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## Reducing memory distortions in egoistic self-enhancers: Effects of indirect social facilitation

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### Abstract

An experiment examined the impact of indirect social monitoring on memory distortions found in ‘egoistic self-enhancers’, that is, individuals prone to self-reporting enhanced traits related to social status and dominance (Paulhus & John, 1998). One-hundred-and-sixty-six students from a large urban university (117 women and 49 men, mean age = 23.0 years) were randomly assigned to two conditions. Those in the ‘Video-Camera’ condition completed a bogus personality feedback task designed to index self-enhancing memory biases (Djikic, Peterson, & Zelazo, 2005) in presence of a video-camera aimed in their direction, while participants in the ‘Control’ condition completed the same task, but without the video-camera. The results show that high egoists in the ‘Video-Camera’ condition experienced significantly less positive memory distortion than high egoists in the ‘Control’ condition, suggesting that indirect social monitoring can interfere with early information processing biases found in egoistic self-enhancers.

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## 1. Introduction

The human tendency to think of the self as being better than others, described by psychologists as the ‘better-than-average effect’, is pervasive (Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; Heine & Lehman, 1999; Guerin, 1994; Tadahiro, 1999). This self-favoring bias is amplified when individuals compare themselves with an abstract ‘average’ individual, as opposed to an individuated target (Alicke et al., 1995). Self-enhancement is also augmented when the behaviors and qualities rated are subjective and abstract, rather than objective and observable. As Van Lange and Sedikides (1998) have shown, individuals are more likely to ascribe to themselves characteristics that are more desirable, more controllable, and less verifiable.

Having a ‘good personality’ is certainly among the most socially-desirable qualities (Van Lange & Sedikides, 1998). Individuals provided with the opportunity to assess their own personality traits therefore appear in a prime position to self-enhance. Analysis of this tendency is complicated by the fact that different individuals appear motivated to self-enhance for different reasons. Paulhus and John (1998) have carefully differentiated two particular kinds of self-enhancement. An ‘egoistic bias’ is a self-deceptive tendency to self-report enhanced traits related to social status and dominance. A ‘moralistic bias’, by contrast, is a self-deceptive tendency to deny socially inappropriate or deviant impulses in order to appear more ‘saint-like’. Instead of self-enhancing on traits reflecting agency and personal power, moralistic self-enhancers respond to be seen as exemplifying societally-admired traits and qualities (Paulhus & John, 1998).

Paulhus and John (1998) suggest that the motive force impelling egoistic self-enhancers is a need for agency, while the motive force impelling moralistic self-enhancers is a need for communion. Paulhus (2002) noted that in addition to the self-deceptive tendencies related to agency and communion that egoists and moralists (respectively) exhibit, individuals can deliberately exaggerate their attainment of agency and communion values. Paulhus (2002) calls this type of departure from reality impression management, and subdivides it into two types: agency management and communion management. In this paper, we are specifically interested in examining the unconscious self-enhancing tendencies of egoists and moralists, and their cognitive processing of self-relevant information. Paulhus (2002) determined that unconscious egoistic biases are best measured by normal narcissism scales such as the Narcissistic Personality Inventory (NPI, Raskin & Hall, 1981) or the Self-Deceptive Enhancement subscale of the Balanced Inventory of Desirable Responding (BIDR, Paulhus, 1991), while the best measure of moralistic biases is the Self-Deceptive Denial subscale of the BIDR.

Differences between individuals with egoistic and moralistic biases appear to transcend the demonstrated differences in motivation. Djikic et al. (2005) found, for example, that egoistic and moralistic self-enhancers employ different cognitive strategies to maintain an enhanced view of their traits. When participants were presented with bogus feedback about their personality, only egoistic self-enhancers manifested memory distortions toward positive personality characteristics, as measured by a recognition memory task (Djikic et al., 2005). The results of this study suggest that egoistic self-enhancers begin distorting information earlier in the processing chain than moralistic self-enhancers, who recognized both positive and negative characteristics equally well. This led us to believe that by manipulating the most salient difference between the moralists and egoists – namely, the extent to which they are driven to comply with socially-appropriate

standards of behavior and attitude – we could perhaps extinguish the memory distortions plaguing the egoists, but not the moralists.

