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ATTENTIONAL LOAD INCREASES THE POSITIVITY OF SELF-PRESENTATION

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Recent research has addressed the role of attention in self-presentation. The present study examined the effects of attentional load on the positivity of self-descriptions. Subjects rated themselves on 30 traits presented on a microcomputer. To create an attentional load, we required subjects to monitor digits that appeared regularly on the screen. To manipulate the load, we varied the speed of digit presentation. Results show that high attentional load during trait rating increased the proportion and speed of desirable responses. In addition, high attentional load during trait ratings decreased later recognition memory for positive and negative traits but increased later recognition for neutral traits. These findings are used to explain a variety of documented effects of emotional arousal on cognitive processing.

A number of recent studies have demonstrated how different affective states influence self-presentation (e.g., Gollwitzer, Earle & Stephan, 1982; Paulhus & Levitt, 1987; Thornton, 1984). An attentional explanation for such phenomena was suggested by Paulhus and Levitt (1987) in a study showing that affective distractors increased the positivity of subjects' self-descriptions. They had subjects respond "me" or "not me" to trait words presented on a microcomputer screen. Simultaneous with the trait word, a distractor word (which subjects were told to ignore) was presented nearby. When the distractor word was affect laden (related to sex or violence), subjects tended to increase "me" responses to positive traits and reduce "me" responses to negative traits. The authors pointed out the similarity between this pattern of responding and defensiveness: A threat causes people to inflate their

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assets and deny their vices even when such responses do not counter the threat.

Two theories were offered to explain the experimental results. On one hand, it may be that affect-laden distractors trigger a fast-rising arousal that increases dominant (i.e., positive) responding. Alternatively, it may be that the high salience of affect-laden distractors diverts attention from the processing of trait words thus inducing a more superficial form of analysis. Subjects may then revert to more habitual forms of self-description: Such responses tend to be positive because of a lifetime of practicing positive self-descriptions (see Heilbrun, 1964; Paulhus, 1988). A related possibility is that reduced attentional capacity caused subjects to adopt a more simple decision strategy—they ignored the descriptive content of trait words and responded on the basis of trait desirability alone.

To distinguish between attentional and arousal explanations, a pure manipulation of attention is required—one that is unconfounded with affect. If this pure attentional manipulation were to yield the same result found with affect-laden words, it would suggest that the effects of affective distractors are mediated by attentional dynamics. Accordingly, in the present study, we induced an attentional load by having subjects perform a digit-counting task while they rated themselves on a series of traits. Attentional load was varied simply by altering the speed of digit presentation.

If the attentional account is correct, then increasing the attentional load while a subject is providing self-descriptions should increase the positivity of the self-descriptions. Therefore we predict that subjects will claim more positive and fewer negative traits under high compared to low attentional load. Neutral traits should be unaffected. Also consistent with Paulhus and Levitt (1987), the responses to positive and negative traits should be faster under high compared to low load. In contrast, responses to neutral traits should be slower under high compared to low load.

An attentional account of positivity shifts in self-presentation also has implications for memory for the trait words. Unfortunately, Paulhus and Levitt (1987) did not include a measure of trait-word memory. To explore possible memory effects in the present study, we administered a recognition test immediately after the trait rating task.

Our high load condition is expected to engage more attentional capacity than the low load, thereby leaving less capacity for the processing of traits. Consequently, trait words should be processed less extensively. It is well known that memory strength is positively related to how extensively the words are processed at study time (Craik & Tulving, 1975). Therefore, traits responded to quickly should show poor retention. Given our predictions for response times, subjects' memory for positive and negative traits should be poorer under high compared to low load conditions. In contrast, memory for neutral traits should improve under high compared to low load conditions.

METHOD

Subjects and Design. A total of 34 (17 male; 17 female) subjects participated for payment of $5 each. The experimental design included two independent variables: attentional load (high or low) and type of trait word (positive, negative, or neutral). Both were manipulated within subjects.

