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Children's reasoning about norms and traits as motives for behavior

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Abstract

Two important sources of information for social judgments are personality dispositions (traits) and social norms. Existing research suggests that young children do not find traits salient. To what extent might they rely on a different source of information? Two experiments explored how information about preferences (what someone likes) and rules (what is allowed or forbidden) affected social judgments. Five-year-olds predicted people's future behavior would be consistent with rules, but appeared insensitive to information about preferences. Preferences were better predictors than rules for 8-year-olds. Older children and adults consistently judged that actors would want to, and be happy to, satisfy preferences rather than rules. Younger children were more likely to use rules to infer people's psychological states. Results are consistent with the hypothesis that deontic relations, such as rules and norms play a central role in young children's social cognition, with ideas of individual psychological dispositions emerging in middle childhood.
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1. Rules and preferences: children's reasoning about motives for behavior

Researchers have long been interested in how children develop the adult repertoire of social cognition abilities. One of the central problems in social cognition is using existing information to make predictions about people's future behavior. This is a classic inductive problem; various known facts must be selected and integrated to form a plausible hypothesis

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about an unknown occurrence. Much research has focused on how children come to use psychological information to make social inferences (see Miller & Aloise, 1989; Ruble & Dweck, 1995, for reviews). The current study begins to consider a second source of social inferences: deontic information concerning rules, norms, and obligations. How do children use such information to make social inferences, and how do they integrate deontic attributes with information about a person's psychological states? Two experiments explore the possibility that deontic attributes play a particularly important role in young children's social inference, with psychological dispositions becoming more important in older children's reasoning.

One of the central principles of social cognition is the practical syllogism: if somebody wants X, and believes that Y will achieve X, then, all else being equal, they will do Y. The syllogism provides a means to generate behavioral predictions from information about psychological states (e.g., beliefs and desires). Research in theory of mind suggests that children as young as 2- or 3-years of age reason according the practical syllogism (Wellman, 1990). Children use information about beliefs and desires to predict (and explain) behavior in ways very consistent with adult inference. They may have misconceptions about what someone might think or want (e.g., not understanding the possibility of false belief, Perner, Leekham, & Wimmer, 1987), but the basic explanatory function of mental states are in place quite early. The practical syllogism provides a powerful tool for social inference, but its application requires fairly complete knowledge of mental states. How do children predict behavior in the absence of direct information about beliefs and desires?

There are many relevant sources of information for predicting behavior. Various facts might be useful directly, or indirectly as cues to mental states which then allow behavioral predictions. Which sources do children use? One obvious source would be information about past behavior. That a person has chosen to drink juice rather than milk on one occasion might be a warrant for predicting they will do so again in the future. Kalish (2002) found that young children were less likely to predict behavioral regularities than were older children or adults. In fact, preschool-aged children often used a complementation or balancing strategy: people would do just the opposite of what they had done in the past. One explanation for this finding is that past behavior is not directly predictive of future behavior, but rather functions as a piece of an inferential chain. In particular, an often implicit premise in using past behavior to infer future is that the past behavior is evidence of a stable disposition. A past instance of juice drinking indicates a general disposition to drink juice, which then motivates predictions of future juice drinking. The findings from Kalish (2002), as well as a long tradition of research in the development of social cognition, suggest that young children may be less likely to infer the existence of stable dispositions than older children or adults, (see Miller & Aloise, 1989; Ruble & Dweck, 1995, for reviews).

Recent research suggests that trait-based reasoning is not completely beyond the ken of young children. When provided with multiple examples of consistent past behavior and more sensitive response measures, young children will predict cross-situational consistency (Cain, Heyman, & Walker, 1997). Tasks that encourage thinking about people or attributes as categories yield more traitlike inferences (Gelman & Heyman, 1999). Nonetheless, it remains true that younger children require more evidence than older children to make trait attributions (Aloise, 1993). Yuill (1992) suggests that one explanation for children's lack of attention to traits is that traits have not been integrated with other explanatory concepts (Yuill & Pearson, 1998). Until middle-childhood, trait ascriptions are understood

only as statements of past behaviors, not sources of motivation. Around age seven or eight, children come to understand traits as part of a psychological causal chain for behavior (e.g., generosity makes someone want to share). Absent causal understanding, trait ascriptions are not particularly informative for young children. One consequence of this account is that older children's predictions will be more influenced by information about traits than will younger children's.

