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Longitudinal and Cross-Sectional Age Effects in Nonverbal Decoding Skill and Style

Peter D. Blanck, Robert Rosenthal, and Sara E. Snodgrass
Harvard University

Bella M. DePaulo
University of Virginia

Miron Zuckerman
University of Rochester

This study examined longitudinal and cross-sectional age effects on accuracy of decoding nonverbal cues. A videotaped nonverbal discrepancy test was administered to children aged 9 to 15 years. The discrepancy test measured: (a) decoding accuracy—the extent to which subjects were able to identify affects (positivity and dominance) from video (facial and body) cues and audio (content filtered and random spliced) cues; (b) discrepancy accuracy—the extent to which subjects recognized the degree of discrepancy between audio and video cues; and (c) video primacy—the extent to which subjects were more influenced by video (face or body) than by audio cues. It was found that (a) older children benefited more than younger ones from the effects of retesting in their accuracy at decoding discrepant cues, especially for discrepant facial cues; (b) all children showed significantly less video primacy after retesting, and older relative to younger children displayed a trend for less body primacy after retesting; and finally (c) relative to younger children, older children showed less video primacy in decoding extremely discrepant ("leaky"), as compared to slightly discrepant, audio and video nonverbal cues. Thus, although older children performed better than younger children at most nonverbal decoding tasks, the advantages of age were especially great for the decoding of the more discrepant or leakier channels. The processes that may underlie increases in specific nonverbal skills and changes in nonverbal styles are discussed.

A great deal of research has been directed toward studying the development of nonverbal skills in children (for reviews see Charlesworth & Kreutzer, 1973, and DePaulo & Rosenthal, 1982). Several studies have explored the relationships among different kinds of nonverbal communication skills in children (e.g., Blanck, Rosenthal, Snodgrass, DePaulo, & Zuckerman, 1981; Buck, 1975; DePaulo & Rosenthal, 1979a, 1979b; DePaulo, Rosenthal, Finkelstein, & Eisenstat, 1979; Zuckerman & Przewuzman, 1979). A few studies have examined socialization, friendship, family, and/or cognitive variables that may facilitate or inhibit the development of particular nonverbal styles and skills in children (c.f. Blanck, Zuckerman, DePaulo, & Rosenthal, 1980).

The research on developmental changes in nonverbal decoding has employed cross-sectional methods almost exclusively. Many developmentalists might consider this independent measurement method to yield only approximate conclusions about development (e.g. Baltes, Reese, & Nesselroade, 1977; Baltes & Nesselroade, 1979). The longitudinal method, on the other hand, might more accurately describe intraindividual change in the development of nonverbal communication. Of course, each method has its strengths and weaknesses. For example, one problem with the longitudinal method is the difficulty of disentangling the effects of practice, retesting, and maturation.

The present investigation examined both longitudinal and cross-sectional age effects on accuracy of decoding nonverbal cues. Three different nonverbal variables were ex-

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Requests for reprints should be sent to Peter D. Blanck, Department of Psychology and Social Relations, Harvard University, 33 Kirkland Street, Cambridge, Massachusetts 02138.

amined: (a) decoding accuracy, or subjects' ability to identify the degree of positivity and dominance in face, body, and tone of voice cues; (b) discrepancy accuracy, or subjects' ability to recognize the degree of discrepancy between audio and video cues; and (c) video primacy, or the extent to which subjects weigh video information (from the face or body) more heavily than audio information when video and audio cues conflict (DePaulo, Rosenthal, Eisenstat, Rogers, & Finkelstein, 1978). Decoding accuracy and discrepancy accuracy tend to be fairly independent skills (DePaulo & Rosenthal, 1979c), whereas primacy is more accurately described as a style, strategy, preference, or bias, rather than a skill.

DePaulo and Rosenthal (1978, 1979a, 1982) have suggested that the increasing efficiency with age in the utilization of information in nonverbal decoding tasks might be attributable to a growing information processing capacity, and that this increase might be moderated by the amount or type of information that is available. Indeed, Case (1972), and Pascual-Leone (1970), have suggested that information processing capacity increases with age and can account for the growth of many cognitive-developmental skills.

Employing a cross-sectional sample and utilizing consistent nonverbal cues, DePaulo and Rosenthal (1978) showed that increases in nonverbal accuracy with increasing amounts of information were more pronounced for older than for younger children. The results of this study suggested that nonverbal processing capacity may vary with age, or alternatively, that older children may put more effort into such experimental tasks, have a lower distractability level, and/or simply have greater stamina.

