE 2
STUDY 1: SIMPLE AND PARTIAL CORRELATIONS CONTROLLING FOR SDR

	1	2	3
1. Materialism	...		
2. Self-esteem	-.19** (-.10)	...	
3. Compulsive buying	.43*** (.35)***	-.22*** (-.15)*	...

NOTE.—Partial correlations are in parentheses (controlling for SDR). Given the directional propositions discussed in the article, reported p -values are based on one-tailed t -tests, including the inverse correlation between compulsive buying and self-esteem, which has been observed in prior research (e.g., Faber and O'Guinn 1992).

* $p < .05$.

** $p < .01$.

*** $p < .001$.

negatively correlated, reproducing a prior finding by Faber and O'Guinn (1992).

Partial Correlations between Content Variables. Next, in view of the possible SDR bias, partial correlations were computed (with SDR held constant), to examine whether SDR might be inflating or suppressing the prior substantive findings. Any noteworthy change from the simple correlations would indicate an SDR effect. Table 2 reports these partial correlations in parentheses below each simple correlation. Basically, the comparative results between simple and partial correlations are mixed. The absolute value of the differences ranges from .07 to .09. These differences are relatively small, though notably larger than Moorman and Podsakoff's (1992) results (mostly .01 or .02 differences). Perhaps most important, partialing out SDR from the materialism and self-esteem relationship resulted in a nonsignificant partial correlation ($p > .05$). Thus, the simple correlation involving these variables was apparently spurious as a result of SDR bias. The relation between materialism and compulsive buying was also inflated as a result of SDR, as evidenced by the smaller partial correlation. However, the partial correlation was still medium size and statistically significant, suggesting that the inflation due to SDR was fairly inconsequential. Similarly, the relationship between compulsive buying and self-esteem was only modestly amplified by SDR.

Hierarchical Regression Analysis. Next, two hierarchical regression models were tested. Each model included (1) SDR, (2) materialism, and (3) the interaction of SDR with materialism as independent variables, for the purpose of predicting variance in either of two dependent variables (self-esteem or compulsive buying). If the regression coefficient for the interaction term turned out to be statistically significant, then the form of the materialism \rightarrow consequence relationship would be moderated by SDR (i.e., it would be conditional on the level of SDR). To examine such an interaction, SDR scores could be

dichotomized by a median split (or tripartite groups could be formed). Separate simple regressions of the consequence on materialism for each SDR group would reveal how the form of the relationship (i.e., the regression slope) changes as a function of the different levels of SDR according to the raw regression weights for materialism (cf. Arnold 1982). However, analyses in study 1 revealed that the interaction terms were not statistically significant in either hierarchical regression model (p 's > .05). Thus, SDR did not moderate the form of the relations between materialism and either self-esteem or compulsive buying.⁵

Discussion of Study 1

The purpose of study 1 was to examine whether SDR might confound some prior insights into the consequences of materialism. In contrast to an earlier finding by Richins and Dawson (1992), their materialism scale was found here to correlate negatively with SDR at a moderate effect size. This result suggests that SDR acted as a response bias to systematically lower materialism scores. Because no positive correlation was observed, it appears on the basis of the prior discussion that SDR does not represent the need-for-approval construct sharing content variance with the materialism value. Also, for the first time it was observed that Faber and O'Guinn's (1992) compulsive buying scale was negatively correlated with SDR, intimating SDR contamination for this measure as well.

Nonetheless, statistically controlling for SDR had a negligible effect on the estimated relationship between materialism and compulsive buying. The theoretical proposition that the materialism value increases the tendency toward compulsive buying was largely uninfluenced by SDR. The relationship between compulsive buying and self-esteem was also virtually unaffected by partialing out SDR. However, the same analysis for the relation between materialism and self-esteem proved otherwise. Study 1 appeared to replicate Richins and Dawson's (1992) substantive finding that materialism decreases self-esteem. After SDR was partialled out, though, the correlation was reduced to nonsignificance and support for this prior finding dissipated. As a result, the apparent nomological relationship between materialism and self-esteem seems instead to have been a measurement artifact of impression management. Finally, in study 1 no evidence of moderation by SDR was discerned.