If traits are not a salient source of behavioral predictions for young children, what other sources of information might they use? Our hypothesis is that the deontic structure of situations is particularly salient and influential for young children. In this context, "deontic" refer to what is obligatory and what is permitted. Deontic relations are typically embodied in norms and rules. In this study we contrast deontic relations with psychological dispositions, of which traits and preferences are a subset.[1] Briefly stated, our hypothesis is that where older children use preferences, younger children use rules. When making social inferences, older children and adults look to information about a person's psychological dispositions. Younger children are more likely to look to information about a person's obligations and permissions.

There is little work bearing directly on the question of how children expect rules and norms to affect behavior. Research in moral development demonstrates that even young children have a quite sophisticated understanding of different sorts of rules (e.g., moral and conventional, Turiel, 1983). Preschool-aged children can identify conditions of conformity with rules and readily identify violations (Cummins, 1996; Harris & Nunez, 1996). In tests of deductive reasoning, people are often more successful at reasoning about rules with deontic content than about rules with indicative content (i.e., true/false statements). This deontic advantage is found with young children (Chao & Cheng, 2000). Four-year-olds appreciate something of the psychological bases of adherence to norms; they realize that a person must know a rule and intend to follow it (Kalish, 1998). Preschool-aged children can track changes in rules (e.g., rules of games) and identify the consequences of those changes for behaviors (Kalish, Weissman, & Bernstein, 2000). Young children clearly know a lot about norms and are competent users of rules.

One important quality of deontic relations is that they motivate behavior. Predictions and explanations often make use of rules, obligations, and permission. If a driver approaches a traffic signal, the way to predict what will happen next is to cite the rules of the road (see Ryle, 1949). Norms are equally useful in less formal contexts; we can infer a stranger might offer his right hand when introduced, and a fellow diner might pass the salt when asked. Children appreciate this aspect of rules. When asked to define rules they state that rules dictate behavior and are to be followed or obeyed (Turiel, 1983). Norms can serve the same explanatory functions as traits; both are reasons for action (see Searle, 2001). Although young children might not appreciate that traits provide reasons, sources of desires (Yuill, 1992), they may understand that norms can lead people to form desires and intentions. Thus norms would be informative in a way traits are not.

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[1] There are many distinctions to be made within the general categories. In this report we will ignore the fact that there are different sorts of deontic relations and psychological dispositions. "Norm" and "rule" will be treated as synonyms, as will "trait" and "preference," though it is likely more accurate to think of the second member of each pair as sub-type of the first (e.g., preferences are one kind of trait).

A considerable body of research has explored children's and adults' propensities for treating behavior as motivated by traits. But to what extent are people disposed to view behavior as motivated by rules and norms? One way to begin this investigation is to compare traits and rules. Experiment 1 asks how people use information about psychological and deontic attributes to make predictions. Given the focus on trait attribution in the literature, we might expect that older children and adults would attend to trait information (people act according to their individual personality). In contrast, younger children are thought to be insensitive to psychological dispositions, perhaps they pay more attention to rules (people do what they are supposed to). There is no clear basis for predicting older children's and adult's relative weightings of rule and trait information. It seems likely that both sources of information would be used to predict behavior.

2. Experiment 1

Experiment 1 explored how people of different ages use information about deontic relations and psychological dispositions to make predictions about people's behaviors. In this experiment deontic relations were operationalized as rules, psychological dispositions were presented as preferences. A very simple version of rules was used; rules were statements of proscribed behaviors (e.g., "The rule is to share food."). Preferences were presented as likes and dislikes (e.g., "Johnny likes to share his food."). Many studies of psychological dispositions present participants with trait labels (e.g., "shy," "generous"). It is unclear how familiar young children are with such labels. Moreover, Kalish (2002) found that young children were more likely to predict stability across time for likes/dislikes than for other sorts of psychological behaviors. Preferences would seem to be salient and familiar sources of behavioral information for young children.

