

Mediated meaningfulness?¹

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Changes in the frequencies with which items elicited claimed or stated associates were studied before and after the items had participated in mediation and in control paradigms. The interpolated mediation-control task yielded reliable evidence of mediated facilitation. More associates were claimed on the second than on the first association test but the increase did not appear to be influenced by the particular conditions of the interpolated task.

Mediated facilitation has been shown to increase when the meaningfulness of all of the learning materials was increased (Peterson & Blattner, 1963) and when the meaningfulness of the common—mediating—term was increased (Horton, 1964). It is possible that the items themselves became more "meaningful" in these experimental sessions. The present experiment was designed to assess changes in the frequency with which associates were claimed for items before and after these items had been presented in an interpolated task. The interpolated task presented the items in two mediation paradigms and in two control paradigms.

The mediation paradigms were a chaining model, A-B, B-C, A-CDE, and a response equivalence model, B-C, B-A, A-CDE.

Method

The basic design was to present a 96-trigram association test before (AT1) and after (AT2) the trigrams had been presented as part of an interpolated task. The association tests were prepared by typing 96 consonant trigrams (CCCs) of from 0 to 42% association value (Witmer, 1935) on memory drum tapes. Two random sequences of the 96 CCCs were prepared.

The interpolated task consisted of 24 "sets." A "set" was defined as the consecutive presentation of five cards representing either a mediation or a control format for one of the two paradigms. The 24 sets assigned to an S consisted of a randomized ordering of six sets representing the mediation form of the chaining paradigm (Paradigm I²); six sets representing the control form of Paradigm I; six, representing the mediation form; and six, the control form of the response equivalence paradigm (Paradigm VIII²). Four different interpolated tasks were established so that the trigrams could be used in all conditions over the entire group of Ss.

To balance the use of the trigrams, sets representing the mediation form, Paradigm I, were constructed and then the trigrams of these sets were systematically re-positioned to correspond to the other conditions as noted below. Three trigrams with minimum letter-overlap were chosen for the A, B, and C positions of each of the 24 mediation sets. The remaining 24 trigrams were used as the X-trigrams of the control sets. Thus, for each S, 24 trigrams were presented on AT1

and AT2 but were not included in the particular interpolated task assigned to S. These trigrams were designated the "neutral X" items.

The mediation form for Paradigm I was A-B, A, B-C, B, A-CDE. The immediate retention of an acquisition pair was tested by presenting the stimulus trigram alone, e.g., A was shown immediately after A-B. The test-trial card presented the stimulus from the first-stage pair, A, with the second-stage response, C, and two additional trigram-response alternatives, D and E. The C response alternative was used equally often in the first, second, or third position among the alternatives on the test trials. To equate frequency of experience with each of the test-trial alternatives over the entire group of sets, the D and E components for a particular set were C trigrams from other sets.

A control set was prepared for each mediation set by substituting a new, extraneous, trigram for Stimulus B in the second-stage pair, X-C, providing a pool of 24 mediation sets and their 24 control sets that represented Paradigm I.

The components of the mediation and control sets for Paradigm I were then switched to the corresponding positions in the response equivalence paradigm (Paradigm VIII), B-C, B, B-A, B, A-CDE; and X-C, X, B-A, B, A-CDE. The materials were all printed in capital letters on white, 4 x 6 in. index cards.

The Ss were 32 introductory psychology students at Indiana University, 15 men and 17 women, who participated to fulfill a course requirement. Eight Ss were assigned randomly to each of the four interpolated tasks. The S was seated in front of the memory drum and Witmer's (1935) instructions were read to him. The S spelled the trigram and then stated "what the letters meant to him, if anything." If the trigram seemed familiar but the meaning could not be stated quickly or could not be recalled, S was to say, "Yes." The trigrams were presented at a 4-sec. rate. In the interpolated mediation-control session S spelled aloud all trigrams shown. When the stimulus appeared alone S was to read off the letters of the stimulus and then supply the missing member of the pair. If he erred, the pair was shown again, then the retention test was repeated, and so on until S responded correctly. On test trials S read the A trigram with each of the response alternatives and then stated which of the response alternatives made the "best pair or seemed right" with the stimulus trigram. The second association test (AT2) followed.