To test our hypothesis, we employed a framework provided by the social facilitation effect, the tendency of individuals to have their performance on tasks generally improved (although sometimes impaired) by the presence of others (Allport, 1920; Triplett, 1898; Zajonc, 1965). While the effect has been shown to depend on a variety of factors such as evaluation context, task complexity, and the type of presence, and while its mechanisms range from drive, cognitive processes, to evaluation apprehension (Aiello & Douthitt, 2001), the framework provided a potentially valuable setting for our attempts to reduce memory distortions in egoistic self-enhancers. Social facilitation manipulations hypothetically bring the social world into an individual's consciousness, facilitating heightened awareness of the social world and its judgments.

In the experiment described here we employed a manipulation used previously by Henchy and Glass (1968), who assessed social facilitation in four conditions: alone, expert, non-expert, and alone, but recorded on film. Participants who were in the 'recorded' condition were characterized by facilitation effects that were second only to the expert condition. This demonstrated the potency of even an indirect presence. Given this, and the privacy constraints demanded by our experimental setting (reading personality feedback), we decided to use the 'recorded' condition in our attempts to ameliorate memory distortions in egoistic self-enhancers.

We replicated our methods from Djikic et al. (2005) for this study. Participants completed a series of personality questionnaires, and read bogus feedback, both positive and negative, hypothetically generated from those questionnaires. Following this, we assessed participants' memory for that feedback. We hypothesized that egoists would experience reduced memory bias if they thought they were recorded by a video-camera, when compared to the egoists in the control condition (no video-camera).

## 2. Method

### 2.1. Participants

We tested 160 participants (117 women and 49 men, mean age = 23.0 years) from a large urban university. All participants were fluent in English, and were told they were taking part in a study examining the effectiveness of different personality questionnaires. They were subsequently informed that they would complete several personality measures and would then view feedback about their personality. All participants were tested individually, and were paid \$10 for taking part in the experiment.

### 2.2. Materials

#### 2.2.1. Questionnaire measures

Two questionnaires were used. We measured egoistic and moralistic self-enhancement using the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1991), the most widely used questionnaire-based measure of socially desirable responding, which has a high degree of internal consistency (Cronbach's alpha = 0.83) and test-retest reliability of .65–.69 (Paulhus, 1991). In

accordance with Paulhus's (2002) ideas, we used the Self-Deceptive Enhancement (SDE) subscale to measure egoistic self-deceptive biases and the Self-Deceptive Denial (SDD) subscale to measure moralistic self-deceptive biases. Each subscale contains 20 items rated on a scale ranging from 1 (not true) to 7 (very true). Generally, only extreme responses (6 and 7, or 1 and 2) are scored (Paulhus, 1991). However, since continuous scoring of the BIDR subscales has been shown to be both more reliable and valid than dichotomous scoring (Stoeber, Dette, & Musch, 2002), the continuous method was used in all analyses.

We employed the NEO Personality Inventory-Revised (NEO PI-R, Costa & McCrae, 1992), a standard 240-item "big-five" personality questionnaire (assessing extraversion, neuroticism, agreeableness, conscientiousness, and openness) as the apparent basis for generating the bogus personality feedback for all participants. This questionnaire is frequently used and reliable, with an alpha coefficient ranging from .86 to .92 (Costa & McCrae, 1992).

### 2.2.2. *Bogus personality profile*

The bogus profile each participant received consisted of 24 personality descriptions. Half of the descriptions were related to agency. The other half were related to communion. Of the half related to agency, six were positive (e.g., "You are as assertive as most people when circumstances require. You often speak without much hesitation and at times even play the part of the group leader.") and six were negative (e.g., "You do not always enjoy new and different activities. This can make your life at times appear slow and stagnant."). Personality descriptions relating to the communion were also split into positive (e.g., "You are generally frank and sincere and not willing to manipulate others through flattery, craftiness, or deception.") and negative categories (e.g., "Occasionally, you put your own needs and interests before those of others. You can be self-centered and reluctant to get involved in the problems of others."). The bogus feedback was presented as a screen with 24 hyperlinked buttons (12 '+' buttons, and 12 '-' buttons). The participants were told that clicking on '+' or '-' buttons would take them to positive or negative statements about their personality, respectively. Positive and negative statements were matched for length.

