

THE EFFECTS OF THREE PICTORIAL STRATEGIES
ON COMPREHENSION, RECALL AND VOCABULARY ATTAINMENT
IN GREEK INSTRUCTION TEXT

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Abstract

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This study was aimed at determining the effect of Pictures on the recall and comprehension of a written text and on vocabulary attainment in second language learning. The target population consisted of students born in Canada of Greek parents, who, parallel to their regular daily studies, have the added task of trying to learn Greek. Subjects were 200 students, Grade IV, chosen at random in equal numbers, 100 from "Socrates" day school and 100 from "Plato" Saturday school. It was hypothesized that pictures would have a positive effect on the story recall and comprehension of a Greek text and on the attainment of vocabulary, because they contained both relational elements that contributed to the meaning of the story, and vocabulary support. The design of the study was a 4 x 2 x 2 mixed factorial. The 3 independent variables (picture conditions, levels of exposure to the Greek language, time of testing), and the 3 dependent variables (vocabulary attainment, comprehension of story content and story order) were described. The results showed that 1) pictures support vocabulary attainment and comprehension and recall of significant story events especially among those students with a lower command of the language.

2) Thematic pictures with labels proved superior to the other two picture treatments.

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Chapter One

Introduction

This study is concerned with a problem area of very practical concern to persons who are designing instructional materials, for students in second language classrooms. It is focused upon the use of illustrations in second language text. While it deals specifically with learning Greek as a second language and, in particular, the level of weekly exposure to instruction in Greek, it may be generalized and applied to other second language situations.

Context of the Problem

A significant proportion of elementary and secondary students in North America are regularly involved in formal courses of instruction in two languages - the language of their country, which of course in Canada is English or French, and the language of their parents' native country. Usually these are second or third generation families, who have emigrated to a new land but are attempting to preserve the language as well as much of the culture of their homeland. This situation is especially true of Greek families and because of this, Greek students served as subjects in this experiment.

Typically, two patterns exist in regards to the learning of Greek as a second language. Some children attend regular classes in the public schools, where the language of instruction is English or French and, in addition to this, attend Saturday class where the language of instruction is Greek. While a primary purpose of these part-time schools is to teach Greek as a second language, the content of the classes deals specifically with the culture and literature of Greece.

In schools of this type the total instructional time rarely exceeds four hours per week and in many cases even less.

The other common pattern for children of Greek heritage is to attend day school in French, English and Greek. Many subjects are taught in French and English, but a significant percentage of the school day is devoted to learning Greek. In this case, the total time of instruction often exceeds $1\frac{1}{2}$ hours per day or a total exposure time of 8 hours per week. This is twice the exposure time of students in the Saturday classes and, as might be expected, this difference is reflected in the level of language and reading abilities of the two groups. However, it is also not surprising to note that neither group approaches the level of proficiency of Greek students living and studying in Greece.

One of the difficulties that teachers in these schools face is the textual materials that are available for use in Canadian/Greek schools. Because few Greek instructional materials are produced in Canada, basal readers and other textbooks are acquired from Greece. Not only are these materials graded so as to be too difficult for second language Greek children, but they are designed to native speakers. There are illustrations in these texts but they are not intended as support for the text. Often these illustrations are abstract in nature, and, while aesthetically pleasing, do not provide contextual cues for students who may be having difficulty with the language. Of course this situation poses little difficulty for Greek native speakers. In fact, there are those who argue that North American texts should be similarly designed. However, pictures and illustrations designed specifically to support

the text may be beneficial for Canadian/Greek students who are just learning the formalities of the language. In general, then, this study was designed as an exploratory investigation concerning the use of illustrations in Greek instructional materials (specifically, reading materials) with students of two exposure levels - designated relatively as maximum and minimum. The purpose was to determine if explicit thematic pictures (i.e. realistic pictures which relate specifically to the content and theme of the story being read) improve comprehension and recall of the story content. A second purpose was to determine if the addition of selected key vocabulary words in the body of the illustrations, improves the learning and retention of those words as a result of reading the story. A third purpose was to determine which of three illustrative designs best facilitated the combined goal of better comprehension and recall and improved vocabulary. The three picture types selected were: (1) realistic picture without vocabulary labels (i.e. similar to most textual illustrations), (2) realistic picture with vocabulary labels placed near the object or person being named, and (3) picture dictionary (i.e. story elements with labels but placed in quadrants of the picture frame without regard to their thematic relationship).

Unfortunately, there is very little empirical evidence concerned with the use of pictures in textual materials for second language learners. However, there has been a substantial contribution in terms of first language learners. In the following section of this introduction the highlights of this research will be presented in four areas: (1) pictures to support vocabulary attainment, (2) pictures

to support comprehension and recall of stories, (3) the differing effect of pictures on pictured and non-pictured text and (4) the differing effect of pictures on high and low-level readers. These and other related literature will then be reviewed and critiqued in detail in the Review of Literature.

Summary of Picture/Prose Research

For generations children have been taught to read from books that contain pictures and illustrations (Huey, 1908/1968). Historically, as cited in Concannon (1975), the first step was taken by Comenius (Orbis Pictus, 1650) followed a hundred years later by the New England Primer (1792). Today pictures are a standard feature in almost every children's book. However, the practice of illustrating nearly every form of printed material encountered in the early grades, appears to have reached exaggerated proportions. Willows (1978) observed that it has become common not only to illustrate children's reading materials in the normal way, but even to print text directly on an illustrated background.

One of the major criteria that is currently used in determining how children's books are to be illustrated is whether or not the illustrating will increase the saleability of the book (Levin, 1976; Levin and Lesgold, 1978). To a large extent these illustrative decisions are based upon the real or perceived preferences of the target audience. A number of studies over the years have documented these preferences (French, 1952; Malter, 1948; Rudisill, 1952; Stewing 1974; Whipple, 1953; Myatt and Carter, 1979). These studies have documented

the instant aspects of preference (e.g. color, realism) as well as pointed out those realms in which changes in preference are occurring (e.g. modernism). This kind of research has helped publishers cater to the "aesthetic tastes" of the buying public and particularly to the tastes of educators who are responsible for selecting textbooks and basal readers for use in early childhood classrooms.

Only recently (since the late 1960's) have questions related to the functional acceptability of illustrating children's books been seriously raised. Shepard (1967) first suggested that pictures may not be entirely supportive of the acquisition of sight-vocabulary words in a study which has been replicated several times since. His argument was essentially that during the learning process, pictures act as substitutes rather than reinforcements for the to-be-learned vocabulary words, so that, upon testing, the word-only groups produce superior results. Subsequent replications and extensions of this findings have produced conflicting findings. Studies by Braun (1969), Singer, Samuels and Spiroff (1973-74), Harzen, Lee and Miles (1976), Brooks (1977), Ude (1977) and Willows (1978) have essentially confirmed Samuels' original findings. On the other hand, Montare, Elman and Cohen (1977) Arlin, Scott and Webster (1978-1979) reported finding that pictures are facilitative of sight-word acquisition. At this point in time, it appears that the inclusion of illustrations in materials designed to support the development of early reading skills may have a negative effect although the question remains open.

Another question that has been raised concerns the extent to which pictures support the comprehension and recall of children's textual and story materials. Although this question has not been as widely

researched as the latter, several studies (Peeck, 1974; DeRose, 1976; Rusted and Coltheart, 1979; Rusted and M. Coltheart, 1979; Willows, 1979; Bryant et al, 1980; Peeck, 1980) have produced results which suggest that pictures in children's text do indeed contribute substantially to understanding and subsequent recall of textual or story information. Again, however, there is much controversy and contradiction in findings. These findings indicate that pictures may be appropriate for children who have acquired basic sight vocabulary, but whose comprehension skills are still developing. In other words, the effects of illustrations which depict story or textual elements may converge with prose at the level of meaning, but diverge, possibly because they are more compelling and easily interpreted than unfamiliar words, at the level of vocabulary attainments. Since the essence of reading is the extraction of meaning from non-representational symbols this deeper-level confluence of meaning would seem to justify the use of pictures in text when the purpose is to convey meaning.

Since pictures are obviously not prerequisites to extracting meaning from verbal text, is it possible that illustrations are more helpful for readers with lower-level skills than those whose skills are more developed? That is, would low-level readers benefit more from the addition of contextual cues than proficient readers? Several researchers have posed that question (Wardle, 1977; Rusted and M. Coltheart, 1979; Moore, 1975; DeRose, 1976; Goldberg, 1974) and although the findings are inconclusive, the literature tends to suggest that poor readers are helped more by the presence of pictures than good readers. This finding, although not firmly established is of

particular significance to the present study since it suggests that second language learners with less exposure to instruction in Greek should profit more from pictorial accompaniments than students with greater levels of exposure.

Chapter Two

Review of Literature

In the following sections four areas of the picture literature will be reviewed. The first area concerns the general characteristics of pictures in regard to their memorability. In the second section the literature on the contribution of pictures and illustrations to comprehension and recall of story text will be discussed. The third section deals with the controversy surrounding the use of pictures as prompts to vocabulary attainment in preschool children and in the fourth section the few articles dealing with pictures in second language learning will be reviewed.

Pictures and Memory for Pictures

One of the conclusions that has been reached regarding the effects of pictures is that pictorially represented objects are more memorable than their associated verbal labels. This idea is appealing at an intuitive level since people commonly report that a picture-like image in memory can serve as a prompt for remembering a verbal label or name. The scientific evidence which has been gathered over the years tends to support this conclusion (Shepard, 1967). Using adults as subjects, he tested three recognition memory tasks, each with 600 stimuli. His findings were that, whereas verbal material (words, sentences) were recognized with 89% accuracy, pictures reached a high of 97% accuracy. After a week, however, it was found that verbal and pictorial stimuli were essentially the same. Levin (1976), commenting on the findings of Shepard, maintained that: a) the data used were acquired from differ-

ent subject population in sequentially conducted experiments, and (b) there was no similarity in the picture and word lists, as regards length and content. As equally impressive as Shepard's is the study of Standing, Conezio and Haber (1970), who found 90% accuracy in 2500 pictures even with a lapse of three days between presentation and testing. Evidence of picture superiority is also afforded by the research of Paivio and Csapo (1969) in which recognition memory for line drawings of familiar objects proved to be greater than that of verbal labels of the same objects. Subjects in this study were also adults. Exactly the same conclusions were reached by studies in which the subjects were of school and preschool age (Brown and Scott, 1971; Corsini, Jacobus and Leonard, 1969; Reese, 1970; Ghatala and Levin, 1973).

Age seems to be a regulatory factor as regards the magnitude of the effect of pictures. Levin, Davinson, Wolff and Citron (1973) found that while second graders achieved a score of 14% on pictorial items and 12% on verbal ones, this difference of 2% increased to 15% with fifth-graders as subjects, for they achieved a score of 28% for pictures and 13% for words. According to Bruner (1964), there are three ways in which a person extracts meaning from the experience of his environment or represents his experience. These ways are: a) enactive, namely representation by physical actions; b) ikonic, representation by imagery; and c) symbolic, representation by symbols. An adult is able to make use of all three ways, but such is not the case with a child, especially of preschool age. The latter is lacking in symbolic representation, a fact which leads to the conclusion that the preschool child's capacity for storing information in memory

relies more on pictures than words. This last conclusion is corroborated by the study of Corsini, Jacobus and Leonard (1969), who found that preschool children a) are better able to encode pictorial than verbal information, and b) that they have difficulty translating this iconic representation into a verbal response.

Up to here, emphasis has been placed on the favorable effect of pictures on memory recognition concerning concrete objects. The situation, however, is quite different when the objects of the study are concepts (e.g. soft, heavy, etc.). The role of pictures is much less effective than that of words (Katz and Paivio, 1975; Runquist and Hutt, 1961; Hollenberg, 1970). The explanation, according to the conclusions of the above, is that irrelevant perceptual details may contribute to a "conceptual blindness" (Levin, 1973), a conclusion which brings to the forefront the observation of Travers (1964) that simple line drawings can be more effective as information transmitters than either shaded drawings of real-life photographs; full realism pictures that flood the viewer with too much visual information are less good as learning stimuli than simplified pictures or drawings.

The above results are suggestive in regard to the design of pictorial materials for the use in text. Pictures should attempt to support the story line in which concrete and identifiable objects play a decisive role. Abstract ideas contained in stories or instructional materials which deal with non-tangible ideas or concepts will probably not profit from pictorial support. So as to avoid interference from non-relevant details, pictures should be simple and uncluttered.

To some extent these suggesting contradict the findings of children's preference studies (Myatt and Carter, 1979). A summary of the findings have revealed the following:

- 1) Children prefer color to black and white
- 2) Children prefer photographs or realistic as opposed to abstract representation
- 3) Younger children prefer simplicity as opposed to complexity, while older children prefer the reverse

However, it is clear that in the design of materials to support instructional aims, the results of learning and memory studies should be the guide. Therefore, the pictures used in the current study were simple line drawings in black and white in which all distracting and potentially confusing details have been removed.

Effect of Pictures on Recall and Story Comprehension

The studies which have been conducted regarding the effects of pictures on comprehension and recall of story information will be reported. The results of these studies are to a large extent contradictory. First, studies where non-facilitative findings or negative effects have emerged will be reported. Later, the studies in which positive findings have occurred will be reviewed.

Non-facilitative results. Goodykoontz (1936) and Miller (1938) were among the first who studied the relationship between pictures and comprehension. According to their conclusions, the addition of pictures to a written text did not enhance comprehension. A little later, however, Strang (1941) and Halbert (1943) conducted new studies which revealed that pictures did indeed enhance comprehension. The existence

of the widely divergent views at the outset of studies on this subject quite naturally created a great stir. One of the criticisms of Miller's study was that some of the questions which were used were not measures of what is today called comprehension. To be specific, text questions required the subjects 1) to pick out from a group of words the one spoken by the teacher; 2) to choose from two sentences the one that the teacher said; 3) to pick out the word which did not belong to a group of three words; 4) to fill in sentences after the reading of a paragraph; and 5) to place in sequence the events as they were presented in a paragraph. Practically the same criticism was acknowledged by Halbert when, in her conclusions she mentioned that pictures were an aid to recall. However, recall and comprehension are not exactly the same thing. Halbert argued the point in the following way: "To the extent that memory for ideas is a measure of comprehension, to that extent pictures contribute to the comprehension of reading materials" (p.7). The contrasting conclusions of Goodykontz (1936), Miller (1938), Strang (1941) and Halbert (1943) were reconciled in a set of reviews (Spaulding, 1955; Weintraub, 1960, 1966; Koenke, 1968). Here it was argued that a single comprehension test score came from a number of sequences and details of the written text. Thus, it was inevitable for the conclusions regarding the role of pictures in reading comprehension to be considered as general comprehension. Zintz (1970) divided comprehension skills into three categories:

- a) literal comprehension (understanding vocabulary remembering, finding details, finding main idea, putting ideas in proper

- sequence, finding information in paragraphs, to answer question),
- b) interpretive skills (learning to anticipate meanings, drawing inferences, drawing generalizations),
- c) evaluation skills (fact vs fancy, overstatement or unfounded claims, judging emotional response to what is read).

Wishing to avoid the difficulties of the previous studies (Goody-kontz, 1936; Miller, 1938; Strang, 1941, Halbert, 1943), Vernon (1953, 1954) performed two studies in which she sought to determine the effects of pictures on the retention of details, on the sequencing of facts, and on the main points of a long and difficult passage. In other words, she wanted to determine the effect of pictorial stimuli on the recall and comprehension of written text. Her conclusions, in general, showed that the use of pictures produced only minor additions to the recall and produced no distinct advantage for comprehension of the text. Interest, moreover, was stirred by another conclusion of hers. According to her findings young and less intelligent students paid more attention to the pictures than the older, more sophisticated readers. That is to say, the age, intelligence and education of the subjects were factors which influenced the effectiveness of the pictorial materials. Indirect confirmation of this conclusion was provided by the observation of Levin (1972) that any change whatsoever in reading materials was usually more crucial for below-average than for above-average readers. Thus, justification was given to the propositions of Wiener and Cromer (1967), that below-average readers should be considered according to the level where they are, and from a variety of vantage points.

Koenke (1958) studied the effects of pictures upon children's ability to identify the main idea of a paragraph. For his study, the pictures represented the main ideas of short, expository paragraphs. Grade III and Grade VI students were used as subjects. The four treatments were: 1) paragraph only (no picture), 2) Paragraph and picture (no directions to use the picture), 3) Paragraph and picture (minimum directions to use the picture), and 4) Paragraph and picture (maximum directions to use the picture). Koenke found that the existence of pictures, even with maximum directions to use them, did not enhance the students' ability to state the main idea of the paragraph. The fact that two of these treatments contained instructions for the use of pictures to the minimum and to the maximum respectively, confirmed the thoughts of Brown, Lewis, and Harclerod (1973) regarding visual literacy. They conclude that: "...All persons need proficiency in reading pictures, but this skill must be developed over time". (p. 150) Finally they maintain that visual awareness - the skills of visual reading and visual comprehension - are very important factors in intellectual development.

So far, the studies reported here have shown that the addition of pictures to a written text did not enhance comprehension, except for Halbert's (1943) and Strang's (1941) experiments. The next few studies elaborate in these findings in an effort to determine why these non-facilitative results occurred. Specifically, they address the probability that pictures function to distract subjects from the verbal material. Weintraub (1960) conducted a study to determine the effect of Pictures on comprehension. As subjects he used Grade III students

who were given texts with pictures and other texts without pictures. Using multiple choice questions that measured both details and main ideas, Weintraub found greatest comprehension when only the written test was used. The results of the study also revealed that, rather than reducing the differences between good and poor students, as would be expected, pictures seemed to widen the gap. This leads us to believe that the pictures functioned as distractors. The latter conclusion reinforces one of the findings of Vernon (1953) that younger and less intelligent students paid more attention to the pictures than the older, more sophisticated readers. It appears that when distracting stimuli are present the performance of the below-average student undergoes greater disruption than does the performance of the more capable student (Silverman, Davids and Andrews, 1963; Baker and Madell, 1965).

To test the hypothesis that when pictures and words are presented together, the pictures would function as distracting stimuli, Samuels (1967) conducted a study in which two experiments were performed. Experiment I was designed as a laboratory study to test the effect of pictures on naive subjects in circumstances different from those which prevailed in the class. According to the results, during the 10 acquisition trials, when pictures were available as incidental cues for appropriate verbal responses for subjects in the picture conditions, subjects in these conditions gave significantly more correct responses than did subjects in the no-picture conditions. On the 10 critical test trials, when pictures were not available as incidental cues, subjects in the no-picture condition gave significantly more correct responses. Despite the alternation of acquisitions and test trials,

subjects in the picture conditions used the pictures more as cues than as words. This finding reinforces the view that pictures acted as distractors because they drew the attention of the subjects away from the printed words.

A similar opinion was expressed by Underwood (1963), who maintained that when two stimuli (word and picture) are presented together, it is the picture which produces the desired response, a fact that caused the student to pay only scant attention to the written words. Samuel's second experiment took place under circumstances similar to those existing in the regular class. No significant difference was observed in reading acquisition between the picture and no-picture condition among the good readers. Among the poor readers, however, the no-picture condition produced better results than the picture condition. These results support the findings of Silverman, Davids and Andrews (1963), and Baker and Madell (1965).

In two related experiments, Willows (1978) examined the effects of background pictures on the speed and accuracy of children's reading. In both experiments, subjects were required to read sets of words under each of three conditions: (1) with no pictures; (2) with related pictures; (3) with unrelated pictures. The two experiments differed as regards the age of the subjects (Experiment I - Grade 2; Experiment II - Grade 3) and the location of the photographs (Experiment I - behind the words, Experiment II - above the words). The results of these two experiments were: (a) the words were read more slowly in the presence of related pictures; (b) unrelated pictures produced more interference than related pictures; (c) related background pictures tended to make

subjects more accurate in their decoding whereas the opposite occurred with the unrelated background pictures; (d) less skilled readers were more susceptible than better readers to the distracting effects of background pictures; and (e) the location of pictures was not a major determinant of their interfering effects.

On the subject of reading ability, it should be pointed out that it is an important variable which quite a few of the researchers mentioned up to now have not resolved. Bluth (1973), using second grade students as subjects in his study, found that whereas the good readers benefited from pictures, the poor readers had the same results with pictures as they did without pictures. Exactly the opposite results from those of Bluth, were obtained by Wardle (1977), who found that pictures facilitated the comprehension of poor readers but had no effect on the performance of the good readers. The subjects in his study were seventh grade students.

These conflicting results have become even more complicated with the findings of Levin (1973), who determined that the pictorial representation of a text was not facilitative especially for the poor readers. More specifically half his subjects who were grade 4 students, received the story in printed form and the other half in pictorial form (12 cartoon-like color drawings, each corresponding to one sentence of the printed text). Half the subjects who had the printed text received a visual imagery organizational strategy prior to studying the story. Imagery organization facilitated comprehension of the story, especially with the students with adequate vocabulary skills. The fact that pictorial treatment was not significantly facilitative was possibly due

to one of two reasons. Either (a) the pictorial representation was not what it should have been (i.e. nature of pictures, sequence of pictures) or (b) some linguistic information should have accompanied the pictures. The last explanation is supported by the results of Matz and Rohwer (1971) who used tape-recorded passages when the pictorial representations were displayed.