In the present study, it was predicted that although older children would perform better than younger children at most nonverbal tasks (e.g., the decoding of consistent nonverbal cues), older children would be *even more* effective than younger children at organizing and interpreting discrepant nonverbal cues that involve making sense of complicated mixed-channel messages. Further, it was thought that retesting might be associated with greater gains in decoding discrepant nonverbal cues for older relative to younger children.

Our second interest was in the development of video primacy. There is evidence that suggests that video (but not audio) cues have less impact on young children (relative to adults; e.g., Bugental, Kaswan, Love, & Fox, 1970; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979; Zuckerman, Blanck, DePaulo, & Rosenthal, 1980). Older children may favor the information they gain from video cues over the information they gain from audio cues. Further, DePaulo et al. (1978) found that adults were more influenced by video cues—particularly facial cues—than by audio cues, and the face has been shown to be the most informative channel (e.g., Ekman & Friesen, 1969; Izard, 1971; Rosenthal et al., 1979). Perhaps younger children, relative to older children, are less able to process some of the information that the face has to offer and less able to profit from the effects of retesting.

Accordingly, this study also examined the developmental aspects of video (face and body) primacy (longitudinally and cross-sectionally). Although over the long period from childhood to adulthood there appears to be an increase in video primacy, earlier research (Blanck et al., 1981) suggested that older children would show less video primacy after retesting than would younger children. Perhaps this is because older children have learned through socialization and/or experience that as nonverbal cues become discrepant, one is able to gain more information about an encoder's true affect by relying more heavily on less controllable channels (i.e., tone).

Our final interest was in the extent to which this video primacy is influenced by the degree of discrepancy between audio and video nonverbal cues (leakage). The findings reported by Rosenthal et al. (1979) were based on the study of consistently communicated video and audio cues, and those of Zuckerman et al. (1980) were based on both consistent and discrepant cues. Both studies employed cross-sectional designs. In real life, the audio and video channels often operate simultaneously, but their messages are not always consistent. Feelings of ambivalence, attempts at deception, and expressions of sarcasm may all lead the sender to express different emotions in different channels. The possibility of discrepancy among channels raises the question of which cues or channels the decoders "trust" more or weigh more heavily in their judgments (i.e., the more leaky or less leaky channels). This question is addressed in the present study from a longitudinal and cross-sectional perspective; that is, we examined childrens' nonverbal decoding strategy at different ages.

DePaulo et al. (1979) speculated that people tend to perceive extremely discrepant messages as indicative of deception and consequently weight the less controllable vocal cues more heavily. When communication is considered deceptive, a less controllable channel such as the voice is more likely to leak information about the sender's true affect than are more controllable channels such as the face (cf. Blanck & Rosenthal, 1982; Ekman & Friesen, 1969). Thus, as nonverbal cues become more and more discrepant (leakier), older children might also show a decrease in video primacy, relative to younger children. Perhaps older children have learned through socialization to develop some degree of distrust toward facial expressions when the expressions are accompanied by discrepant vocal cues.

Method

Subjects and Experimenter

The study was conducted in a summer camp during the summers of 1978 and 1979. Subjects were 79 children (55 males and 24 females) between the ages of 9 and 15 in 1978. There were no campers older than 15 and pretesting established that children younger than 9 began to manifest some difficulty in understanding the experimental task. The participants came from homogeneous backgrounds, mostly middle- and upper-middle-class families.[1]

The experimenter, a male, worked as a counselor and group leader at the camp and thus was a familiar figure to all participants.

Materials

Sensitivity to discrepant audio and video cues was measured by the Nonverbal Discrepancy Test (DePaulo et al., 1978). The items for the test were developed from 2-sec videotaped and audiotaped enactments of eight everyday life situations by a 24-year-old woman. The eight situations were categorized into four different types, each formed by the crossing of two dimensions: positivity–negativity and dominance–submissiveness. Thus, there were two positive-dominant situations (admiring nature and talking to a lost child), two positive-submissive situations (expressing gratitude and expressing deep affection), two negative-dominant situations (criticizing someone for being late and expressing jealous rage), and two negative-submissive situations (talking about the death of a friend and asking forgiveness). The categorization of the situation into the four types or quadrants was determined by ratings of two independent samples of judges (Rosenthal et al., 1979).

