Perceptual defense or set: A re-examination¹

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Exposure time for neutral task words presented, following pretask taboo words, nonsense words, and other neutral words, was evaluated to test whether increased recognition thresholds would be found both for neutral words following taboo words and for neutral words following nonsense words. The results indicated significantly higher recognition thresholds for the nonsense-neutral situation than for the neutral-neutral situation. No difference was found between taboo-neutral and neutral-neutral. Also, no differences were found on the basis of order of presentation or response words used. These results allowed for a reevaluation of perceptual defense in terms of set.

The concept of perceptual defense has met widespread resistance since its inception by Bruner & Postman (1947). They presented Ss with neutral and taboo words on a tachistoscope. Words were first presented at a fast exposure speed and then at slower speeds until the S correctly recognized the word. They found that neutral words were recognized at significantly faster exposure speeds than taboo words. This difficulty in perceiving the taboo words they termed "perceptual defense," and defined it as an "unconscious mechanism of resistance to recognition of threatening stimuli."

Other studies (Eriksen, 1951, 1954; Eriksen & Browne, 1956; Postman, Bruner, & McGinnies, 1948) have supported these original findings and provided further evidence for perceptual defense.

Research has been performed to measure the GSR reading obtained in tachistoscopic experiments. McGinnies (1949) presented neutral and taboo words tachistoscopically and measured Ss' recognition thresholds and GSR deflections. Recognition thresholds were found to be higher for taboo words than for neutral words. GSR readings, however, showed fluctuations before S verbally acknowledged recognition, indicating that S had recognized the taboo words at the same threshold as the neutral words, but had withheld verbal recognition. Similar results were found by Lazarus & McCleary (1951).

Howes & Solomon (1950) raised objections to the tachistoscopic research. They contended that a S may withhold identification of a taboo word not because he doesn't want to say it and is defending

against it, but because he may just want to be sure that his identification is correct. They further argued that recognition threshold may be a function of a word's relative frequency of usage as reflected in the Thorndike-Lorge list (1944). Thus, taboo words would be expected to have higher recognition thresholds since they have a low frequency of usage.

Later research (Postman & Schneider, 1951; Postman, Bronson, & Gropper, 1953; Solomon & Howes, 1951) replicated several of the previous studies but with careful control for equal word frequency counts. They found no evidence to support the perceptual defense hypothesis.

Brown (1961) has suggested that the variation in recognition thresholds may be due to such factors as age, visual acuity, frustration, word length, ego-involvement, and a number of other factors. Cofer & Shepp (1957) presented one word at a regular speed and another word immediately following but for a briefer exposure period. Recognition threshold was found to vary with the degree of similarity between the first and second words. Bitterman & Kniffin (1953) found differences based on presentation order.

McGinnies & Sherman (1952) attempted to study the generalization of perceptual defense to words which Ss would have no reluctance to verbalize. Their idea was that if a mechanism of perceptual defense exists, then the response process which mediates this effect will remain long enough to delay recognition of neutral stimuli which immediately follow exposure to some anxiety arousing word. Taboo and neutral words were presented as pretask words. These words were exposed long enough for S to recognize them easily. Then a paired neutral word was presented and the recognition threshold calculated. The results showed a significant elevation in the recognition thresholds for words preceded by taboo words. This elevation in threshold was not found in words preceded by other neutral words. Support for perceptual defense was provided in that the avoidance reaction was generalized to words which Ss would normally have no reluctance to report. Similar results were found in studies by Walters, Banks, & Ryder (1959) and Walters & Pilipec (1964).

Forest, Gordon, & Taylor (1965) performed a study similar to McGinnies & Sherman (1952) and found concurring results. They then gave Ss a second test using nonsense words as pretask words. They found higher thresholds for neutral words

following the nonsense words than for neutral words following other neutral words. This provided support for a "set" hypothesis.

Criticism of this latter research can be found in the fact that Ss were not tested under all conditions at the same time. In addition, length of words was not held constant and order of presentation may have had an effect (Bitterman & Kniffin, 1953). Finally, S's attention throughout the experiment may not have been constant since he verbalized only the task word when recognized.

The present experiment was designed to test a set hypothesis under closely controlled conditions. The hypothesis tested was that neutral task words presented tachistoscopically, following either pretask taboo words or nonsense words, would have higher recognition thresholds than neutral task words following neutral pretask words. Results supporting this hypothesis would allow an interpretation based on set.

SUBJECTS

Subjects were 30 male students from introductory psychology classes. Only males were used to control for sex differences in recognition thresholds (McGinnies, 1949; Postman et al, 1953).