2.1. Method

2.1.1. Participants

Sixty children were recruited from a birth registry database and childcare sites in a Midwestern city. Thirty children were in a younger group ($M= 5.0$; range $= 4.2 -5.11$), and thirty children were in an older group ($M = 7.11$; range $= 7.1 -8.10$). Equal numbers of males and females were included in each age group. We chose participants from 5 and 8-year-old groups because previous studies concerning trait attribution and person-perception suggest that important advances in children's use of trait terms occur at about the age of 7–8 years. Thirty-four adult college students participated for course credit. Gender was not recorded for adult participants.

2.1.2. Stimuli and design

Stimuli for the study were 16 short story scenarios (see Appendix for scenarios), presented with colored line drawings (for children). Half the participants heard preference stories, half heard rule stories. Each story described a rule or preference and a character who had behaved consistently with the rule/preference in the past. Half of the stories were arbitrarily designated as *standard* content (e.g. 'Ann likes to work with others.'), and half were designated as

alternate content (e.g. 'Jessica likes work by herself.'). Given the goal of having both standard and alternate forms be plausible, rules involved conventional rather than moral issues (Turiel, 1983). Each participant was presented with both *standard and alternate* stories. The task was to predict whether a character's action on a future occasion would be consistent with the rule/preference. Prediction questions were presented as a forced-choice between two possible outcomes (e.g., "Will Ann work with someone else or work by herself?").

2.1.3. Procedure

Children were tested individually in a quiet area at their childcare site or at a research facility. The experimenter first gave a brief description of the task:

"I'm going to show you some pictures, and then tell you a story about the people in these pictures. For each picture there is a rule [or "something the person likes to do", in the preference condition]. I'll read you the story, and then I'm going to ask you a question. OK?"

Children were told that there are no 'right' or 'wrong' answers, and to just say what they thought the best answer was. Stories were presented in random order, blocked with respect to standard and alternate content. Adults were tested on a computerized version of the task, that was identical to the child version except that no pictures were shown. No feedback was provided.

2.2. Results

Responses were scored for predictions of consistency (future behavior would match preference/rule). Fig. 1 presents the mean proportions of consistent responses for each age group, and for each question type. Younger children predicted consistency with rules more often than would be expected by chance, but did not differ from chance in predictions of conformity with preferences. Older children showed the opposite pattern: significant consistency for preferences, but only marginal difference from chance for rules ($P = .06$ after controlling for family wise error). Predictions of consistency were analyzed in an ANOVA with age and condition (Rule or Preference) as a between-subjects variables. There was a main effect of age, $F(2, 88) = 32.9$, $P < .0001$. Adults predicted consistency more often either group of children (all pairwise comparisons $P < .05$, Tukey's HSD). There was no overall difference in the rate of consistent predictions across the two groups of children.

The interaction between age and condition was also significant, $F(2, 88) = 10.9$, $P < .0005$. The sum of squares for this interaction was .58. A specific contrast combining younger children's rule predictions and older children's preference predictions tested against younger preference predictions and older children's rule predictions yielded a sum of squares of 0.54, $F(1, 88) = 20.1$, $P < .0001$. Thus the age by condition interaction derived mainly from the condition difference between young and old children. Adults generally predicted consistency in both conditions. Young children predicted that characters' behavior would be consistent with rules more often than with preferences, $F(1, 88) = 19.9$, $P < .0001$.[2] Older