The enactments of the eight situations were recorded on four channels. Two channels were video channels, showing only the body (neck to knees) or only the face; two others were audio channels, either content filtered (Rogers, Scherer, & Rosenthal, 1971) or randomized spliced (Scherer, 1971). Content filtering removes from the voice the high frequencies upon which word recognition depends. Randomized splicing is a technique whereby the audiotape is cut into pieces that are then spliced together in a random order. Either process renders the speech unintelligible but, whereas content filtering preserves sequences and rhythm, randomized splicing saves pitch and intensity.

In the discrepancy test each facial enactment of the eight situations was paired with four content filtered voices (one from each quadrant) and four randomized spliced voices (one from each quadrant), thus resulting in 64 (8 × 8) Face + Audio items. The eight body enactments were paired with the audio enactments in a similar way, thus resulting in another 64 items, and creating a 128-item test. For one quarter of the items, the video (face or body) and the audio (content filtered or randomized spliced) cues were from the same quadrant; for example, a positive–dominant face might be paired with a positive–dominant voice. One quarter of the items consisted of video and audio cues from exactly opposite quadrants; for example, a positive-dominant face might be paired with a negative–submissive voice. The video and audio components of the remaining items differed on only one of the affective dimensions; for example, a positive–dominant face might be paired with either a positive–submissive voice or a negative–dominant voice. In sum, one quarter of the items were consistent whereas three quarters were either entirely or partially inconsistent. (For a more detailed description of the Nonverbal Discrepancy Test, see DePaulo et al., 1978).

Instructions

The discrepancy test was administered in group sessions with number of subjects per session ranging from

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[1] All subjects were taken from a larger sample at the summer camp (121 males and 129 females) who had participated in research in 1978 and who returned to camp in 1979 (Zuckerman, Blanck, DePaulo, & Rosenthal, 1980); the latter study focused on developmental changes in decoding nonverbal cues employing only a cross-sectional design. Subjects in this study were grouped into three age levels (youngest: 9- and 10-year-olds; middle: 11- and 12-year-olds; oldest: 13–15-year-olds) in order to maximize the *n*'s per cell and the stability of the analysis of variance.

15 to 25 (*Mdn* = 18). The experimenter explained to the subjects that they were going to see a series of film clips showing a face or a body accompanied by a voice. The subjects were told that sometimes they would get very similar impressions from the voice and from the face or body, but that at other times the impressions from the voice and from the face or body would be different. For each scene, subjects were required to indicate their overall impression based on both the voice and the face or body. Specifically, they judged each scene on two dimensions (positivity–negativity and dominance–submissiveness) and also indicated the extent to which the audio and video components were discrepant. To facilitate the judgment task, we utilized 9-point rating scales with endpoint labels that were familiar to children: 1 (sad) to 9 (happy) for the positive–negative dimension; 1 (weak) to 9 (bossy) for the dominant–submissive dimension; and 1 (not different) to 9 (different) for ratings of discrepancy.

Care was exercised to ascertain that the subjects, particularly the younger children, understood the experimental task. Thus, the experimenter repeated the instructions twice or more, gave examples of consistent and discrepant messages, and answered all questions. Although it took more time to explain the instructions to the younger children, all children in the study seemed to understand the procedure.

Dependent Variables and Data Analysis

Subjects' ratings of the scenes in the discrepancy test yielded video primacy scores and accuracy scores. Video primacy scores reflect the extent to which subjects were more influenced by video than by audio cues. A subject who was more influenced by the video channel would have rated scenes in which the video cues were positive and the audio cues were negative more positively than scenes in which the audio scenes were positive and the video cues were negative. Thus, video primacy scores for positivity ratings were computed by subtracting the mean of a subject's positivity ratings of all audio-positive/video-negative scenes from the mean of his or her positivity ratings of all video-positive/audio-negative scenes. These primacy scores were computed separately for scenes in which the video cue was a face and for scenes in which the video cue was a body. The video primacy scores for ratings of dominance were computed in a similar way. Thus, there were video primacy scores for each combination of Channel (face/body) × Dimension (positivity/dominance) as well as marginal totals for channels and dimensions, and a total score. Higher primacy scores reflect more influence by video than by audio cues.

