

Order of Information Presentation and Children's Moral Judgments

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FELDMAN, NINA S.; KLOSSON, ELLEN CHERESKIN; PARSONS, JACQUELYNNE E.; RHOLES, WILLIAM S.; and RUBLE, DIANE N. *Order of Information Presentation and Children's Moral Judgments*. *CHILD DEVELOPMENT*, 1976, 47, 556-559. It was hypothesized that age differences in use of intent information in children's moral judgments might be due to a recency effect in the judgments of younger children. A study was conducted to examine the effect of order of stimulus presentation on children's moral judgments. The information was presented to children, ages 4-5 and 8-9 years old, through stories with either normal information order, intent-consequence, or reversed order, consequence-intent. It was found that order has a significant impact on children's moral judgments. In addition, memory data were gathered which indicated that the pattern of forgetting was parallel to the pattern of information preference for the younger subjects. The findings suggested that younger subjects' relative neglect of intent in the normal order of information was based, in part, on their failure to remember the material correctly rather than on differential weighting of the 2 cues.

In the early literature on the development of moral judgments, it is reported that younger children base their judgments more on consequence than on intent information, while older children base their judgments more on intent (Piaget 1932). One interpretation of these age differences has been that the two kinds of information may be differentially weighted (Armsby 1971; Hebble 1971). A number of recent studies have questioned the validity and generality of these conclusions due to methodological problems and certain situational variables that seem to affect children's judgments. For example, several investigators have noted that the paired-story format employed in the early studies was an inappropriate index of children's awareness of and/or ability to use intentionality in making moral judgments (e.g., Costanzo, Coie, Grumet, & Farnill 1973; Hebble 1971). Also, previous research has reported that the extent to which young children utilize intent information is influenced by the positive/negative

valence of the consequence information (Costanzo et al. 1973) and the mode of information presentation (Chandler, Greenspan, & Barenboim 1973).

Although these studies demonstrate that young children do utilize intent information, they almost always support the original Piagetian finding of an increase in the use of intent with age. However, a major methodological problem still remains. The two kinds of information are always presented in the same order, with consequence second. Thus, the finding that young children utilize consequence more than intent may, in many cases, simply represent a recency effect. Support for this hypothesis is provided by findings of a recency effect for young children in free recall (Cole, Frankel, & Sharp 1971) and in achievement judgments (Kun, Parsons, & Ruble 1974). In addition, Parsons (Note 1) found that order of stimulus presentation did affect the moral judgments of kindergarten-aged children. However, developmental inferences cannot be drawn as the study

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was done with only one age group, and additional factors were involved.

The primary purpose of the present investigation was to examine the impact of order of presentation on the moral judgments of two age groups of children. In predicting a recency effect for young children's moral judgments, we expected a significant increase in younger subjects' use of intent when intent was presented last. More specifically, for the normal intent-consequence sequence (Order 1) we expected to replicate previous findings that increasing age was related to increasing use of intent information. For the reversed consequence-intent sequence (Order 2), we predicted that age differences in the use of intent would be diminished.

Method

Subject.—The subjects were 14 boys and 14 girls from white, middle-class families who were recruited for pay through a newspaper advertisement and tested at Princeton University. The 14 younger subjects ranged in age from 4-10 to 5-11; the 14 older subjects from 8-1 to 9-4. The mean ages were 5-4 and 8-9, respectively.

Materials.—Four story themes were written in which an actor produced either positive or negative consequences acting under either positive or negative intentions. In one theme, a child was either chastised or praised for intending either to mess up or clean up his room. Additional themes concerned fixing a radio, feeding a pet, and returning lost glasses.

Procedure.—Subjects were randomly assigned to Order 1 (intent-consequence) or Order 2 (consequence-intent) presentation of information. A female experimenter read the subject four stories, representing each theme and each valence

combination. Presentation was counterbalanced across subjects. After each story was presented the subject was asked whether the actor was good or bad and then, "How good?" (or "How bad?"). The subject indicated his/her judgment on a scale of five squares of increasing size, representing a "little bit" to "very much." A memory check for each story followed the rating. The subjects were asked to recall whether what the actor tried to do and what actually happened were good or bad to find out if they recalled the valence of the intent and consequence information.