Facilitative results. Apart from the studies of Strang (1941) and Halbert (1943) which were mentioned earlier, the positive influence of pictures on the comprehension of a written text can be found in the results reported by Peeck (1974), who observed that his grade four students did benefit from the presence of pictures, not, however, immediately but from one to seven days after the reading of the text. Here it should be pointed out that pictures facilitated students' performance on questions concerning illustrated narrative text content and picture content, but performance was not facilitated for unillustrated text information. Koenke and Otto (1969) also studied what pictures could offer to children's comprehension of the main idea in reading. In their study they used texts approximating commercial reading material (198 words) and two types of pictures: (a) explicitly relevant to the main idea; and (b) generally relevant to the context. Koenke and Otto found that whereas the students of grade VI benefited from the pictures, grade III students did not. The fact that pictures helped grade VI students' comprehension comes into direct conflict with the findings of Koenke (1968) who, under the same conditions, arrived at the very opposite conclusion. The reason for this is probably explained by the fact that he used a

smaller paragraph (approximately 50 words). Thus, we can draw the conclusion that pictures enhance main idea responses to longer passages only. These conflicting results may also be due to the fact that Koenke (1968) used pictures which were not related to the main idea, or general content, or relevant to a specific detail. As mentioned above, the grade III students did not benefit from the pictures. That is to say, they were unable to give higher level responses. Since Otto and Barrett (1968) found that third grade students were capable of giving main idea responses, this contrast remains, to a certain degree, inexplicable because, according to the conclusions of Vernon (1954) and Koenke (1968), at least, even directions for the use of the pictures would have been useful.

Supportive of previous findings by Koenke and Otto (1969), as well as Peeck (1974), are the findings of the study by Haring and Fry (1979). They studied the effect of pictures on the comprehension test of grade IV and grade VI students, using two kinds of pictures which differed in the number of details. The conclusion of this study was that pictures aid recall of the main ideas of a written text.

Picture benefits were present both immediately and later, something which is somewhat contrary to the findings of Peeck. If a picture is to enhance comprehension it must be able to convey information that is relevant to the questions asked on a test (Samuels 1970). This conclusion finds support in research conducted by Lindseth (1969). Using students of grades I, II and III Lindseth tried to determine up to what point these students could answer comprehension questions on a developmental reading series that accompanied the

stories upon which the questions were based. Lindseth found that the students were not able to answer comprehension questions solely by looking at the pictures.

Positive results regarding the role of pictures on young children's oral prose recall and comprehension were found by Levin and colleagues (1976) and in four studies by Bransford and Johnson (1972). These conclusions, however, cannot be considered as applicable since there is no guarantee that the results would be equally positive in the domain of reading comprehension. The fact that decoding skills differ for listening and for reading (Sticht, Beck, Hawke, Kleinman and James, 1974), leads to the undeniable fact that the effect of pictures on reading comprehension is investigated best with a written text.

The conclusions on all of these studies appear to be conflicting. This could be due to any number of reasons, among which are the following: 1) the number of pictures presented: one differed markedly from study to study, (i.e. from one picture per passage to 37 pictures per passage) 2) the student level (i.e. range of grade one through grade ten), 3) the written text: difficulty level, size etc. However, the general impression which dominates is, if certain conditions exist, pictures can have a positive effect on children's comprehension of a written text. Levie and Lentz (1983) in a comprehensive review of picture-prose studies reached a similar conclusion. It is therefore reasonable to expect that carefully designed pictures which relate to the thematic content of the Greek story being used as an experimental will contribute significantly to comprehension of the story elements and recall of specific story-related information.

Pictures as prompts for learning vocabulary

It is common practice, that when a student is beginning reading and cannot identify a word, the teacher advises him to look at the picture for a cue to the identification of this word. As Chall (1967) points out, in most basal reader series the use of pictures is recommended. The reason, or part of the reason, is that pictures provide cues to the meaning of words which are entirely unknown or only somewhat familiar to the students (Arlin, Scott and Webster 1978-79). However, the conclusions of studies on the role of pictures in the learning of new words are conflicting. Samuels and his "focal attention theory" plays an important role in this dispute. To determine the effect of pictures on learning to read words, Samuels (1967) conducted a study under two different conditions. The first experiment took place in a laboratory with kindergarten students as subjects. According to the results, during acquisition trials, pictures facilitated correct responses. However, on test trials, when pictures were not presented, the no-picture group gave significantly more correct responses.

The second experiment took place in a regular class setting with grade I students as subjects. The results showed that there was no difference in learning between picture and no-picture groups among good readers. Among poor readers, the no-picture group learned significantly more words. Samuels concluded that the presence of pictures appeared to distract the reader's attention from distinctive features of the printed stimulus (word). This serves, simultaneously, as a confirmation of the conclusions of Silverman, Davids, and Andrews (1963),

as well as Baker and Madell (1965) who found that when distracting stimuli were present, the performance of the underachievers fell to a low level in comparison to that of the good students.

In order to test the findings of Samuel (1967), Montare, Elman and Cohen (1977) conducted a study which could be characterized as a replication and extension of Samuel's work. However, the conclusions which were derived refuted the findings of Samuel. Arlin, Scott and Webster (1978-79) on the subject of the study of Montare, Elman and Cohen, reported that in experiment I, verbal (voice) feedback was used for the students who could not answer correctly. Montare, Elman and Cohen found that in the picture-word condition very little feedback was required because the picture prompted the correct answer. On the contrary, in the word-only condition, more verbal feedback was required, a percentage of 88 of total voice feedback. This fact leads us to the conclusion that, quite probably, in similar studies, the results which apparently favor no-picture superiority is the result of a large amount of verbal feedback rather than actual effectiveness in the no-picture condition. The focal attention theory of Samuels was also examined in a study by Arlin, Scott and Webster (1978-79). Contrary to the conclusions of the above theory, pictures presented with words facilitated learning, a fact which leads us to believe that the conclusions on the role of pictures as distractors are unwarranted.

The already confusing situation was even further entangled by Goodman (1970) with his own "contextual theory", based on which contextual constraints facilitated identification of new words. In other words, syntactic and semantic constraints of the sentences

provided cues for the identification of new words. Singer, Samuels and Spiroff (1974) conducted a study in order to resolve the focal attention versus context controversy. In their experiment four conditions were used: word alone, word and picture, word and sentence, and word, sentence and picture. The subjects scored best on word alone, next on word-picture, third on word-sentence, and worst of all on word-sentence plus picture condition. These results were considered as support for the "focal attention" theory of Samuels.

The negative influence of pictures on the learning of new words is also supported by a study conducted by Braun (1969), who found that students in a no-picture condition acquired sight words at a significantly faster rate than students in a picture-word condition. The same conclusion was reached by Harris (1967) as cited in Samuels (1970). Harzem, Lee and Miles (1976) also found that the no-picture condition facilitated word learning more than the word-picture condition.

Contrary to the studies reported, the current study involves the learning of vocabulary words in the context of a reading passage. In this situation new vocabulary is learned in relation to the thematic characteristic of the story as contrasted with the isolated picture-word methodologies of the previously reported studies. However, their findings may be helpful in predicting the success of the various treatment conditions. The conditions in which vocabulary labels are placed in close proximity to pictured story elements are expected to produce favorable results as compared with the no picture control condition. However, it is the picture-only condition (without vocabulary labeling) that is most like the studies previous cited. Here, it is expected that a picture superiority

effect will not emerge when this condition is contrasted with the no-picture control.

Pictures as aids to the Second Language Learner

Researchers have expended a considerable amount of time and effort in attempting to trace the path followed in the learning of a second language. According to McLaughlin (1977), as cited in Morsbach (1981), there are two opposing views concerning the way in which the learning of a second language takes place. The first view (Politzer 1965; Brown 1973) maintains that second language (L2) learning is based on the special structures of the first language (L1). That is to say, children with different native languages showed entirely different developmental sequences in the learning of English as a second language than that shown by English children. The second view (Ravem, 1968; 1974; Milon, 1974; Erwin-Tripp, 1974) supports the idea that the child who learns a second language will go through the same stages that were passed through by the native speaker of this language.

This second view is also supported by Dulay and Burt (1974), who, in contrast to the above researchers, used a limited number of children and conducted their study among larger groups of English-learning children, whose mother tongue was Spanish, Chinese, Japanese or Norwegian. Dulay and Burt found striking similarities among the different language groups. Also supportive are the conclusions of Morsback (1981), who examined the development of comprehension as opposed to speech development as did all the previous researchers. In spite of the lack of agreement, it appears that in both L1 and L2 learning, everything follows the same path as learners progress from simple to complex structures.

Interference from L1 to L2 is a problem with which the L2 learner has to contend (Yorio, 1971; Taylor, 1978; La Vergne, 1977). Specifically Taylor (1978) states that for students of pre-school and school age, L1, in the process of establishment, causes transient interference in L2 and the probability of forgetting, if unused. For adults, however, L1, firmly and premanently established, causes persistent interference in L2. The relation between L1 and L2 determines the difficulty of L2. Support for this notion is given by LaVergne (1977), who says that L1 seems to interfere with L2 in secondary bilingualism, which results when the acquisition of L2 takes place in a formal setting after the acquisition of L1. In such a case, L1 termed the dominant language and L2 the non-dominant language.

The fact that the teaching of L2 in schools, especially in the lower classes, is confined to speaking alone, is quite probably proof of the soundness of the conclusions of Yorio (1971), Taylor (1978), and LaVergne (1977).

It is an undeniable fact that the nature of the learner (cultural background, linguistic knowledge, general knowledge or attitudes), and the nature of the material (language patterns, unknown information) are two very basic factors, which substantially affect comprehension. Prior knowledge is a pathway to understanding new ideas. Omaggio (1979) stresses that the lack of agreement regarding the role of pictures in recall and comprehension of written texts among first language learners, in combination with the lack of research in the second language field, makes prescriptions to practice difficult. Among educators, the opinion prevails that visual materials are able to aid the L2 learner in recall and comprehension of a written text. In a recent article, as cited by

Omaggio (1979), Tuttle (1975) states that "foreign language students can benefit from many types of visual materials. The still or flat pictures can prove to be a rich resource in the foreign language classroom" (p. 9). The visual aid: (a) helps to create a situation or context which is outside the classroom walls; (b) can give reality to what verbally might be understood; (c) can easily present unfamiliar cultural aspects; and (d) can change situations rapidly in oral drill (Kreidler, 1971).

To the above positive features of pictures, Taggart (1974) adds that a picture produces the source of a visual message destined to reach, through some process of transmission, the language learner in a form which he may apprehend.

However, the disagreement regarding the role of pictures still exists. Even Taggart (1974) shows that he accepts this fact: "Despite the numerous theoretical reservations that have been expressed concerning the total effectiveness of the picture as a device for conveying meaning of utterances..."(p. 86).

Tardy (1975), as cited by Omaggio(1979), points out the various ambiguities and possible interpretations that can be attached to even the "clearest" of visual materials, and remarks that any attempt to limit students' interpretations of a given picture to a single meaning is more or less "doomed to failure".

Here something very strange occurs. What constitutes, according to Tardy, a disadvantage for pictures is considered by Tremblay (1979) as an advantage. According to the observations of Tremblay, which, as he says, are the results of many years of experience in the teaching of

English as a Second Language, the most important concept with respect to any understanding of the use of pictures in the L2 classroom is polysemy, i.e. the idea that a simple picture can produce different interpretations in the minds of different people. He maintains that a picture is not a mirror, an image of reality. It is both less and more than reality because the mind correspondingly absorbs from the picture only what it considers important, while simultaneously it is enriched by the contributions of the observer.

Independent of this conflict of views between Tardy and Tremblay, quite a few researchers (Scanlan, 1980, Kreindler 1971, Omaggio, 1979) agree that a picture must be simple, realistic and unambiguous. Similar conclusions were also observed in the review which preceded, concerning the role of pictures in the first (maternal) language.

Based on the suggestion of Goodman (1968) and Smith (1973) that reading is an hypothesis testing process in which the reader selects cues and makes predictions about the ongoing discourse on the basis of these selection, Omaggio (1979) formed the hypothesis that additional contextual information should make the comprehension task easier for the foreign language learner, who is often faced with material which is unfamiliar, difficult and unpredictable.

Although a picture is not a "translation" of the text, it can give indications as to what happens in the passage, thus allowing the L2 reader: (1) to make better predictions about what will occur; and (2) to restrict various hypotheses which could hinder him from achieving comprehension of the text (Coste 1975). Supportive here is Taggart (1974), who maintains that pictures definitely have a place in two of

the three phases of teaching a second language, namely in the presentation phase and practice phase. (The third one is the testing phase).

The conclusions reached by Omaggio (1979) are in agreement with the above, and naturally gives support to the general opinion which prevails regarding the role of visual aids in L2 learning. With her research into the effects of certain types of pictures on Second Language reading comprehension, in which she used 664 university students enrolled in first year French as subjects, Omaggio found that pictures had a significant positive effect on comprehension of the text but only in those subjects in the second language condition. More specifically, of the six pictorial contexts which she used, (1) no picture (2) picture related to specific (3) picture with prethematic context (4) picture with thematic context (5) picture with postthematic context (6) a series of three pictures with complex context, the one that offered the most information to comprehension was the prethematic context. Presumably this was because the prethematic pictorial condition provided general story-related information in advance, thereby increasing a student's ability to make logical predictions. The objectives of the present study were to conduct a study among students born in Canada, but of Greek parents. Parallel to their regular daily studies at an English or French school, these students have the added task of trying to learn Greek, the language of their parents.

The fact that the majority of Greek parents are newly-arrived immigrants helps these children to acquire language skills, especially in their early years. When, however these children grow up and go to school, they come into contact with an environment different from that which exists at home, and so their ability to speak Greek diminishes,

due to the fact that they now have to function in English or French. At the same time, these children find it increasingly difficult to expressing themselves in writing, and to understand written texts in Greek. This difficulty becomes more pronounced as the child goes on, each year, to more advance texts. Experience with teaching such students tends to make the teacher agree with the conclusions of Yorio, as mentioned above, as well as with those of Coste.

In the present research, it was anticipated that pictures would prove to have a positive effect on the recall and story comprehension of a Greek text and on the attainment of Vocabulary. This hypothesis was supported by the findings of Tuttle (1975) and Taggart (1974) who have already been mentioned above. To the conclusions of Taggart we must also add his observation that a picture is in a position:

- 1) to suggest the meaning of individual lexical items;
- 2) to supply clues to grammatical meaning.

However, it was anticipated that the form of the picture would determine whether the pictures were beneficial for comprehension or vocabulary learning. Three forms of pictures were tested. The first type was similar to those used by Omaggio (1979) in that their purpose was to represent the meaning of the verbal content. In this respect, this picture type was similar to illustrations found in most North American readers. The second type was most aptly called a "picture dictionary." Here, the same physical elements (i.e. story elements) contained in the type described above were used, but they were pictured discretely on the page (i.e. separated by lines). The one-word name of the pictured element appeared in close contiguity with the picture.

This picture type was to supply support for the vocabulary words which occurred in the passage.

The third picture type consisted of the same representational pictures as mentioned in Type 1, except that these pictures included embedded vocabulary labels. In principle, these pictures were to support both comprehension and vocabulary because they contained both relational elements (i.e. how the physical elements were related) that contributed to the meaning of the story and vocabulary support. However, it was anticipated that these two roles might interfere with one another.

Hypotheses

1. It was expected that an interaction would occur between the treatment conditions and level of exposure. Picture conditions were believed to be of most value to low exposure students, therefore the distinction between picture and no picture conditions would be greatest at this level. Of the high exposure level it was expected that no distinction between picture and no picture conditions would emerge.
2. It was expected that an overall picture effect would emerge for both comprehension and vocabulary. That is, an overall main effect would occur and be primarily attributable to the difference between picture conditions and the no picture conditions.

Chapter Three

METHOD

Experimental Sample

The subjects selected for this study were grade IV students enrolled at "Socrates" and "Plato" schools in Montreal. "Socrates" is a day school with 1250 students, in which lessons are conducted on a full time basis in three languages: French (66%), Greek (25%), and English (9%). "Socrates" school is made up of three buildings, which are situated in Montreal (5757 Wilderton) 630 students, in Ville St. Laurent (250 Houde) 230 students, and at Roxboro (11th Avenue) 390 students. Transport to and from school is provided for the students by a door-to-door bus service. "Socrates" school is affiliated with the CECM (Commission des Ecoles Catholiques de Montreal).

The curriculum followed for French and English lessons is the one set out by the Ministry of Education of Quebec for Elementary Schools. The curriculum for Greek language learning is the one defined by the Ministry of Education of Greece, a fact which ensures the school full recognition and approval. The books which are used are the same as those used by students in Greece, and are brought here and distributed to the students free of charge.

The name "Plato" is used to denote a system of classes which operate in different parts of Montreal and the surrounding area. These classes are open to those students who are enrolled during the week at English or French schools.

"Plato" (1500 students) operates under the full responsibility and control of the Hellenic Community of Montreal. The curriculum, which

consists of Greek Language, Religion, History and Geography has been adapted to allow for part-time teaching in these subjects. The books which the students use are the same as those used by the students of "Socrates" and, of course, in Greece. This is rather unfortunate because the level of the students of "Plato" is entirely different, and could be called much lower than the students of Greece in regards to the level of knowledge of the Greek language. It should be pointed out that "Socrates" is the only full-time Greek-run day school in Canada, but there are other schools similar to "Plato", which operate under the care of other organizations of the Greek community. This raises the target population to approximately 5000 students.

The sample for this study consisted of 200 students, Grade IV, chosen at random in equal numbers, 100 from "Socrates" day school and 100 from "Plato" Saturday school. The subjects from "Socrates" attended the Montreal branch, while those from "Plato" the schools: "Sinclair Laird" and "William Hingston High School". All the subjects, boys and girls, were born in Montreal of Greek parents, and were between the ages of 9 and 10.

Design

The design of the study was a 4 x 2 x 2 mixed factorial. Picture conditions had four levels: (1) no picture (NP), (2) thematic pictures (TP), (3) thematic pictures plus labels (TPL), and (4) non-thematic pictures with labels (NTPL). This was a between-group factor. The other between-group factor was called Level of Exposure and contained two levels: (1) minimum exposure (MINEX), (maximum of four hours per week), and (2) maximum exposure (MAXEX) (minimum of eight hours per

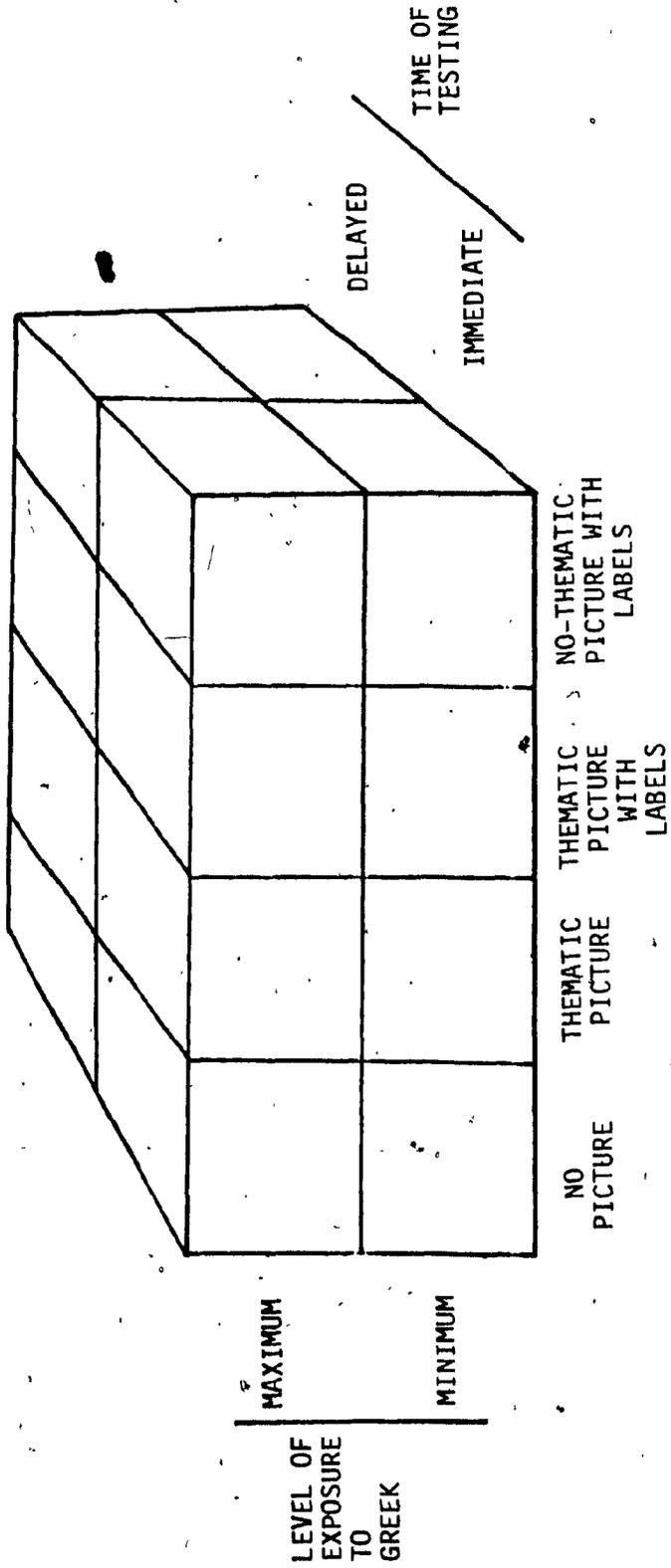


Figure 1. Research Design.

week), where exposure was defined as the amount of instruction in Greek on a weekly basis. The third variable, Time of Testing had two levels,

(1) immediate testing and (2) delayed testing.