Study 1 has several weaknesses. First, although the respondents were told that they would remain anonymous because the research assistants would not be viewing the completed questionnaires, it is possible that many suspected otherwise. This would be problematic because the

expectation of the public disclosure of one's answers evokes SDR as a temporary situational demand (Fisher 1993; Paulhus 1991), whereas the focus of study 1 was purportedly on SDR as an enduring response style. If the data collection procedures compromised anonymity, the results would be equivocal and might not apply to typical conditions of dark side research, where anonymity is usually assured.

In addition, psychometric concerns have been voiced about the validity of the Marlowe-Crowne Scale (Ballard, Crino, and Rubenfeld 1988), including the relevance of norm-specific items developed over 30 years ago. Similarly, as noted earlier, the Marlowe-Crowne Scale has been shown to load on both the impression management and self-deception dimensions of SDR (Paulhus 1984). Consequently, the statistical control of SDR via the Marlowe-Crowne Scale could be misleading when adjustment variables such as self-esteem are involved. In fact, in study 1 the positive correlation between the Marlowe-Crowne Scale and self-esteem may have resulted more from overlapping content variance with self-deception than from impression management contamination (cf. Zerbe and Paulhus 1987). Further, because the Marlowe-Crowne Scale may not be a clear marker of impression management (Paulhus 1984), it may also underestimate SDR effects (Zerbe and Paulhus 1987). If so, results on SDR in study 1 may have been conservative, indicating a need for testing SDR effects with a more refined, contemporary measure of SDR. Finally, because study 1 inspected only two consequences of materialism, insights into SDR would be bolstered by examining other effects. Thus, the purposes of the second study were to clarify, replicate, and extend the study 1 insights into SDR in materialism research.

STUDY 2

Study 2 examined three additional consequences of materialism, namely neuroticism, self-actualization, and impulse buying. Neuroticism is one of the five basic personality traits that has gained broad support from psychologists. It has been conceptualized as the tendency to experience aversive emotional states (Watson and Clark 1984) and has been found to be interrelated with a variety of cognitive and behavioral styles, including insufficient control of cravings (McCrae and John 1992). However, neuroticism's relation to dark side consumer issues has not been previously considered. According to Scitovsky (1976), materialism precipitates recurring negative emotions through unsatiated product desire. If so, it can be proposed that the materialism value is positively related to neuroticism.

Like neuroticism, self-actualization represents an influential psychological adjustment construct. Self-actualization has been viewed by some humanistic theorists as the highest level of human existence (Maslow 1962). Self-actualizers are posited to be comparatively free of socio-cultural influences, growing through their own capacities,

⁵For completeness, moderation of degree was also examined. First, SDR scores were split at the median, and then correlations between content variables were compared for the higher- versus the lower-SDR group. However, none of the differences in correlations were statistically significant (p 's > .05).

and not extrinsically motivated. Logically, then, the materialist's lust for goods and concomitant dependence on the "having" mode of existence is contrary to self-actualizing (Kilbourne 1987). Therefore, the materialism value should be inversely related to self-actualization.

More specific to the consumer behavior field, the tendency to engage in impulse buying may also be influenced by materialism. Impulse buying has been defined as "a sudden, often powerful and persistent urge to buy something immediately" (Rook 1987, p. 191). It is accompanied by intense, complex hedonics (positive and negative emotions) and occasionally leads to adverse consequences, including regret over the purchase and financial strain. In promoting the view that consumer impulsivity is a lifestyle trait, Rook (1987) contended that materialism should be positively related to both general acquisitiveness and the impulse buying tendency. Study 2 tested this latter proposition as well.

Returning to the issue of the SDR bias, if the study 1 results based on the Marlowe-Crowne Scale are at least partly valid, then in study 2, materialism should negatively correlate with a newer, stricter measure of SDR as impression management. The same should hold for compulsive buying. The relation of impulsive buying to impression management may also be negative, given that it is "often associated with sensitive emotional states [that] some respondents may be either unable or unwilling to recall or sort out their feelings" (Rook 1987, p. 197). As before, such findings would suggest controlling for impression management in subsequent data analyses involving these variables.

