

MODALITY EFFECT IN A FOREIGN LANGUAGE CONTEXT

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It has been shown that previously presented material, if auditory, is remembered better than visual. The present study investigated the role of modalities in a foreign language context, hypothesizing that visual modality is superior to that of an auditory one with regard to a text-based recognition test. Thirty-six intermediate male EFL students who were randomly assigned to three groups of 12; Listening group (L), Reading group (R), and listening-Reading group (LR), participated in this study. A 200-word passage was selected. Group (L) listened to the pre-recorded passage, Group (R) read the passage, and Group (LR) listened to and read the passage. A written ten-item multiple-choice recognition test was immediately administered after each task. The results indicated no significant difference between the modes of input whether auditory or visual and that of auditory-visual.

Introduction

Most types of observable language behaviors comprise three levels; that of the language signal which almost covers all forms of language expression, generated and perceived by language users, including writing as well as speech; that of neurophysiological activity involved both in the first and second; and that of language system (Garman, 1990). The language signal is generated, and perceived, by the operation of some highly specialized systems, auditory and visual pathways from sensory organs to the brain, and motor pathways from the brain to the vocal tract and the hand-arm system (Garman, 1990).

The recency effect appears to be specific to auditory rather than visually presented material: This property is known as the modality effect. A wide range of different studies affirm that previously presented material, if auditory, is remembered better than visually presented one (Glenberg, 1990; Jakimik, 1990; Greene, 1989, 1985; Framkish, 1989 in Nassaji, 1996). Nassaji (1993) himself studied modality effect and the superiority of auditory over visual input, but his results showed no significant difference between the two. Less work has been done on text recognition after exposition, whether auditory or visual. Furthermore, situations in which relations between both auditory and visual are concerned have gotten less attention.

The human auditory system is a sensory-neural complex which has quite general capacities for processing a range of sounds but which also shows some specialization for the sorts of sounds that are ordinarily used in speech (Garman, 1990). Research has shown that the auditory memory span for foreign language material is considerably less than that for native-language material, probably on a ratio of nine words to fifteen (Rivers, 1981). Many researchers have concluded that speech perception is a highly specialized facet of human audition.

As your eyes scan these lines of print, perceptual processes are initiated that are, at least in their early stages, quite independent of all the auditory systems which have been considered thus far. Yet language input via each of these systems, auditory and visual, appears to converge ultimately on the same product of comprehension (Garman, 1990). While the speaker involves in the control of the movement of the articulatory organs, the listener involves in searching the acoustic signal for auditorily significant properties. For the writer, written form involves the sweep of the eyes across the page or finger pressing of keyboard operation; the reader controls eye movements over two dimensional arrays, consisting of contrasts dark and light (Garman, 1990). Students who are trained to study language

through written texts are sharply challenged when faced with listening comprehension (Rivers, 1981). As a consequence, we can study memory for written or spoken input, checking either recognition or recall of specific materials. It may also be useful in this connection to note the fairly extensive set of terms available for use in describing what happens during input processing: perception, interpretation, comprehension, understanding and recognition are all found in varying contexts, and with greater or less definition. Recognition is used where assumption of processing via stored terms in memory is strong (Garman, 1990).

A major goal of psycholinguistics research has been to integrate structural description into accounts of language processing (Slobin, 1979). In this paper, we are concerned with just the spoken and written forms of language as input, since speech as a form of language is universal and the written forms are also basic in all communities that possess them. From a psychological point of view, the visual modality of language processing gives rise to questions that go to the heart of our understanding of how language is instantiated in the individual (Garman, 1990).

Methodology

Subjects: The subjects were 36 upper-intermediate male EFL students at Iran Language Institute in Kerman, and participated in the experiment voluntarily.

Materials and Design: A 200-word passage was chosen from Alexander's book (1967) and pre-recorded for groups (L) and (LR) (see Appendix). The context and the words of the passage were familiar to all the subjects. A ten-item multiple-choice recognition test was prepared, based on the content of the passage (see Appendix).

Procedures: Subjects were tested in three different groups. Group (L) listened to the pre-recorded passage and they were given four and a half minutes to answer the questions. Group (R) read the passage in 75 seconds and immediately they were given the test having 4.5 minutes to answer the questions. Group (LR) first listened to the passage and immediately afterwards, they were given 75 seconds to read the passage. The same test was immediately afterwards administered and the time limit was kept constant. The subjects were briefed on the testing procedures before taking part in the experiment.

Results and Discussion

The results demonstrated that there is no meaningful difference among the three groups and the differences between the means of groups could not be considered large enough to state that groups were different in performance; $F_{(2, 33)} = 1.185, p < .05$. Further analysis of the data revealed no significant difference between the three groups; Groups L-R ($F_{(1, 33)} = .83, p < .05$); Groups L-LR ($F_{(1, 33)} = 1.84, p < .05$); and Groups R-LR ($F_{(1, 33)} = .58, p < .05$) (see tables below).