APPARATUS

Two projectors were used in this experiment. The first, produced by Three Dimension Company, was used for standard presentation of the pretask words. The second projector, from Standard Projector and Equipment Company, was a Model 500-C2 with an Ilex tachistoscopic attachment having variable control of exposure time.

STIMULI

The stimulus words (pretask) were of three types: neutral, taboo, and paralog (two-syllable nonsense words). Sixteen neutral words, all having similar word frequency counts on the Thorndike-Lorge list (1944), were taken from those used by McGinnies & Sherman (1952). Four of these were randomly chosen as pretask words and

Table 1
Presentation Words

Pretask	Task
outer	legal
phone	towel
spray	glide
brand	rider
bitch	lucky
penis	grind
whore	cable
raped	weave
latuck	flush
zumap	ranch
gokem	hound
tarop	scent

Table 2
Duncan's New Multiple-Range Test of Differences Between Three Types of Pretask Words

Groups	M	(1) 5.50	(2) 6.67	(3) 8.33	Shortest Significant Ranges
(1) Neutral	5.50		1.17	2.83*	R ₂ = 2.494
(2) Taboo	6.67			1.66	R ₃ = 2.600
(3) Paralogs	8.33				

* $p < .01$

the remaining 12 were randomly assigned to three groups of task words. Four taboo words from the same source were also used. Finally, four paralogs were chosen from Noble (1952), all having low association values. All words were prepared on 35mm slides for viewing by the S. The stimulus words are given in Table. 1.

DESIGN

The 30 Ss were randomly assigned to three groups of 10 Ss each. Each group had a different order of presentation of the pretask words. For each group of Ss, the three sets of response words were matched with a different type of pretask word. Thus, all Ss were exposed to all words, but in different orders and with different pairing of pretask and task words.

With this design, an analysis of variance could be performed for the effects of presentation order, type of task word, and response words.

PROCEDURE

The S was seated 9 ft from a 50 x 50 in. screen. Following a ready signal from E, a pretask word was presented for 3 sec. S was instructed to say this word aloud, thus insuring his attention. Following a 1-sec interval, the task word was presented for 1/150 sec and S was instructed to identify this task word. If S was unable to do so, the procedure was repeated beginning with the pretask word and then the task word for an increased exposure time. This was repeated, increasing the exposure speed constantly by .10 sec each time until S correctly identified the word. The number of exposures necessary for recognition was recorded by E.

The 12 sets of exposures (4 of each type) were preceded by several practice sets with neutral pretask words.

RESULTS

An analysis of variance yielded an insignificant F for the order effect [$F(2,54) = 1.36$]. Similarly, an insignificant F was found for the effect of the response words [$F(2,54) = 1.89$]. However, the F for the stimulus (pretask) word effect was significant beyond the .025 level [$F(2,54) = 4.66$].

The differences among the three means for the pretask words were tested with Duncan's new multiple-range test. The results (Table 2) indicated a significant difference ($p < .01$) between the means for neutral pretask words and pretask paralogs. This result is interpreted as indicating that

pretask paralogs significantly delayed recognition of neutral task words. No significance was indicated for the difference between the means of pretask taboo words and neutral pretask words.

DISCUSSION

On the basis of previous studies (e.g., Bruner & Postman, 1947; McGinnies, 1949; McGinnies & Sherman, 1952), it was expected that taboo words presented as pretask words would significantly raise the recognition threshold for neutral task words through a generalization of perceptual defense. In the present study, although the number of exposures required to recognize task words following pretask taboo words was greater than for those following neutral words, the difference was not significant. This result is in line with the findings of Postman & Schneider (1951), Solomon & Howes (1951), and others.

Thus, when word frequency counts, word length, and other factors are carefully controlled, the perceptual defense phenomenon does not occur.

The significant difference found between the effects of neutral pretask words and pretask paralogs was as hypothesized. Certainly there is nothing for Ss to defend against in these paralogs. Their association values were low and, thus, it is doubtful that Ss associated them with some sort of threatening stimuli. These results can be generalized to a large extent since no significance was found on the basis of presentation order or particular response words used.

It may be argued from the present results that perceptual defense did not occur. The results do, however, allow for an interpretation in terms of set. Results of other investigators (Freeman, 1954; Postman et al, 1953) have indicated that set plays a role in selective perception. Hence, the presentation of a taboo word or paralog may well put the S into a set in which he is prepared to see similar material. When, in fact, such subsequent material is not shown, S may take considerably longer to recognize correctly the material being presented.

As to the fact that no significance was found for the effect of the taboo words, perhaps this is due to the more frequent occurrence of these words in present-day spoken vocabulary. On the other hand, paralogs are not used, and, hence, are unfamiliar to Ss.

Other variables accounted for, it would appear that the generalization effect found was due to set and not perceptual defense.

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NOTE

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