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[2] The F-tests reported are simple effects contrasts conducted within an interaction. The simple effects tests the significance of one variable at each level of another. Thus for an age by condition interaction the simple effects would test whether condition difference were significant individually for adults, older, and younger groups, and whether there were age differences for rules and for preferences.
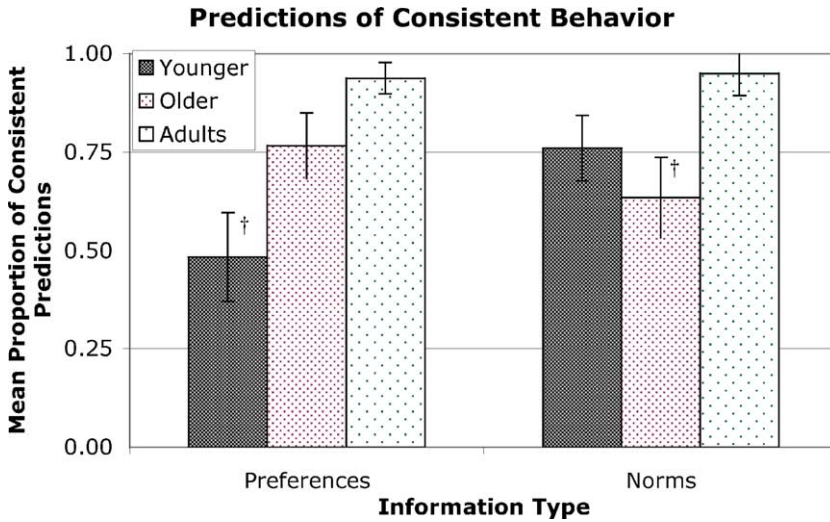
Predictions of Consistent Behavior

Fig. 1. Mean proportion of predictions that characters' future behavior will be consistent with norm and preference information, Experiment 1—(†) not different than chance, $P < .05$, two-tailed *t-test* controlling for family wise error using Holm's test.

children showed a marginally significant tendency to predict the opposite: more consistency with preferences than with rules, $F(1, 88) = 3.5$, $P = .06$. Older children predicted more consistency with preferences than did younger, $F(1, 88) = 22.5$, $P < .0001$. The difference between the two groups of children for rules did not reach statistical significance, $F(1, 88) = 2.6$. There were no gender differences in the mean proportions of consistent responses within the two groups of children (gender was not recorded for adults).

Each participant heard both standard and alternate versions of the same story: a character who liked to wear shoes in the house, a character who liked to not wear shoes. One measure of the significance of rule and preference information is the difference between these variants. The data for these analyses were frequencies of predictions of behavior consistent with the standard version of the story (standard outcomes). If the information in the story is having an effect we would expect more standard outcomes in standard than in alternate stories. The question of most interest is whether the effects of stories differed by content, rule versus preference. Different rates of standard outcomes for standard versus alternate stories measures the effectiveness of the stories. Were rule stories more or less effective than preference stories? Rule stories were more effective than preference stories for younger children, $t(28) = 2.2$, $P < .05$. Older children and adults did not show a condition difference.

One concern about the standard/alternate manipulation is that the alternate version of many preference items involved a semantically complex description of a character who "likes not" to do something. Perhaps the alternate items were responsible for young children's chance-like predictions for preferences. A comparison of standard versus alternate items revealed no significant differences. Young children predicted consistency for 48% of standard preference items and 49% of alternates (older children: 78% and 76%, respectively). Neither was there a significant difference between rates of predictions for alternate items involving

the "likes not" construction and others for young children, (items 1–5 versus 6–8 see Appendix, $M(1–5) = .47$, $M(6–8) = .53$, $t(14) = .8$). This difference was marginally significant for older children ($M(1–5) = .75$, $M(6–8) = .83$, $t(14) = 2.0$, $P = .06$) suggesting the procedure may have underestimated older children's predictions of consistency with preferences.

A final set of analyses explored individual patterns. Participants predicted outcomes for 16 stories. The probability of choosing consistent outcomes for 12 or more of the 16 stories by chance is .04 (assuming .5 chance for each story, Binomial theorem). Participants making consistent predictions for at least 12 items were considered consistent responders. Ten young children were consistent responders for rules, only two responded consistently for preferences. The pattern for older children was just the reverse: 10 consistent responders for preferences, only four for rules. Adults predicted consistency for both rules and preferences (15 and 18 participants, respectively).