Materials. Thirty trait words were required for the critical part of the experiment. Initially, 48 traits were selected from the Anderson (1968) norms according to the following criteria: Positive words had to have mean ratings above 6.0 on the Anderson 9-point rating scales, neutral words had to be between 4.0 and 6.0, and negative words had to be below 3.0. These words were used for a pilot study in which 29 subjects were asked to indicate for each word whether it was self-descriptive ("me") or not self-descriptive ("not me"). Based on the pilot data, we then selected 10 positive, 10 negative, and 10 neutral words that were endorsed by .88, .12, and .50 of the subjects.

Given that the Anderson norms are 20 years old, we suspected they might not reflect present-day values. Therefore we decided to assess the desirability levels of the critical trait words by evaluating them on more recent likability and trait-desirability norms (Hampson, Goldberg, & John, 1987). On 9-point scales, the means were 7.7, 2.0, and 4.7 for our positive, negative, and neutral words, respectively. In fact, the Hampson et al. (1987) ratings correlated .93 with those of Anderson (1968). In combination, these findings validate our selection of trait words.

The recognition test included the 30 target traits and 30 additional traits. Of the latter, 10 were categorized as positive, 10 were negative, and 10 were neutral. They were selected to match the target trait words in terms of positivity on the Anderson (1968) norms.

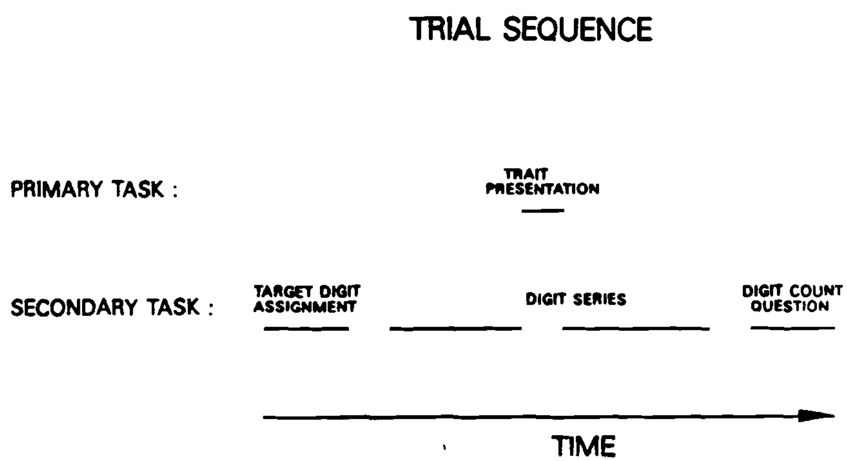
Procedure. The experiment had three parts: Instruction and practice, trait rating while digit monitoring, and memory testing. The experiment was explained during the first part. Subjects were informed that the purpose of the study was to examine the effect of performing a memory task while making decisions about personality traits. They were told that it was important to respond as quickly and as accurately as possible. Then subjects practiced the trait rating and digit monitoring tasks on three practice trials. They were seated in front of a microcomputer (Apple IIe) that presented both the traits and the digits for the monitoring task. Subjects responded to both tasks by means of two telegraph keys (the keypad). Pressing either of the keys initiated the sequence of events that defined one trial. These events are shown in Figure 1.

Each trial involved making a self-evaluation judgment on one trait while monitoring a series of digits. At the beginning of the trial, the computer displayed a target digit; subjects had to note this digit mentally and then count how frequently it occurred in the subsequent digit series. The target digit was displayed until the subject indicated, via the keypad, that he/she had noted the digit and was ready to continue. After a brief delay, the digit presentations began. Both the original target digit and the digit series presentation were centered on the first line below the midpoint of the screen.