There were three dependent variables, (1) vocabulary acquisition, (2) story comprehension and (3) story order. These were administered at the immediate and delayed testing time. Figure 1 shows the design of the study in diagramatic form. Prior experience with the story was controlled by selecting a story which neither exposure groups had encountered. Prior exposure to the vocabulary was not controlled since this factor might have contributed to the success of the experimental manipulations. It was, however, measured prior to the experiment (see materials).

Materials

Text. A 730-word story was used in this study. The selection of the text was made from the grade four reading book. Naturally, the text chosen had not been previously encountered by the subjects in either school. Special care was taken to ensure that the text presented action and concrete images so that the illustrating process presented no difficulty. The story in brief is as follows:

Sophia, a student of grade IV, goes late at night to buy samples of olives from a neighborhood store because, on the following day, she has to present them in her class. Tired after the many chores of the day, she falls asleep as soon as she returns home. She dreams that she is visited by an olive-tree, which tells her its story. Starting with the Great Flood, Noah's Ark and the dove which returned with the olive branch, it goes on to mention the contest between Poseidon and Athena as to whom

the city of Athens should be named after. It tells about the Olympic Games and the olive-wreath with which the winners were crowned, about the Mount of Olives where Christ prayed under the olive trees, and finally mentioned the practical benefit which people derive from the olive tree and its oil (food-lighting-chrism, etc).

*Translated version appears in Appendix A and the actual Greek appears in Appendix B.

Pictures. Three sets, each consisting of 5 pictures were used for this study. The contents of the pictures which were chosen to be drawn were as follows:

1). The first picture presented an olive grove, where some workers standing on ladders were gathering the fruit (olives) from the trees, while others were loading them onto trucks in large baskets.

2). The second picture presented the Flood with Noah watching the dove return with the olive-branch in its beak.

3). The third picture presented the contest between Poseidon and Athena as well as the gifts they offered; water from Poseidon, and the olive tree from Athena.

4). The fourth picture presented the awarding of the prize (an olive-wreath) by a judge to the winner of the Olympic Games.

5). The fifth picture presented Sophia's room with objects mentioned in the story (holy-lamp, icon, bed, etc.)

The 5 pictures of the first set presented the 5 basic concrete images of the text in the normal contextual setting. The second set of 5 pictures were identical to those of the first set except that the name of each concept was written near it. In the third set, the 5 pictures corresponded to those of the first set except that here the elements of the concrete images were presented separately in grid-style frames with vocabulary labels (picture-dictionary):

In brief, therefore, the following names were used to describe the picture levels of the treatment conditions:

1st set: thematic picture (TP)

2nd set: thematic picture plus labels (TPL)

3rd set: non-thematic pictures with labels (NTPL)
(picture dictionary)

In all three sets, the pictures were simple black-ink line drawings with superfluous details. The overall size of each picture was 9 cm x 15.5 cm. The overall size of the third type (picture dictionary) was 13.5 cm x 11 cm, separated into four sections each of which was 6.85 x 5.50 cm. See Appendices for the actual images used in the experiment.

Tests

Vocabulary. In order to determine the vocabulary level of the subjects, a pretest was used. This test consisted of 30 Greek words (Grade IV level) to be translated by each subject into English or French, according to his or her preference. The 30 words were concrete nouns, 20 were taken from the story to which the subject had not yet been exposed, and 10 were chosen from outside the text. These 10 words, one of which led the list, acted as distractors, and were interspersed at random among those contained in the text. The same test was also used as a post-test (immediate-delayed) with the following variation; the 20 chosen from the story remained unchanged whereas the 10 distractors were replaced by other nouns still out of context.

Recall and Comprehension. In order to determine the recall and comprehension level, two tests (posttests) were used. The first consisted of 20 questions, based on the story to which the subjects were required to furnish short answers.

The second test consisted of 10 sentences taken from the story and written in English. These sentences were presented in an altered sequence from that of the text. The subjects were required to place them in the order in which they appeared in the story.

Procedure

Selection of Experimental Sample. Nine grade-four classes were chosen in agreement with the school administration and the class teachers, four from "Socrates" and five from "Plato". These classes contained the kind of students, which generally appear in all classes (above average - average - below average). Every class of "Socrates" (25 subjects) consisted of a treatment group. Therefore, intact groups were used in all conditions of the design.

The choice of 5 classes from "Plato" was judged essential since the number of students in each class varied. Thus the fifth class of grade four students had to be split up and the students integrated into the other classes in order to complete the required number of subjects (25 in each treatment group). The selection of which group should have which treatment also took place at random.

It should be specially stressed here that the only difference which existed between the students of Socrates and Plato was the level of knowledge of the Greek language. In this respect the students of "Socrates" were superior to those of "Plato". However, although data were not gathered on the demographics of the two samples (because of the difficulty of obtaining permission to peruse student documents) the two samples appeared equivalent on most observable criteria (e.g. sex). It is recognized that the samples may not have been perfectly matched.

Physical Study Setting. The experiment in the children's usual classrooms, and all of eight treatment groups worked under the same conditions.

Uniformity of Directions for the Experiment. In order to achieve the same conditions for all the subjects, two meetings were held between the investigator and the teachers of the eight groups of subjects. At the first meeting (1 week before the experiment), the investigator presented the problem under research, explained the nature and method of the study, and gave each teacher a sample of the material (story-text, tests).

At the second meeting (2 days before the experiment), various queries were answered, and a second explanation was made of the procedure to be followed in the experiment. In addition, the teachers were given the materials for the experiment (texts-tests), directions to be given to the students, as well as a code number. The directions for the student contained the information to be given by the teacher concerning the aim of the study and the modus operandi of the experiment. The code number which each teacher had to write on the back of the last page of each test-paper, was used as a recognition mark of the treatment group to which each test paper belonged. This helped ensure that during the correction, each paper was placed with the right treatment group. The code number of each group was determined according to the following diagram (figure 2).

Finally, a third meeting was held, two days before the Delayed Test, and the investigator again explained the procedure to be followed.

Directions and Testing Procedure. After the subjects were seated, the teacher instructed them as follows: "Today you will participate in an experiment. This experiment is of great value because we want to find out if and how far pictures can help you remember and understand a story, as well as learn new words. The grades of these tests will not

LEVEL OF EXPOSURE TO GREEK	MAXIMUM	$a_1 b_1$	$a_1 b_2$	$a_1 b_3$	$a_1 b_4$
	MINIMUM	$a_2 b_1$	$a_2 b_2$	$a_2 b_3$	$a_2 b_4$
		NO PICTURE	THEMATIC PICTURE	THEMATIC PICTURE WITH LABELS	NON-THEMATIC PICTURE WITH LABELS

TYPE OF TEXT

Figure 2: Coding scheme used for scoring of tests.

be calculated with the grades of your regular school performance. Throughout the test you must be quiet, you must not speak to or look at your neighbor for help. You will need only a pencil and an eraser. On every test paper, you must write your name, and the name of your school (Socrates-Plato). The experiment consists of 4 tests. For each test I will give you the corresponding directions."

It must be pointed out that each test was administered separately in sequence, because it was considered that if all four tests were given simultaneously, the student would be unfavorably affected psychologically by the amount of work required.

In continuation, the teacher gave out the pre-test with the following instruction:

"On the left-hand side of the paper there are thirty words which you have to translate into French or English. If you don't know one word, go on to the next one".

After the subjects had finished this test, the teacher collected the papers, and gave out the story-text with the following instruction:

"In front of you, you have a story which was taken from your reading book. Read it silently and carefully. The pictures illustrating the text are to help you understand the story and learn some new words." So you should look closely at the pictures as you are reading." To the pictures labels and the picture-dictionary groups, further instructions were given for the subjects to pay close attention to the words printed on the pictures..

(Naturally, no mention was made of pictures to the groups in the no-picture condition.)

When the students had finished reading the text, the teacher

collected it, and distributed the vocabulary post-test with the following instructions:

"The words which you see on the left-hand side of the paper have to be translated into French or English. As you yourself will soon find out, most of these words, 20 specifically, are the same as those in the first test. Now that you have read the text, you will understand that these words were taken from it, while the other ten are from other sources."

In continuation, after the subjects had finished and the papers were collected, the teacher handed out the next test with the following instructions:

"In this test there are twenty questions on the story which you have just read. Try to answer them with short responses."

After the subjects had answered, and the teacher had collected the papers, he distributed the last test with the following instructions:

"Here there are ten sentences taken from the story you have read. The order of these sentences is not the same order as they were in the text. Read them all carefully and then write on the line which is in front of each sentence a number from one to ten, showing thus the order in which you think is correct according to the story you have read".

After the tests, the subjects asked questions concerning the correct answers, especially the last test regarding the order of sentences. The answer which the teacher gave them (based on pre-arrangement with the investigator who had foreseen this possibility) was:

"You must be quite tired out now. We will have the opportunity to discuss the correct answers later."

The answers were not given to them because according to the design

of the experiment, the same tests would be administered after a week's delay.

Another observation, off the record, was that the subjects in the picture conditions showed great enthusiasm at the presence of pictures.

Delayed Test Experiment

Exactly a week later, the same procedure took place. The instructions that were given to the students were as follows:

"Today we will repeat, for the same reasons as we mentioned last week, some of the tests which you wrote. We want to see if and how well you remember the story and the words you learned. You will write these tests the same as the ones you wrote before without, however, the help of the text. Concentrate on this story and try to answer the questions as well as you can."

The same instructions as the first time were given for each test and the same procedure was followed.

CHAPTER FOUR

Results

Introduction

The purpose of this study was to determine the effectiveness of pictures for enhancing vocabulary attainment and story recall and comprehension in elementary Greek reading materials. The sample consisted of fourth grade students in two levels of second language exposure: maximum exposure (MAXEX) (students study Greek approximately eight hours per week) and minimum exposure (MINEX) (students spend four hours learning Greek). This distinction served to define one of the independent variables in the study. The other independent variable, picture conditions, was comprised of three forms of pictorial accompaniments: thematic picture (TP), thematic picture with labels (TPL) and non-thematic picture with labels (NTPL). The third variable was immediate and delayed posttests which was treated as a repeated factor. There were three dependent variables; comprehension, vocabulary and order. A vocabulary measure was taken before the experiment began and was used later as a covariate in the analysis. The assessment of this covariate will precede the reporting of the major findings.

Assessment of Vocabulary Covariate

The covariate was constructed from the distractors of the vocabulary test that was administered before the experiment, immediately afterwards and one week later. The first set of distractors (10 words) was added to the mean of the second (10 words) and third sets (10 words) of distractors. The mean was used because the same ten distractors made up

tests two and three. Means and standard deviations of the vocabulary measure are shown in Table 1.

Regression analysis of the covariate on the dependent variables indicated that the vocabulary test was a significant predictor in all cases. Table 2 shows the correlation, variance accounted for and analysis of variance information for each of the regression analyses. These data indicate that the vocabulary measure is a significant predictor of scores for each of the three dependent variables and a potentially useful covariate.

In addition, a test of homogeneity of regression (test of parallel regression slopes) was run. This test assesses the major assumption of analysis of covariance - that the between-treatment regression lines do not intersect. For all three dependent variables, the test of this interaction was found not significant ($p > .30$). The vocabulary measure was therefore considered an adequate covariate for the purposes of the analysis.

Vocabulary Attainment

Main analysis. The first dependent variable was assessed using two-way analysis of covariance with time as a repeated factor. Adjusted and unadjusted means and standard deviations for this analysis are shown in Table 3. In Table 4 the complete ANCOVA summary table for the Vocabulary Attainment measure is shown. This table indicates that the three-way interaction is not significant ($p = .097$), but that both interactions involving the repeated factor time are significant (for Time x Level, $p = .018$ and for Time x Condition, $p < .00001$).

Table One

Means and Standard Deviations of Vocabulary Distractors (covariate)
Across Treatment Condition

Condition	<u>n</u>	\bar{x}	s.d.
<u>MINEX</u>			
NP	25	17.52	2.04
TP	25	17.68	1.92
TPL	25	17.92	2.11
NTPL	25	17.70	1.66
<u>MAXEX</u>			
NP	25	17.36	2.88
TP	25	16.88	1.92
TPL	25	17.38	2.05
NTPL	25	18.64	1.32

Table Two

Correlations, R² and Analysis of Variance for the Vocabulary Predictor Regressed on the Dependent Variable

Dependent Variables	r	r ²	Analysis of Variance				
			SS	df	MS	F	p
Comprehension (Immediate) Error	.18	.03	341.80	1	341.80	6.28	.01
			10774.28	198	54.42		
Comprehension (Delayed) Error	.16	.02	273.61	1	273.61	5.02	.03
			10783.27	198	54.46		
Vocabulary (Immediate) Error	.26	.07	215.94	1	215.94	14.67	.0002
			2915.35	198	14.72		
Vocabulary (Delayed) Error	.76	.57	133.02	1	133.02	265.70	.00001
			99.13	198	.50		
Story Order (Immediate) Error	.15	.02	27.05	1	27.05	4.299	.04
			1245.71	198	6.79		
Story Order (Delayed) Error	.16	.03	107.63	1	107.63	5.22	.02
			4085.09	198	20.63		

Table Three
 Adjusted and Unadjusted Means and Standards
 Deviations for Vocabulary Attainment (Dependent Variable)
 Across Treatment and Repeated Conditions

Condition	n	IMMEDIATE		DELAYED	
		\bar{x}	s.d.	\bar{x} adj.	s.d.
<u>MINEX</u>					
NP	25	10.60	4.04	10.67	8.84
TP	25	10.76	2.11	10.73	11.40
TPL	25	11.80	3.52	11.63	13.32
NTPL	25	10.08	4.54	10.04	10.00
<u>MAXEX</u>					
NP	25	15.16	2.66	15.32	13.92
TP	25	15.52	2.33	15.96	15.20
TPL	25	14.20	2.54	14.35	14.32
NTPL	25	16.36	2.31	15.77	15.40

8.91

11.37

13.15

9.96

14.08

15.64

14.47

14.81

2.95

2.11

3.38

3.98

3.00

2.27

3.77

3.06

TABLE FOUR
ANCOVA Summary of Results
for Vocabulary Attainment

Source	SS	df	MS	F	P
Picture Conditions (A)	101.84	3	33.95	2.10	.10
Level (B)	1797.01	1	1797.01	111.02	.001
A X B	167.69	3	55.90	3.45	.018
Covariate	479.24	1	479.23	29.61	.0001
Error	3091.60	191	16.19		
Time (C)	6.76	1	6.76	3.34	.07
C X A	73.70	3	24.57	12.13	.0001
C X B	11.56	1	11.56	5.71	.018
C X A X B	12.98	3	4.33	2.14	.10
Error	389.00	192	2.03		

The main effect for Time, the repeated factor, was also significant ($p < .0001$), but this was not considered particularly interesting.

Within the between-group portion of the design, the Condition X Level interaction was significant as was the main effect for Level.

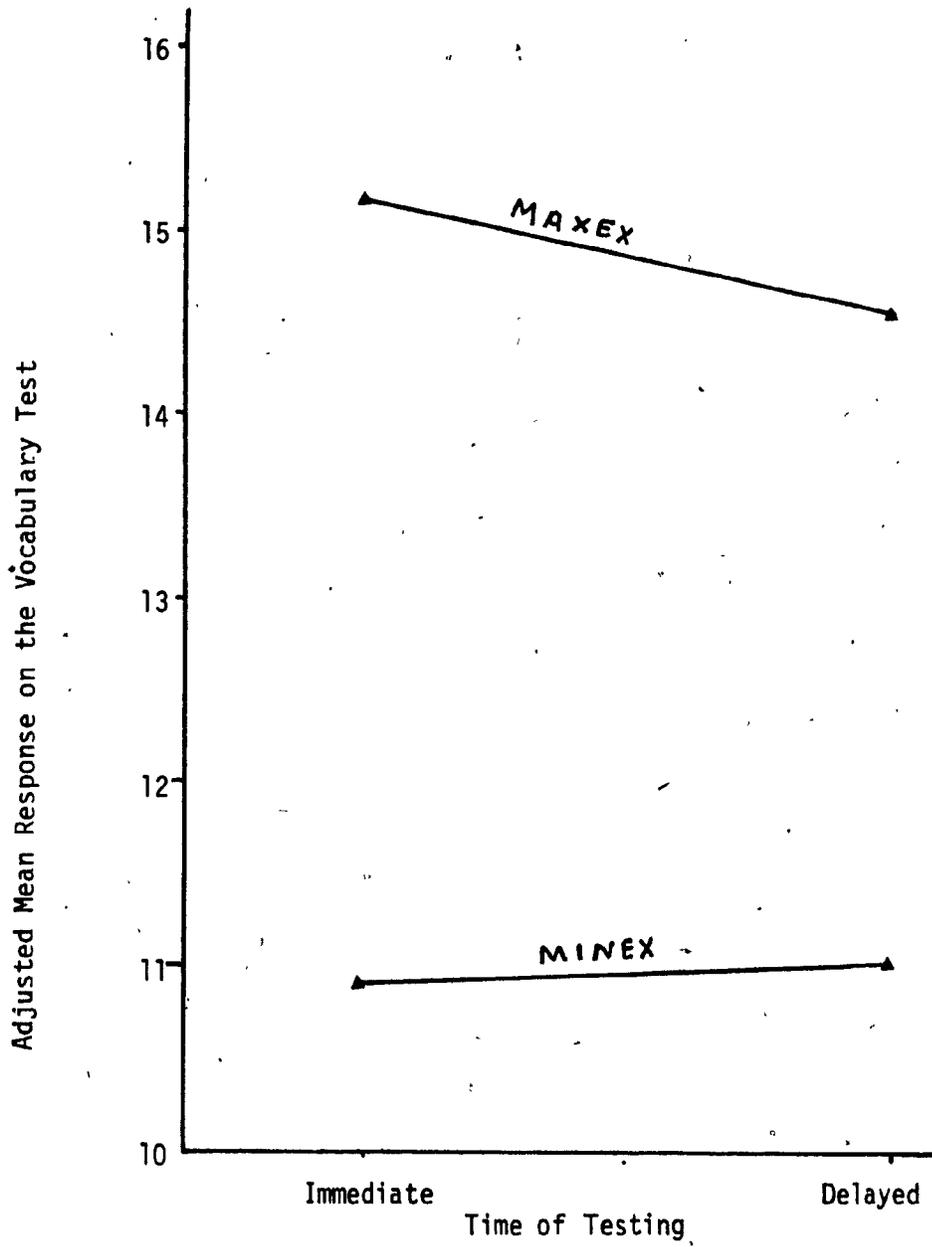
The main effect for Condition was not significant.

Post Hoc analysis. Since three important interactions were found to be significant, post hoc analysis of the cell means was deemed appropriate. These will be reported in turn for each interaction.

Figure 3 shows graphically the relationship of the adjusted means for the Time x Level interaction. The interaction is undoubtedly the result of the greater decline in scores over time of the maximum exposure level of the variable levels as compared with the minimum exposure level. This interaction was judged of little interest to the intentions of the study and therefore was not pursued further.

The Time x Condition interaction was of more interest. Figure 4 shows this interaction. It is clear that on the immediate test, no differences existed among the four levels of the independent variable conditions. However, on the delayed test this situation changed dramatically. Thematic Pictures with Labels emerged as the superior condition and the No Picture condition fell considerably below the other treatment means. A Scheffé test conducted on the combination of picture treatments compared with the No Picture control ($\frac{a_1 + a_2 + a_3}{3} > a_4$)

revealed a significant difference in favor of the picture conditions. This was a test of the overall facilitative effects of pictures on vocabulary attainment and was considered a positive indication that such facilitative effects do exist.

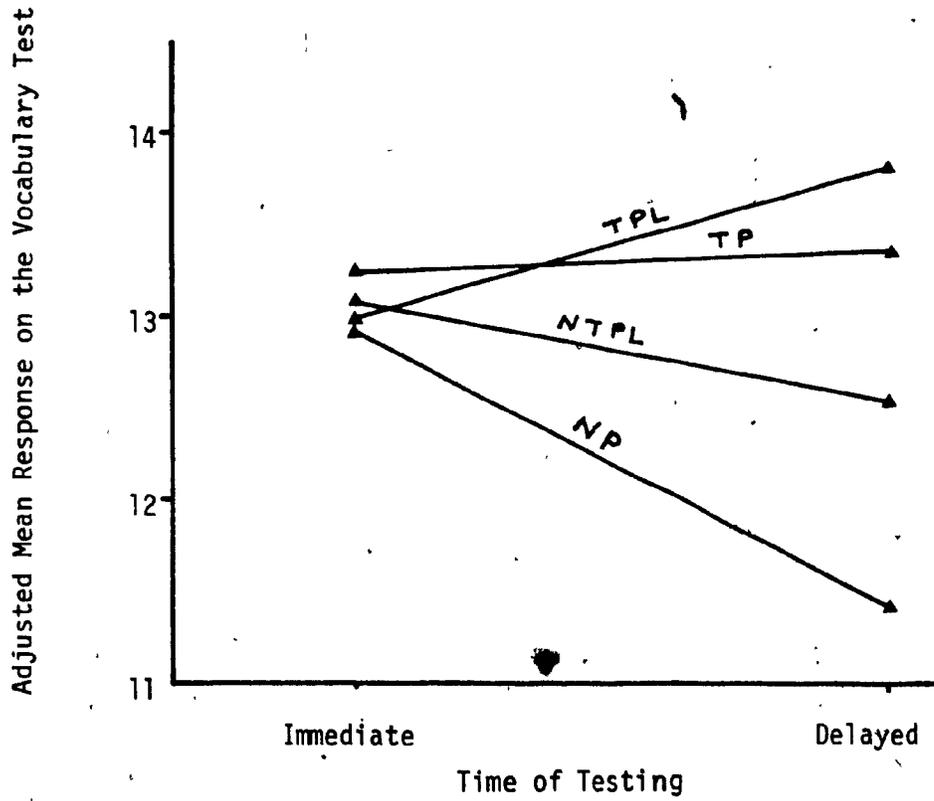


KEY

MINEX: Minimum exposure

MAXEX: Maximum exposure

Figure 3: Interaction between time and level conditions on the vocabulary test.