### 2.2.3. *Memory measures*

Recognition memory task consisted of a list of 48 descriptions. This list included each of the 24 original descriptions and an additional 24 new "decoy" descriptions that were similar in content, but opposite in valence, and randomly placed in the list. For example, the description "You are generally frank and sincere and not willing to manipulate others through flattery, craftiness, or deception" had as its decoy counterpart "You are sometimes crafty and deceptive and willing to manipulate others through flattery, secrecy, or dishonesty." The language of the additional 24 statements closely resembled the originals, so that participants would not rely on recognition of familiar phraseology and content (see Djikic et al., 2005).

Based on this memory task, three measures of recognition memory were created. The first, Errors, is the sum of all errors in recognition, including statements that participants recognized even though they were not present in the feedback (false alarms), and statements present in the feedback that participants failed to recognize (misses). The second measure, Positive Ratio, indicates the ratio between all positive and all negative statements recognized as present in the feedback. The *Positive Ratio* measure quantifies the degree of positive bias present in recognized statements. The

third measure, *Error Bias* measures positive bias in recognition among the erroneous answers. It was computed by finding the difference between errors that favored the self (positive false alarms + negative misses) and errors that did not favor the self (negative false alarms + positive misses).

### 2.3. Procedure

Participants were tested individually, and assigned randomly either to the ‘Video-Camera’ or ‘Control’ condition. Participants assigned to the ‘Video-Camera’ condition were ushered into a room containing a 38.1 cm (15 in.) color monitor attached to an IBM-compatible computer, with a large video-camera, ostensibly aimed at their profile, set up 1 m to the left of their chair. The experimenter made sure that participants were aware: (a) that the video-camera was turned on (a small red light on the camera came on when the experimenter pushed the ‘Record’ button), (b) that the camera was aimed only at them, and could not record anything on the computer screen, and (c) that the purpose of camera was to ensure the ‘smooth’ running of the experiment. Participants assigned to the Control condition experienced precisely the same situation, without the video-camera.

Once participants were seated, a computer program guided them through completion of the personality questionnaires. After participants completed the questionnaires, the experimenter called up their ostensible personality profile on the computer, and told them to view their profile.

Immediately after participants finished viewing the bogus profile, they were instructed to elaborate in writing whatever they remembered from it. This intermediary task provided a 15-min delay before the recognition task, and allowed for consolidation of memories formed by the feedback. Following the intermediary delay task, participants were given the recognition memory task. Participants were instructed to circle as many descriptions as they could remember seeing in their personality profile. They were told explicitly that this was a memory test and that they should mark all personality descriptions that they remembered seeing, regardless of whether or not the items accurately represented their personality. After completing the recognition task, participants were fully debriefed.

## 3. Results

A tendency toward egoistic and moralistic biases was derived from participants’ scores on the Self-Deceptive Enhancement (SDE) and Self-Deceptive Denial (SDD) subscales of the BIDR, respectively (Paulhus, 2002). When we refer to ‘high’ vs. ‘low’ egoists or moralists, we are referring to categories created by median splits. The means and standard deviations, as well as correlations among the SDE, SDD, and memory measures are presented in Table 1.

In the first part of the analyses, we checked that the memory distortion findings found in Djikic et al. (2005) were replicated. Indeed, high egoists in the Control condition manifested significantly more memory distortion than low egoists, for both measures of memory distortion, *Positive Ratio*,  $t(87) = 2.72, p < .01$ , and *Error Bias*,  $t(87) = 2.85, p < .01$ .<sup>1</sup> It was also found that the pressure of

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<sup>1</sup> Null hypotheses of normality of sample and homogeneity of variance were tested with Kolmogorov–Smirnov and Levene’s test, respectively, and null hypotheses were not rejected.

