

## SERIAL POSITION EFFECTS IN NONSENSE SYLLABLE LEARNING AS A FUNCTION OF INTERLIST REST PAUSES\*

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An experiment to test a consolidation hypothesis of certain serial learning position effects has been reported, in which effects produced by continuous and discontinuous presentation of lists were compared. The failure of these two conditions to produce different position effects disproves the hypothesis, but also argues against most of the currently held theories.

The experiment to be reported arose from a theory designed to explain one of the well-known serial position effects in nonsense syllable learning, namely the fact that the final syllables in a list are learnt more easily than intermediate ones, and almost as easily as the first few syllables in the list. The hypothesis derives from the *perseveration* or *consolidation* theory of memory, according to which memory traces require some time for their consolidation (McGeoch & Irion, 1952, p. 118). The time provided by the interlist rest pause would aid in the consolidation of the last one or two syllable memory traces, and might thus account for the superior memory for these syllables. A necessary deduction from this hypothesis would be that the abolition of the interlist rest pause would abolish the superiority of the last few syllables in the list. A previous study by Mitchell (1933) did not show the predicted effect, but as there are some doubts about the proper control of relevant variables, a repetition of the experiment seemed to be in order.

Two fifteen-syllable lists (A, B) were constructed and shown to the subjects on the Maudsley memory drum (Eysenck, 1957), which enables discrete 2-sec. presentations of each syllable to be made. In addition, a set of fourteen dual-colour rectangles was affixed to the proper positions on the memory drum terminating with a single-colour blue rectangle. Two types of presentation were used: (1) Continuous presentation, in which the first syllable followed the fifteenth without a break, and (2) discontinuous presentation in which each series was followed by colour naming, the last single colour serving as a cue for the first syllable. Eight subjects were employed, all of them post-graduate psychologists ignorant of the purpose of the experiment. Order of series, and continuity or discontinuity of each series, were counterbalanced for the subjects so that effect of series, subjects, and order were experimentally controlled. The results of the experiment are shown in Figs. 1 and 2, in which are plotted respectively the *mean first correct response* and the *total number of errors* made before one complete correct presentation of the list.

The results disprove the hypothesis conclusively, terminal position effects being as marked for the continuous as for the discontinuous presentation. The only difference between the two presentations appears to be an improvement in learning for the whole series under the discontinuous presentation condition; this is significant beyond the 0.01 level. The result, therefore, is similar to that of Mitchell. It appears to disprove not

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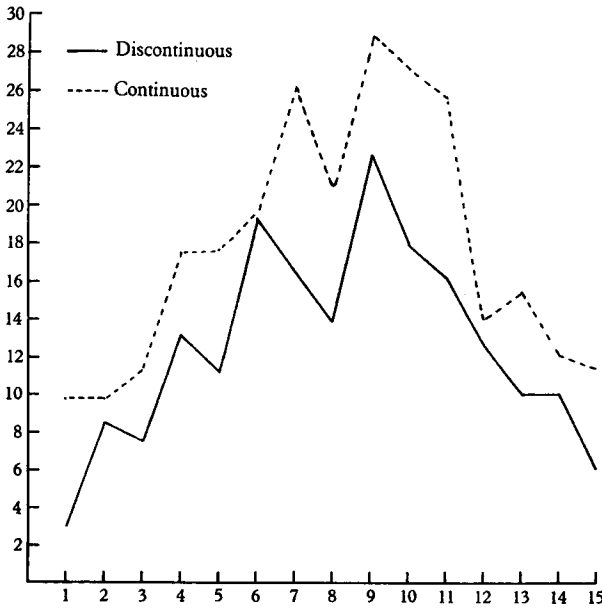


Fig. 1. Number of errors made at each syllable position until first correct anticipation with continuous and non-continuous presentation respectively.

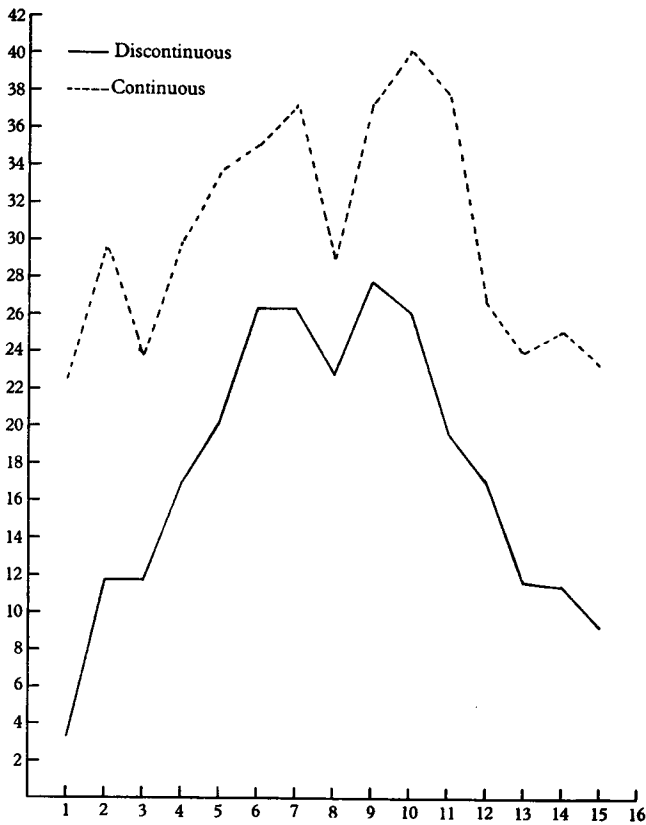


Fig. 2. Number of errors made at each syllable position during learning to mastery with continuous and non-continuous presentation respectively.

only the consolidation hypothesis, but does not seem to be in line with predictions from the Hull–Lepley hypothesis (Hull *et al.* 1940) either, as this posits specific intralist phenomena which should not apply under conditions of continuous presentation. The same may be said of the explanation in terms of competing responses (Foucalt, 1928; Woodworth & Poffenberger, 1920). It also appears to contradict the Ribback & Underwood (1950) hypothesis of ‘backward association’. It is possible that the correct explanation of the phenomenon may be found in connexion with the Von Restorff (1933) effect, on the assumption that the first and the last syllable in a series stand out from the rest by virtue of their position (Woodworth & Poffenberger, 1920). Even in a continuous series the subject very soon becomes aware of these position effects. The data presented do not, of course, prove this hypothesis or even support it particularly; they merely tend to go counter to all the other available hypotheses, thus leaving this as slightly less unlikely to be correct than the others.

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