

# Effects of acquaintance and friendship on children's recognition of classmates' faces

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*Using as stimuli, photos of classmates' faces presented under masks so only a portion of the face could be seen, a positive relationship between children's chronological age and accuracy of identification was confirmed. Length of acquaintance between S and the pictured child did not affect performance; however, when young Ss acknowledged the pictured child as a "friend," they were more likely to identify him correctly than when the pictured child was not a friend.*

Acquisition of discriminations among human faces, complex and infinitely variable as faces are, can be said to be one of the truly staggering feats of perceptual learning of which human beings are capable. However, until very recently little systematic research attention has been directed at questions like *how* and *when* such discriminations come about or what cue or situational factors influence individual performance. Goldstein & Mackenberg (1966) have shown that children's accuracy of recognition of classmates' pictures, when only a part of the photographed face is visible, is a positive function of chronological age. However, that study, utilizing intact groups of children (school classrooms), left unanswered the question of the extent to which the effect of increasing perceptual maturity of the child was independent of length of time children had been acquainted with each other. It also did not touch on an equally interesting question, raised by Vernon (1966) among others, whether we perceive and remember more clearly and in more detail faces of persons toward whom we have positive affective responses in contrast to those of persons toward whom we feel more neutral? The present study addressed itself to both these issues. The first question asked was this: When children are of similar chronological age, but some have known each other for several years and others have been acquainted for only 8 to 12 weeks, will differences occur in accuracy of identifications made from parts of faces related to length of acquaintance between S and the pictured child? The second question was whether children acknowledged by S as friends were more likely to be identified by him from parts of their faces than were classmates whom S had not mentioned as friends.

## Subjects

Ss were children in four classrooms at the Laboratory School of the University of Missouri. The sample contained: 27 kindergartners; 33 first graders; 30 second graders; and 27 sixth graders. Classrooms

were selected so as to include those with a maximum number of newly enrolled children.

## Procedure

Two black and white Polaroid close-up photographs were taken of each child's face. They were posed unsmiling, at a standard distance, and at two angles—full-faced and facing 35° to the right. A black cape covered all exposed clothing. Full-faced pictures were mounted separately on 4 x 5 in. gray cards. Photos of partially turned faces were mounted in groups of five on larger cardboard panels. Each panel included two or more pictures of those 13 faces, parts of which would be used as stimuli in the test session of the study.

Approximately one week after photographs were taken, E saw each S individually in a preliminary session. S was asked to identify his classmates' full-faced *whole* pictures presented one at a time. If S could not name the pictured child, E named five classmates of the appropriate sex to choose among. Also, during this session each S was asked to name a "good friend" in his room. The question was repeated until three friends were named.

Thirteen photos were selected to appear under the masks in the test session. Each of the 13 masks is designed to expose some different part of the photographed face, for instance, an eye, a nose, the upper half of the face, etc. Masks are described in detail in Goldstein & Mackenberg (1966). For each classroom, photos of 13 children were selected to be presented as critical stimuli under the masks. In grades 1, 2, and 6 all children newly enrolled that term (7, 5, and 5, respectively) were included in the sample of stimuli. To each of these sample sets sufficient photos of children in the group a year or more were added to total 13.

During the test session one week later, each S was presented the masked 13 critical pictures of his classmates, one at a time, and asked to recall the name of the child pictured under the mask. If S failed to respond within 15 sec. or guessed incorrectly, E showed him a panel of partially turned faces and asked S to pick (recognize) the correct child from the five shown there. S was not told whether his responses were correct. Each time a new S was run, pictures were rotated under the masks assuring, over the whole class, that each picture was shown under each mask at least twice. Masks remained in the same order throughout.

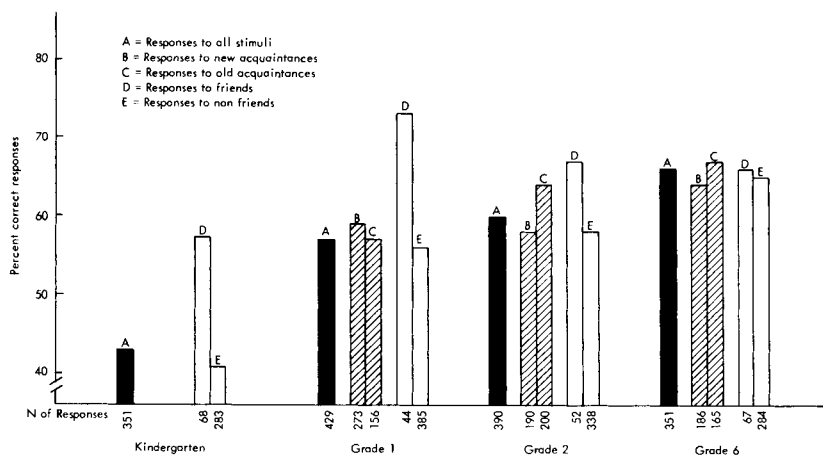


Fig. 1. Percent correct identifications by Ss of various ages viewing old vs. new acquaintances and friends vs. non-friends.

## Results and Discussion

Data from the preliminary session (identification without masks) indicated that all second and sixth graders recalled the names of all classmates. No first grader completely failed to identify any classmate, although 2% (of 1089) trials required prompting. Among kindergartners, 13% (of 729) trials required prompting and another 3% of trials resulted in S's failure either to recall or recognize the name of the pictured child. Since both necessity for prompting and failures to identify were more a function of the stimulus picture than of S, the samples of 13 critical pictures used in the test sessions were always those whose names all Ss had been able to recall or to recognize on presentation of the whole photo.

As the above data might suggest, data from the recognition trials of the test sessions proved redundant. That is, recognition performance merely increased the general level of accuracy shown on recall by a small amount. Results presented here represent recall trials only. Because of the varying n's of responses involved, frequencies of correct responses were converted to percentage scores which were employed both to summarize the data and for the difference tests performed.

Data pertinent to the questions of the study are shown graphically in Fig. 1. When mean percent of overall accurate identifications are compared, accuracy of identification of whole pictures from their parts is clearly an age-related function as had been shown in the Goldstein & Mackenberg study (1966). Mean difference tests showed that kindergartners did less well than all older children; children in grades 1 and 2 did not differ in performance; but both did less well than children in grade 6.

Accuracy of identification of the pictured child is not related to the length of acquaintance between S and the pictured child. Mean difference tests for paired

observations comparing accuracy of "old" children in each class when viewing old and when viewing new acquaintances were not significant. Mean difference tests between performance of "new" children viewing all classmates and "old" children viewing only old acquaintances likewise were not significant. The positive relation of age to accuracy of identification of parts of faces does not appear to be an artifact of length of acquaintance.

Among younger children, a friend's face under the mask is more likely to be correctly identified than a non-friend's face. The Wilcoxon matched-pairs signed-ranks test was employed in each age group to compare children's performances when identifying faces of friends and of non-friends. Significant values of  $z$  ( $p < .05$ , 1 tailed) were obtained for the comparisons in all three groups of young children. The difference was insignificant in grade 6. Additional tests failed to find any performance differences related to the sex of S or to his mental age.

These results confirm the importance of age in the adequacy of part-whole perception. They also suggest that the learning of a human face, to an extent that it may be identified when only a part of it is seen, takes place within the first weeks during which children are exposed to each other. Among younger children, the enhancing effect of friendship on accuracy of identification suggests that positive reinforcements associated with certain faces may facilitate learning and detailed recall.

## References

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