KEY

- NP: No Picture
- TP: Thematic Pictures
- TPL: Thematic Pictures plus Labels
- NTPL: Non-Thematic Pictures with Labels

Figure 4. Interaction between time and picture conditions on the vocabulary test.

In regard to the differences among the three picture treatments, pairwise post hoc tests (Tukey) revealed differences between the Thematic Picture with Label (TPL) condition and the Non-Thematic Picture with Labels (NTPL) condition ($p < .05$) but no difference between the TPL Condition and the Thematic Picture (TP). Generally speaking, this interaction suggests that at least for vocabulary attainment, pictures function to support recall over time as compared with the condition without pictures. This finding is consistent with Duchastel's (1981) argument regarding the potentially positive effects of pictures in text.

The third significant interaction, the between group test of Condition X Level, revealed a pattern of means (adjusted) as illustrated in Figure 5. Here the results indicated that differences existed in picture conditions only with Minimum exposure (MINEX) students of Greek. A Tukey test of differences among the means of MAXEX students produced no evidence for the superiority of any picture condition ($p < .10$). Within the Minimum Exposure group, it was found that the Thematic Picture with Labels (PWL) conditions varied from the others, resulting in a significant difference (Scheffé) when contrasted with the other conditions ($p < .05$). In addition, it was found that no difference existed between the Minimum and Maximum exposure means in the TPL condition even though large differences existed between MINEX and MAXEX for the other conditions.

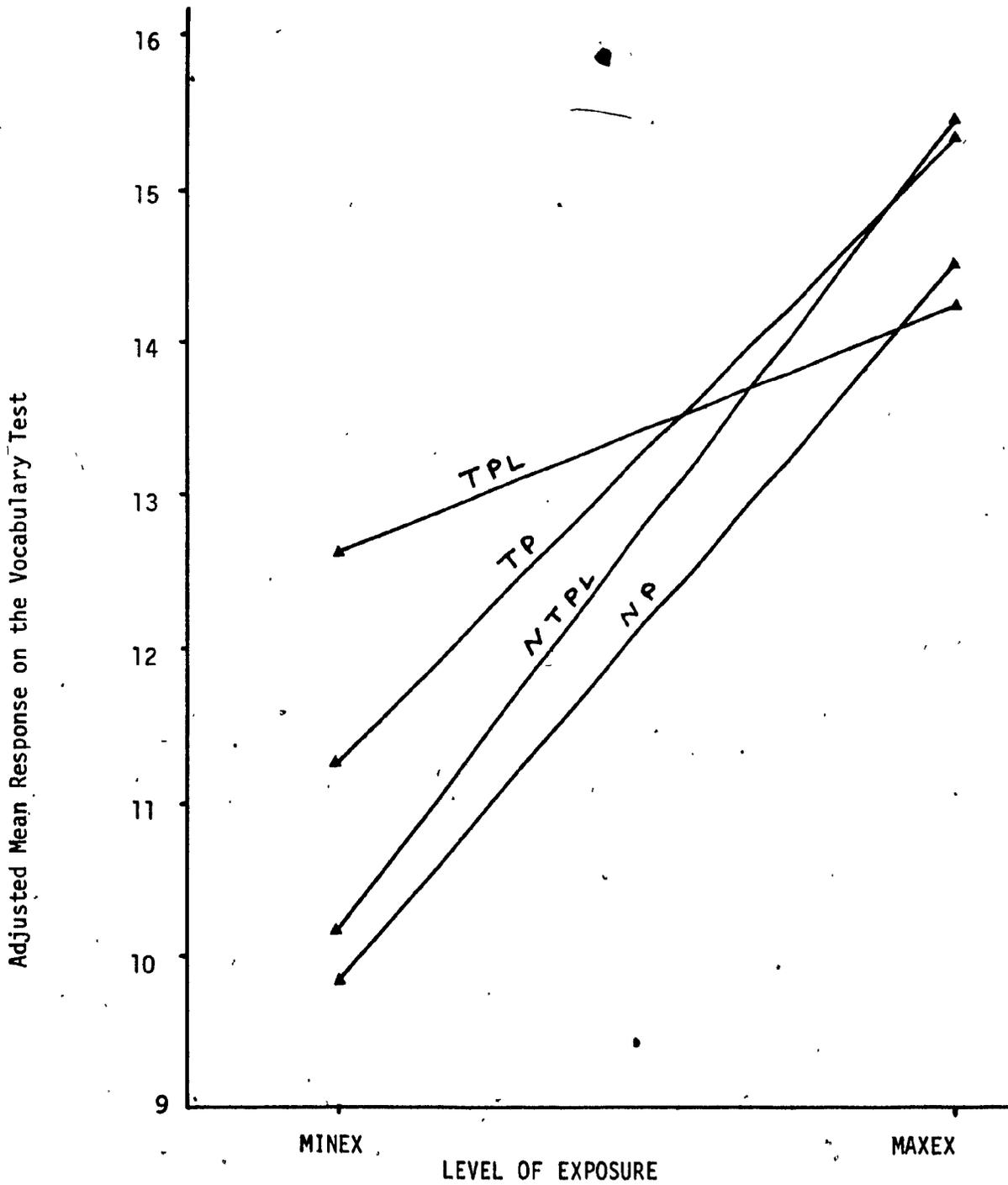


Figure 5: Interaction between picture conditions and level of exposure on the vocabulary test.

Story Comprehension and Recall

Main analysis. Story comprehension and recall was measured with an immediate and delayed cued-recall test. The adjusted and unadjusted means and the standard deviations are shown in Table 5. Table 6 presents the summary of the three-way analysis of covariance that was performed on the data.

Neither the three-way interaction nor the two-way interaction of Time X Level were significant. However, the Time X Condition interaction was significant as was the main effect for Time.

In the between-groups portion of the design, both the interaction (Condition X Level) and the main effects for Level and Condition were significant. Since the interactions in this case subsume all main effects, only these interactions will be subjected to post hoc analysis and subsequently discussed.

Post hoc analysis. In Figure 6, the Time X Condition interaction is depicted. It is clear that the interaction here is the result of the slightly downward trend of two of the groups (NTPL and NP) overtime as contrasted with the slightly upward trend of the other two groups (TP and TPL). As was expected, the NTPL failed to support recall and comprehension at the same level as the TPL Condition. However, the similarity of the means of this condition and the TP was surprising. Although it is clear that in terms of magnitude, the TP and TPL are different, their trend over time is similar, suggesting that the thematic nature that the two pictures share contributes to comprehension and memory for story events. As was noted, however, this trend only emerged over time. At Time 1, the results of the TP and NTPL Conditions is almost identical. The fact that the NTPL and NP Conditions share a

Table Five
 Adjusted and Unadjusted Means and Standard Deviations
 for Story Comprehension and Recall (Dependent Variable)
 Across Treatment and Repeated Conditions

Condition	n	IMMEDIATE		DELAYED	
		\bar{x}	sd	\bar{x}_{adj}	sd
<u>MINEX</u>					
NP	25	16.04	5.06	16.12	5.03
TP	25	19.64	6.64	19.61	5.91
TPL	25	22.16	6.54	21.95	6.70
NTPL	25	20.24	7.94	18.84	7.55
<u>MAXEX</u>					
NP	25	28.80	4.01	29.00	4.13
TP	25	28.28	4.48	28.83	4.62
TPL	25	29.40	6.01	29.59	5.97
NTPL	25	28.56	4.04	27.82	3.88

TABLE SIX

ANCOVA Summary of Results
for Story Comprehension and Recall

Source	SS	df	MS	F	P
Picture Conditions (A)	787.14	3	262.38	4.55	.0042
Level (B)	8531.09	1	8531.09	147.91	.0001
A X B	560.48	3	186.83	3.24	.02
Covariate	752.61	1	752.61	13.05	.0004
Error	11016.31	191	57.68		
Time (C)	23.04	1	23.04	7.35	.0073
C X A	45.26	3	15.09	4.82	.0030
C X B	1.00	1	1.00	.32	.57
C X A X B	17.22	3	5.74	1.83	.14
Error	601.48	192	3.13		

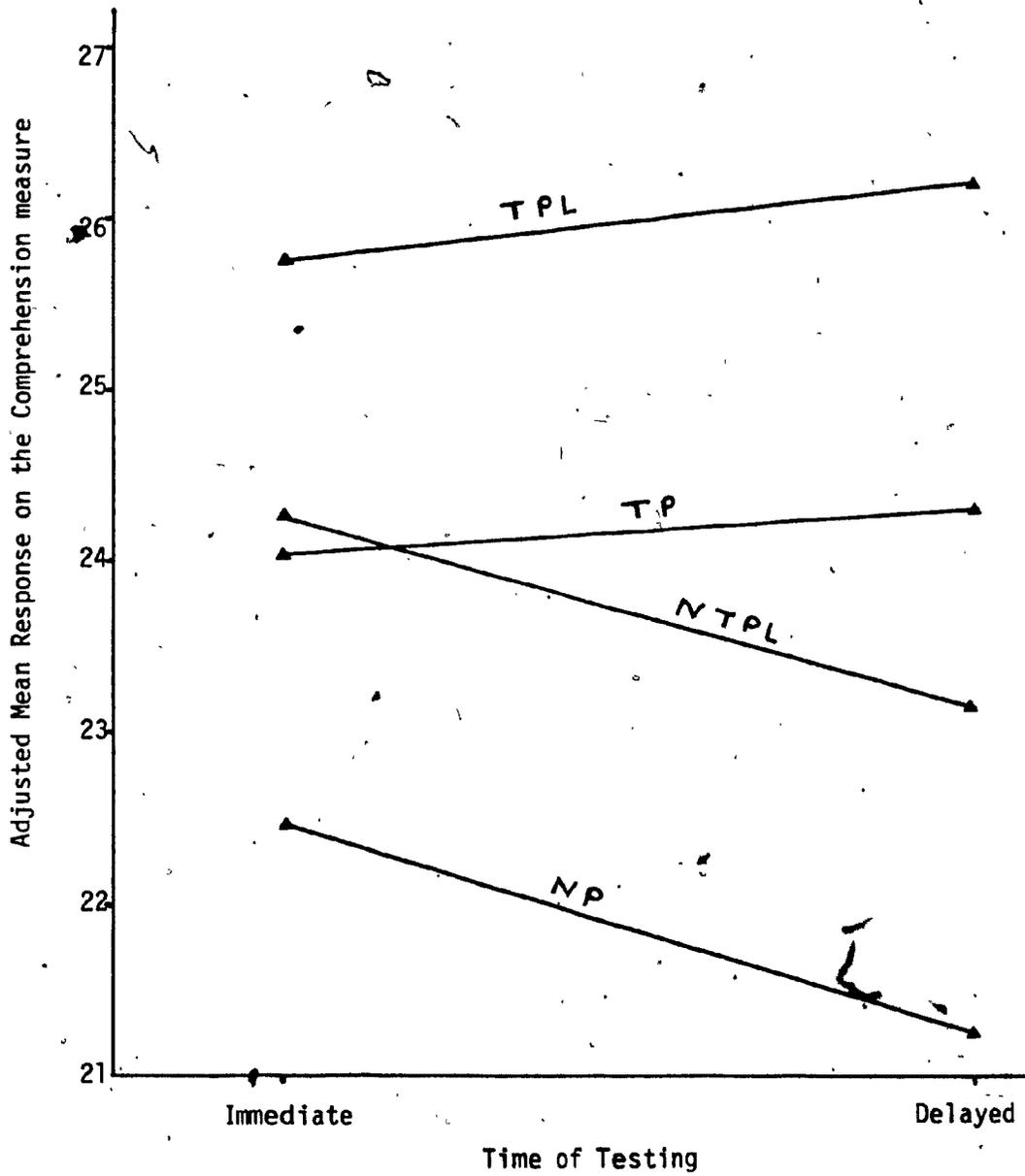


Figure 6: Interaction between time and picture conditions on the comprehension test.

similar trend over time is taken as secondary evidence of the superiority of the thematic-aspects of the other two picture conditions. However, it is clear that labels are clearly related to performance even on the recall and comprehension measure. This is especially evident at Time 1. It appears, however, that again the TPL has emerged as the most profitable condition for supporting the intentions of the instructional situation.

The second significant interactions to be described is pictured in Figure 7. It is interesting to note that it is very similar to the Levels x Conditions interaction for vocabulary attainment that was presented in the last section. Clearly, the difference among picture conditions resides only at the MINEX level. At the MAXEX level, the means are extremely close to one another.

A scheffé test was conducted at the MINEX level to determine if an overall facilitation effect for pictures existed ($\frac{a_2 + a_3 + a_4}{3} > a_1$). This test was significant ($p < .01$). It was concluded, again, that an overall picture effect was evident in the data that the TPL Condition supported comprehension and recall of the story materials and subsequent memory for the story events. These findings closely parallel the findings for vocabulary attainments.

Story Order

A final dependent measure, Story Order, was used to assess the subject's recall of the order in which the story events occurred. Adjusted and unadjusted means and the standard deviations are shown in Table 7. Analysis of covariance on these data revealed only one

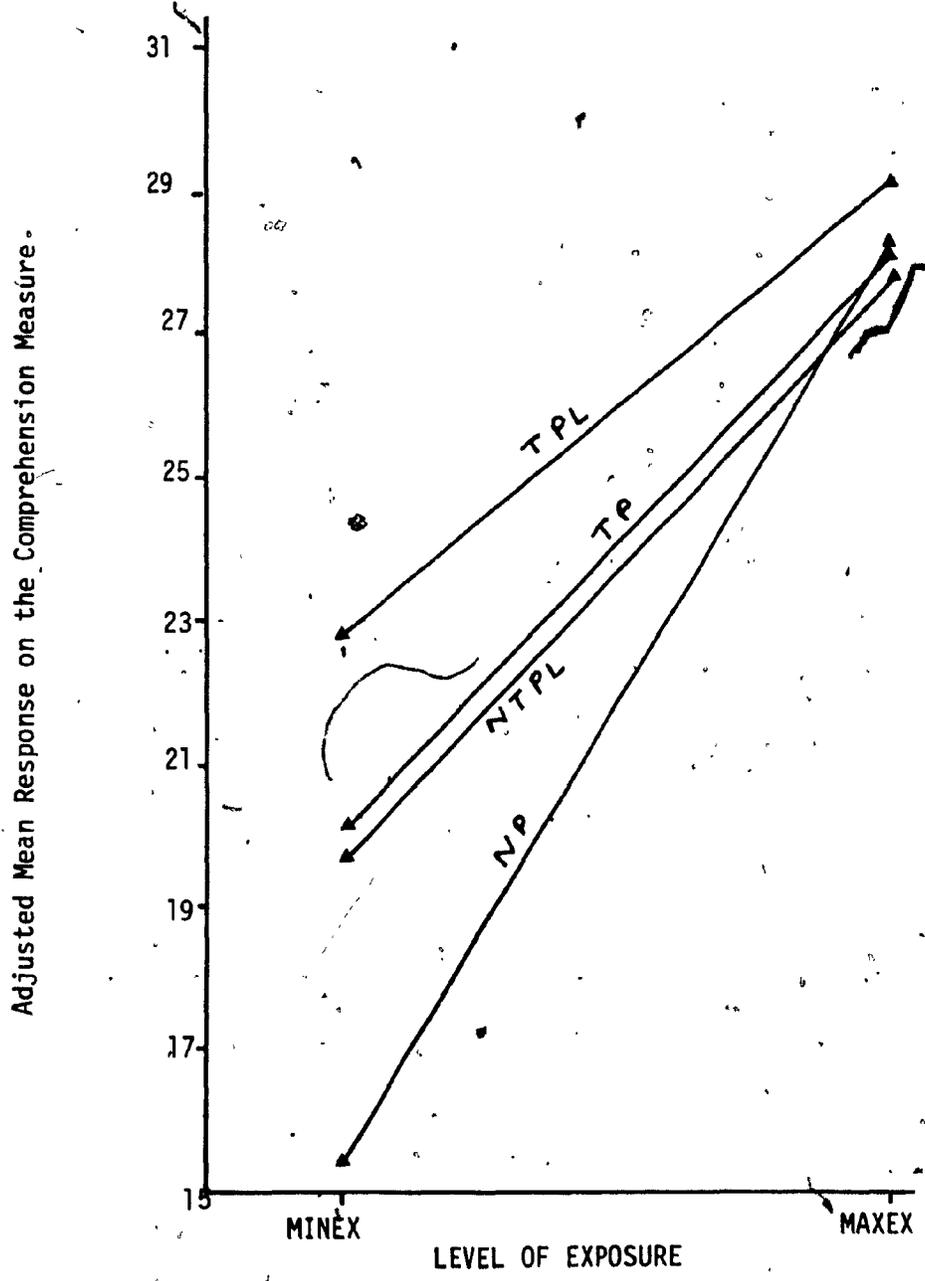


Figure 7: Interaction between level of exposure and picture conditions on the comprehension test.

Table Seven

Adjusted and Unadjusted Means and Standards
 Deviations for the Story Order (Dependent Variable)
 Across Treatment and Repeated Conditions

Condition	n	IMMEDIATE		DELAYED	
		\bar{x}	sd	\bar{x} adj.	sd
MINEX					
NP	25	4.32	1.60	4.36	2.08
TP	25	3.56	1.94	3.54	1.86
TPL	25	2.52	2.52	4.46	3.07
NTPL	25	2.38	2.38	4.38	2.17
MAXEX					
NP	25	2.17	2.17	7.05	11.00
TP	25	1.68	1.68	7.66	1.79
TPL	25	1.95	1.95	7.45	1.73
NTPL	25	1.93	1.93	6.32	1.96

significant effect. A main effect for Levels is evident in Table 8. This effect was of little consequence to the purpose of the experiment. However, it should be noted that although not significant ($p = .11$) the pattern of means for the Condition X Levels interaction is very similar to those obtained from the vocabulary attainment and recall/comprehension measures. Again TPL emerged as the superior condition in the MINEX Level lending even more evidence to its facilitative effects.

Summary of Results

In summary, the results of this study have provided reasonably consistent results as to the effectiveness of pictures as adjuncts to second-language reading materials. The results are briefly described below:

1. Pictures appear to effectively support vocabulary attainment and comprehension and recall of significant story events. However, this appears to occur only in students who have less than adequate command of the language. The differentiation among picture and non-picture conditions occurred only within the MINEX level.
2. One picture condition appears to support vocabulary attainment best. TPL, a composite condition of the other two conditions in which both labels and thematic support are combined in the same picture, appears to produce the strongest textual support as compared with the other two picture treatments. This state of affairs is, to a large extent, at variance with the practice of picturing stories in texts. These and other issues will be discussed in the next section.

Table Eight

ANCOVA Summary of Results
for Story Order

Source	SS	df	Ms	F	p
Picture Conditions (A)	23.65	3	7.88	.67	.57
Level (B)	894.58	1	894.58	76.46	.0001
A X B	70.31	3	23.44	2.00	.11
Covariate	164.17	1	164.17	14.03	.0002
Error	2234.59	191	11.70		
Time (C)	8.70	1	8.70	.81	.37
C X A	9.39	3	3.13	.29	.83
C X B	.42	1	.42	.04	.84
C X A X B	39.55	3	13.18	1.22	.30
Error	2074.44	192	10.80		

Chapter Five

Discussion

The purpose of this study was to determine the effectiveness of pictures for enhancing vocabulary attainment and story comprehension in elementary reading in second language learning. More specifically, it was anticipated that the form of picture would determine whether the pictures were beneficial for comprehension or vocabulary learning. A 730-word previously unseen story from the grade four reading book was used. Three forms of pictures were tested. The control group had no pictures. Three tests were developed to measure vocabulary attainment and to determine recall and comprehension levels. In addition, a vocabulary measure which was administered before the experiment was used as a covariate in the analysis.