Table 1  
Means, standard deviation, and correlations among SDE, SDD, and memory measures

	<i>M</i> ( <i>SD</i> )	SDE	SDD	Errors	Positive Ratio	Error Bias
SDE	3.87 (.64)	1.00				
SDD	3.97 (.74)	.32 <sup>a</sup>	1.00			
Errors	6.49 (4.98)	.08	-.04	1.00		
Positive Ratio	1.05 (.34)	.19 <sup>b</sup>	.04	.26 <sup>a</sup>	1.00	
Error Bias	.01 (2.32)	.19 <sup>b</sup>	.04	.14	.91 <sup>a</sup>	1.00

Note:  $N = 166$ .

<sup>a</sup> Correlation is significant at the .01 level (two-tailed).

<sup>b</sup> Correlation is significant at the .05 level (two-tailed).

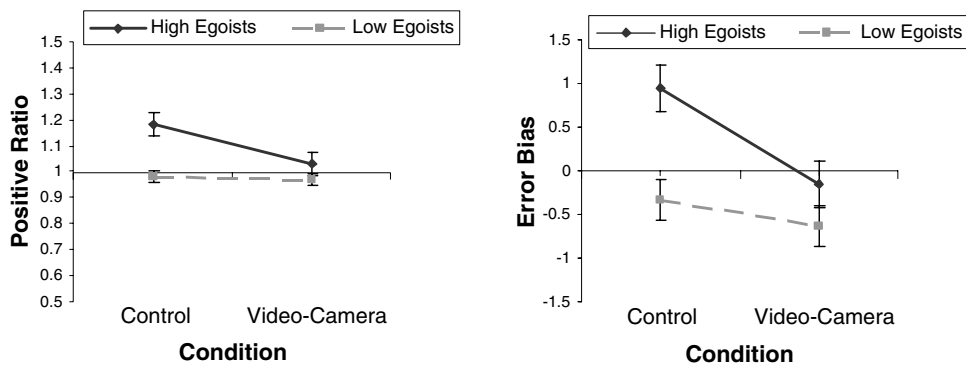


Fig. 1. *Positive Ratio*, and *Error Bias* means for high and low egoists (median split) across Control and Video-Camera conditions ( $N = 166$ ). The condition of no bias is represented in each figure by a horizontal line (value of '1' for *Positive Ratio*, and '0' for *Error Bias*).

indirect monitoring significantly increased the number of errors in the Video-Camera condition, ( $t(164) = -2.23, p < .01$ ), particularly among low egoists,  $t(83) = -2.77, p < .01$ .

The central hypothesis was tested through a multiple analysis of variance, and yielded a significant effect of Condition on both *Ratio*,  $F(1, 79) = 4.08, p < .05$ , and *Error Bias*,  $F(1, 79) = 4.20, p < .05$ . Directional  $t$ -tests show that, as predicted, high egoists in the Video-Camera condition manifested fewer memory distortions than high egoists in the Control condition, for both memory distortion variables [ $t(79) = 1.75, p < .05$ , for *Positive Ratio*, and  $t(79) = 2.02, p < .05$  for *Error*

Table 2  
Means and standard deviations of dependent variables for high and low egoists (median split) across conditions

	High egoists		Low egoists	
	Control ( $N = 42$ )	Video-Camera ( $N = 39$ )	Control ( $N = 47$ )	Video-Camera ( $N = 38$ )
Errors	6.10 (5.03)	7.08 (3.65)	4.89 (4.76)	8.32 (5.86)
Positive Ratio	1.18 (.46)	1.03 (.32)	.98 (.19)	1.01 (.31)
Error Bias	.95 (2.48)	-.15 (2.45)	-.34 (1.77)	-.42 (2.42)

Note:  $N = 166$ .

*Bias*]. The results are presented in Fig. 1. The horizontal lines represent values of no positive memory distortion for each variable.