2.3. Discussion

The results of Experiment 1 generally supported the hypothesis that normative information would be salient to younger children, while trait information would be more salient to older participants. Preschool-aged children used information about rules to predict people's behavior. They did not reliably predict that people would act on preferences. Older children were more likely to predict that people would consistently follow their preferences than that they would consistently follow rules. Adults predicted that behavior would be consistent with rules and preferences equally. These results support the hypothesis that rules are an important part of social context for young children. In middle-childhood, psychological motives may be most salient. These results held at both the group and individual levels. Relatively few younger children consistently predicted people would act according to their preferences, but many predicted consistency with rules. Few older children predicted consistency with norms, but many reliably predicted people would act on their preferences.

From an adult perspective it is counterintuitive that children ever failed to predict consistency. With no indications of a contrary impulse, what would prevent people from predicting actors would behave the way they had in the past? The default assumption for adults may be that a person will behave the same in the future as in the past, unless there is information to the contrary. However, Kalish (2002) found that preschool- and early school-aged children often expect change. Their assumption may be that people will act differently in the future than in the past, unless there is information to the contrary. The results of Experiment 1 suggest that young children do not see preferences as strong enough to reliably overcome whatever forces might cause people to change their behavior across time. Older children did not see rules as particularly compelling warrants for predicting stability. It seems that the preschool- and early school-aged children included in Experiment 1 both require some good reasons to think people will act the same way in the future as they did in the past, but children of the two ages disagree about what constitutes a good reason, rules or preferences.

A second influence on the predictions observed in Experiment 1 could be beliefs about the correlations between rules and preferences. Although participants heard only rule or preference information, they might have inferred the other attribute. For example, the lit-

erature on discounting (Aloise & Miller, 1991) suggests adults and older children might expect a negative relation between rules and preferences. When told that a rule mandates one option, they may assume the person prefers the other. This principle would provide a reason for predicting inconsistency in the rule stories in Experiment 1. Similarly, if younger children expect the same negative relation, they would be motivated to predict inconsistency in preference stories (because a rule is assumed to proscribe the opposite behavior). Alternatively, research suggests that young children might expect a positive relation between rules and preferences (they augment rather than discount, Karniol & Ross, 1976; see discussion below). This possibility complicates the interpretation of high rates of consistent predictions. Perhaps younger children reasoned that if the rule mandates option 1, then the person must prefer option 1. Behavioral predictions could be based on preferences (as inferred from rules). On this scenario it is not clear why young children would not have predicted consistency in the preference condition. However, the possibility that preferences and rules might be thought to be correlated is important to consider. Experiment 2 assesses beliefs about the relations between rules and preferences.

3. Experiment 2

Experiment 1 suggests developmental differences in the ways information is used to predict behavior but did not address the nature of those differences. One possibility is that rules and preferences are understood as two different sources of motivation. Rules are one reason people do things, preferences another. People of different ages attend to information about these reasons differentially. An alternative, is that rules and preferences are not understood as distinct, but rather statements of rules and preferences are interpreted as different formats of information about the same source of motivation. For example, it may be that children simply judge future behavior on the basis of past behavior, with information about what a person "likes" and what they "have to do" interpreted as stronger or weaker statements of past behaviors. Young children might interpret "have to" as "always does" and "likes to" as "sometimes does," older children would make just the reverse interpretation.

Adult intuitions are that rules and preferences are different influences on behavior. Rules can be understood as an external source of motivation, while preferences are internal and individual. Rules and preferences are different reasons why people might choose to do things. One indication that rules and preferences are different is that they have different implications for other states of a person. In addition to asking about predictions of behavior, Experiment 2 probed for other consequences of preferences and rules. Participants were asked what a character would want, what would make them happy, and what they were supposed to. Adult intuitions are that preferences determine what people want, but rules determine what they are supposed to do. What would make someone happy is somewhat more ambiguous, but happiness is often linked to satisfaction of desires, and so related to preferences (see Gnepp & Chilamkurti, 1988). Moreover, the circumstance of preferences and rules conflicting seems natural to adults. The reason to have a rule is that people's preferences may run counter to the proscribed behavior. Intuitions suggest that in cases of conflict someone should do one thing but want to do another. To what extent will young children draw the same inferences about rules and preferences as older participants?