Given that self-deception, the second component of SDR, is characteristic of well-adjusted individuals, Paulhus (1992) found that it was correlated more highly than impression management with psychological adjustment variables such as self-esteem (+) and trait anxiety (-). Therefore, in study 2 a similar pattern of correlations with self-deception was anticipated with respect to self-esteem (+), neuroticism (-), and self-actualization (+). If these expectations are borne out, then in the analysis of materialism's impact on adjustment variables, self-deception should not be controlled because it shares content variance with the adjustment variables (cf. Zerbe and Paulhus 1987).

Data Collection, Measures, and Sample

With a different group of student assistants, a survey method identical to study 1 was implemented, with one exception. A small, random subset of respondents in study 2 was asked to provide their first names and phone numbers for a short follow-up interview. The request was not foreshadowed in the cover letter and appeared only once, placed inconspicuously in the middle of the next-to-last page of the questionnaire where demographic information was gathered. The intent of the postsurvey interviews was to determine the degree to which respondents believed, as promised in the cover letter, that the research assistants

would not see their answers and that all responses were ultimately anonymous.

Measures for materialism, self-esteem, and compulsive buying were the same as in study 1. Self-actualization was measured with Jones and Crandall's (1986) 15-item scale, and neuroticism was measured with the appropriate 12 items from the Eysenck Personality Questionnaire (Eysenck and Eysenck 1975). Impulse buying was assessed with a scale recently developed by Martin, Weun, and Beatty (1993). The scale includes eight Likert items (e.g., "I buy some things without hesitation if I like them when I first see them"). In their pilot validation work, Martin et al. (1993) reported an acceptable scale reliability ($\alpha = .86$) and encouraging results from a confirmatory factor analysis (adjusted goodness of fit = .94, root mean square residual = .08; standardized residuals ranged from -1.99 to 1.46). Paulhus's (1992) Balanced Inventory of Desirable Responding (BIDR, version 6) was used to assess the two-component theory of SDR. Although the BIDR has not been used extensively, Paulhus (1992) reports several validation studies that suggest the BIDR is the best current scale for separately measuring impression management and self-deception.

A total of 172 respondents completed the questionnaire. Ages ranged from 21 to 90 ($\bar{X} = 40$), 55 percent were female, 49 percent were currently married, and 86.5 percent were Caucasian. Regarding family incomes, 17.7 percent were at or below \$20,000, 42.3 percent were between \$20,001 and \$50,000, and 40 percent were above \$50,000.

Results

Thirty-five respondents were asked to provide their first names and phone numbers for the follow-up interview, and 33 complied. Six could not be reached (despite numerous attempts), three had disconnected numbers at callback, and 24 agreed to be interviewed. Two initial questions addressed whether respondents had completed the questionnaire themselves and whether they had returned it to the student assistant in the sealed envelope. All 24 interviewees responded affirmatively to these two questions, allaying concerns that some of the assistants might have completed the questionnaires themselves. Interviewees were then asked, "In putting your survey in the sealed envelope, did you believe that the student would see your answers?" (response options: yes, maybe, or no). All 24 respondents answered no. They were then asked how much they believed that their answers would be seen by the student, using a scale from zero (did not believe) to ten (truly believed). Twenty-three respondents answered "zero" and one answered "one." Thus, although these 24 respondents represent only 13.9 percent of the total sample, their consistent replies during the follow-up interviews suggested that the perception of anonymity in the survey was not distinctly compromised through the use of student assistants.

As in study 1, respondents' compulsive buying scores

TABLE 3
STUDY 2: DESCRIPTIVE STATISTICS AND CORRELATIONS WITH IMPRESSION MANAGEMENT AND SELF-DECEPTION

Scale	α	\bar{X}	SD	Correlation with impression management	Correlation with self-deception
Materialism	.85	50.17	11.48	-.36***	-.17*
Self-esteem	.80	39.36	5.04	.21**	.53***
Compulsive buying	.77	1.0	1.81	-.22**	-.22**
Neuroticism	.86	32.47	8.79	-.21**	-.46***
Self-actualization	.66	53.70	6.64	.14	.37***
Impulsive buying	.82	23.88	6.14	-.20**	-.14
Impression management	.83 ^a	7.51	4.42		.36***
Self-deception	.73 ^a	6.35	3.63	.36***	