There were two types of accuracy scores, accuracy of decoding affect and accuracy of decoding discrepancy. People who were accurate at decoding affect should have rated the positive scenes as more positive than the negative scenes and the dominant scenes as more dominant than the submissive scenes. Hence, accuracy for positivity ratings was defined as the difference between subjects' mean positivity ratings of the positive scenes and their mean ratings of the negative scenes.[2] Accuracy scores for dominance ratings were computed analogously. Both positivity and dominance accuracy scores were computed for the consistent items only and therefore were completely independent of the video primacy scores. All consistent items in the discrepancy test had an audio component that was paired either with the body or with the face. Thus, there were accuracy scores for each combination of Channel (face + voice/body + voice) × Dimension (positivity/dominance) as well as marginal totals for channels and dimensions, and a total score. Higher scores reflected higher accuracy at decoding affects. It should be noted that for both video primacy and accuracy at decoding affect, the expected value under the null hypothesis of no primacy and/or no accuracy was zero and individual differences in the use of rating scales (e.g., tendency to rate scenes as extremely positive or as extremely negative) had no effect on this expected value.

Accuracy of decoding discrepancy reflected subjects' ability to recognize the degree of discrepancy between audio and visual cues. Accurate judges of discrepancy should have rated as more discrepant the scenes that were actually more discrepant. Thus, this type of accuracy was computed from subjects' discrepancy ratings (1 = not different, 9 = different) according to the following formula: (mean of discrepancy ratings of the very discrepant scenes × 2) + (mean of discrepancy ratings of the slightly discrepant scenes) − (mean of the ratings of the nondiscrepant scenes × 3). Higher scores reflected higher accuracy at decoding discrepancy. In this formula, as in the other accuracy formulas, the expected value under the null hypothesis of no accuracy was zero.

Video primacy and accuracy at decoding affect were examined in unweighted means analyses of variance (ANOVAS) in which age level (youngest: 9- and 10-year-olds; middle: 11- and 12-year-olds; and oldest: 13-, 14- and 15-year-olds) and sex (male/female) were the between-subjects factors, and channel (face/body), dimension (positivity/dominance), and year were the within-subjects factors (repeated measures). The video primacy scores examined in the above analysis were collapsed across degree of discrepancy and the content filtering versus randomized splicing factors (a separate analysis examined effects of degree of discrepancy, and the difference between content filtering and randomized splicing was not of interest in the context of the present study). The accuracy scores were based only on consistent items and were also collapsed across the content filtering/randomized splicing factor. For both video primacy and accuracy scores, main effects and/or interactions involving age were further examined in linear contrasts. For main effects, the contrast weights assigned to the three successive age levels were −1, 0, and +1.

Results

Prior to presenting the analysis of consistent and discrepant decoding ability it should

[2] In the basic standardization data of the PONS test, accuracy of face, body, content filtered voice, and randomized spliced voice were all substantially greater than chance (Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979).

be noted again that the longitudinal aspects of the present study were designed to permit replication of the cross-sectional aspects of the Zuckerman et al. (1980) findings of the effect of age on the decoding accuracy of consistent nonverbal cues. It should also be noted that the overall mean accuracy score (M = 3.21) differed significantly from zero, $t(76) = 26.44, p < .001, d = 6.07$,[3] indicating that decoding accuracy was better than chance.

Accuracy at Decoding Consistent and Discrepant Affects

Mean decoding accuracy scores for consistent affect are presented in the top half of Table 1. It can be seen that accuracy at decoding consistent nonverbal cues increased with age, linear contrast for age, $F(1, 76) = 6.48$, $p < .025$, $d = .58$. In addition, dominance cues (linear contrast for age: $F[1, 76] = 9.86$, $p < .01$, $d = .72$), and facial cues (linear contrast for age: $F[1, 76] = 5.82$, $p < .05$, $d = .55$) were particularly more accurately decoded by older children. The main effect of year and the Age × Year interaction for consistency accuracy were not significant.

Mean decoding accuracy scores for discrepant affect are presented in the bottom half of Table 1. It can be seen that discrepancy affect accuracy increased with age, (linear contrast for age: $F[1, 76] = 7.81$, $p < .01$, $d = .64$). In addition, when considered separately both facial and body accuracy for discrepant cues increased with age, (linear contrast for age: $F[1, 76] = 4.03$, $p < .05$, $d = .46$, for face, and linear contrast for age: $F[1, 76] = 4.53$, $p < .05$, $d = .49$, for body).