The purpose of the study was subdivided into three areas of concentration, from which the final conclusions were drawn: to determine if explicit thematic pictures improved comprehension and recall of the story content. According to the results, the answer is mixed. A level of exposure by treatment interaction suggested that, in this testing context, pictures are most effective when exposure to Greek is minimal. In post hoc analysis it was determined that the TP and the TPL conditions functioned significantly better than the NTPL or the NP conditions. There was a significant effect over time. The fact that whereas, at Time 1 TP and NTPL results were practically identical, at Time 2 NTPL and NP conditions share a similar trend. This is secondary evidence of the superiority of thematic pictures. This conclusion agrees with the findings of Omaggio (1979) who found that pictures had a significant positive effect on comprehension and recall in second

language learning. She attributes this to the fact that pictures were informative enough to contribute additional cues to the overall general meaning of the reading passage. Children who are shown pictures can be expected to recall at least 40% more story information than children not shown pictures (Levin and Lesgold, 1978). Rusted and Coltheart (1979) also found that the presence of pictures enhances recall of the prose passages. The same conclusion was reached by Koenke and Otto (1969) for grade six subjects.

It appears, therefore, that Coste (1975) was accurate when he expressed the opinion that although a "situational" picture does not give the second language learner a translation of the text, it does provide indications about the relationship of the events which occur in the passage. This might be considered as an explanation of the superiority, as shown by the results, of the TP and TPL over the NTPL. The latter does not have any cohesion; it does not present a complete whole but just isolated pictures without any relationship between them. Thus, the student was probably unable to create the visual imagery which, in combination with the story-relevant illustrations, has been found to facilitate children's recall of story information (Pressley, 1977; Levin, 1976).

Finally the results showed that the MINEX group was the one which benefited most of all. If we take for granted that the MAXEX group are better readers than the MINEX group, then we agree with the findings of Wardle (1977) who had somewhat similar results among subjects of grade seven students. Poor readers benefited in comprehension from the presence of pictures while, on the contrary, pictures seemed to have no effect on good readers. Golinkoff and Rosinski (1976) found

that 9 and 10 year old children who were poor at decoding were not necessarily inferior on semantic access for the individual words and suggest that these skills may be independent in reading. Decoding is defined as the ability to pronounce words aloud and semantic processing entails acquisition of word meaning (Rust and Coltheart, 1979).

The fact that the MINEX group benefited more from the presence of pictures was something which was expected at the beginning, since at no time in the past had these students had, at their disposal, a text with so many pictures or, in other words with so much additional information on the text they read. One could perhaps refute this on the grounds that the other group (MAXEX) had used the same books as those used by the MINEX group. What, then, is the reason for this discrepancy? The most likely answer to this is that since they had better mastery of the second language, their interest in the picture was somewhat diminished. Nevertheless, we are still led to the conclusion that pictures do have a positive effect on second language learning.

The second area of study was to determine if the addition of selected key vocabulary words in the body of the illustration improves the learning and retention of these words as a result of reading the story. Here, also, the answer, according to the results of this study, is affirmative, a fact which brings it into conflict with the findings of other researchers (Samuels 1967, 1970; Singer, Samuels, and Spiroff, 1974; Braun, 1969, Fowler, 1962; Harzem, Lee and Miles 1976) that, namely, pictures do not help in the learning of new words. In this study TPL had a greater positive effect than the other forms of pictures. The words which were added to the picture did not act as dis-

tractors as Silverman, Davids and Andrews (1963), and Baker and Madell (1965) maintain, but on the contrary, they created permanent impressions over time whereas the NP condition presented a drop.

The first argument which could be offered to explain this conflicting view is that the subjects of the above studies were students learning their first language whereas this study concerns the learning of a second language. The fact that there are other studies whose results support the use of pictures for the teaching of new words (Denburg, 1976-77; Hartley, 1970; King and Muehl, 1965; Arnold, 1968) makes us agree fully with Kreidler (1971) that "Vocabulary can be introduced and practiced with pictures" (p. 33).

It is important and worthy of notice the fact that in the Time X Condition interaction the results showed effect especially in over-time. Almost the same conclusion was reached by Peeck (1974) who found that grade four students benefited from pictures 1 day and 7 days after reading the story but not immediately. It is evident that durability is another advantage of pictures. This is also supported by Peng and Levin (1979) who found that picture effects in children's story recall were highly durable, persisting over an interval of 3 days and for questions presumably demanding deeper levels of comprehension.

The third area of study was to determine which of the three illustrative designs best facilitated the combined goals of better comprehension and recall and improved vocabulary. The results showed that TPL condition supported best comprehension and recall of the story materials, subsequent memory for the story events and learning of new words. The thoughts of Gombrich (1972) explain in the best

possible way this superiority of TPL. Gombrich says that "jointly the media of word and image increase the probability of a correct reconstruction. The mutual support of language and image facilitates memorizing" (p. 86). The verbal messages, he says, make the content of the picture clear and understandable to the reader. Perhaps at this point, we should remember Levin (1976) who says that "Although one way to maximize what children learn is to use pictures, another is to embed the materials in a meaningful context or organization in which learning can occur...As Rowher (1967) has aptly noted, in such situations performance is greatly enhanced by adding to the to-be-remembered stimuli, a finding which prompts the seemingly paradoxical inference that the more there is to learn, the better the learning" (p. 113).

Recommendations for Future Research

The results of this study showed that pictures facilitated comprehension, recall and learning of new words. The positive effect of pictures was more evident among the minimum exposure group, a fact which is sufficient to justify the use of pictures in the teaching of a second language. As, however, was revealed by the review of the literature, there is a great conflict of conclusions on this subject. This conflict, ignoring of course the confusion it may cause to the L2 teachers concerned, should be reason enough for new studies.

With this work as a starting point, future research could branch out into the following areas of study:

First, research should be made into the number of "situational" pictures which should accompany a story. Should, that is, pictures be designed to focus on every concrete part of the story, on only the difficult parts of the story, or just to illustrate the key points irrespective of whether they are easy or difficult to comprehend?

Second, research should be made to determine the number and the kind of elements to be included in the picture. This is of considerable importance because, if we accept the fact that the thematic pictures plus labels produced the best results, then we should concern ourselves with the number of words to be included in the pictures, "Frustration will inevitably occur if the students are deluged with more than they can assimilate with reasonable effort" (Scanlan p. 210).

Third, research should be made into the possibility of a modification of the non-thematic picture with labels condition. On concluding

this study, the investigator formed the impression that the presentation of the picture in the non-thematic picture plus labels condition could create confusion. The placing of four individual pictures in the same frame may give the impression of one complete thematic picture but, simultaneously, the impression of four isolated unrelated pictures. If these pictures of each element were placed separately in the text itself, perhaps resulting effect would be more favorable. Finally, this research should be repeated with every grade level so as to determine with accuracy the conditions under which the L2 learner could benefit.

Reference Notes

- Bluth, L.F. A comparison of the reading comprehension of good and poor readers in the second grade with and without illustrations. Dissertation Abstracts International, 1973, 34, 637.
- Brooks, P.R. The influence of pictures, context and difficulty on beginning reading. Unpublished doctoral dissertation, The University of Florida, 1977.
- Bryant, J., Brown, D., Silberberg, A., & Elliot, S.M. Humorous illustrations in textbooks: Effects on information acquisition, appeal, persuasibility and motivation. Paper presented at the Speech Communication Association Convention, New York, November, 1980. (ERIC Document Reproduction Service No. ED 196 071).
- DeRose, T. The effects of verbal and pictorially induced and imposed strategies of children's memory for text. Wisconsin Research and Development Center for Cognitive Learning, The University of Wisconsin, Madison, 1976.
- Harris, L.A. A study of the rate of acquisition and retention of interest-loaded words by low socio-economic kindergarten children. Unpublished doctoral dissertation, University of Minnesota, 1967.
- Koenke, K.R. The roles of pictures and readability in comprehension of the main idea of a paragraph. Paper presented at the meeting of the American Educational Research Association, Chicago, February, 1968.
- Levin, J.R. On functions of pictures in prose. Theoretical Paper No. 80. Madison: Wisconsin Research and Development Center for Individualized Schooling, 1979.
- Lindsseth, M.L. The use of pictures to answer comprehension questions in a selected developmental reading series. Unpublished Master's thesis, University of Minnesota, 1969.
- Matz, R., & Rohwer, W.D., Jr. Visual elaboration of text. Paper presented at the annual meeting of the American Educational Research Association, New York, March, 1979.
- Moore, A.M. Investigation of the effect of patterns of illustrations on third graders' comprehension of information. Doctoral Dissertation, Kent State University, 1975. (University Microfilms No. 75-20, 604).
- Otto, W., & Barrett, T.C. Two studies of children's ability to formulate and state a literal main idea in reading. Technical Report No. 57, 1968, Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin.

Peeck, J. Experimenter-provided and learner-generated pictures in learning from text. Paper presented at the annual meeting of the American Educational Research Association, Boston, April, 1980.

Rohwer, W.D., Jr. Social class differences in the role of linguistic structures in paired-associate learning: Elaboration and learning proficiency. Final Report on the Basic Research Project No. S-0605, U.S. Office of Education, 1967.

Rusted, J., & Coltheart, M. Facilitation of illustrated and non-illustrated aspects of text. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, April, 1979.

Strang, A.M. A study of gains and losses in concepts as indicated by pupils reading scores after the addition of illustrations to the reading matter. Unpublished doctoral dissertation, Temple University, 1941.

Ude, C.K. The effect over time of pictures on the acquisition of similar and dissimilar sight words by prereaders. Unpublished doctoral dissertation, Emory University, 1977.

Wardle, K.F. Textbook illustrations. Do they aid reading comprehension? Paper presented at the annual convention of the American Psychological Association, 1977.

Weintraub, S. The effect of pictures on the comprehension of a second grade basal reader. Unpublished doctoral dissertation, University of Illinois, 1960.

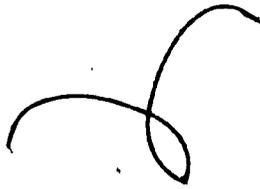
References

- Arlin, M., Scott, M., and Webster, J. The effects of pictures on rate of learning sight words: a critique of the focal attention hypothesis. Reading Research Quarterly, 1978-1979, 4, 645-660.
- Arnold, R.D. Four methods of teaching word recognition to disabled readers. Elementary School Journal, 1968, 68, 269-274.
- Baker, R.W., and Madell, T.O. A continued investigation of susceptibility to distraction in academically underachieving and achieving male college students. Journal of Educational Psychology. 1965, 56, 254-258.
- Bransford, J.D., and Johnson, M.K. Contextual prerequisites for understanding: Some investigations of comprehension and recall. Journal of Verbal Learning and Verbal Behavior 1972, 11, 717-726.
- Braun, C. Interest-loading and modality effects on textual response acquisition. Reading Research Quarterly, Spring 1969, 4, 428-444.
- Brown, R. Development of the first language in the human. American Psychologist. 1973, 28, 97-106.
- Brown, A.L. and Scott, M.S. Recognition memory for pictures in preschool children. Journal of Experimental Child Psychology. 1971, 11, 401-412.
- Brown, W.J., Lewis, B.R., Harclerod F.F. A.V. Instruction. Technology Media and Methods. New York: McGraw-Hill, 1973.
- Bruner, J.S. The course of cognitive growth. American Psychologist. 1964, 19, 1-15.
- Chall, J. Learning to Read: the Great Debate. New York: McGraw-Hill, 1967.
- Concannon, J.S. Illustrations in books for children: Review of research. The Reading Teacher, 1974, 254-256.
- Corsini, A.D., Jacobus, A.K., and Leonard, D.S. Recognition memory of preschool children for pictures and words. Psychonomic Science 1969, 16 (4) 192-193.
- Coste, G. Les piètinnements de l'image. Etude de linguistique appliquée, 1975, 17, 5-28.
- Denburg, S.D. The interaction of picture and print in reading instruction (abstract report). Reading Research Quarterly. 1976-1977, 12, (2), 176-189.
- Duchastel, P.C. Illustrations in text: A retentional role. Programmed Learning and Educational Technology, 1981, 18, 11-15.

- Du'lay, H.C. and Burt, K.M. Errors and strategies in child second language acquisition. TESOL Quarterly, 1974, 8, 129-136.
- Erwin-Tripp, S.M. Is Second language learning like the first? TESOL Quarterly 1974, 8, 11-127.
- Fowler, W. Teaching a two-year old to read: An experiment in early childhood learning. Genetic Psychology Monographs, 1962, 66, 181-283.
- French, J.E. Children's preferences for pictures of varied complexity pictorial pattern. Elementary School Journal, 1952, 53, 90-95.
- Chatala, S.E. and Levin, R.J. Developmental differences in frequency judgements of words and pictures. Journal of Experimental Child Psychology 1973, 16 495-507.
- Goldberg, F. Effects of imagery on learning incidental material in the classroom. Journal of Educational Psychology, 1974, 66, 233-237.
- Golinkoff, R.M. & Rosinski, R.R. Decoding, semantic processing and reading comprehension. Child Development, 1976, 47, 252-258.
- Gombrich, E. The visual image. Scientific American 1972, 227 (3), 82-96.
- Goodman, K.S. Reading: A psycholinguistic guessing game. In Singer, H. and Ruddell, B., R. (Eds) Theoretical models and processes of reading. Newark, Delaware: International Reading Association, 1970.
- Goodman, K.S., The Psycholinguistic Nature of the Reading Process. Detroit, Wayne State University Press, 1968.
- Goodykoontz, B. The relation of pictures to reading comprehension. Elementary English Review. 1936, 13, 125-130.
- Halbert, M. An experimental study of children's understanding of instructional materials. Bulletin of School Service, 1943, 15, (4), 7-60.
- Haring, J.M., Fry, A.M. Effect of pictures on children's comprehension of written text. Educational Communication and Technology Journal. 1979, 27 (3), 185-190.
- Hartley, R.N. Effects of list types and cues on the learning of word lists. Reading Research Quarterly, 1970, 6, 97-121.
- Harzem, P., Lee, I., Miles, T.R. The effects of pictures on learning to read. British Journal of Educational Psychology, Nov. 1976, 46, 318-322.

- Hollenberg, C.K. Functions of visual imagery in the learning and concept formation of children. Child Development 1970, 41, 1003-1015.
- Huey, E.G. The psychology and pedagogy of reading. Cambridge, Mass: MIT Press 1968 (originally published, 1908).
- Katz, A.N. and Paivio, A. Imagery variables in concept identification. Journal of Verbal Learning and Verbal Behavior 1975, 14, 284-293.
- King, E.M. Muehl, S. Different sensory cues as aids in beginning reading. The Reading Teacher, 1965, 19, 163-168.
- Koenke, K. and Otto, W. Contribution of pictures to children's comprehension of the main idea in reading. Psychology in the Schools 1969, 6, 298-302.
- Kreidler, J.C. Effective Use of Visual Aids in the ESOL Classroom, TESOL Quarterly 1971, 5, (1), 19-37.
- LaVergne, M. Textbook analysis of surface-structure difficulty. Foreign Language Annals, 1977, 10, 571-580.
- Levie, W.H. and Lentz, R. The Effects of text illustrations: A review of research. Educational Communication and Technology Journal, 1983, 30.
- Levin, J.R. Comprehending what we read: An outsider looks in, Journal of Reading Behavior, 1972, 4, 18-28.
- Levin, J.R. Inducing comprehension in poor readers: A test of a recent model. Journal of Educational Psychology, 1973, 65, 19-24.
- Levin, J.R., Bender, B.G., and Lesgold, A.M. Pictures, repetition, and young children's oral prose learning. AV Communication, 1976, 24, 367-380.
- Levin, J.R. What have we learned about maximizing what children learn? In Cognitive Learning in children. Levin, J.R. and Allen, V.L. (Eds). New York: Academic Press, 1976.
- Levin, J.R., Davidson, R.E. Wolff, P. and Citron, M. A comparison of induced imagery and sentence strategies in children's paired-associate learning. Journal of Educational Psychology, 1973, 64, 306-309.
- Levin, J.R. and Lesgold, A.M. On pictures in prose. Educational Communication and Technology Journal, 1978, 26, 233-243.
- Malter, M.S. Children's preferences for illustrative materials. Journal of Educational Research, 1948, 41, 378-385.

- McLaughlin, B. Second-language learning in children. Psychological Bulletin, 1977, 84 438-459.
- Miller, W.A. Reading with and without pictures. Elementary English Review, 1938, 13, 125-130.
- Milon, J.P. The development of negation in English by a second-language learner. TESOL Quarterly 1974, 8 137-143.
- Montare, A., Elman, E., Cohen, J. Words and pictures: a test of Samuels' findings. Journal of Reading Behavior, 1977, 9, 269-285.
- Morsbach, G. Cross-cultural Comparisons of Second Language Learning: The Development of Comprehension of English Structures by Japanese and German children. TESOL Quarterly 1981 15 (2) 183-188.
- Myatt, B. and Carter, M.J. Picture preferences of children and young adults. Educational Communication and Technology. 1979, 27 (1) 45-53.
- Omaggio, A.C. Pictures and second language comprehension: do they help? Foreign Language Annals, April 1979, 12, (2), 107-116.
- Paivio, A. and Csapo, K. Concrete-image and verbal memory codes. Journal of Experimental Psychology, 1969, 80, 279-285.
- Peeck, J. Retention of pictorial and verbal content of a text with illustrations. Journal of Educational Psychology, 1974, 66 880-888.
- Peng, C.Y. and Levin, J.R. Pictures and children's story recall: Some questions of durability. Educational Communication and Technology Journal, 1979, 27 (1) 39-44.
- Politzer, R.L. Foreign language learning: A linguistic introduction. Englewood Cliffs, N.J., Prentice-Hall, 1965.
- Pressley, M. Imagery and children's learning: Putting the picture in developmental perspective. Review of Educational Research, 1977, 47, 585-622.
- Ravem, R. Language acquisition in a second-language environment. International Review of Applied Linguistics in Language Teaching 1968, 6, 197-185.
- Ravem, R. The development of Wh-questions in first and second language learners. In Error analysis: Perspectives on second-language acquisition. J.C. Richards (Ed.) London: Longman 1974. 134-155.

- Reese, H.W. (Chm.) Imagery in children's learning. A symposium. Psychological Bulletin, 1970, 73, 383-421.
- Rudisill, M. Children's preferences for color versus other qualities in illustrations. Elementary School Journal, 1952, 444-451.
- Runquist, W.N., and Hutt, V.H. Verbal concept learning in high school students with pictorial and verbal representation of stimuli. Journal of Educational Psychology. 1961, 52, 108-111.
- Rusted, J. Coltheart, V. The effect of pictures on the retention of novel words and prose passages. Journal of Experimental Child Psychology, 1979, 28, 516-524.
- Samuels, S.J. Attentional processes in reading: the effect of pictures in the acquisition of reading responses. Journal of Educational Psychology, December 1967, 58, 337-342.
- Samuels, S.J. Effects of Pictures on learning to read, comprehension, and attitudes. Review of Educational Research, 1970, 40, 397-402.
- Scanlan, M. T. Another foreign language skill: Analyzing photographs. Foreign Language Annals, 1980, 13, 209-213.
- Shepard, N.R. Recognition memory for words, sentences and pictures. Journal of Verbal Learning and Verbal Behavior 1967, 6, 156-163.
- Silverman, M., Davids, A., and Andrews, J.M. Powers of attention and academic achievement. Perceptual and Motor Skills. 1963, 17, 243-249.
- Singer, H., Samuels, S.J., and Spiroff, J. The effect of pictures and contextual conditions on learning responses to printed words. Reading Research Quarterly. 1973-1974, 9, (4) 555-567.
- Smith, F. Psycholinguistics and Reading. New York: Holt, Rinehart, Winston, Inc., 1973.
- Spaulding, S. Research on pictorial illustration. Audio-visual Communication Review, 1955, 3, 43-44.
- Standing, L., Conezio, J., and Haber, R.N. Perception and memory for pictures: single-trial learning of 2500 visual stimuli. Psychonomic Science, 1970, 19, 73-74.
- Stewing, J.W. Children's picture preference. Elementary English, 1974, 51, 1012-1013.
- Sticht, T.G., Beck, L.J., Hauke, R.N., Kleinman, G.M., and James J.H. Auding and Reading: A developmental model. Alexandria, Va.: Human Resources Research Organization, 1974.
- 

- Taggart, G. Pictures in second-language teaching. Canadian Modern Language Review, 1974, 30, 86-93.
- Tardy, M. "La fonction semantique des images". Etudes de linguistique appliquee. 1975, 17, 29-34.
- Taylor, I. Acquiring vs. Learning a Second Language. Canadian Modern Review. 1978 34 (3) 455-469.
- Travers, R.M.W. The transmission of information to human receivers. Audio-Visual Communication Review. 1964, 12, 373-385.
- Tremblay, R. Using magazine pictures in the second-language classroom. Canadian Modern Language Review 1979, 35, (3) 82-86.
- Tuttle, G.H. Using visual material in the foreign-language classroom. Learning Resources, 1975, 2, i. 9.
- Underwood, B.J. Stimulus selection in verbal learning. Verbal behavior and learning problems and processes, New York: McGraw-Hill, 1963.
- Vernon, M.D. The value of pictorial illustration. British Journal of Educational Psychology, 1953, 23, 180-187.
- Weintraub, S. What research says to the reading teaching. Reading Teacher 1966, 20, 60.
- Whipple, G. Appraisal of the Interest Appeal of Illustrations. Elementary School Journal, 1953, 53, 262-269.
- Wiener, M. and Cromer, W. Reading and reading difficulty: A conceptual analysis. Harvard Educational Review. 1967, 37, 620-643.
- Willows, M.D. A picture is now always worth a thousand words: pictures as distractors in reading: Journal of Educational Psychology, 1978, 70, (2), 255-262.
- Willows, D.M. Reading Comprehension of illustrated and non-illustrated aspects of text. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, April 1979.
- Yorio, A.C. Some sources of reading problems for foreign language learners. Language Learning, 1971, 21, 108-109.
- Zintz, V.M. The reading process - the teacher and the learner. Third edition. Dubuque, Iowa: Brown, 1970.

