ABSTRACT

This study examined the relationship between repressive/defensive coping and identification thresholds for pleasant and unpleasant words. Word identification thresholds were determined by presenting masked words at increasing durations until correct report. Identification thresholds were greater for unpleasant than for pleasant words. When the difference between identification thresholds for unpleasant and pleasant words was standardized, high-defensive participants showed this effect to a greater degree than low-defensive participants. One possible interpretation of the findings is that avoidance of unpleasant stimuli takes place, and that repressive/defensive participants are more prone to it. Alternatively, the findings may reflect a general perceptual bias for pleasant stimuli that is greater for high defensive participants. Such a perceptual bias for pleasant stimuli may facilitate avoidance of unpleasant ones.
Over thirty years have passed since the original perceptual defense paradigms were designed. Currently they are in their third resurgence as a research enterprise [1]. Although it is generally agreed that unconscious processes take place, the complexity of the information that is processed outside of awareness is not clear. Processing of complex, meaningful information is an assumption that lies at the very heart of the notion of unconscious defense mechanisms.

Motivated by Freudian drive theory, the early perceptual defense literature employed sexual words, and was heavily criticized for being confounded with response bias [2]. It was rightfully argued that many participants would feel uncomfortable telling an authority figure (e.g., in a lab coat) that they saw taboo words, and would want to be completely certain before saying them. Some well designed studies addressed these criticisms by various means, e.g., by forced choice procedures [3], signal detection analysis [4], or by having participants detect neutral stimuli imbedded in sexual versus non-sexual pictures [5].

"Repression" specifically implies avoidance of unpleasant stimuli. Thus, if repression or repressive coping per se are valid, avoidance must be shown for unpleasant, but not for pleasant stimuli. Kitayama found that affect leads to impaired word perception if stimuli are infrequent (more so if they are unexpected as well), and leads to enhanced perception if stimuli are frequent and expected [6, 7]. Kitayama found no differences between positive and negative words, and argued that the valence of affect (positive or negative) is not important for word recognition [6]. This argument runs counter to the notion of defense, which would clearly predict larger effects for negatively valenced stimuli.

A stylistic tendency for repressive/defensive coping [8] has been associated with alterations in sensory and perceptual processing [9-11]. Few studies to date have assessed the relationship between repressive/defensiveness and perception of emotional stimuli.

Crowne and Marlowe found that participants scoring in the top 50th percentile on the MCSD showed higher recognition threshold for taboo words than those who scored in the lower 50th percentile when they believed that the experiment was examining social disapproval [12]. There was no effect for defensiveness when participants believed that the experiment was examining perceptual speed. Further, participants who believed that the experiment examined social disapproval admitted to response withholding more often than participants who believed that the experiment involved perceptual accuracy. There was no difference between high and low defensive participants with regard to admission of response withholding.

Holroyd found that defensive low anxious (repressors) had significantly higher thresholds than true low anxious participants for numbers associated with sexual pictures relative to numbers associated with nonsexual pictures [5]. True low-anxious participants had significantly higher recognition thresholds for numbers associated with sexual pictures relative to numbers associated with nonsexual pictures than sensitizers (high anxious participants). No significant effects of sex
or sex by group were found. Although these results are often cited in support of a defensiveness interpretation for the MCSD, and the method employed seems to have reasonably minimized the response bias criticism, there are limitations to this influence. Because there was no defensive high anxious group, the interaction of anxiety and defensiveness is uncertain. Furthermore, although sexual pictures are probably emotionally salient for most participants, they might produce embarrassment (negative valence), or sexual arousal (positive valence).

In the present study, we examined relationships among the personality dimensions of anxiety and defensiveness and identification thresholds for unpleasant and pleasant words. Neither class of words was sexual. We wished to assess whether identification thresholds would be greater for unpleasant than pleasant words, and whether repressive or defensive coping would relate with these increased thresholds.

**METHOD**

**Participants**

Volunteers were recruited from the University of Nebraska at Omaha, and were paid $25.00 for participation. All participants were literate, native speakers of English. The sample consisted of twenty women and eight men between nineteen and thirty-eight years of age (\(X = 24.07, s = 5.73\)). If participants reported use of prescription glasses, they wore them during the testing session.

Participants were grouped according to high or low scores on the Eysenck Personality Questionnaire [13; EPQ] N and L. The cutoffs for assignment to the EPQ-L groups were designed to approximate recommendations by Weinberger [14], and were as follows: 7 and above "High-defensive" (i.e., the upper third), and less than 7 "Low-defensive." The cutoff for assignment into a "High-anxious" group as an EPQ-N score of > 10. Participants with EPQ-N scores of < 11 were designated "Low-anxious."

**Apparatus and Materials**

An IBM model 30 computer with a high resolution VGA monitor was used to trigger tachistoscopic word presentations. The software used initially randomized the order of word presentations and then presented a random letter forward mask of 50 msec duration followed by the target and a random letter backward mask. The masks and targets were presented in block style capital letters 5 cm in height.

Words were fifteen pleasant and fifteen unpleasant words selected from *A Handbook of Semantic Word Norms* [15]. The handbook has several standard scales, including "Pleasantness" (PLS) and "Familiarity" (FAM) that have ranges of 1 to 7. For this study, unpleasant words were selected from those words with
unrelated auditory event-related brain potential task, the results of which are reported elsewhere [11].

RESULTS

Scores on the Lie Scale ranged from 0 to 13 (\( X = 4.96, s = 3.21 \)) and scores on the N scale ranged from 3 to 18 (\( X = 9.11, s = 4.40 \)). Linear correlations between L and N and L and P were .026 and .068 respectively.