Experiment 2 presents participants with conflicts between rules and preferences; some-one likes to do one thing, but should do another. In part this conflict will bear on the question raised in Experiment 1 of whether rules or preferences are understood as the stronger or better predictor of behavior. However, the primary purpose of pitting rules against prefer-ences is not to assess their relative strength, which is likely variable. For example, children generally judge moral rules as more important and serious than conventional rules, but do not always judge people will obey morals over conventions (Tisak & Turiel, 1988). Rather, the goal of presenting both rule and preference information together is to assess whether par-ticipants view them as separate sources of motivation, or as separate pieces of information about the same source of motivation.

3.1. Method

3.1.1. Participants

Thirty-nine children participated in Experiment 2. Twenty-one were in a younger group (mean age = 5.0, range 4.3–5.9), with 10 males and 11 females. Eighteen were in an older group (mean age = 7.11, range 7.0–8.10), with eight males and 10 females. Participants were recruited from a birth-registry database, and interviewed at a university research facility. Twenty-three adult college students (13 female, 10 male) participated for course credit.

3.1.2. Design

The stimuli for the experiment involved eight stories describing characters facing con-trasting preferences and norms. Each story ascribed a preference ("likes to do X") and a rule ("rule is to not do X"). Novel actions were used to avoid any confounds with prior beliefs about proper or preferred outcomes. Half the scenarios involved a positive preference/rule and half involved a negative preference/rule. An example of a rule and preference ascrip-tions is: "Johnny likes to flimmer. The rule is to not flimmer." One scenario was included with no conflict between preference and rule condition. This item provided a check for story comprehension. Each scenario was accompanied by colored line drawings depicting characters in neutral states. Participants were asked to make four judgments about each sce-nario: What would make the character happy? What does the character want to do? What should the character do?, and What will the character do? All questions were presented as forced-choices between two options (e.g., flimmer, not flimmer). In addition, after each "will do" question, participants were asked whether they were "pretty sure," or "just kind of sure" about their response.

3.1.3. Procedure

Children were tested individually in a quiet area. After a brief play session to ac-quaint children with the experimenter and materials, children were told that they would be shown pictures and hear stories about people in the pictures. Adults were tested in groups and the experiment administered on individual computers. The order of questions was randomized within each scenario. After making two judgments, children were re-minded of the rule and preference information in the stories. Order of scenarios was randomized. No feedback was provided, beyond general encouragement for the child participants.
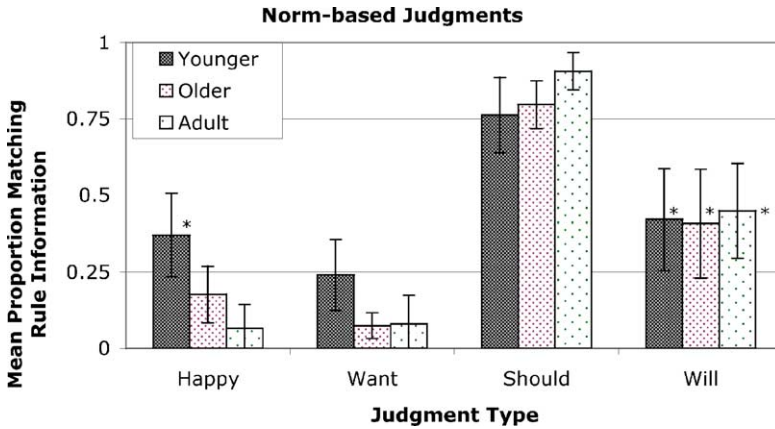
Fig. 2. Mean proportion of predictions that characters' behavior and attributes will be consistent with norm rather than preference information, Experiment 1—(∗) not different than chance, $P < .01$, two-tailed t-test controlling for familywise error using Holm's test.