The linear contrast of the Age × Year interaction for discrepancy accuracy was in the predicted direction, $F(1, 76) = 3.03$, $p < .10$, $d = .40$, $t(76) = 1.74$, $p < .05$, one-tailed. It was especially interesting to note that this Age × Year effect was substantially greater for face than for body discrepancy: $F(1, 76) = 6.20$, $p < .025$, $d = .57$, for face, and $F(1, 76) = .02$, $p > .50$, $d = .03$, for body. This interaction shows that relative to younger children, older children benefited more from the effects of retesting in terms of accuracy at decoding discrepant cues (especially discrepant facial cues) and is consistent with the DePaulo and Rosenthal results (1978, 1979c). The main effect of year for discrepancy accuracy was not significant. Overall, it appears that abilities to decode different affective dimensions and channels do not develop at the same rate. Further, although older children perform better than younger children at most nonverbal decoding tasks, the advantages of age are especially great for the decoding of discrepant facial cues.

Table 1
Mean Decoding Accuracy for Three Age Levels

Accuracy	Age level: Youngest	Middle	Oldest	M
Consistency				
1978	2.578	3.285	3.264	3.043
1979	2.753	3.540	3.794	3.363
M	2.666	3.413	3.529	3.203
Difference	.175	.255	.530	.314
Discrepancy				
1978	.719	.257	1.107	.694
1979	.537	.844	1.991	1.124
M	.628	.551	1.549	.909
Difference	−.182	.587	.884	.430

Note. Youngest age level = 9–10-year-olds, n = 18; middle = 11–12-year-olds, n = 43; oldest = 13–15-year-olds, n = 18. Higher scores indicate greater decoding accuracy. The same children participated in both 1978 and 1979.

Video Primacy and Decoding Stategy

Consistent with previous findings (Zuckerman et al., 1980), analyses of the total video primacy scores showed no overall main effects for age or for the Age × Year interaction. However, the linear contrast for the Age × Year interaction for body primacy did point in the predicted direction, $F(1, 76) = 3.87$, $p < .10$, $d = .45$; $t(76) = 1.97$, $p < .05$, one-tailed. This trend shows that relative to younger children, older children

[3] The d is defined as an estimate of the effect size, expressed in standard deviation units (Cohen, 1977), and defined conceptually as $(M_1 - M_2)/\sigma$ and computed as $2\sqrt{F}/\sqrt{df}$ in this article. Cohen considers a d of .20 to be a small effect, .50 a medium effect, and .80 a large effect.

Table 2
Mean Decoding Strategy Scores for the Three Age Levels

Year	Age level: Youngest	Middle	Oldest	*M*
1978	−.537	.243	.222	−.024
1979	−.172	.133	.164	.042
M	−.354	.188	.193	.009
Difference	.365	−.110	−.058	.066

Note. Youngest age level = 9–10-year-olds, n = 18; middle = 11–12-year-olds, n = 43; oldest = 13–15-year-olds, n = 18. Higher scores indicate greater nonverbal decoding strategy. The same children participated in both 1978 and 1979.

displayed less body primacy after retesting. Stated differently, when the nonverbal channels (i.e., body and tone) were discrepant, older relative to younger children displayed a tendency to rely more heavily on a less controllable channel (i.e., tone) to gain information about the encoder's true affect, after having been retested.

A separate ANOVA compared video primacy for sex and year effects. The ANOVA included channel and year as within-subjects factors and sex as the between-subjects factor.

Both males and females showed a decrease in video primacy after retesting (main effect of year: $F[1, 77] = 4.97, p = .029, d = .51$, for video primacy) suggesting once more that after retesting, children rely relatively more on audio cues (as opposed to video cues) to determine the encoder's true affect. It appears that with practice children learn to trust less controllable channels (i.e., audio) in determining true encoder affects when nonverbal cues are discrepant, and this seems to be especially true of older relative to younger children. This pattern of results is further supported by the findings that all children showed significantly greater audio accuracy, the least controllable channel, after retesting, $F(1, 77) = 10.44$, $p = .002$, $d = .74$; whereas they did not show significantly greater video accuracy, $F(1, 77) = .161$, $p > .50$, $d = .09$, after retesting.