As predicted, high moralists in the Video-Camera condition did not experience reductions in memory distortions [ $t(77) = .49, p = .63, t(77) = .45, p = .66$ ], as their memory of feedback was accurate and non-distorted when compared to that of high egoists. Means and standard deviations of all three dependent variables for high and low egoists, across conditions, are presented in Table 2.

#### 4. Discussion

The experiment described in this paper tested the hypothesis that indirect social facilitation would have ameliorative effects on the memory distortions found in egoistic self-enhancers. Given that moralistic self-enhancers do not exhibit these memory biases, we hoped to make egoists more like moralists: more aware of social standards of behavior and attitude, by indirect social facilitation. The results of the experiment confirmed our hypothesis. The memory distortion characteristic of high egoists was significantly reduced in the Video-Camera condition, when compared to the Control condition. It appears that the egoists' habitually distorted processing of self-relevant information can be ameliorated somewhat by the context in which they are placed.

While it is clear that the indirect social facilitation can reduce memory distortions in egoists, the mechanism by which this occurs remains relatively unspecified. A large number of proposed social facilitation mechanisms could be reasonably applied in this case. According to theories of evaluation apprehension (Cottrell, 1972), egoists might be sensitive to the possibility that someone might check their memory results against the original feedback. Self-presentation theorists (Baumeister, 1982; Bond, 1982; Goffman, 1959) might explain the greater accuracy under monitored conditions as an attempt (conscious or unconscious) by egoists to appear more honest or accurate in their task when they are aware of scrutiny by others. Self-awareness theorists (Carver & Scheier, 1981; Duvall & Wicklund, 1972) might presume that egoists are more self-aware, when they are monitored, and are therefore less likely to rely on habitual (and distortion-producing) information-processing heuristics. It seems likely that the presence of video-camera makes egoistic participants want to be seen (and perhaps see themselves) as both honest and competent, regardless of their level of self-awareness.

Another interesting issue that can be raised is the potential effect of indirect social facilitation on subgroups of moralistic and egoistic self-enhancers that manifest only one but not the other form of self-enhancement. Our results show that Self-Deceptive Enhancement and Self-Deceptive Denial subscales of the BIDR correlate significantly. This means that in our sample, egoists who exhibited a reduction in memory distortions were also likely to be moralists. It would be interesting to examine whether egoists who are not moralists show the same effect, and also what happens to moralists who are not egoists as well. To answer these questions, however, one needs a larger sample that would yield larger number of participants in these particular subgroups.

The results, as they stand, could have interesting applications in work settings. We show that monitoring is effective in reducing egoists' memory distortion of the new feedback presented to them. This means that indirect monitoring during work evaluation and feedback sessions might be very useful. This would give employers some hope that their highly egoistic employees would

not immediately suppress all the negative components of the evaluation feedback. However, by the same token, the presence of video-camera would not make the egoists necessarily more honest during initial employment screening sessions. During these sessions, individuals provide, rather than receive, information, and we have shown that the effect holds only when individuals are provided with *new* (unprocessed and undistorted) information about themselves.

## 5. Conclusion

It is as yet unknown whether the social facilitation effect produced in this experiment would generalize to different forms of social facilitation. Would increased salience of the video-camera presence improve or impede the accuracy of memory feedback for high egoists? What would happen if there were one or more other people with the subject in the testing room? If the high egoists were told that their responses were being monitored electronically, via the computer, would this modify their tendency towards self-serving memory distortion? Would the effect generalize to clinical populations of narcissists, given that its demonstration is currently limited to relatively ‘normal’ university students? Fortunately, all these questions can be addressed empirically, and we hope future research will illuminate the scope and limitations of this experiment.

The existence of memory distortion for self-relevant information characteristic of egoistic self-enhancers implies that members of this group suffer a difficulty in creating and maintaining accurate self-representations early in the information-processing cycle. The experiment in this paper provides evidence that indirect social facilitation can disrupt this cycle of cognitive distortion. Discovery and specification of optimally effective techniques to prevent memory distortion might prove ecologically useful, both for clinical populations, and for ‘normative’ but egoistic individuals alike.

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