The digit series continued for 20 s, either at a slow rate (1 every 2 s) or at a fast rate (2 per s). Each digit series was composed of randomly selected digits between 0 and 6. Following a 1.6-s interval after the last digit in the series, instructions on the screen requested the subject to estimate and indicate, via the keypad, the frequency of the target digit. Subjects were not given any feedback about their performance on the digit task until after the experiment. Immediately after the target digit frequency had been estimated, a message warned the subject to "get ready for the next trial." Two seconds later, the target digit for the next trial was presented.

At a randomly selected temporal position within a window 50–75% of the way through the digit series, digit presentation was suspended for 500 ms. During this interval, a target trait was presented. The trait word appeared at the same time as the next digit in the series would normally have appeared. The trait was centered on the

FIGURE 1
Schematic representation of events during each trial.



first line immediately below the midpoint of the screen; it temporarily replaced the digit series. Following the trait presentation, the digit series resumed. Subjects responded to the word by pressing the "true" key for traits that were self-descriptive and the "false" key for traits that were not self-descriptive. The instructions were to make the trait decisions "while the digit series is still being shown" and "as quickly and as accurately as possible."

Following the last trait rating trial, a surprise recognition test was given for the critical traits. The test included 60 trait words—the 30 from the rating trials and 30 new ones. The test words were randomized and presented on the computer monitor, one at a time. Subjects were instructed to indicate their recognition decisions by pressing the "true" key to indicate that the trait had been previously presented, or the "false" key if it had not been previously presented.

This task completed the experimental session. Subjects were debriefed and dismissed.

RESULTS

The three dependent variables were the proportion of traits endorsed (i.e., selected as true of one's self), the time required to make trait endorsement responses, and the postexperimental recognition of previously presented trait words.

ENDORSEMENT OF TRAITS

The proportion of traits endorsed in each condition was analyzed in a 2 × 3 ANOVA crossing trait type (positive, negative, neutral) with load (high versus low). All proportions were transformed by arcsin $p^{1/2}$, following Winer (1971, p. 400) to minimize heterogeneity of variance. Significant effects emerged for trait type, $F(2, 66) = 167.6$, $p < .001$, and the interaction between load and trait type, $F(2, 66) = 5.14$, $p < .01$.

Figure 2 highlights the main effect for trait type, and the interaction between trait type and attentional load. Positive traits were endorsed more frequently ($M = .84$) than were neutral traits ($M = .47$), $t(33) = 9.59$, $p < .001$, and neutral traits were endorsed more frequently than were negative traits ($M = .16$), $t(33) = 9.25$, $p < .001$. More important, under high compared to low load conditions, subjects endorsed a higher proportion of positive traits, $t(33) = 2.94$, $p \leq .006$, and a smaller proportion of negative traits, $t(33) = 1.87$, $p < .07$. In contrast, endorsement of neutral traits did not change as a function of attentional load, $t(33) = .59$, ns.

