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The Modality Effect of Presenting Digits - as
Symbols and as Words - on Immediate Serial Recall

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In the short term memory and more definitely in the storing of memory and its relation with its presenting , most studies are based on finding out whether memory material presented aurally is stored in a separate store which is rather different to that if presented visually , or it is stored in one store regardless its presenting modality . This problem can be seen through differences in the whole or partial performance of the memory lists presented to subjects aurally and visually .

The absence of this difference means that there is only one store - one store theory by Sperling - . Meanwhile the existence of this difference means that there are two stores - two store theory by Murdock - . Some studies show that the difference between the similarity of the specific properties of the memory material presented on the two channels is large , hence there is no need to assume the possibility of two stores .

Thus this study came to show whether the specific properties of the memory material is an intervening variable with its presenting modality .

The problem of this study comes as follows :

What is the modality effect of presenting digits - as symbols and as words - on immediate serial recall ? . Despite the fact that the studies relating to the storing of memory and its relation with its presenting modality has't considered sex as a variable

taking into account that males and females normally don't differ in the morphology of memory ; Despite so it is not wrong to assume such a variable . Thus the second problem of this study comes as follows :

What is the effect of sex on immediate serial recall , on digits - as symbols and as words , regardless its presenting modality ? .

The hypotheses of this study were as follows :

1. There is a significant difference in the performance of the subjects on digits presented aurally as words , and on digits presented visually as words, through immediate serial recall.
2. There is a significant difference in the performance of subjects on digits presented visually as symbols and those presented aurally as words , through immediate serial recall .
3. There is no significant difference in the performance of subjects on digits presented visually as symbols and those presented also visually as words , through immediate serial recall .
4. There is no significant difference in the performance of males and females on digits presented - as symbols and as words - through immediate serial recall .

To test these hypotheses , were presented from one to nine arranged hyphazardly in nine lists , eight of which were experimental trials to every subject from the same group where sixty student in the second secondary class participated in it with the same number of both sexes in the three different ways of presentation : digits as symbols on the visual channel ; digits as words on the aural channel ; and digits as words on the visual channel . Thus the study has an experimental design ($3 \times 2 \times 8$ with repeated measures) . The same lists were presented to every subject with the speed of one digit per one and half a second by a special projector in visual presentation, and by a tape- recorder

concerning the third hypothesis which says that the

in aural presentation , it is a fixed speed in all the lists and to all subjects in all presenting modalities . All the subject were asked to recall the digits mentioned in the list in a written form immediately after its presentation in the same serial of the presentation . Every digit mentioned in the recalled list was considered wrong in the following cases .

1. if it was completely missed .
2. if another alternative digit was mentioned in the list .
3. if the digit itself came in a wrong position of the list.

The result of the analysis of variance ($3 \times 2 \times 8$) points out the existence of significant difference with a level 0.05 among the marks obtained by the subjects on digits as symbols and as words . These differences were due to the type of the material presented rather than its presenting modality . When a test was made to compare the means of marks of the subjects on presenting modalities the following were pointed out :

1. There were no significant differences among the means on digits presented aurally as words , and digits presented visually as words ; and this cancels the first hypothesis
2. There were significant differences on a level 0.01 among the means on digits presented aurally as words and their presentation visually as symbols . This supports apparently the correctness of the second hypothesis ; because the difference is due to the variation of specific properties of the material presented rather than the presenting modality.
3. There were also significant differences on a level 0.01 among the means in the visual presentation of digits as words and their presentation visually as symbols . It is clear here that the differences is due to the type of the material which is presented . This in turn cancels the correctness of the third hypothesis which says that the

difference is due implicitly to the presenting modality .

The results pointed out also that there were no significant differences among the means of marks of males and females on presenting modality ; and this supports the correctness of the fourth hypothesis .

Through these results , it is obvious that the mere existence of differences in performance doesn't justify the assumption of the existence of two stores , as far as there is an intervening variable with the presenting modality which is the specific properties of the presented material .

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