Appendix A

The Story of the Olive Tree

The Story of the Olive Tree

Mr. Stratos, the grocer, was confused. All afternoon he had filled bottles with oil. Sophia came late; Mr. Stratos was just about to close the store.

- Hi there! Did your mother forget anything?

- It was I who forgot, said Sophia shyly. My grandmother was sick and we went to clean up the house a little, she explained. We just arrived home and I ran. I want...I undertook to take samples of olives to school. I want a "throumba" (wrinkled) olive, a "nyhati" (pointed) olive. Have I forgotten any other kind?

- You forgot the green split olive, Mr Stratos reminded her. We also have pickled olives and black olives, he added.

Sophia saw that the grocer was tired. She felt ashamed, and tried to excuse herself.

Mr. Stratos muttered something. He hastily put the olive-samples in a bag, thrust the money hurriedly in his pocket and began to pull down the roll-down shutters, to close.

Sophia went to her house. There she found a note from her mother. "I am popping round again to see grandmother. I won't be long".

Sophia was very tired. She had helped her mother with the chores, had run to the doctor's, to the drugstore. She had also washed the dishes...she feels sleepy...how sleepy Sophia feels!

She empties the bag, puts the various olives on a small plate. Sophia knows about olives, Every year they go to the village and gather in their crop, How beautiful it is there! She goes from one olive tree

to another, gives a hand - a little hand, that is - she talks to the workers, who, standing on ladders, gather the olives. She is even happier when she sees the truck set off for the city laden with olives.

Suddenly a shadow comes up to her. Sophia recognizes her at once. It is the olive tree.

- How did you come so far, Madam Olive Tree? Sophia asks.

- I came to tell you my story, says the olive tree. I know that you love me. And I want you to tell my story tomorrow to the other children in your class.

The olive tree grew silent for a moment, as if thinking, and then began to whisper:

- People, Sophia, have known me for years and years. Since the time of the great flood: Horror, desolation, water, darkness engulfed the earth at one time.

Noah, closed in the Ark, prayed all day and all night to God to end this evil. One day the flood stops: But Noah does not dare to come out of the security of the Ark - He sends first a dove. The dove comes back, holding a bright green olive branch in its beak.

Me, a sign of life

brought to Noah by the dove

And it was I who was the sign that life had begun again on earth.

In Greece, I have no complaint, people loved me, took care of me, honored me. How can I forget that brilliant noon, when the Gods gathered on the Acropolis, to give a name to the city of Kekrops.

Athena arrived. What would her gift be?

Poseidon arrived. What would his gift be?

Poseidon offered water. Athena offered an olive tree. Athena won.

The olive tree was silent for a while.

Then in a low voice, she continued:

- In the Panathenaia, the Athenians honored their goddess. And to the winners in the Games which took place, they gave, as a prize, a jar (amphorea) of olive oil which came from the holy olive tree on the rock of the Acropolis.

- I know that with your own branches they crowned all the winners, said Sophia shyly.

- Ah, you mean the "kotinos". That crowning wreath was made from the branches of the wild olive tree which had been planted by Hercules in the holy grove of Olympia.

- I also know, Sophia now took heart, about that mount, which was full of olive trees, where Christ went to pray.

- The Mount of Olives. There Christ preached to people and taught them to love, said the olive tree and added with emotion:

- There, on that mount, under the olive tree, people heard for the first time that they must pray to God: "Our Father, which are in Heaven...

- I think of those olive trees, which heard those words. But I think most of all of that evening, the last evening before they seized Christ, who went there again, to the Mount of Olives, and wept.

- From my oil comes the Holy Myron (the Chrism), with which the priest annoints whoever is baptized.

- With my oil men have light.

- With your oil the icons are illuminated, said Sophia almost tenderly, and she looked at the sacred lamp, which filled the room with shadows.

- I am tired, murmured Sophia, and walked to her bed.

- Sleep, Sophia, we will keep you company said the olive tree, and the sacred lamp nodded and its tiny flame grew brighter.



Appendix B

Experimental Passage: Greek Version

Text/No Pictures

Η ΙΣΤΟΡΙΑ ΤΗΣ ΕΛΙΑΣ

Ο κυρ Στράτος, ο μπακάλης, τὰ 'χασε. Όλο το απόγευμα γεμίζει μπουκάλια με λάδι. Η Σοφία ήρθε αργά, κόντευε να κλείσει πια το μαγαζί ο κυρ Στράτος.

- Καλώς τηνε. Ξέχασε τίποτα η μάνα σου;

- Εγώ ξέχασα, είπε ντροπαλά η Σοφία. Ήταν άρρωστη η γιαγιά μου και πήγαμε και της συγυρίσαμε λίγο το σπίτι, δικαιολογήθηκε. Μόλις τώρα γυρίσαμε στο σπίτι μας κι έτρεξα. Θέλω... Πρέπει να πάω δείγματα από ελιές στο σχολείο. Θέλω μια ελιά θρούμπα, μια νυχάτη. Μήπως ξέχασα κανένα είδος;

- Ξέχασες την πράσινη την τσακιστή, της θύμισε ο κυρ Στράτος. Έχουμε και τις ξυδάτες και τις μαυρολιές, πρόσθεσε.

Κατάλαβε η Σοφία πως ήταν κουρασμένος ο μπακάλης. Ντραπήκε, γιατί τον καθυστερούσε.

- Σας κουράζω, αλλά ξέρετε αύριο έχουμε μάθημα για την ελιά, προσπάθησε να δικαιολογηθεί.

Κάτι μурμούρισε ο κυρ Στράτος. Έχωσε βιαστικά σε μια σακούλα τις ελιές-δείγματα, έβαλε τα λεφτά στην τσέπη του, κι άρχισε να κατεβάζει τα ρολά, να κλείσει.

Η Σοφία πήγε σπίτι. Εκεί βρήκε ένα σημείωμα της μητέρας της. "Ξαναπετάγομαι ως τη γιαγιά. Δε θα αργήσω."

Η Σοφία ήταν πολύ κουρασμένη. Βοήθησε τη μητέρα στις δουλειές, έτρεξε στο γιατρό, στο φαρμακείο... Έπλυνε και τὰ πιάτα... νυστάζει... πόσο νυστάζει η Σοφία.

Αδειάζει τη σακούλα, βάζει σ' ένα πιατάκι τις διαφορετικές ελιές. Η Σοφία ξέρει από ελιές. Κάθε χρόνο πάνε στο χωριό και παίρνουν τη σοδειά από τον ελαιώνα τους. Όμορφα που είναι εκεί. Αρρίζει από ελιά σε ελιά και μιλάει στους εργάτες που ανεβασμένοι στις σκάλες μαζεύουν τον καρπό. Η χαρά της γίνεται ακόμη πιο μεγάλη όταν βλέπει το φορτηγό να ξεκινά φορτωμένο με τις ελιές για την πόλη.

Ξαφνικά μια σκιά την πλησιάζει. Η Σοφία τη γνώρισε αμέσως. Είναι η ελιά.

- Πώς κι ήρθες τόσο δρόμο κυρα-ελιά; ρωτάει η Σοφία.

- Ήρθα να σου πω την ιστορία μου, λέει η ελιά. Ξέρω πως μ' αγαπάς. Και θέλω την ιστορία μου να την πεις αύριο στην τάξη σου.

Η ελιά στάθηκε λίγο, σαν να σκέφτηκε κι άρχισε να φιθυρίζει:

- Οι άνθρωποι, Σοφία, με ξέρουν χρόνια και χρόνια. Από τότε που έγινε ο μεγάλος κατακλυσμός.

Φρίκη, ερημιά, νερό, σκοτάδι,
τη γη τη θάψαν μια φορά.

Ο Νώε κλεισμένος μέσα στην κιβωτό, μέρα και νύχτα προσεύχεται στο θεό να δώσει τέλος σε τούτο το κακό. Κάποτε σταματάει ο κατακλυσμός. Μα ο Νώε δεν τολμάει να βγει από τη σιγουριά της κιβωτού. Στέλνει πρώτα ένα περιστέρι. Το περιστέρι γυρίζει κρατώντας στο ράμφος του ένα ολοπράσινο κλωνάρι ελιάς:

Εμέ ζωής φέρνει σημάδι
στο Νώε η περιστέρα.

Κι ήμουν εγώ στο σημάδι, πως η ζωή ξανάρχισε στη γη.

Στην Ελλάδα, δεν έχω παράπονο, οι άνθρωποι με αγάπησαν, με φρόντισαν, με τίμησαν. Πώς να ξεχάσω εκείνο το αστραφτερό μεσημέρι, που είχαν μαζευτεί στην Ακρόπολη οι θεοί, για να δώσουν όνομα στην πόλη του Κέκροπα;

Έφτασε η Αθηνά. Ποιο θα 'ταν το δώρο της;

Έφτασε ο Ποσειδώνας. Ποιο θα 'ταν το δώρο του;

Νερό πρόσφερε ο Ποσειδώνας. Ελιά η Αθηνά. Νίκησε η Αθηνά...!

Η ελιά σάπασε για λίγο. Ύστερα με σιγανή φωνή συνέχισε:

- Οι Αθηναίοι στα Παναθήναια τιμούσαν τη θεά τους. Και στους αγώνες που γίνονταν, έδιναν βραβείο στους νικητές έναν αμφορέα με λάδι, που έβγαινε από την ιερή ελιά του βράχου της Ακρόπολης.

- Ξέρω πως με το δικό σου κλωνάρι στεφάνωναν όλους τους νικητές, είπε η Σοφία.

- Άλλες για τον κότινο. Αυτό το στεφάνι φτιαχνόταν από τα κλαδιά της αγριελιάς που είχε φυτέψει ο Ηρακλής στο ιερό άλσος της Ολυμπίας.

- Ξέρω ακόμα, τώρα πήρε θάρρος η Σοφία, και για εκείνο το βουνό, που ήταν γεμάτο ελιές και πήγε ο Χριστός να προσευχηθεί.

- Το όρος των Ελαιών. Εκεί δίδαξε ο Χριστός τους ανθρώπους και τους μάθαινε ν' αγαπούν, είπε η ελιά και συγκινημένη πρόσθεσε:

- Εκεί, σ' αυτό το βουνό, κάτω από τις ελιές, ο κόσμος άκουσε

για πρώτη φορά πως πρέπει να προσεύχεται στο Θεό: " Πάτερ ημών, ο εν τοις ουρανοίς..."

- Σκέφτομαι εκείνες τις ελιές, που άκουσαν αυτά τα λόγια. Μα σκέφτομαι πιο πολύ το βράδυ, το τελευταίο βράδυ πριν πιάσουν το Χριστό, που πήγε πάλι εκεί, στο βουνό με τις ελιές, κι έκλαψε.

- Με το λάδι γίνεται το άγιο μύρο, που μ' αυτό ο παπας μωρώνει όποιον βαπτίζεται.

- Με το λαδάκι μου φωτίζονταν οι άνθρωποι.

- " Με το λαδάκι σου φωτίζονται τα εικονίσματα, είπε σχεδόν τρυφερά η Σοφία και κοίταξε το καντήλι που γέμιζε το δωμάτιο. Ίσκιους.

- Είμαι κουρασμένη, μουρμούρισε η Σοφία και προχώρησε προς το κρεβάτι της.

- Κοιμήσου, Σοφία, εμείς σου κρατάμε συντροφιά, είπε η ελιά και το καντήλι έγνεψε ναι και δυνάμωσε τη φλογίτσα του.

Appendix C

Experimental Passage: Greek Version

Text/Thematic Pictures

Η ΙΣΤΟΡΙΑ ΤΗΣ ΕΛΙΑΣ

Ο κυρ Στράτος, ο μπακάλης, τά 'χασε. Όλο το απόγευμα γερμίζει μπουκάκια με λάδι. Η Σοφία ήρθε αργά, κόντευε να κλείσει πια το μαγαζί ο κυρ Στράτος.

- Καλώς τηνε. Ξέχασε τίποτα η μάνα σου;
- Εγώ ξέχασα, είπε ντροπαλά η Σοφία. Ήταν άρρωστη η γιαγιά μου και πήγαμε και της συγυρίσαμε λίγο το σπίτι, δικαιολογήθηκε. Μόλις τώρα γυρίσαμε στο σπίτι μας κι έτρεξα. Θέλω... Πρέπει να πάω δείγματα από ελιές στο σχολείο. Θέλω μία ελιά θρούμπα, μια νυχάτη. Μήπως ξέχασα κανένα είδος;
- Ξέχασες την πράσινη την τσακιστή, της θύμισε ο κυρ Στράτος. Έχουμε και τις ξυδάτες και τις μαυρολιές, πρόσθεσε.

Κατάλαβε η Σοφία πως ήταν κουρασμένος ο μπακάλης. Ντραπήκε, γιατί τον καθυστέρούσε.

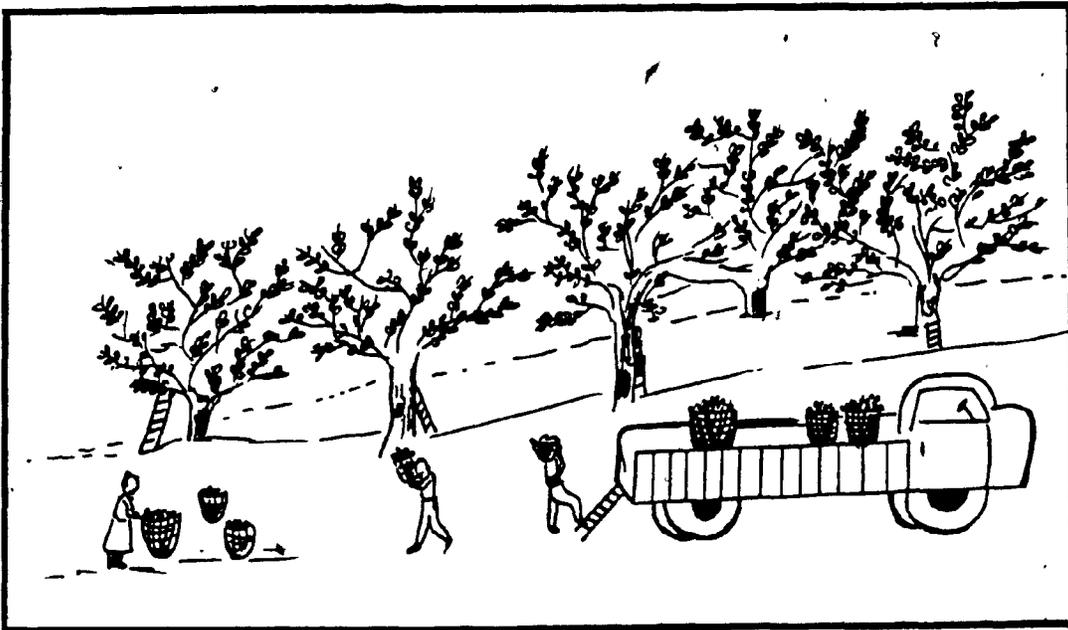
- Σας κουράζω, αλλά ξέρετε αύριο έχουμε μάθημα για την ελιά, προσπάθησε να δικαιολογηθεί.

Κάτι μουρμούρισε ο κυρ Στράτος. Έχωσε βιαστικά σε μια σακούλα τις ελιές-δείγματα, έβαλε τα λεφτά στην τσέπη του, κι άρχισε να κατεβάζει τα ρολά, να κλείσει.

Η Σοφία πήγε σπίτι. Εκεί βρήκε ένα σημείωμα της μητέρας της. "Ξαναπετάγομαι ως τη γιαγιά. Δε θα αργήσω."

Η Σοφία ήταν πολύ κουρασμένη. Βοήθησε τη μητέρα στις δουλειές, έτρεξε στο γιατρό, στο φαρμακείο... Έπλυνε και τα πιάτα... νυστάζει... πόσο νυστάζει η Σοφία.

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Ξαφνικά μια σκιά την πλησιάζει. Η Σοφία τη γνώρισε αμέσως. Είναι η ελιά.

- Πώς κι ήρθες τόσο δρόμο κυρα-ελιά; ρωτάει η Σοφία.
- Ήρθα να σου πω την ιστορία μου, λέει η ελιά. Ξέρω πως μ' αγαπάς. Και θέλω την ιστορία μου να την πεις αύριο στην τάξη σου.

Η ελιά στάθηκε λίγο, σαν να σκέφτηκε κι άρχισε να φιθυρίζει:

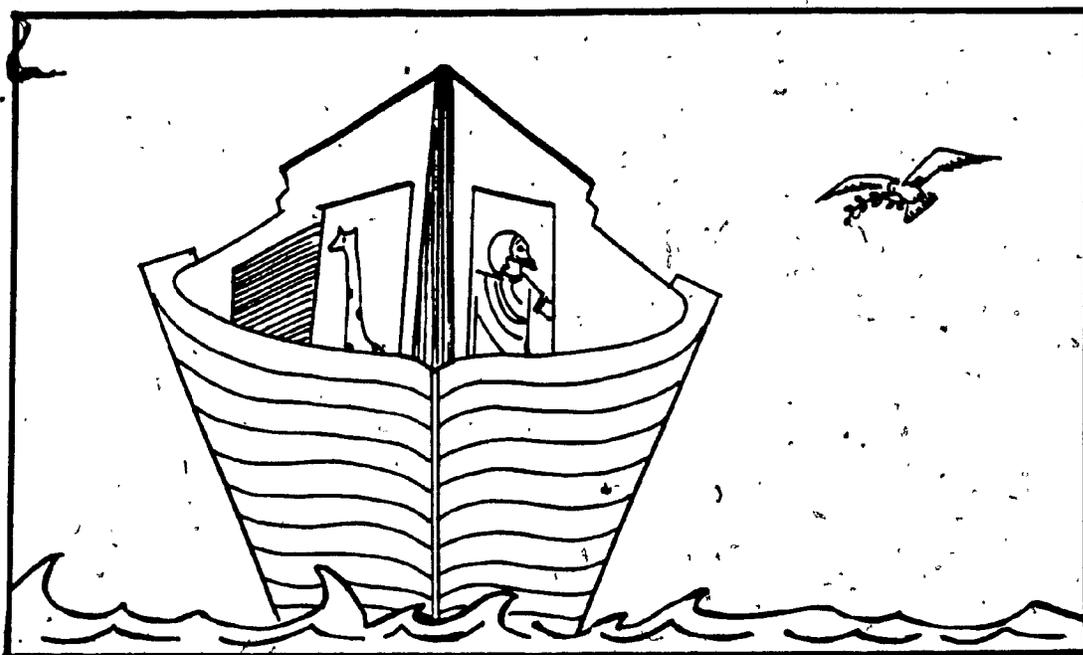
- Οι άνθρωποι, Σοφία, με ξέρουν χρόνια και χρόνια. Από τότε που έγινε ο μεγάλος κατακλυσμός.

Φρίκη, ερημιά, νερό, σκοτάδι,
τη γη τη θάψαν μια φορά.

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Εμέ ζωής φέρνει σημάδι
στο Νώε η περιστέρα.

Κι ήμουν εγώ το σημάδι, πως η ζωή ξανάρχισε στη γη.



Στην Ελλάδα, δεν έχω παράπονο, οι άνθρωποι με αγάπησαν, με φρόντισαν, με τίμησαν. Πώς να ξεχάσω εκείνο το αστραφτερό μεσημέρι, που είχαν μαζευτεί στην Ακρόπολη οι θεοί, για να δώσουν όνομα στην πόλη του Κέκροπα;

Έφτασε η Αθηνά. Ποιο θα 'ταν το δώρο της;

Έφτασε ο Ποσειδώνας. Ποιο θα 'ταν το δώρο του;

Νερό πρόσφερε ο Ποσειδώνας. Ελιά η Αθηνά. Νίκησε η Αθηνά...



Η ελιά σώπασε για λίγο. Ύστερα με σιγανή φωνή συνέχισε:

- Οι Αθηναίοι στα Παναθήναια τιμούσαν τη θεά τους. Και φτούς αγώνες που γίνονταν, έδιναν βραβείο στους νικητές έναν αμφορέα με λάδι, που έβγαινε από την ιερή ελιά του βράχου της Ακρόπολης.