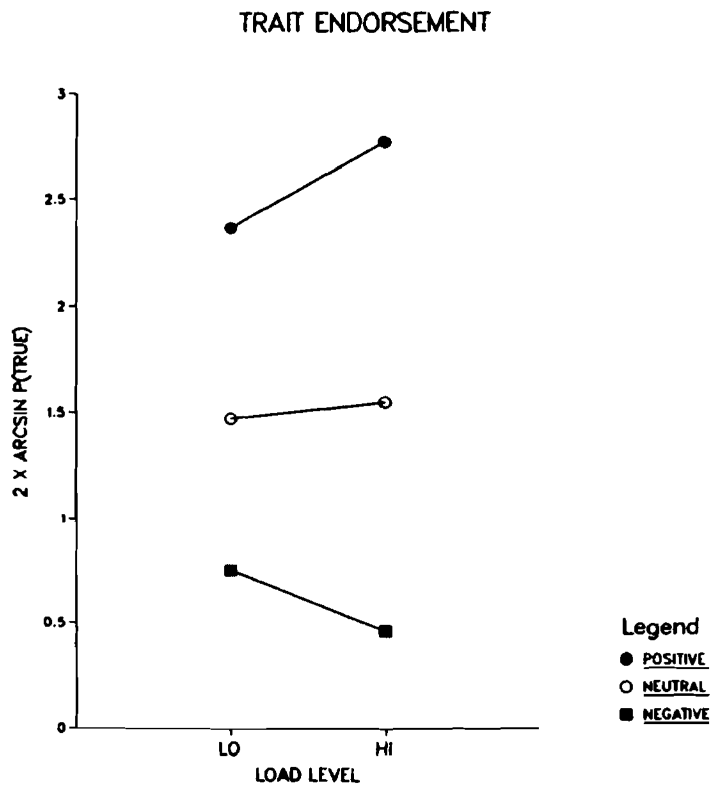


FIGURE 2
Transformed trait endorsement rates by trait type and load level.

TRAIT ENDORSEMENT RESPONSE TIMES

The mean response time for each trait type was calculated for each experimental condition. In calculating the means, any response time greater than 4.0 s was set to 4.0 s. The frequency of these unusually long response times was similar across conditions (0–3% of total observations). They consisted primarily of weak key presses. To reduce heterogeneity of variance, all times were transformed by taking their square root values.

The factors in the 2 × 3 ANOVA were load level (low, high) and trait type (positive, negative, neutral). The ANOVA showed a significant main effect for trait type, F (2, 66) = 14.45, $p < .001$, a main effect for load, F (1, 33) = 51.37, $p < .001$, and a significant interaction between trait type and load, F (2, 66) = 9.04, $p < .001$.

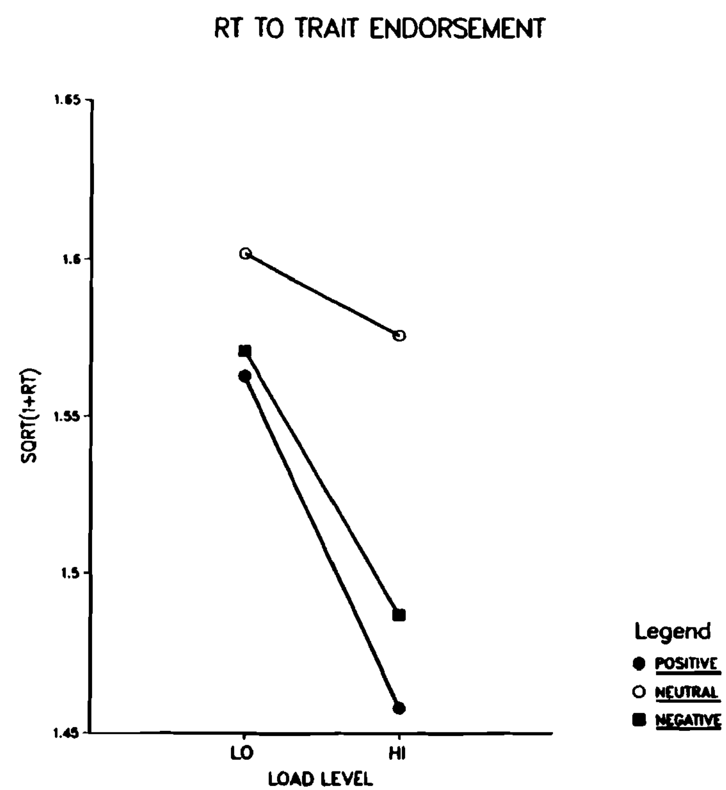
Figure 3 highlights the main and interaction effects. The interaction reflects a difference in responding to neutral traits on the one hand, and valenced (positive and negative) traits on the other hand. Follow-up analyses showed that the speed of responses to neutral traits did not differ across high and low load conditions, t (33) = 1.55, ns.

The valenced traits alone were examined in a follow-up ANOVA: A main effect emerged for load, F (1, 33) = 80.1, $p < .001$, with no other significant differences. Thus response times to both positive and negative traits were faster under high than under low load conditions.