Finally, consistent with the Zuckerman et al. (1980) findings, as the scenes became more and more discrepant (i.e., in the moderately discrepant scenes, the audio and video components differed on one affective dimension, "off by one", whereas in the extremely discrepant scenes they differed on both affective dimensions, "off by two"), older children relative to younger children, showed less video primacy (linear contrast for age: $F[1, 76] = 4.55, p < .05, d = .49$). The mean scores for this decoding strategy for the three age levels are presented in Table 2.

These results support the suggestion (DePaulo & Rosenthal, 1979a) that the tendency to show less video primacy for more discrepant cues, at least to some degree, is a developmental phenomenon. The linear contrast of the Age × Year interaction as well as the main effect for year for the leakage decoding strategy were not significant.[4]

Discussion

This study examined longitudinal and cross-sectional age changes in accuracy and style of decoding nonverbal cues. Three specific issues were examined: the accuracy with which subjects decoded consistent and discrepant affects from face or body and tone, the extent to which subjects were more influenced by video than by audio cues (video primacy), and the extent to which this video primacy was influenced by the degree of discrepancy between audio and video nonverbal cues (leakage).

Most likely, the overall level of both accuracy and video primacy was partially a function of the stimulus materials that were used in the Nonverbal Discrepancy Test (DePaulo et al., 1978). It is possible that a different set of materials would produce a different level of accuracy and a different magnitude of video primacy. It is less likely, however, that a different set of materials would produce markedly different develop-

[4] It should be noted that only one of the major dependent measures yielded significant sex differences; females were more accurate at decoding dominance, $F(1, 77) = 4.55, p = .017, d = .49$. Finally, since there would have been empty cells in the Age × Year × Sex larger analysis, we were not able to employ all these variables in the same analysis of variance (ANOVA). Hence, we computed Age × Year and Sex × Year ANOVAS separately.

mental changes. It is important, therefore, to focus not on the overall level of accuracy, but on the question of how accuracy changed as a function of age, retesting, channel, and affective dimension. Similarly, the fact that subjects were more influenced by video than by audio cues is of much less interest than the fact that this video primacy changed as a function of other factors.

Consistent with the results of previous work (DePaulo & Rosenthal, 1978; Rosenthal et al., 1979; Zuckerman et al., 1980), increases in age, defined both longitudinally and cross-sectionally, were associated with increases in ability to decode nonverbal cues. Further, the advantages of age were especially great for the decoding of discrepant nonverbal cues that involved interpreting complicated mixed-channel messages. Retesting seems to have been associated with greater gains in decoding discrepant nonverbal cues (especially discrepant facial cues) for older relative to younger children.

Another question of interest concerned longitudinal and cross-sectional changes in differential attentiveness to or reliance on various channels of nonverbal cues. It was found that there was a tendency for all children to show less video primacy after retesting and that relative to younger children, older children displayed less body primacy after retesting. These results suggest that with practice, and as nonverbal cues become discrepant, children display a tendency to rely more heavily on less controllable channels (i.e., tone) to gain information about an encoder's true affects. This effect of practice is greater for older than for younger children.

Finally, the present findings replicated cross-sectionally the results of the Zuckerman et al. (1980) study showing that relative to younger children, older children treat extremely discrepant messages with some caution. As previously stated, DePaulo et al. (1978) suggested that people perceive extremely discrepant messages as indicative of deception and therefore may attend relatively more to the audio cues. Older children, it appears, have developed some degree of distrust toward facial expressions when the expressions are accompanied by discrepant vocal cues, and retesting does not seem to affect this result differentially for the older or the younger children.

Our purpose has been to help foster the investigation of the processes underlying increases in nonverbal skill and changes in nonverbal style. The results suggest that age, examined both longitudinally and cross-sectionally, is associated with the growth of many nonverbal skills. Further, this increase is moderated by the type and amount of the information presented, by discrepancies in the information presented, and by the effects of retesting. It should be noted, as DePaulo and Rosenthal (1978) suggested, that the relative advantage of older children in processing certain nonverbal cues may be a function not only of a larger processing capacity, but also a function of such factors as effort, distractability, and/or stamina. It remains for future research to examine, through experimentally controlled conditions, the effects of retesting on intraindividual change in the ability to decode and encode nonverbal cues (cf. Blanck and Rosenthal, Note 1). This line of research may shed light on the relationship between nonverbal learning and/or socialization processes and individuals' sensitivity to specific nonverbal channels.

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