^aKuder-Richardson (KR-20) formula.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

were reversed before further data analysis. Table 3 lists the reliabilities of the measures, descriptive statistics, and intercorrelations with impression management and self-deception. Table 3 reveals that materialism was negatively correlated with impression management to a moderate degree. This suggests again that some respondents made themselves look better in responding to the materialism scale, biasing their scores downward.⁶ The negative correlations between impression management and both compulsive buying and impulsive buying were also indicative of measurement contamination. In addition, impression management was negatively correlated with neuroticism and positively correlated with self-esteem. Overall, these results strongly suggest that impression management should be controlled in the analysis of relations among these content variables.

Paulhus's (1992) SDR scale facilitates a more refined analysis of impression management and self-deception, separating measurement bias (impression management) from that which is theoretically important (self-deception). This separation was valuable for all but one of the six content variables. The materialism scale was more strongly related to impression management than to self-deception ($Z = -2.34, p < .05$). A parallel finding was observed for impulsive buying, but not compulsive buying. In contrast, the three psychological adjustment variables (self-esteem, neuroticism, and self-actualization) were more highly related to self-deception than to impression management (p 's $< .05$)—a result similar to Paulhus's (1992) findings in support of his two-component scale of SDR.

In developing and validating his BIDR scale, Paulhus has observed correlations between impression management and self-deception ranging from .60 in his earliest

work to .19 in his later research. The correlation here was moderate (.36), nearly identical to Moorman and Podsakoff's (1992) recent result (.35) in organizational behavior research.

Simple Correlations between Content Variables. Table 4 shows the simple correlations among the six substantive variables. Replicating results from prior research and study 1, the materialism value was again inversely related to self-esteem and positively correlated with compulsive buying. Compulsive buying and self-esteem were negatively correlated again as well. Further, the relative sizes of these correlations were similar to those in study 1.

In addition, the three new propositions concerning other consequences of materialism appeared to be supported. As expected, materialism was positively related to neuroticism, inversely related to self-actualization, and positively related to impulse buying. Other emergent findings included positive correlations between compulsive buying and both impulse buying and neuroticism, as well as a positive correlation between impulse buying and neuroticism. Impulsive buying was unrelated to self-esteem and both compulsive and impulsive buying were unrelated to self-actualization.

Partial Correlations between Content Variables. In view of the apparent SDR bias in the measurement of the content variables, partial correlations were calculated next, with impression management held constant (see Table 4; partial correlations are in parentheses). To test for the spuriousness or suppression effects of impression management, the simple and partial correlations were compared. The results showed that the absolute value of the differences ranged from .02 to .07, which are relatively small differences, as in study 1.

Also replicating the results of study 1, the partial correlation between materialism and self-esteem was nonsignificant, suggesting again that impression management bias was creating a spurious relationship, as reflected in the simple correlation. In addition, the inverse relation-

⁶In study 2 the correlations of the materialism subscales with impression management were -.22 (success), -.30 (centrality), and -.33 (happiness). The correlations with self-deception were -.17, -.14, and -.12, respectively.

TABLE 4
STUDY 2: SIMPLE AND PARTIAL CORRELATIONS CONTROLLING FOR IMPRESSION MANAGEMENT

	1	2	3	4	5	6
1. Materialism	...					
2. Self-esteem	-.14* (-.07)	...				
3. Compulsive buying	.35*** (.30)***	-.22** (-.20)**	...			
4. Neuroticism	.19** (.12)	-.62*** (-.60)***	.24*** (.21)**	...		
5. Self-actualization	-.27*** (-.24)***	.59*** (.58)***	-.07 (-.04)	-.47*** (-.45)***	...	
6. Impulsive buying	.41*** (.37)***	-.06 (-.02)	.28*** (.25)***	.16* (.12)	-.02 (-.04)	...