Results

An age \times intent \times consequence \times order repeated measures analysis of variance was performed on the judgment data. The means for these analyses are presented in table 1.

Overall analysis.—As predicted, significant effects for intent, $F(1,24) = 96.64$, $p < .001$, and consequence, $F(1,24) = 15.82$, $p < .01$, indicated that subjects' judgments were more positive for positive intent and positive consequence stories. The expected age \times intent interaction was also significant, $F(1,24) = 8.54$, $p < .01$, indicating that older subjects did use intent more than younger subjects; older subjects' judgments were more negative (or positive) with negative (or positive) intent than younger subjects' judgments. Unlike previous research, which found that young subjects rely on consequence information more than older subjects, the age \times consequence interaction here was not significant.

Predicted age \times intent \times order and age \times consequence \times order interactions, indicating that younger subjects rely more on information presented second, were not significant. However, a significant intent \times order interaction, $F(1,24) = 19.61$, $p < .001$, and a consequence \times

TABLE 1
MEAN JUDGMENT RATINGS^a AS A FUNCTION OF AGE, ORDER, INTENT, AND CONSEQUENCE

CONSEQUENCE	INTENT			
	Order 1		Order 2	
	Positive	Negative	Positive	Negative
Younger subjects (4-5 years):				
Positive	3.43	1.14	2.71	-2.86
Negative	-2.57	-1.29	1.57	-3.00
Older subjects (8-9 years):				
Positive	4.29	0.28	3.86	-1.43
Negative	1.57	-2.14	3.00	-4.57

^a Ratings range from -5 (very bad) to +5 (very good).

order trend, $F(1,24) = 3.05$, $p < .10$, indicate that both younger and older subjects' judgments relied more on intent (and, to a less extent, consequence) when it was presented second.

Within-orders analyses.—Previous research findings of age differences in intent use were predicted for Order 1, the traditional order, and not Order 2. An age \times intent \times consequence analysis within Order 1 yielded the expected intent, $F(1,12) = 14.54$, $p < .01$, and consequence, $F(1,12) = 16.65$, $p < .01$, main effects and an age \times intent interaction, $F(1,12) = 8.63$, $p < .05$. Within Order 2 only an intent main effect, $F(1,12) = 102.5$, $p < .001$, resulted. Examining the data by order (see fig. 1), it is clear that in Order 1 younger subjects relied more on consequence, while older subjects relied equally on both kinds of information. In Order 2 younger and older subjects relied more on the information presented second, intention. Previous age difference findings in intent use occurred only in the traditional order, Order 1.

Memory checks and internal analysis.—One explanation for age differences in the use of intent is that younger subjects have more difficulty recalling the valence of the information presented first. An analysis performed on number of recall errors revealed that this predicted recency effect was confirmed, $t(26) = 2.19$, $p < .05$; younger children made more primacy errors than older children

for both intent and consequence. Younger subjects also made more errors on information presented first than information presented second, $t(26) = 2.99$, $p < .01$. Younger subjects' mean primacy and recency recall errors were 1.29 and 0.50, respectively. Older subjects' mean primacy and recency recall errors were 0.64 and 0.79, respectively. No other effects were significant.

An internal analysis (age \times intent \times consequence \times order) was computed by reassigning subjects to intent and consequence valences based on the valences they recalled instead of the valences they originally heard. Significant intent, $F(1,96) = 115.13$, $p < .001$, and consequence, $F(1,96) = 10.13$, $p < .01$, main effects resulted as well as an intent \times order interaction, $F(1,96) = 4.98$, $p < .05$; the patterns of means were the same as those described in the overall analysis. However, the age \times intent interaction found in the overall analysis (due primarily to its strong presence within Order 1), did not approach significance here, suggesting that perhaps this previous age difference in intent use is due to the younger subjects' primary errors and is not due to the relative weighting of the two kinds of information.

Consequence valence effects.—As would be predicted by previous research (Costanzo et al. 1973), greater use of intent information by older subjects was found only in the negative consequence conditions. Collapsing across orders, t tests for younger versus older subjects were computed on resultant intent scores (mean rating of positive minus mean rating of negative intentions) for the two consequence levels. Results showed the expected age difference in intent use for negative consequences, $t(12) = 2.36$, $p < .05$, and not positive consequences.

