

THE RELATIONSHIP OF VISUAL SYNTHESIS  
TO LIPREADING PERFORMANCE

By

Dale W. Kitchen

The major purposes of this study were to design a test of visual synthetic ability and to assess the relationship of this instrument to lipreading ability.

Thirty-two normal hearing college students, with audiologically undramatic medical histories and normal 20/20 vision, served as subjects in this research. All subjects had normal intelligence.

All subjects participated in a test of visual synthesis which assessed ten facets of visual perception thought to be related to the ability to synthesize stimulus materials. Following this, subjects participated in a lipreading film which assessed the ability to lipread sentences, words, and stories.

The data were subjected to statistical analyses in order to assess the relationships among all synthesis and lipreading variables. All possible combinations of the variables were correlated and the data were presented in a correlation matrix.

The results of the investigation showed that two of the synthesis subtests (Dotted Outlines and Scattered Letters) and the Total Synthesis score were correlated significantly with the ability to lipread words, stories, and with Total lipreading score. Dotted Outlines and Scattered Letters were thought to be closure-type tasks which involved arranging disparate elements to form a meaningful "whole." These same subtests were also thought to require speed of visual perception. None of the synthesis variables correlated sig-

nificantly with the ability to lipread sentences. It was determined that either visual synthesis did not operate in the ability to lipread sentences or else the subtests in this study did not tap the dimension of synthesis necessary to the successful lipreading of sentences.

(Unpublished Ph.D. thesis, Michigan State University, 1968).

AN INVESTIGATION OF THE RELATION BETWEEN  
PERFORMANCE ON A FILMED LIPREADING TEST AND ANALYSIS  
OF THE VISUAL ENVIRONMENT

By

Susan Claire Haske Brainerd

Audiologists and speech pathologists hold major roles in the rehabilitation of the aurally handicapped. The development of lipreading ability has been identified by these clinicians as being one of the major components of a successful aural rehabilitation program. However, the results of empirical studies have not yet defined for these clinician the variables they need to manipulate in order to improve an individual's ability to read lips.

The purpose of the present study was to investigate the relationship between an individual's field independency and his ability to read lips. A review of the literature suggested that lipreading ability would be related to an individual's tendency to perceive his visual environment analytically.

The Utley Lipreading Test (Form A) was used as the measure of lipreading ability and the Hidden Figures Test was used as the measure of analysis of the visual environment. Both tests were administered to twenty volunteer male undergraduates at Michigan State University. All subjects possessed normal hearing and normal vision.

Reliability estimates of the test measures were obtained through use of the split-half method. The corrected reliability estimates were .73 for the total Utley Test and .81 for the total Hidden Figure Test. The relationship between performance on the two measures was analyzed through calculation of a Pearson Product Moment Correlation Coefficient. The resulting coefficient of .46 was significant at the .025 level and indicated the performance on the Utley Test is positively related to performance on the Hidden Figures Test.

(Unpublished M.A. Thesis, Michigan State University, 1969).

## VISUAL ACUITY AND LIPREADING PERFORMANCE

By

Larry Lovering

Recently, it appears that considerably more emphasis is being placed on habilitation and rehabilitation audiology. Lipreading is one of the communication systems that is found to be operating within the above framework of audiology. In the past, with few exceptions, lipreading research seems to have been based more on common sense methodologies than on objectively tested hypotheses. Only recently did Hardick, *et al.*, investigate lipreading performance as a function of visual acuity, and discover that persons with relatively minor acuity problems obtained significantly lower lipreading scores than did those person with normal vision.

The purpose of this study is to investigate lipreading performance as a function of visual acuity along the parameter of myopia. More particularly, subjects who have normal hearing as determined through the conventional pure tone audiometric technique, and who have normal vision as determined through a modern optometric examination, will view a colored motion picture under five visual conditions. Five separate films with scramblings of the same twenty sentences will be presented to each subject. Separately,

the subjects will view each film under a different visual acuity dimension that will be randomly assigned, ranging from 20/100 to 20/20 by means of prescribed lenses (for each subject) which will produce the desired visual condition (for each subject). It is hypothesized that lipreading scores will deteriorate as a function of visual distortion.

(Research in Progress, Michigan State University).