

# A critical examination of the response competition hypothesis

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Harrison and Matlin have proposed that novel stimuli elicit response competition (rc) which produces a tension state, but that exposure to these novel stimuli establishes response hierarchies, reducing rc and tension, and making the familiar less unpleasant than the novel. Several problems with the rc hypothesis are presented: (1) it does not adequately account for decreasing or inverted U-shaped relationships between frequency and affect; (2) the nature of rc is unclear and counterintuitive; (3) the operational definitions of rc and meaningfulness lack discriminant validity; (4) data supporting the rc hypothesis have alternate explanations. However, the considerable heuristic value of the hypothesis in generating research and other hypotheses is acknowledged.

The recent rediscovery of a relationship between how often one is exposed to a stimulus and how pleasant that stimulus seems has sparked curiosity as to the psychological processes involved. Why should familiarity sometimes breed contempt, and sometimes breed comfort, as has recently been shown?

One explanation of the phenomenon is in terms of "response competition," an idea that Harrison (1967, 1968) borrowed from Berlyne (1960 and earlier). The essence of this hypothesis is that novel stimuli are, in some respects, similar to various familiar stimuli and, consequently, elicit competing, incompatible, and therefore tension-producing responses. Any subsequent exposure to the stimulus permits establishment of a response hierarchy and reduction of the tension state. As this unpleasant tension state is reduced with repeated exposure, evaluative ratings of the stimuli are hypothesized to become less negative.

Since Harrison's elaboration of the response competition hypothesis, several problems have become evident. One problem is that, while the hypothesis is able to account for a positive relationship between exposure frequency and evaluative ratings, it does not, in its original formulation, account for the frequently obtained inverted U-shaped function (e.g., Smith & Dorfman, 1975; Stang & O'Connell, 1974) unless one accepts Saegert and Jellison's (1970) suggestion that "some optimal level of cognitive conflict is preferable to complete reduction of response competition" (p. 557). This extension of the hypothesis strengthens the post hoc use of the hypothesis, but weakens its predictive usefulness. Further, neither form of the hypothesis can account for the fact that, with prolonged

exposure, immediate evaluative ratings seem reliably to be a decreasing function of exposure frequency (e.g., Berlyne, 1970; Stang, 1975b; Stang, Campus, & Wallach, 1975) or that the shape of the function seems to change with a rating delay (e.g., Harrison & Crandall, 1972; Stang, 1974, 1975a).

Another problem with response competition concerns the unspecified nature of the competition between responses. Is emission difficulty what is meant? Probably not, for even with words for which we have many associations and poorly developed response hierarchies, subjects rarely find themselves "tongue tied" with associations competing for emission. For example, "kitchen" will elicit many associations, yet somewhat different sets of associations across trials on the same subject, but has short associative latencies. Perhaps the competition between responses refers to interassociation incompatibility. This interpretation also poses problems, for frequently used words tend to have more denotative meanings (see Matlin & Stang, Note 1), suggesting that repeated exposure might increase rather than decrease response competition.

Perhaps the greatest difficulty with the response competition hypothesis is that the typical operational definition of response competition (latency to first free association in a discrete free association task) is suspiciously similar to the typical operational definition of meaningfulness (number of free associations per unit time in a continuous free association task). Since meaningfulness seems to interact with exposure frequency in essentially the same way as response competition (cf. Amster & Glasman, 1966; Hamid, 1972), we need to question the "discriminant validity" (Campbell & Fiske, 1959) of the two concepts. Bousfield (1944) has shown that the rate of free association is dependent on the number of associations available: The greater the number of associations remaining, the shorter the associative latency. While the relationship is curvilinear, it does suggest that latency to

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first free association may be an indirect measure of meaningfulness (or vice versa). Several studies have directly examined the relationship between meaningfulness and associative latency. Beck, Phillips, and Bloodsworth (1962) report correlations of  $-.23$  and  $-.19$  between two measures of meaningfulness and associative latency. Ley and Karker (Note 3) report a correlation between judged meaningfulness and associative latency of  $-.77$ ; Ley and Locascio (1970) report a correlation between meaningfulness and associative latency of  $-.80$ . The evidence suggests that measures of response competition and meaningfulness may lack discriminant validity.

What of the other experimental evidence previously adduced in support of the response competition hypothesis? The finding that stimuli with short associative latencies are more pleasant (Harrison, 1968) than stimuli with longer latencies may be because associations tend to be pleasant (Matlin and Stang, Note 1) and stimuli with short associative latencies tend to have more associations; the more pleasant the associations, the more pleasant the stimulus. The finding that repeatedly exposed or frequently occurring stimuli have shorter associative latencies (e.g., Harrison & Zajonc, 1970; Matlin, 1970) may be the result of forming more associations with repeated exposure and the strengthening of all initial associations during this exposure. The finding that frequently occurring or frequently exposed words elicit first associations which are easier to recall than first associations elicited by infrequent words (Matlin, 1970) may be a consequence of the greater communality of these associations (Hall & Ugelow, 1957; Matlin, 1970), resulting from fuller understanding of their denotative meaning.

One other source of experimental support for the response competition hypothesis requires more extended discussion. Matlin (1970) paired nonsense stimulus words with evaluatively neutral familiar real words, and exposed them to subjects in such a way that some stimuli were always paired with the same associates, while others were paired with changing associates. Matlin found that the fewer the associations the experimenter supplied, the more positive the evaluative ratings of the stimulus. Harrison, Tutone, and McFadgen (1971) provide two variations on this paradigm, with similar results. It is possible that the more neutral associations the experiment supplied, the greater was the interference with the subjects' learning of the stimulus, and with the subjects' natural formation of associations to it. Recently, Kreindler and Hakmiller (Note 2) have found evidence that interference which inhibits learning also reduces liking of the stimulus. Similar interference may occur when subjects are instructed to vary their pronunciation of stimulus terms (Matlin, 1970, 1971).

This review suggests considerable problems with the response competition hypothesis. Whether these problems are resolved by response competition theorists

is an open question. But whatever weaknesses the hypothesis now appears to have, the great heuristic value of the hypothesis should not be minimized. It helped spark such interest in mere exposure phenomena that, within 5 years of its publication, there were five competing theories (Stang, 1973). It seems that exposure to the theory has produced a very healthy theoretical response competition.

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