Table 1. ANOVA

source	degree of freedom	sum of squares	mean squares	F ratio	F prob.
Between Groups	2	28.6667	14.3333	1.1845	.3186
Within Groups	33	399.3333	12.1010		
Total	35	428.0000			

$F_{sig}(2,33)=3.28, p<.05$

Table 2 : Descriptive Statistics

Group	Mean	SD	SE
Listening(L)	11.1667	3.3530	.9679
Reading(R)	12.500	4.4415	1.2822
Listening--- Reading(LR)	13.3333	2.3094	.6667

Table 3:T- test

variables	T- test
L - LR	-1.84
L - R	-.83
R - LR	-.58

$t \text{ sig} = \pm 2.074, p<.05$

General Discussion

In many countries (in Iran as well), foreign languages are learned by numbers of students who will never have the opportunity of conversing with native speakers, but who will have access to the literature and periodicals, or scientific and technical journals, written in the language they are learning. As a result their knowledge of the language is text-based, and they are better readers than learners. Everyday experience shows that while they generally remember quite well what they have heard, they usually cannot repeat it in the same words in which it was given. At more advance stages, they may recognize the essentials of the message but not be able to remember what they have recognized. This is because they are unable to concentrate their attention on the crucial elements of the message long enough to rehearse them subvocally before moving on with continuing voice. All their attention is taken up with recognition and selection. There is little capacity left for processing for retention (Rivers, 1981). Jacqueline Sach (1967, in Slobin, 1979) has inserted that knowledge of the world and knowledge of the language interact in the process of understanding and remembering what we hear and read. We can further state that individual students prefer different modalities of learning: Some learn better through ear, some through eye. Although the results of the data in the present study are not significant and conclusive, there seems to be a trend towards a slight superiority of visual modality over auditory modality in a foreign language environment which requires further stipulation.

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Appendix A

Stop Thief!

Roy Trenton used to drive a taxi. A short while ago, however, he became a bus-driver and he has not regretted it. He is finding his new work far more exciting. When he was driving along Catford Street recently, he saw two thieves rush out of a shop and run towards a waiting car. One of them was carrying a bag full of money. Roy acted quickly and drove the bus straight at the thieves. The one with the money got such a fright that he dropped the bag. As the thieves were trying to get away in their car, Roy drove his bus into the back of it. While the battered car was moving away, Roy stopped his bus and telephoned the police. The thieves' car was badly damaged and easy to recognize. Shortly afterwards, the police stopped the car and both men were arrested.

Appendix B

CHOOSE THE EXACT SENTENCE THAT YOU HEARD/READ.

1. a. *The one with the money got such a fright that he dropped the bag.*
- b. *The man with the money got such a flight that he dropped the bag.*
- c. *The man with the money got such a fright that he dropped the bag.*
- d. *The one with the money got such a flight that he dropped the bag.*

2.
 - a. Roy acted weakly and drove the bus straight at the thieves.
 - b. Roy acted quickly and threw the bus straight at the thieves.
 - c. Roy acted quickly and drove the bus straight at the thieves.
 - d. Roy acted weakly and threw the bus straight at the thieves.
3.
 - a. A short while ago, however, he became a bus driver.
 - b. However, a short while ago he became a bus driver.
 - c. However, he became a bus driver a short while ago.
 - d. A short while ago, he became a bus driver, however.
4.
 - a. The police stopped the car and the men were arrested.
 - b. The police stopped the car and both men were arrested.
 - c. The policeman stopped the car and both men were arrested.
 - d. The policeman stopped the car and the men were arrested.
5.
 - a. The thieves' car was badly damaged not easy to recognize.
 - b. The relief car was badly damaged and easy to recognize.
 - c. The thieves' car was badly damaged and easy to recognize.
 - d. The relief car was badly damaged not easy to recognize.
6.
 - a. Roy threw his bus into the back of it.
 - b. Roy drove his bus into the back of it.
 - c. Roy threw his bus into the pack of it.
 - d. Roy drove his bus into the pack of it.
7.
 - a. Roy stopped his bus and called the police.
 - b. Roy dropped his bus and called the police.
 - c. Roy dropped his bus and telephoned the police.
 - d. Roy stopped his bus and telephoned the police.
8.
 - a. He is finding this new work far more exciting.
 - b. He is finding his new work far more exciting.
 - c. He is finding his new work far more interesting.
 - d. He is finding this new work far more interesting.
9.
 - a. Roy turned on as to drive a taxi.
 - b. Roy Trenton used to drive a taxi.
 - c. Roy Trenton used a drive of a taxi.
 - d. Roy turned on as a drive of a taxi.
10. The title of the reading/listening was:
 - a. Stop Tariff!
 - b. Stop Belief!
 - c. Stop Brief!
 - d. Stop Thief!

g.s.