RECOGNITION

The mean proportion of false alarms (.07) did not differ significantly across experimental conditions. Therefore we will report only the hit-

FIGURE 3
Transformed values of reaction times (s) to trait words by trait type and load level.



rate data, that is, the proportion of traits correctly recognized as having been presented during the rating task. A load by trait type ANOVA yielded no significant main effects, but the trait type by load interaction was highly significant, F (2, 66) = 11.25, $p < .001$.

The means for the six conditions are displayed in Figure 4. Recognition of neutral traits was better for traits presented under the high as compared to the low load condition, t (33) = 3.47, $p < .001$. To test whether positive and negative trait recognition was lower under the high load condition, a 2 × 2 ANOVA of load (high, low) by trait type (positive, negative) was performed. As predicted, the only significant effect was for load, F (1, 33) = 12.0, $p < .001$. Thus recognition of traits did not differ between positive and negative traits but both dropped significantly when presented under high load conditions.

DISCUSSION

For the most part, the predictions based on an attentional model were confirmed. High attentional load during self-presentation increased the likelihood of desirable responding; that is, subjects were more likely to claim positive and disclaim negative traits. Moreover, high attentional load induced faster responses to valenced (positive or negative) trait words. These results directly parallel those found by Paulhus and Levitt (1987) using affect-laden distractor words. The only discrepant result was that increased load, rather than increasing reaction times to neutral traits, had no significant effect.

The results also indicated that memory for valenced traits (positive or negative) was poorer when they had been presented under high load. The poorer memory can be accounted for by the higher speed at which valenced traits were processed under high compared to low load. Memory for neutral traits, however, *improved* if they had been presented under high load. This result obtained despite the fact that their speed of processing was not significantly slower under high compared to low load.

The results are generally consistent with the position that, under high load conditions, controlled processing deteriorates whereas automatic processing continues (Posner & Snyder, 1975). We argue that, as a result of extensive practice, familiar trait words are processed in a highly skilled or automatized fashion. This manner of processing is normally augmented by control mechanisms that are engaged to tailor our responses to situational demands (Baumeister, Hutton, & Tice, 1989; Paulhus, 1988). In other words, we suggest that, when giving a self-description, our basic tendency is to claim positive traits;

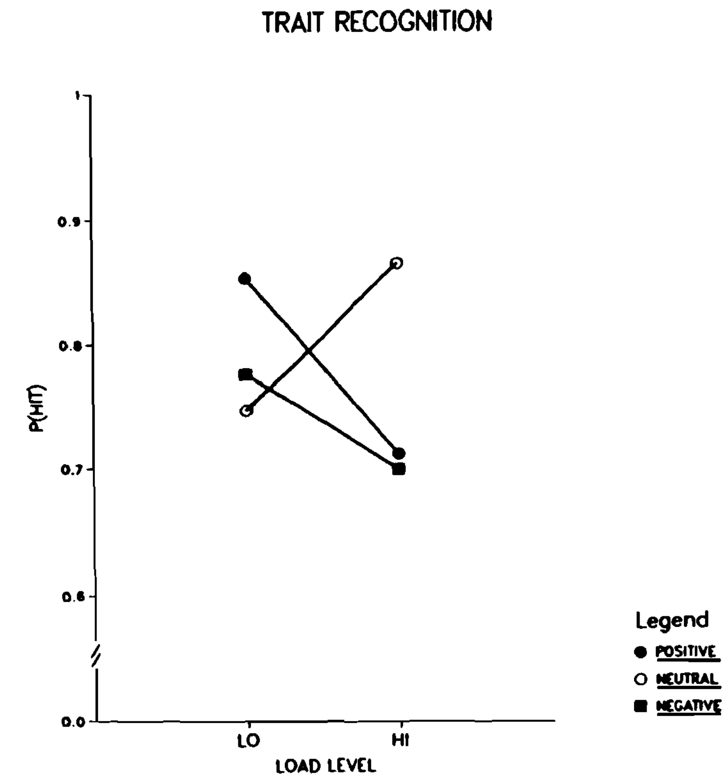


FIGURE 4
Trait recognition rates by trait type and load level.

we augment or override this tendency to take into account current motivational concerns, for example, a more specific self-presentational image (toughness, cynicism, modesty).[1] When attention is withdrawn, however, only highly practiced self-descriptions are available for output.