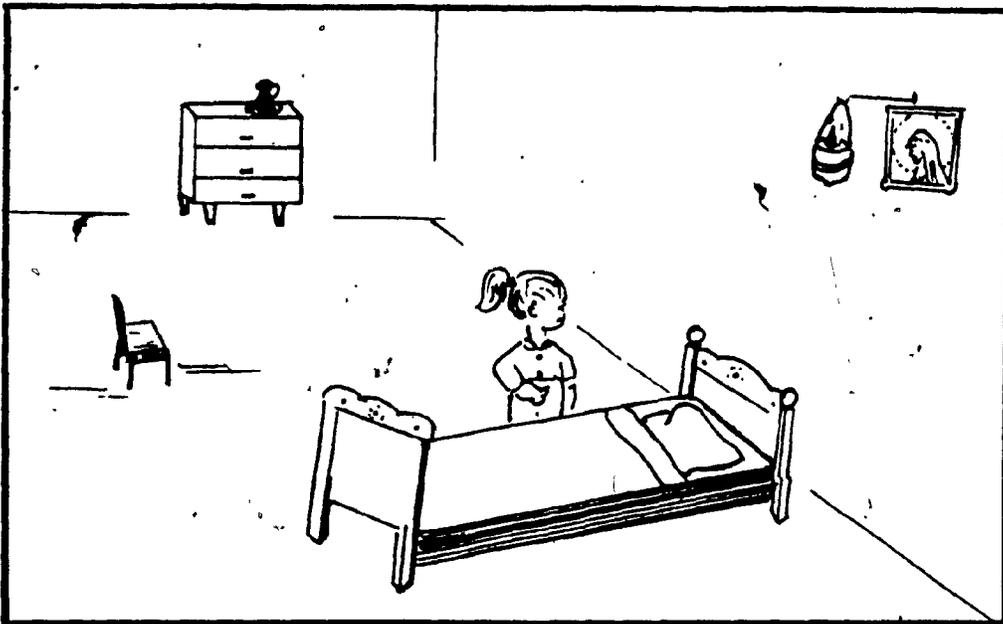
- Ξέρω πως με το δικό σου κλωνάρι στεφάνωναν όλους τους νικητές, είπε η Σοφία.

- Άλλες για τον κότινο. Αυτό το στεφάνι φτιαχνόταν από τα κλαδιά της αγριελιάς που είχε φυτέψει ο Ηρακλής στο ιερό άλσος της Ολυμπίας.



- Ξέρω ακόμα, τώρα πήρε θάρρος η Σοφία, και για εκείνο το βουνό, που ήταν γεμάτο ελιές και πήγε ο Χριστός να προσευχηθεί.
- Το όρος των Ελαιών. Εκεί δίδασκε ο Χριστός τους ανθρώπους και τους μάθαινε ν' αγαπούν, είπε η ελιά και συγκινημένη πρόσθεσε:
- Εκεί, σ' αυτό το βουνό, κάτω από τις ελιές, ο κόσμος άκουσε για πρώτη φορά πως πρέπει να προσεύχεται στο θεό: " Πάτερ ημών, ο εν τοις ουρανοίς..."
- Σκέφτομαι εκείνες τις ελιές, που άκουσαν αυτά τα λόγια. Μα σκέφτομαι πιο πολύ το βράδυ, το τελευταίο βράδυ πριν πιάσουν το Χριστό, που πήγε πάλι εκεί, στο βουνό με τις ελιές, κι έκλαψε.

- Με το λάδι γίνεται το άγιο μύρο, που μ' αυτό ο παπάς μωρώνει όποιον βαπτίζεται.
- Με το λαδάκι μου φωτίζονταν οι άνθρωποι.
- Με το λαδάκι σου φωτίζονται τα εικονίσματα, είπε σχεδόν τρυφερά η Σοφία και κοίταξε το καντήλι που γέμιζε το δωμάτιο. Γοκίους.



- Είμαι κουρασμένη, μουρμούρισε η Σοφία και προχώρησε προς το κρεβάτι της.
- Κοιμήσου, Σοφία, εμείς σου κρατάμε συντροφιά, είπε η ελιά και το καντήλι έγνεψε ναι και δυνάμωσε τη φλογίτσα του.

Appendix D

Experimental Passage: Greek Version

Text/Thematic Pictures with Labels

Η ΙΣΤΟΡΙΑ ΤΗΣ ΕΛΙΑΣ

Ο κυρ Στράτος, ο μπακάλης, τά 'χασε. Όλο το απόγευμα γεμίζει μπουκάλια με λάδι. Η Σοφία ήρθε αργά, κόντευε να κλείσει πια το μαγαζί ο κυρ Στράτος.

- Καλώς τηνε. Ξέχασε τίποτα η μάνα σου;

- Εγώ ξέχασα, είπε ντροπαλά η Σοφία. Ήταν άρρωστη η γιαγιά μου και πήγαμε και της συγγυρίσαμε λίγο το σπίτι, δικαιολογήθηκε. Μόλις τώρα γυρίσαμε στο σπίτι μας κι έτρεξα. Θέλω... Πρέπει να πάω δείγματα από ελιές στο σχολείο. Θέλω μια ελιά θρούμπα, μια ψυχάτη. Μήπως ξέχασα κανένα είδος;

- Ξέχασες την πράσινη την τσακιστή, τηςθύμισε ο κυρ Στράτος. Έχουμε και τις ξυδάτες και τις μαυρολίτες, πρόσθεσε.

Κατάλαβε η Σοφία πως ήταν κουρασμένος ο μπακάλης. Ντρέπηκε, γιατί τον καθυστερούσε.

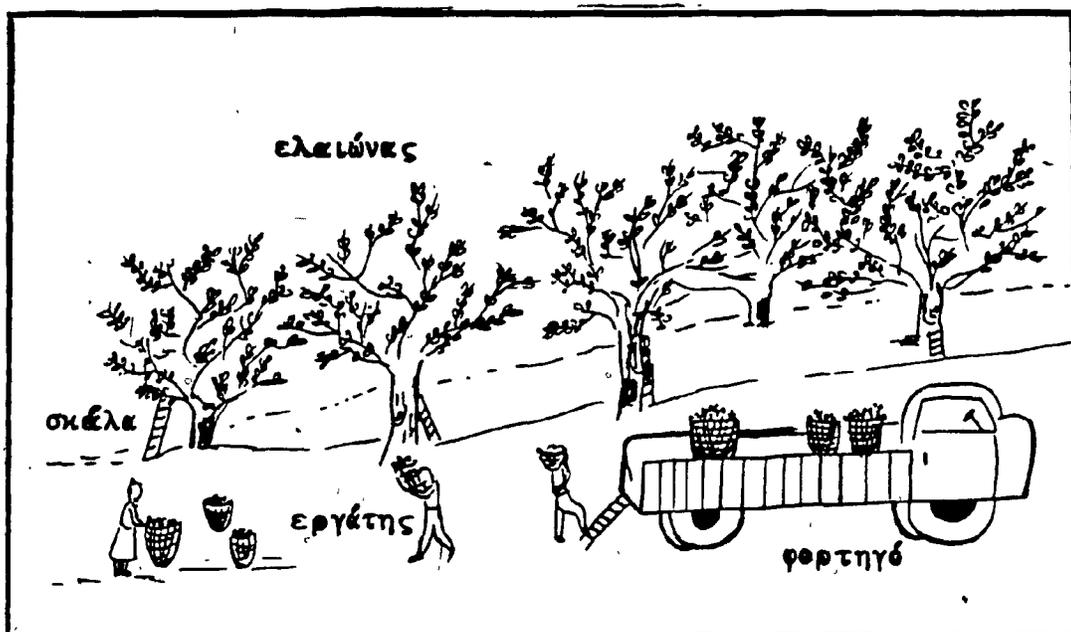
- Σας κουράζω, αλλά ξέρετε αύριο έχουμε μάθημα για την ελιά, προσπάθησε να δικαιολογηθεί.

Κάτι μούρμούρισε ο κυρ Στράτος. Έχασε βιαστικά σε μια σακούλα τις ελιές-δείγματα, έβαλε τα λεφτά στην τσέπη του, κι άρχισε να κατεβάζει τα ρολά, να κλείσει.

Η Σοφία πήγε σπίτι. Εκεί βρήκε ένα σημείωμα της μητέρας της. "Ξαναπετάγομαι ως τη γιαγιά, δε θα αργήσω."

Η Σοφία ήταν πολύ κουρασμένη. Βοήθησε τη μητέρα στις δουλειές, έτρεξε στο γιατρό, στο φαρμακείο... Έπλυνε και τα πιάτα... νυστάζει... πόσο νυστάζει η Σοφία.

Αδειάζει τη σακούλα, βάζει σ' ένα πιατάκι τις διαφορετικές ελιές. Η Σοφία ξέρει από ελιές. Κάθε χρόνο πάνε στο χωριό και παίρνουν τη σοδειά από τον ελαιώνα τους. Όμορφα που είναι εκεί. Γυρίζει από ελιά σε ελιά και μιλάει στους εργάτες που ανεβασμένοι στις σκάλες μαζεύουν τον καρπό. Η χαρά της γίνεται ακόμη πιο μεγάλη όταν βλέπει το φορτηγό να ξεκινά φορτωμένο με τις ελιές για την πόλη.



Ξαφνικά μια σκιά την πλησιάζει. Η Σοφία τη γνώρισε αμέσως. Είναι η ελιά.

- Πώς κι ήρθες τόσο δρόμο κυρα-ελιά; ρωτάει η Σοφία.
- Ήρθα να σου πω την ιστορία μου, λέει η ελιά. Ξέρω πως μ' αγαπάς. Και θέλω την ιστορία μου να την πεις αύριο στην τάξη σου.

Η ελιά στάθηκε λίγο, σαν να σκέφτηκε κι άρχισε να ψιθυρίζει:

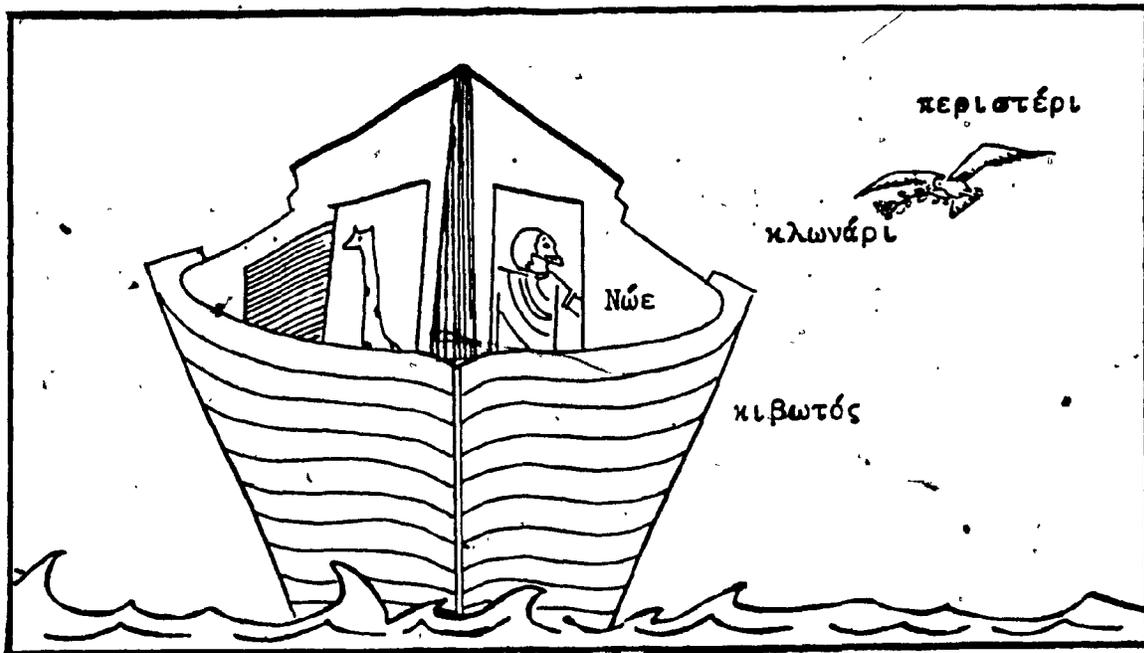
- Οι άνθρωποι, Σοφία, με ξέρουν χρόνια και χρόνια. Από τότε που έγινε ο μεγάλος κατακλυσμός.

Φρίκη, ερημιά, νερό, σκοτάδι,
τη γη τη θάψαν μια φορά.

Ο Νώε κλεισμένος μέσα στην κιβωτό, μέρα και νύχτα προσεύχεται στο θεό να δώσει τέλος σε τούτο το κακό. Κάποτε σταματάει ο κατακλυσμός. Μα ο Νώε δεν τολμάει να βγει από τη σιγουριά της κιβωτού. Στέλνει πρώτα ένα περιστέρι. Το περιστέρι γυρίζει κρατώντας στο ράμφος του ένα ολοπράσινο κλωνάρι ελιάς:

Εμέ ζωής φέρνει σημάδι
στο Νώε η περιστέρα.

Κι ήμουν εγώ το σημάδι, πως η ζωή ξανάρχισε στη γη.



Στην Ελλάδα, δεν έχω παράπονο, οι άνθρωποι με αγάπησαν, με φρόντισαν, με τίμησαν. Πώς να ξεχάσω εκείνο το αστραφτερό μεσημέρι, που είχαν μαζευτεί στην Ακρόπολη οι θεοί, για να δώσουν όνομα στην πόλη του Κέκροπα;

Έφτασε η Αθηνά. Ποιο θα 'ταν το δώρο της;

Έφτασε ο Ποσειδώνας. Ποιο θα 'ταν το δώρο του;

Νερό πρόσφερε ο Ποσειδώνας. Ελιά η Αθηνά. Νίκησε η Αθηνά:...

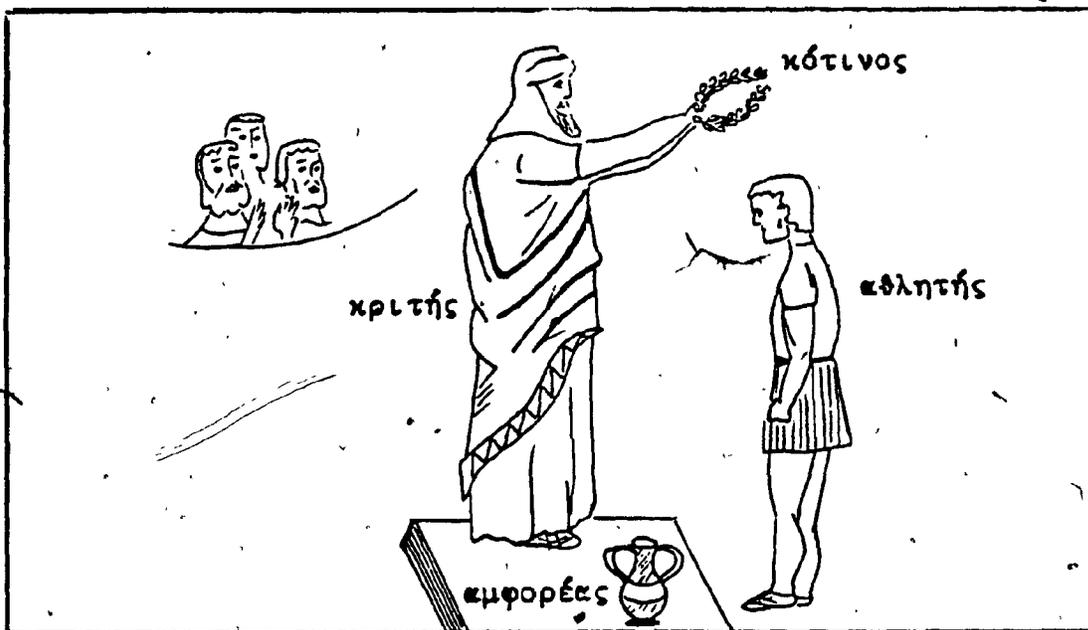


Η ελιά σώπασε για λίγο. Ύστερα με σιγανή φωνή συνέχισε:

- Οι Αθηναίοι στα Παναθήναια τιμούσαν τη θεά τους. Και στους αγώνες που γίνονταν, έδιναν βραβείο στους νικητές έναν αμφορέα με λάδι, που έβγαине από την ιερή ελιά του βράχου της Ακρόπολης.

- Ξέρω πως με το δικό σου κλωνάρι στεφάνωναν όλους τους νικητές, είπε η Σοφία.

- Άλλες για τον κότινο. Αυτό το στεφάνι φτιαχνόταν από τα κλαδιά της αγριελιάς που είχε φυτέψει ο Ηρακλής στο ιερό άλσος της Ολυμπίας.



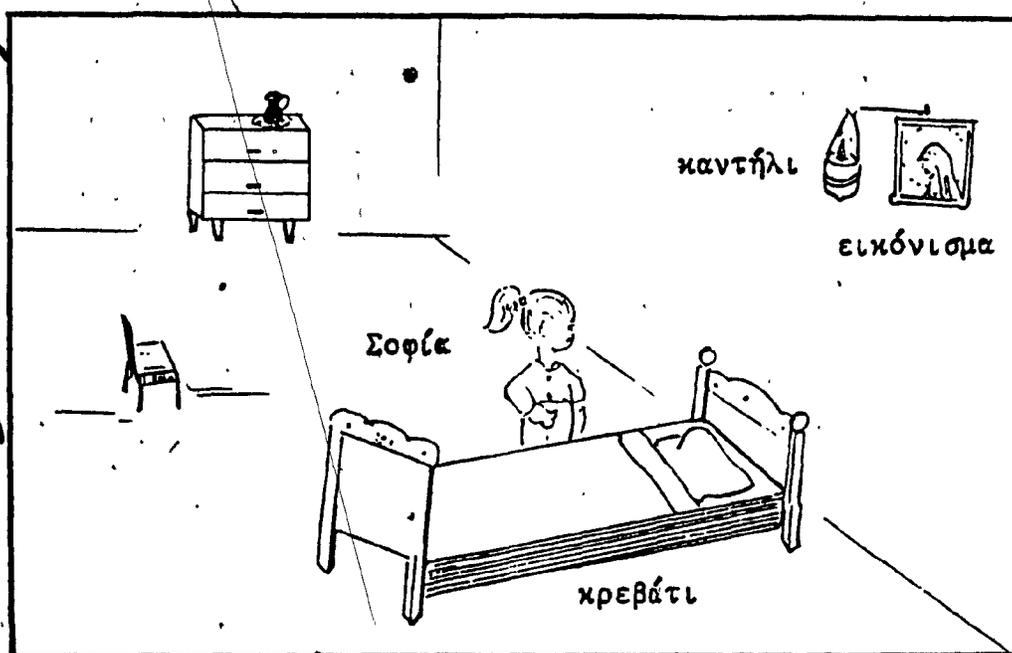
- Ξέρω ακόμα, τώρα πήρε θάρρος η Σοφία, και για εκείνο το βουνό, που ήταν γεμάτο ελιές και πήγε ο Χριστός να προσευχηθεί.

- Το όρος των Ελαιών. Εκεί δίδασκε ο Χριστός τους ανθρώπους και τους μάθαινε ν' αγαπούν, είπε η ελιά και συγκινημένη πρόσθεσε:

- Εκεί, σ' αυτό το βουνό, κάτω από τις ελιές, ο κόσμος άκουσε για πρώτη φορά πως πρέπει να προσεύχεται στο θεό: " Πάτερ ημών, ο εν τοις ουρανοίς..."

- Σκέφτομαι εκείνες τις ελιές, που άκουσαν αυτά τα λόγια. Για σκέφτομαι πιο πολύ το βράδυ, το τελευταίο βράδυ πριν πιάσουν το Χριστό, που πήγε πάλι εκεί, στο βουνό με τις ελιές, κι έκλαψε.

- Με το λάδι γίνεται το άγιο μύρο, που μ' αυτό ο παπάς μωρώνει όποιον βαπτίζεται.
- Με το λαδάκι μου φωτίζονταν οι άνθρωποι.
- Με το λαδάκι σου φωτίζονται τα εικονίσματα, είπε σχεδόν τρυφερά η Σοφία και κόβταξε το καντήλι που γέμιζε το δωμάτιο. Σοκίους.



- Είμαι κουρασμένη, μωρμούρισε η Σοφία και προχώρησε προς το κρεβάτι της.
- Κοιμήσου, Σοφία, εμείς σου κρατάμε συντροφιά, είπε η ελιά και το καντήλι έγνεψε ναι και δυνάμωσε τη φλογίτσα του.

Appendix E

Experimental Passage: Greek Version

Text/Non-Thematic Pictures with Labels

Η ΙΣΤΟΡΙΑ ΤΗΣ ΕΛΙΑΣ

Ο κυρ Στράτος, ο μπακάλης, τά 'χασε. Όλο το απόγευμα γεμίζει μπουκάλια με λάδι. Η Σοφία ήρθε αργά, κόντευε να κλείσει πια το μαγαζί ο κυρ Στράτος.

- Καλώς τηνε. Ξέχασε τίποτα η μάνα σου;
- Εγώ ξέχασα, είπε ντροπαλά η Σοφία. Ήταν άρρωστη η γιαγιά μου και πήγαμε και της συγυρίσαμε λίγο το σπίτι, δικαιολογήθηκε. Μόλις τώρα γυρίσαμε στο σπίτι μας κι έτρεξα. Θέλω... Πρέπει να πάω δείγματα από ελιές στο σχολείο. Θέλω μια ελιά θρούμπα, μια νυχάτη. Μήπως ξέχασα κανένα είδος;
- Ξέχασες την πράσινη την τσακιστή, της θύμισε ο κυρ Στράτος. Έχουμε και τις ξυδάτες και τις μαυρολιές, πρόσθεσε.

Κατάλαβε η Σοφία πως ήταν κουρασμένος ο μπακάλης. Ντραπήκε, γιατί τον καθύστερούσε.