NOTE.—Partial correlations are in parentheses (controlling for impression management). Given the directional propositions discussed in the article, reported *p*-values are based on one-tailed *t*-tests for the following relationships: materialism vs. self-esteem, materialism vs. compulsive buying, materialism vs. neuroticism, materialism vs. self-actualization, materialism vs. impulsive buying, and compulsive buying vs. self-esteem. All other *p*-values are based on two-tailed tests.

**p* < .05.
***p* < .01.
****p* < .001.

ship between materialism and neuroticism became non-significant after partialing out impression management. Apparently, it too had been spuriously inflated by impression management.

Beyond these results, the remaining spuriousness or suppression effects of SDR bias were meager. As in study 1, even though both materialism and compulsive buying appeared contaminated by impression management, the relationship between materialism and compulsive buying was not discernibly affected by partialing out impression management. The same was true for the focal relationships between materialism and self-actualization and between materialism and impulse buying.

Hierarchical Regression Analysis. Regression models were also constructed to determine whether impression management was moderating any of the proposed variable relationships between materialism and its consequences (e.g., materialism → compulsive buying, materialism → self-actualization). As in study 1, the diagnostic issue was whether the impression management variable interacted with materialism in predicting the value of a proposed consequence. This analysis revealed that none of the interaction terms in the five models tested were statistically significant (*p*'s > .05), which suggests that impression management did not moderate the form of the relations between materialism and its consequences in this study either.⁷

Discussion of Study 2

Study 2 sought to clarify, reproduce, and expand on the SDR-related insights from study 1. A small set of

postsurvey interviews suggested that anonymity beliefs among respondents were not jeopardized by the use of student research assistants. Moreover, SDR was treated in a more refined and updated manner through Paulhus's (1992) BIDR scale, in an effort to separate the impression management and self-deception factors. Impression management influenced the measurement of five of the six content variables, most particularly materialism. Nonetheless, controlling for impression management through partial correlations altered only two theory-oriented insights into the consequences of materialism. In particular, the relationships between materialism and both self-esteem and neuroticism were apparent artifacts of impression management. Also, it was found that impression management did not moderate any of the proposed relationships between materialism and its consequences examined in study 2.

GENERAL DISCUSSION

Despite decades of concern in psychology, the field of consumer behavior has paid little attention to the response bias known as socially desirable responding. This article sought to raise awareness of SDR issues and explore the degree to which SDR confounds inquiries on dark side variables. Two survey studies focused on the influence of SDR in testing propositions about the materialism value.

Findings on SDR Contamination

Study 1 used the popular but 35-year-old Marlowe-Crowne Scale to assess the unidimensional view of SDR, while study 2 used Paulhus's (1992) more contemporary scale to address the two-factor conceptualization of SDR (impression management and self-deception). Across both studies the results showed that five of the six focal content variables were correlated with SDR in a manner

⁷Moderation of degree was also investigated. Impression management scores were split at the median, and then correlations between content variables were compared for the higher vs. the lower impression management group. As in study 1, no statistically significant differences were observed (*p*'s > .05).

that implicated SDR (impression management) contamination. Respondents appeared to underreport their materialism value, compulsive buying, impulse buying, and neuroticism while overreporting their self-esteem. On the basis of simple correlations between impression management and the content variables, materialism experienced the largest SDR measurement bias in both studies.

Despite these first-stage findings on SDR contamination, the impact of SDR on understanding relationships between materialism and its consequences was neither dramatic nor comprehensive. Overall, materialism's relationships with compulsive buying (+), impulsive buying (+), and self-actualization (-) were unaffected by SDR (impression management). These second-stage results are revealing, given that several of Zerbe and Paulhus's (1987) recommendations were followed for increasing the probability of uncovering SDR effects (e.g., selecting variables likely to be influenced by SDR, analyzing data for different kinds of SDR effects, and employing the two-component theory of SDR). The limited degree of these SDR effects parallels findings from Ganster et al.'s (1983) and Moorman and Podsakoff's (1992) work in organizational behavior.