Results

Mediated facilitation was shown during the interpolated mediation-control session by the more frequent selections of the C alternative on test trials of mediation sets

Table 1. Relative Frequencies with which Items Elicited Associates on the Two Association Tests as a Function of the Type of Presentation, Paradigm, Position within the Paradigm, and the Alternative Selected on the Test Trial.

Association Test	Test Trial Choice	Paradigm I							Paradigm VIII							Neutral Items
		Mediation			Control				Mediation			Control				
		A	B	C	A	B	C	X	A	B	C	A	B	C	X	
AT1	C	.14	.24	.22	.22	.19	.28	.18	.20	.29	.28	.16	.23	.24	.11	.17
	D or E	.15	.21	.22	.22	.27	.22	.11	.22	.27	.22	.17	.19	.19	.13	
AT2	C	.22	.35	.38	.27	.31	.42	.26	.19	.25	.39	.30	.42	.43	.27	.26
	D or E	.24	.35	.24	.28	.36	.29	.21	.21	.24	.31	.18	.31	.35	.27	

than of control sets, $F = 8.23$, $df = 1/28$, $p < .01$. The mean numbers of selections of C for mediation and control sets of Paradigm I were 4.63 and 4.25. The corresponding values with Paradigm VIII were 4.28 and 3.87. The two paradigms did not yield statistically significant different estimates of mediated facilitation.

On AT1 the 96 trigrams elicited 529 stated associates and 107 unstated but claimed associates (the "yes" responses) and on AT2 they elicited 580 stated associates and 382 claimed associates. The total, 982, exceeded the total number of associates claimed on AT1, 636, $F = 64.71$, $df = 1/1955$, $p < .01$, indicating that associates were more likely to be claimed for the trigrams on AT2 than on AT1.

The basic problem of the experiment was whether or not changes from AT1 to AT2 would be related to the conditions of the interpolated task. To analyze differences between AT1 and AT2 elicitation frequencies were computed as a function of the interpolated mediation-control session: the items which elicited associates on one or both association tests were classified according to the type of presentation (mediation or control), the paradigm (I or VIII), the position within the paradigm (A, B, C, or X) and the alternative that was selected on the test trial (C, D or E). The frequencies of items so classified were then divided by the opportunities for the item to be represented in the particular classification (Table 1). The analysis of variance conducted on the data took into account the unequal n's. Trigrams from sets whose test trials terminated with the selection of C were associated with more responses on AT2 than were sets whose test trials ended with the choice of either D or E, $F = 5.91$, $df = 1/1955$, $p < .05$. None of the other differences was convincingly reliable. The increases in associates claimed on AT2 were approximately the same as the increases shown by the neutral X items.

Discussion

While associates were more likely to be claimed on AT2 than on AT1 the increase appeared to be independent of the particular conditions of the interpolated

mediation-control session. Participation in a mediation set apparently did not increase the likelihood that a trigram would elicit an associate any more than did participation in a control set.

The increasing tendency to claim associates on AT2 was not a simple function of the frequency of exposure of the trigram prior to its presentation on AT2. The trigrams presented most often before AT2, the B-trigrams for mediation sets, showed no greater increase than trigrams presented less often. This situation may have occurred because any extra-experimental associates elicited by a trigram were extinguished or suppressed as the trigram was learned as a member of a pair during the interpolated session. Another possibility was that unlearning occurred during the interpolated session (c.f., Mandler & Earhard, 1964). Such unlearning would have affected the association to the B-trigrams, in particular. Unfortunately, the present design did not permit unequivocal assessment of these possibilities.

References

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Notes

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2. The Roman numerals used to identify the paradigms correspond to the numerals used in Horton & Kjeldergaard (1961).