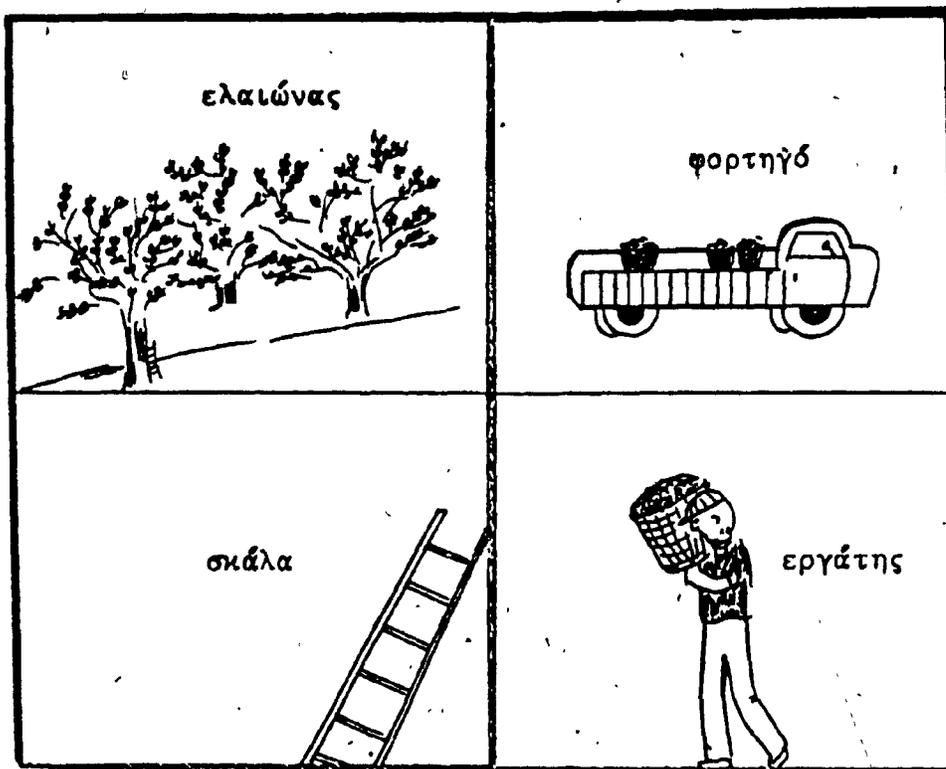
- Σας κουράζω, αλλά ξέρετε αύριο έχουμε μάθημα για την ελιά, προσπάθησε να δικαιολογηθεί.

Κάτι μурμουρίζε ο κυρ Στράτος. Έχωσε βιαστικά σε μια σακούλα τις ελιές-δείγματα, έβαλε τα λεφτά στην τσέπη του, κι άρχισε να κατεβάζει τα ρολά, να κλείσει.

Η Σοφία πήγε σπίτι. Εκεί βρήκε ένα σημείωμα της μητέρας της. "Ξαναπετάγομαι ως τη γιαγιά. Δε θα αργήσω."

Η Σοφία ήταν πολύ κουρασμένη. Βοήθησε τη μητέρα στις δουλειές, έτρεξε στο γιατρό, στο φαρμακείο... Έπλυνε και τα πιάτα... νυστάζει... πόσο νυστάζει η Σοφία.

Αδειάζει τη σακούλα, βάζει σ' ένα πιατάκι τις διαφορετικές ελιές. Η Σοφία ξέρει από ελιές. Κάθε χρόνο πάνε στο χωριό και παίρνουν τη σοδειά από τον ελαιώνα τους. Όμορφα που είναι εκεί. Γυρίζει από ελιά σε ελιά και μιλάει στους εργάτες που ανεβασμένοι στις σκάλες μαζεύουν τον καρπό. Η χαρά της γίνεται ακόμη πιο μεγάλη όταν βλέπει το φορτηγό να ξεκινά φορτωμένο με τις ελιές για την πόλη.



Σαφηνικά μια σκιά την πλησιάζει. Η Σοφία τη γνώρισε αμέσως. Είναι η ελιά.

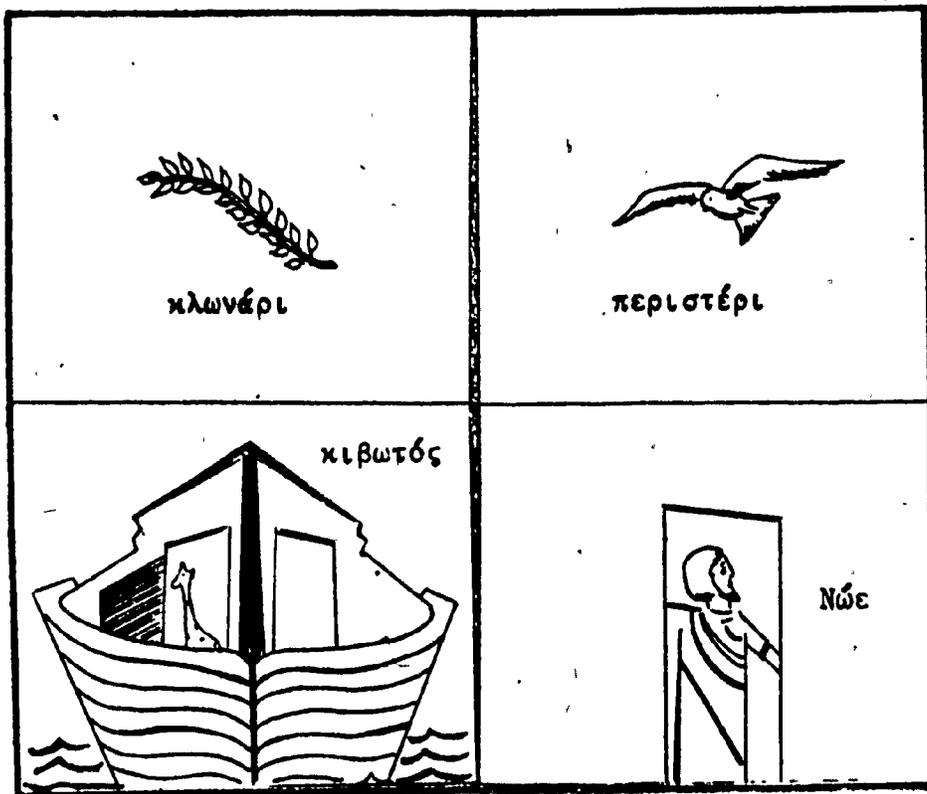
- Πώς κι ήρθες τόσο δρόμο κύρα-ελιά; ρωτάει η Σοφία.
- Ήρθα να σου πω την ιστορία μου, λέει η ελιά. Ξέρω πως μ' αγαπάς. Και θέλω την ιστορία μου να την πεις αύριο στην τάξη σου.

Η ελιά στάθηκε λίγο ,σαν να σκέφτηκε κι άρχισε να φιθυρίζει:

- Οι άνθρωποι, Σοφία, με ξέρουν χρόνια και χρόνια. Από τότε που έγινε ο μεγάλος κατακλυσμός.

Φρίκη, ερημιά, νερό, σκοτάδι,
τη γη τη δάψαν μια φορά.

Ο Νώε κλεισμένος μέσα στην κιβωτό ,μέρα και νύχτα προσεύχεται στο θεό να δώσει τέλος σε τούτο το κακό. Κάποτε σταματάει ο κατακλυσμός. Μα ο Νώε δεν τολμάει να βγει από τη σιγουριά της κιβωτού. Στέλνει πρώτα ένα περιστέρι. Το περιστέρι γυρίζει κρατώντας στα ράμφος του ένα ολοπράσινο κλωνάρι ελιάς:



Με ζωής φέρνει σημάδι

στο Νώε η περιστερᾶ.

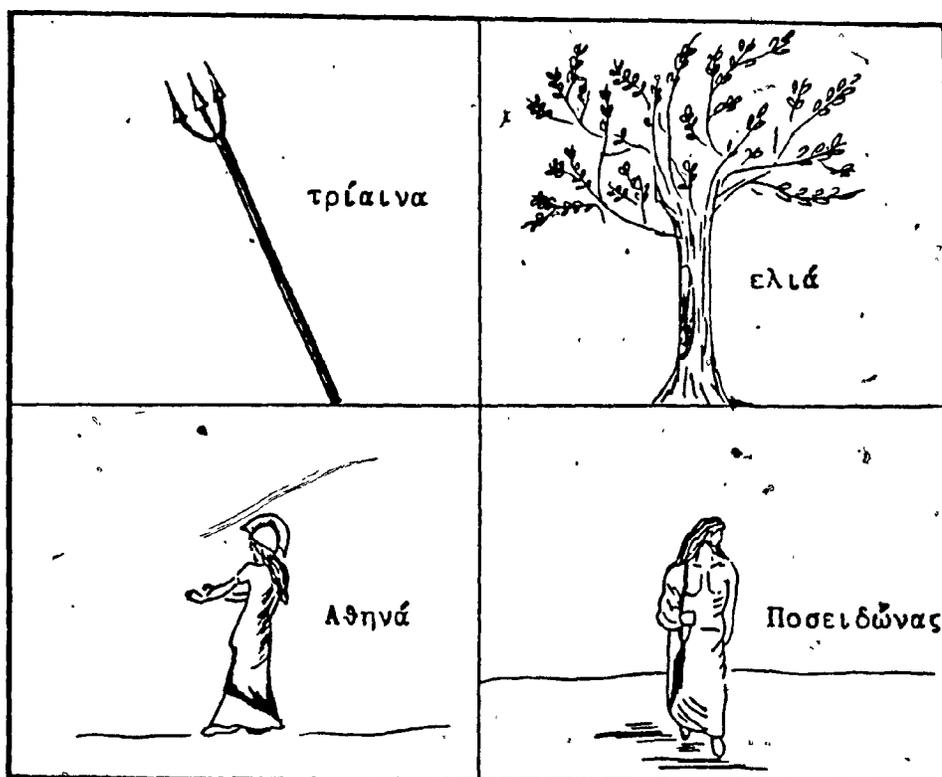
Κι ήμουν εγώ το σημάδι, πως η ζωή ξανάρχιζε στη γη.

Στην Ελλάδα, δεν έχω παρά μόνο, οι άνθρωποι με αγάπησαν, με φρόντισαν, με τίμησαν. Πώς να ξεχάσω εκείνο το αστραφτερό μεσημέρι, που είχαν μαζευτεί στην Ακρόπολη οι θεοί, για να δώσουν όνομα στην πόλη του Κέκροπα;

Έφτασε η Αθηνά. Ποιο θα 'ταν το δώρο της;

Έφτασε ο Ποσειδώνας. Ποιο θα 'ταν το δώρο του;

Νερό πρόσφερε ο Ποσειδώνας. Ελιά η Αθηνά. Νίκησε η Αθηνά...

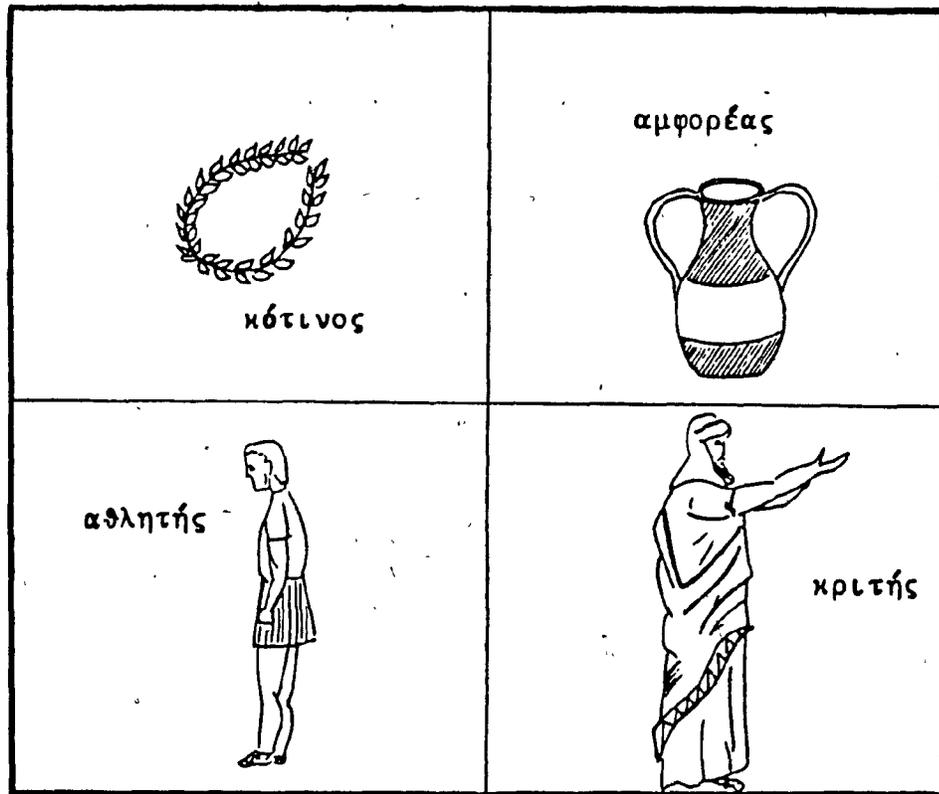


Η ελιά σώπασε για λίγο. Ύστερα με σιγανή φωνή συνέχισε:

- Οι Αθηναίοι στα Παναθήναια τιμούσαν τη θεά τους. Και στους αγώνες που γίνονταν, έδιναν βραβείο στους νικητές έναν αμφορέα με λάδι, που έβγαινε από την ιερή ελιά του βράχου της Ακρόπολης.

- Ξέρω πως με το δικό σου κλωνάρι στεφάνωναν όλους τους νικητές, είπε η Σοφία.

- Άλλες για τον κότινο. Αυτό το στεφάνι φτιαχνόταν από τα κλαδιά της αγριελιάς που είχε φυτέψει ο Ηρακλής στο ιερό άλσος της Ολυμπίας.



- Ξέρω ακόμα, τώρα πήρε θάρρος η Σοφία, και για εκείνο το βουνό, που ήταν γεμάτο ελιές και πήγε ο Χριστός να προσευχηθεί.

- Το όρος των Ελαιών. Εκεί δίδασκε ο Χριστός τους ανθρώπους και τους μάθαινε ν' αγαπούν, είπε η ελιά και συγκινημένη πρόσθεσε:

- Εκεί, σ' αυτό το βουνό, κάτω από τις ελιές, ο κόσμος άκουσε

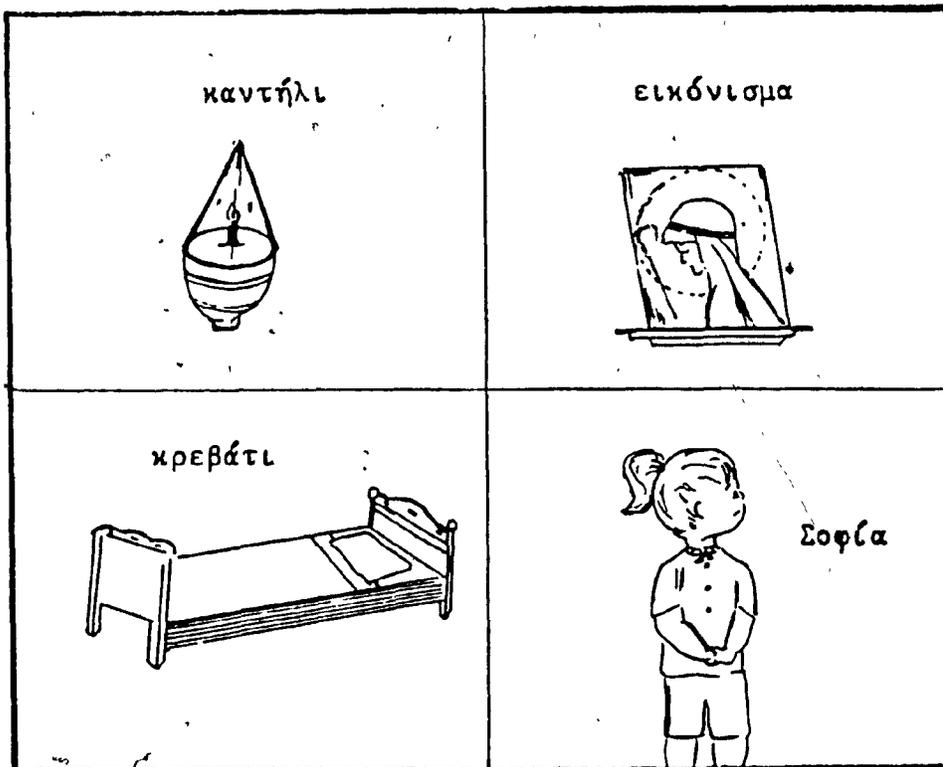
για πρώτη φορά πως πρέπει να προσεύχεται στο θεό: " Πάτερ ημών, ο εν τοις ουρανοίς..."

- Σκέφτομαι εκείνες τις ελιές, που άκουσαν αυτά τα λόγια. Μα σκέφτομαι πιο πολύ, το βράδυ, το τελευταίο βράδυ πριν πιάσουν το Χριστό, που πήγε πάλι εκεί, στο βουνό με τις ελιές, κι έκλαψε.

- Με το λάδι γίνεται το άγιο μύρο, που μ' αυτό ο παπάς μωρώνει όποιον βαπτίζεται.

- Με το λαδάκι μου φωτίζονταν οι άνθρωποι.

- Με το λαδάκι σου φωτίζονται τα εικονίσματα, είπε σχεδόν τρυφερά η Σοφία και κοίταξε το καντήλι που γέμιζε το δωμάτιο. Ίσκιους.



- Είμαι κουρασμένη, μουρμούρισε η Σοφία και προχώρησε προς το κρεβάτι της.

- Κοιμήσου, Σοφία, εμείς σου κρατάμε συντροφιά, είπε η ελιά και το καντήλι έγνεψε ναι και δυνάμωσε τη φλογίτσα του.

Appendix F

Recall, Comprehension and
Vocabulary Tests

Name: _____

School: _____

PRETEST

λίμνη:.....

εργάτης.....

στάλα.....

ποτάμι.....

φορτηγό.....

δάσος.....

ελαιώνας.....

μαχαίρι.....

κλουβί.....

Νώε.....

κιβωτός.....

καράβι.....

περιστέρι.....

ζώο.....

Ποσειδώνας.....

Αθηνά.....

ελιά δέντρο.....

τρέινα.....

αεροπλάνο.....

κότινος.....

αμφορέας.....

αθλητής.....

κριτής _____

εικόνημα _____

φυγέλο _____

καντήλι _____

κρεβάτι _____

σοφία _____

πορτοκάλι _____

λεωφορέιο _____

Name: _____

School: _____

POSTTEST

- δρόμος..... _____
- εργάτης..... _____
- σκάλα..... _____
- καρέκλα..... _____
- φορτηγό..... _____
- φεγγάρι..... _____
- ελαιώνας..... _____
- κουτάλι..... _____
- τηλεόραση..... _____
- Νώε..... _____
- κιβωτός..... _____
- ποδήλατο..... _____
- περιστέρι..... _____
- ζώο..... _____
- Ποσειδώνας..... ✓ _____
- Αθηνά..... _____
- ελιά δέντρο..... ✓ _____
- τρίαινα..... _____
- ποτήρι..... _____
- κότινας..... _____
- αμπορέας..... _____
- αθλήτης..... _____

κριτής.....

εικόνημα.....

νοσοκομείο.....

καντήλι.....

κρεβάτι.....

Σοφία.....

σύννεφο.....

λουλούδι.....

name: _____

POSTTEST

School: _____

1. What was Mr. Stratos about to do when Sophia entered his store?

2. What did Sophia buy?

3. Why did she buy those things?

4. Why was Sophia very tired when she arrived home?

5. Who did Sophia talk to in her room?

6. How do workers gather the olives from the olive-trees?

7. How are olives transported from the olive-trees to the city?

8. Why was Noah closed in his Ark?

9. What does Noah's Ark look like?

10. What is the dove holding in its beak?

11. Who were the two gods who competed to give their name to the city?

12. What is Poseidon holding in his hand?

13. What is Athena wearing on her head?

14. What was Athena's gift?

15. What was given as a prize to the winners of the Olympic Games?

16. What is at the side of the judge?

17. What is the judge about to give the winner?

18. Where did Christ pray just before he was arrested?

19. What is hanging in front of the icon in Sophia's room?

20. What things are there in Sophia's room?

POSTTEST

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Name: _____

School: _____

_____ Mr. Stratos put the olive-samples in a bag, took the money and began to pull down the roll-down shutters, to close.

_____ "- I want... I undertook to take samples of olives to school."

_____ Sophia came late, Mr. Stratos was just about to close the store.

_____ I came to tell you my story, says the olive tree and her voice is like the rustling of the wind.

_____ I know that with your own branches they crowned all the winners, said Sophia shyly.

_____ How can I forget that brilliant noon, when the Gods gathered on the Acropolis to give a name to the city of Kecrops.

_____ Noah, closed in the Ark, prayed all day and all night to God to end this evil.

_____ With your oil the icons are illuminated said Sophia almost tenderly, and she looked at the sacred lamp which filled the room with shadows.

— Sleep, Sophia, we will keep you company said the olive tree, and the sacred lamp nodded and its tiny flame grew brighter.

— I also know, Sophia now took heart, about that mount, which was full of olive trees, where Christ went to pray.

Appendix G

Abbreviations used in this Study

Abbreviations used in this study

Languages

L1: first language

L2: second language

Levels of exposure to Greek language

MAXEX: maximum exposure

MINEX: minimum exposure

Conditions of Pictures

NP: no - picture

TP: thematic picture

TPL: thematic picture with labels

NTPL: non-thematic picture with labels