Discussion

It was hypothesized that age differences in the use of intent might be due to a recency effect in the judgments of younger children, given the traditional order of presentation in which intent information always precedes consequence information. While order reversal did not lead to an absolute reversal of the importance of the two kinds of information, the data clearly support the hypothesis that order of presentation influences moral judgments. Inspection of figure 1 suggests that judgments made by younger children were almost exclusively dependent on the information presented last, whether it was intent or consequence information. Figure 1 also indicates that older subjects used both intent and consequence

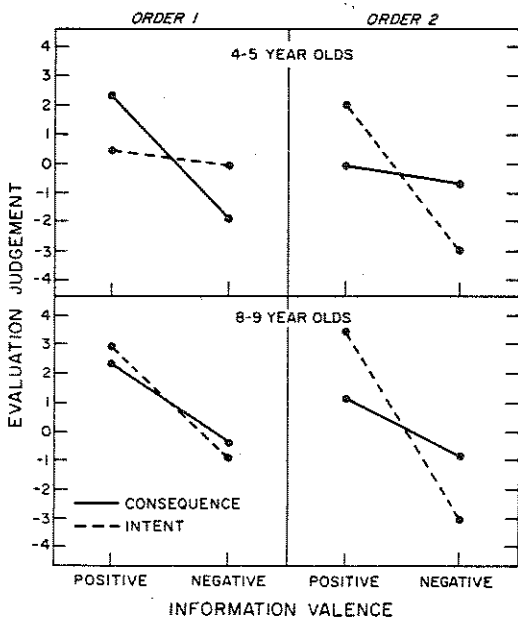


FIG. 1.—Age differences in moral judgments as a function of order and valence of information.

information in Order 1 but relied on intent almost completely in Order 2.

The memory data gathered suggest that recall has a direct impact on the judgmental process of younger subjects. Younger subjects made significantly more primary errors than recency errors; that is, they forgot intent information when it was presented first more frequently than consequence information, and they forgot consequence information when it was presented first more frequently than intent information. Thus, the pattern of forgetting parallels the pattern of information preference for the younger subjects. More support for the importance of memory comes from the internal analysis. There appears to be no difference in the use of intent between the two age groups when one takes into account the valence of information that subjects have actually recalled independent of the valence that the experimenter tried to convey. Taken together, results from all the analyses indicate that younger subjects' relative neglect of intent in the normal order of information may be based in part on their failure to remember the material correctly rather than on differential weighting of the information.

Previous research has recognized the role of memory in moral judgment; however, conditions necessary to determine the effect of memory were not presented (e.g., Armsby 1971), and recall data have not been reported (e.g., Chandler et al. 1973). Without memory checks, it is not possible to assess what information the subject was in fact using when the judgment was made. Thus, preference for intent- or consequence-based judgments without recall data does not necessarily reflect the subjects' awareness of the information.

Numerous studies have found factors other than recall which influence the use of intent information. For example, Costanzo et al. (1973) and the present study found that age differences in use of intent do not occur when children judge stories with positive consequences. Parsons (Note 1) found that degree of competitiveness of story interacted with order of presentation in influencing intent use. Some other determining factors reported are intelligence and social class (Boehm 1962). It is evident that there are a complex set of factors, including memory, which affect children's use of intent information.

Results from the present study underline the importance of methodological factors in this area of

research. Although this study was done in a single-story format, it seems reasonable that the same information-processing problem would apply to the story-pair format. With each story presented as an intent-consequence unit, consequence not only ends each individual story, it also finishes the set, maintaining a recency advantage. Memory of the information is a prerequisite to any judgmental process, yet its influence on children's responses to moral judgment stories has never been adequately tested. Further research could well concern itself more directly with evaluating the relative influence of memory as compared with weighting in children's moral judgments.

Reference Note

1. Parsons, J. Causal attribution and the role of situational cues in the development of children's evaluative judgments. Unpublished doctoral dissertation, University of California, Los Angeles, 1974.

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