A possible alternative explanation is that high load induces a more superficial trait processing strategy. In the present study, for example, subjects may have decided that the fast digit rate precluded detailed processing. Therefore, they chose a simpler strategy—to respond on the basis of the trait-word valence: If the trait is positive, say "true"; if the trait is negative say "false."

This alternative, however, is contradicted by the results of a more recent study from our laboratory. Paulhus and Murphy (1987) replicated the Paulhus and Levitt (1987) results in conditions where subjects

1. Another form of controlled self-presentation that might normally override automatic tendencies is an honest self-search (Paulhus & Murphy, 1987).

were instructed to "answer honestly" and where subjects were instructed to "fake bad." In a third condition, where subjects were instructed to "fake good," however, the effect of affective distractors was to *reduce* the level of desirable responding. These subjects dropped from virtually perfect levels of self-presentation to a moderate level close to that achieved by the other two groups under affective distractors. Thus all three groups ended up at the same intermediate level of positive but not perfect self-presentation.

The results in the fake-good condition are not consistent with the alternative account postulating a switch to the strategy of responding by trait valence alone.[2] Because such a strategy predicts a positive shift, then fake-good subjects should have maintained high levels of self-presentation. Instead, the reduced positivity supports our argument that attentional load causes a reversion to a fast, highly practiced, relatively positive self-description.

Our understanding of these issues will be more complete when we have the answers to the following questions: Would similar effects of load occur (a) if subjects rated other people, and (b) if subjects gave free-form self-descriptions rather than trait ratings? These questions await empirical investigation.

IMPLICATIONS

The present findings suggest that the ability of affective distractors to induce bursts of desirable responding (Paulhus & Levitt, 1987) is mediated by attentional dynamics. Other effects of arousal documented in the literature have been attributed to its distraction value. Many years ago Mandler and Sarason (1952) applied this idea to the effects of test anxiety on test performance. When anxious, test takers show poorer attention on the task because they focus on self-related cognitions. Later, Easterbrook (1959) described in detail the attention-narrowing effects of arousal. More recently, Sanders (1981) explained social facilitation effects in terms of the distracting power of the audience.

Some recent work by Gilbert, Krull, and Pelham (1988) is also consistent with the idea that distraction leads to more superficial forms of social perception. They showed that requiring subjects to monitor various secondary tasks (e.g., distractor words, ingratiation) heightened their tendency to make simplistic trait inferences about social targets.

It may be that a similar explanation applies to the operation of defense mechanisms. The critical component of such mechanisms may be not threat per se, but the concomitant attentional dynamics (Paulhus, Fridhandler, & Hayes, in press). If so, the study of defenses

2. Moreover, none of our subjects reported using such a switch in strategy.

falls properly within the pale of cognitive psychology, an event anticipated some years ago by Erdelyi (1974). This is not to say that emotion does not play a role: It may simply be the most powerful manipulation of attention (Simon, 1986).

Finally, there is reason to believe that bursts of heightened self-presentation observed under emotional arousal are short-lived (e.g., B.R. Schlenker, 1988, personal communication). Once sufficient attention is regained, a more controlled self-presentation may occur in response to the threatening situation (Paulhus, 1988; Schlenker, 1988). In some cases, the controlled strategy may involve a modest (Baumeister et al., 1988)or even negative self-presentation (Schlenker & Leary, 1985). Thus the question "Does self-presentation increase or decrease under emotional arousal?" appears simplistic in retrospect. The challenge for future research on the effects of emotion on self-presentation is the reliable measurement of such rapidly changing dynamics.

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