Nonetheless, it would be unfortunate if these results invited continued complacency about SDR among consumer researchers. First, the simple correlations involving SDR clearly suggest that point estimates of dark side variables (materialism, compulsive buying) are affected by SDR. Second, controlling for SDR raised doubts about two apparent nomological relationships, reducing them to nonsignificance (materialism \rightarrow self-esteem in both studies, materialism \rightarrow neuroticism in study 2). One might argue that these spurious effects of SDR are not noteworthy because the simple correlations between the content variables were too small in the first place to be of substantive interest (in the range of $|.14|$ to $|.19|$). However, by Cohen's (1988) standards, behavioral correlations of these magnitudes can be insightful for theoretical purposes. The key issue is whether any of the researcher's posterior probabilities for proposed content variable relations are altered after accounting for SDR's influence (see Brinberg, Lynch, and Sawyer 1992). Although prior research and conceptual logic indicated that materialism should be negatively related to self-esteem and positively related to neuroticism, controlling for SDR suggested that neither of these relationships may actually exist.

In sum, four overarching conclusions follow from this research. First, because point estimates of dark side constructs and behaviors appear downwardly biased by SDR, consumer researchers should take care to adjust these estimates accordingly. Second, although the threat of SDR in testing relations among variables in the dark side domain appears considerably less than originally expected, its potential to confound such results still persists. Third, consumer researchers may be misleading themselves when they inspect only simple correlations between their content variables and SDR in order to diagnose SDR effects. Finally, even when SDR contamination is sug-

gested through simple correlations, its influence on the assessment of relationships in a nomological net may be small or nonexistent. Only the systematic analyses of spuriousness, suppression, and moderation effects can address these issues.

Limitations and Remaining Controversies

Limitations of this research must be acknowledged. First, both studies collected data at a single time and were correlational in nature, as are most other studies of values, personality, dark side variables, or the SDR style. Therefore, conclusions about causal explanations regarding materialism and its consequences and the role of SDR are necessarily tentative. Second, both studies used a drop-off and pickup survey technique (with a sealed envelope) by student research assistants. Although postsurvey interviews in study 2 suggested that respondents did not doubt their anonymity, a future replication via a conventional mail survey is warranted. Future studies of dark side variables with multiple methods would also be valuable, including indirect (e.g., projective) approaches that mitigate the SDR bias (see Fisher 1993).

Socially desirable responding remains a complex and controversial topic for several reasons. As noted earlier, the validity of the SDR concept and its measures has been much debated. The Marlowe-Crowne Scale has come under increasing attack for being outdated and incompatible with the two-component theory of SDR (Ballard et al. 1988; Paulhus 1984, 1991). Paulhus's (1992) BIDR scale is a strong improvement on both these accounts. On the positive side, his impression management subscale in study 2 replicated the results from study 1 based on the Marlowe-Crowne Scale. Also, the separation of impression management and self-deception provided useful insights into measurement and theoretical differences among the dark side and adjustment variables. On the negative side, despite its advantages over the Marlowe-Crowne Scale, the BIDR scale did not detect more extensive SDR effects in study 2. In addition, the moderate correlation between impression management and self-deception indicated that the separation of these variables was not as successful in study 2 as in some of Paulhus's BIDR validation work. Future work could measure the BIDR subscales (and content variables) at different points in time, limiting common method variance and improving the separation of impression management and self-deception.

It must be reemphasized that SDR scores and their associations with other variables must be interpreted cautiously. This research adopted the conventional view that SDR is a proclivity for dissimulation in research contexts. Nonetheless, consider the following Marlowe-Crowne item: "No matter who I am talking to, I am always a good listener." Agreeing that this desirable behavior is an accurate self-description presumably indicates a tendency toward SDR bias. Alternatively, the same response might suggest that the individual is actually a more socially

conventional person (better socially adjusted) or that s/he is a more virtuous person (as might be expected, e.g., of a cleric). If so, then a negative correlation between SDR and any dark side variable may not indicate dissimulation, but rather shared content variance (or a combination thereof). Moreover, it would suggest that statistically controlling for social conventionality or moral quality through an SDR scale in dark side research would be inappropriate. In effect, a traditional dissimulation interpretation of SDR in dark side research would be questionable.