A 2 \( \times \) 2 between (anxiety by defensiveness) 2 within (word pleasantness) analysis of variance (ANOVA) revealed a significant main effect for word valence \( F(1,24) = 14.18, p < .001 \), indicating greater identification thresholds for unpleasant than for pleasant words across all four groups. ANOVA revealed that the interaction between pleasantness and defensiveness was in the expected direction (i.e., it was expected that high-defensive individuals would show elevated identification thresholds for unpleasant versus pleasant words), but was non significant \( F(1,24) = 1.87, p = .18 \). Figure 1 shows the means for the high and low-defensive groups for the two word categories.

![Figure 1](image-url)  

Figure 1. Trials to identification for unpleasant and pleasant words for high-defensive (\( n = 9 \)) and low-defensive (\( n = 19 \)) participants. The presentation duration was increased by 16.7 msec (i.e., one raster scan) on each presentation. Error bars are SEM.
In examining the individual differences in mean identification thresholds and their standard deviations, it was noticed that the means and standard deviations correlated (Table 2). Differences between identification thresholds for unpleasant and pleasant may have been incomparable between subjects for this reason. We therefore standardized the differences in identification thresholds for unpleasant vs. pleasant words for each subject by computing Z scores (equation 1).

\[ z_{pd} = \frac{\bar{x}_u - \bar{x}_p}{\sqrt{S^2_u/n + S^2_p/n}} \]  

(1)

where \( \bar{x}_u \) = the mean for an individual's identification threshold for unpleasant words, \( \bar{x}_p \) = the mean for pleasant words, \( S^2_u \) and \( S^2_p \) were the respective variances for the unpleasant and pleasant words, and \( n \) = the number of words in each category. These scores were subjected to a 2 (defensiveness) by 2 (anxiety) ANOVA. There was a significant main effect for defensiveness, \( F(1,24) = 5.18, p < .05 \). High defensive participants evidenced greater standardization identification threshold differences between unpleasant and pleasant words than did low-defensive participants. This did not depend on whether they were high or low anxious (Figure 2).

**DISCUSSION**

Identification thresholds were greater for unpleasant than pleasant words. Only when pleasant-unpleasant differences were standardized for each subject was it significantly influenced by defensiveness. These findings are consistent with at least two possible interpretations. For one, it may be that avoidance of unpleasant stimuli takes place, and repressive/defensive participants are more prone to it. The findings may also reflect a general perceptual bias for pleasant stimuli that is slightly greater for high defensive participants.

**Table 2. Pearson Product Moment Correlations (n = 28) between Means and Standard Deviations for Identification Thresholds**

<table>
<thead>
<tr>
<th>Mean Identification Thresholds: Pleasant</th>
<th>Standard Deviation for Identification Thresholds: Pleasant</th>
<th>r = .67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Identification Thresholds: Unpleasant</td>
<td>Standard Deviation for Identification Thresholds: Unpleasant</td>
<td>r = .54</td>
</tr>
<tr>
<td>r = .57</td>
<td>r = .74</td>
<td></td>
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</tbody>
</table>
Defensiveness is associated with decreased vulnerability to depression, presumably because of a self-enhancing cognitive bias [16, 17]. Such a bias is thought to blunt negative self-evaluations. If this is the case, then the present results may reflect this bias and its consequences. Unfortunately, the present design did not include a neutral word category, so it is unknown how perception of neutral words would compare to perception of pleasant and unpleasant ones. Further research is needed to assess this relationship.

The present results seem to contradict Kitayama, who found no differences between pleasant and unpleasant words regarding perceptual accuracy [6]. Such a discrepancy could be due to differences in the dependent variables, as Kitayama utilized implicit perceptual measures, as opposed to explicit perceptual measures employed by the present study (see Kihlstrom, Barnhardt, and Tataryn [18] for a discussion of implicit versus explicit perception).

Another possible reason for the apparent contradiction to Kitayama's [6] findings is that the present study included pleasant and unpleasant words, but no neutral words. The presence of neutral words may alter the demands of the experimental task so as to equalize the salience of affective words irrespective of their valence. It could be that the greater the degree of affective contrast in a given paradigm, the greater the discrepancy in perceptual accuracy between
highly pleasant and highly unpleasant words. The effect of an attentional shift from neutral to emotional might overshadow a shift between negative and positive.

The psychometric meaning of scales like the L scale and the MCSD is at present not clear. It has been noted that high scores may be related to self deception or impression management [19]. Eysenck and Eysenck have concluded that because inverse correlations between L and N on the EPQ arise only in situations where participants have a high degree of motivation for dissimulation, when the scales are uncorrelated the interpretation is less clear [13]. Eysenck and Eysenck have suggested a "social naivete" interpretation of the L scale in the absence of motivation for dissimulation, and the notion of the L scale tapping a trait of defensiveness, or a tendency to avoid unpleasantness, whether conscious or unconscious seems far removed from the original meaning of the scales [13]. Francis, Pearson, and Kay, found that the L scale correlated with religiosity, which they interpreted as indicating lack of insight in religious children [20]. They neglected the possibility that religious children could have answered the questions truthfully with full insight, and were more virtuous than other children.

Social naivete, lack of insight, religiosity, self-deception, other deception, and virtue are all plausible interpretations for high scores on an L scale, and this is not likely to be resolved by a questionnaire method. Studies relating the L scale to emotional word perception given differing motivational antecedents in different settings could be useful in teasing out the naivete, self-deception, other-deception, and virtue components.

REFERENCES