3.2. Results and discussion

Fig. 2 presents the mean proportion of judgments consistent with the stated rule (not preference). The figure reflects responses that characters would: be happy to follow the rule, want to follow the rule, should follow the rule, and actually would follow the rule. Comparisons against chance (50%) responding are indicated in the figure. Proportions of rule-matches were analyzed in an ANOVA with age as a between-subjects factor and judgment (Happy, Want, Should, Will) as a within subjects variable. There was a significant main effect of judgment, $F (3, 177) = 112.1$, $P < .0001$, but not age. Overall, participants judged that characters would want to do what they liked, and would be made happy by doing what they liked, yet characters should follow the rule. There were no age differences in predictions of behavior, neither did behavioral predictions differ from chance at any age (see Fig. 2). Participants were asked how confident they were of behavioral judgments. Of interest is whether people would be more or less confident when predicting conformity to rule or preferences. The frequencies of "pretty sure" (confident) judgments did not vary by behavioral outcome predicted, Younger: $M_{rule} = .48$, $M_{pref} = .55$; Older: $M_{rule} = .73$, $M_{pref} = .70$; Adult: $M_{rule} = .47$, $M_{pref} = .36$.

Younger children predicted wants and happiness differently than did older participants. The age X question type interaction was significant, $F(6, 177) = 3.7$, $P < .005$. This interaction was explored in a series of pairwise comparisons. Young children judged that characters would be made happy by following rules more often than did older children and adults, both pairwise comparisons, $P < .05$ Tukey's HSD. Younger children were also more likely to say characters would want to follow rules than participants in either of the two older groups, both pairwise comparisons, $P < .01$ Tukey's HSD. No other pairwise comparisons were significant. In particular, there were no significant age differences in judgments of what characters should or will do. Young children were not particularly disposed to predict that characters would follow rules. This suggests that the predictions from Experiment 1 were

Table 1
Mean frequencies of matching ascriptions for judgments of happiness, wanting, should do, and will do: experiment 2

Younger	Happy	Want	Should	Will
Happy	*	0.64	0.38	0.58
Want		*	0.34	0.59
Should			*	0.37
Will				*
Older	Happy	Want	Should	Will
Happy	*	0.82	0.21	0.69
Want		*	0.20	0.61
Should			*	0.41
Will				*
Adult	Happy	Want	Should	Will
Happy	*	0.97	0.10	0.57
Want		*	0.13	0.59
Should			*	0.47
Will				*

not simply the result of a belief that a rule statement is an indication of strong behavioral regularity.

Post-hoc inspection of the data revealed a significant gender difference in young children's judgments about what characters would want to do. Young females were much more likely to say a character would want to follow the rule than were young males, (36 vs 8%). When gender was entered into the ANOVA analysis, young females, but not young males differed from the older groups in judgments of wanting Tukey's HSD, $P < .05$. This was the only significant gender difference in the ANOVAs. However, across all age groups, males more often said characters should do what they want than females, 20 vs 15%, respectively. Females more often reported that characters would want to and be happy to follow rules than did males, 20 vs 12%, respectively. The difference in these error rates appeared as a significant interaction in a gender by error-type ANOVA, $F(1, 60) = 4.5, P < .05$. Males tended to predict characters were motivated by what they liked more often than females, who were more likely to see motivation as determined by rules.

A second step in the analysis was to look at relations between the different attribute judgments. Table 1 presents the frequencies of matching responses for each pair of attributes. Of particular interest is whether any judgments were highly correlated with predictions of behavior. In general there were no significant differences either by attribute or age. Although it appears predictions of behavior match what someone wants or is made happy by more so than what they should do, these differences were not significant for any age group. Instead, age differences appeared in judgments of the relations between happy, want and should. Younger children were more likely to judge wanting = should and happy = should than were adults, $f(42) = 2.7, P < .05,$[3] $t(42) = 3.9, P < .001$, respectively. Differences between older and younger children approached statistical significance, $t(37) = 1.8, t(37) = 2.0,$

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[3] Familywise error for all pairwise comparisons corrected using Holm's procedure.

both $P < .08$. There was a consistent increase with age in the tendency to judge that happy = wants, older > younger $t(37) = 2.3$, $P < .05$, and adult > older, $t(39) = 2.8$, $P < .01$. Thus, what changes with age is not the tendency to predict that characters will do what they want (or what will make them happy). Rather, any difference seems to come from changes in understanding what it is that people want and are made happy by. Younger children were more likely to expect that people's obligations and psychological motivations will be consistent.