Although some degree of confounding is inevitable in most research (Brinberg et al. 1992), these aforementioned concerns over SDR must be taken seriously. The social conventionality interpretation is perhaps less serious in study 2 of this research, where Paulhus's (1992) BIDR scale was used. His impression management subscale has been positively correlated with the personality traits of conscientiousness and agreeableness, which suggests that social conventionality may indeed underlie high impression management scores in normal populations tested under anonymous conditions. However, as Paulhus (1992, p. 27) points out, the content of most of his impression management items "is not social conventionality, but behaviors that are infrequent among conventional and unconventional persons alike (e.g., 'I don't gossip about other people's business')." Thus, it is less clear that social conventionality is a strong alternative interpretation of the SDR results in study 2. For now, consumer researchers can best limit this problem by also using Paulhus's (1992) scale. Development of a separate social conventionality measure would clarify these matters further.

The allegation that SDR scores confound dissimulation or impression management with a person's inherent goodness is also legitimate because, *prima facie*, SDR items contain positive and negative behaviors that virtuous people are apt to conduct or avoid, respectively. Nonetheless, if this particular confound is strongly operative in SDR scores, then both Richins and Dawson (1992) and this research should have found negative correlations between materialism and SDR. Instead, only this research uncovered the association, and the explanation for this different finding is supported by cultural analysts who believe that materialism is a more sensitive issue in America today than it was in the 1980s when Richins and Dawson collected data. Nevertheless, future consumer research may seek to use reasonable proxies for virtuousness (e.g., a religiosity scale) and then control for this factor to separate its influence from dissimulation.

Interpreting SDR scores gathered under anonymous conditions remains a contentious issue as well. In non-anonymous situations, respondents' specific answers can be linked to them personally by the test administrator and the SDR concept of tailoring answers to present the best possible social image is straightforward. But in anonymous situations, why and to whom would respondents engage in dissimulation or impression management? The "to whom" issue is clearer because, even in anonymous

surveys, it is common for cover letters to identify research sponsors, including the names of persons to contact if respondents have any questions. But if respondents believe they are answering anonymously, the motivation for SDR would seem less necessary. Thus, as Paulhus (1991) notes, more research is needed to explicate the meaning of SDR in anonymous conditions. Manipulating anonymity and using process-tracing measures (e.g., protocols, response latencies) may help in this regard.

Directions and Recommendations for Future Research

Beyond the conceptual and operational conundrums of SDR, future work is needed to determine whether and how SDR influences other dark side research (e.g., consumer crimes, addictions). In addition, there has been a surge of interest in prosocial behaviors that consumers may overreport in questionnaires (e.g., energy conservation, recycling). To date, there has been no effort to consider whether SDR might contaminate such research. Similarly, satisfaction ratings for medical services have been found to be inflated by SDR (Sabourin et al. 1989), and it remains to be determined whether these findings apply to everyday products and more heterogeneous samples.

In addressing SDR, the first thing consumer researchers should do is consider whether SDR is a potential bias or a variable of theoretical interest (e.g., need for approval). Moreover, either impression management or self-deception may also be of theoretical interest in the study of a given nomological network (cf. Zerbe and Paulhus 1987). For example, individual differences in impression management may help to explain when and by whom strategies of symbolic consumer behavior are emphasized (e.g., with clothing). Also, individual differences in self-deception may help to explain variations in decision-making confidence and postpurchase dissonance as well as participation in high-risk consumption behaviors. Under any of these circumstances, controlling for SDR is unnecessary and ill advised.

If SDR is presumed to have no theoretical link to content variables, then a full, systematic effort to detect SDR bias should be undertaken, as recommended by Ganster et al. (1983) and illustrated in this research. Researchers should particularly take precautions when developing and refining potentially SDR-sensitive scales. Rational analytic techniques (e.g., using a forced-choice format with statements equated for SDR) and factor analytic techniques (to purify scales of items loading with an SDR measure) are available for controlling SDR during scale construction (see Paulhus 1991). If these multiple issues are considered, consumer researchers can be more certain that they are appropriately addressing the nature, role, and effects of SDR, and limiting them if necessary.

[Received March 1994. Revised November 1995. Brian Sternthal served as editor and Deborah Roedder John served as associate editor for this article.]

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