A final set of analyses looked at individual patterns. Participants had six opportunities to make each kind of judgment (happy, want, should, will). As each judgment was a forced choice between two options, the probability of matching the rule or preference by chance is 50%. Matching the rule or preference on all six items would occur by chance at $P < .05$ (Binomial theorem). If a participant gave six answers matching the characters' preferences, they were considered to have matched the preference pattern; six rule responses constituted a rule pattern. Most of the 23 adults showed the predicted patterns; preference for judgments of what a character would want and what would make him or her happy, and rule for what a character should do (18, 17, and 13, respectively). Many older children showed the preference pattern for want and happy judgments (7 and 10 of 18, respectively). However, only four (of 21) younger children reliably predicted that characters would want to do what they liked. Six younger children showed the preference pattern for happy judgments; all were males. No young females reliably said characters would be made happy by doing what they liked. In contrast, several (eight) younger children showed the rule pattern for judgments about what a character should do. Only three older children reliably said characters should do what the rule stated. Older children were more accurate (more like adults) in their judgments of psychological consequences, while younger children were more accurate in their judgments of normative consequences.

Consistent with Experiment 1, younger children tended to focus on rules, while older children showed some tendency to emphasize preferences. These differences appeared not in predictions of behavior, but rather in judgments about motivational states. The results suggest a progressive distinction between psychological and deontic motives. Older participants judged that happiness and desire (wants) were determined by preferences, and would usually be congruent. Younger participants often judged that happiness and desire would be determined by rules, and did not judge that happiness and desire would always be the same. Yet, judgments of what characters should do were always tied to rules—preferences did not affect obligations. What may be developing is the sense that there are psychological motives independent of (and in Experiment 2, opposed to) deontic motives.

Interestingly, the data suggest that the separation of psychological motives may happen earlier, and be more complete, for males than females. Female children are often reported to be more compliant with rules and authority than male children (Emler & Reicher, 1987; Serbin et al., 1990). Relative to boys, girls prefer activities with adult-provided structure, including rules and expectations for proper performance (Huston, Carpenter, Atwater, & Johnson, 1986). To the extent that past literature indicates that girls are more rule-oriented than boys, the results of Experiment 2 suggest this effect applies to their judgments of others behavior as well as regulation of their own.

One remaining question is why participants did not show any consistent pattern in their predictions of behavior. For adults the likely answer is that the items presented a conflict

between two "forces," two different sorts of motives. Which force actually dominates in the choice of behavior may depend on complex contextual factors (e.g., presence of authorities, strength of preference) that were not specified in the experiment. Younger children may have experienced the character descriptions as ambiguous or even incoherent. The image is not of a single person pulled in two directions, but of an unclear message about the direction of pull.

4. General discussion

The distinction between what people want and what they should do is intuitive for adults. Classically the two motives conflict, but whether preferences and rules run in parallel or in opposition, common sense holds them to be more or less independent influences on decision making.[4] One hypothesis consistent with the results of Experiments 1 and 2 is that young children emphasize deontic over psychological influences. The idea of what someone generally likes to do may not be clearly distinguished from what the person should or ought do. Alternatively, young children may appreciate preferences and traits as independent of norms, but see them as relatively weak motivators.

The hypothesis that young children's social reasoning emphasizes norms is not an alternative to naive psychology. Preschool-aged children appreciate that rules influence behavior via psychological processes (Kalish, 1998). To predict that a person will follow a rule is not to do something other than judge that people act on what they think and want. Rather, norms provide an answer to the question, "What is it that someone wants?" Norms (as well as traits) allow reasoners to infer the motivational (desire) premise of the practical syllogism. Young children may be less likely than older children to locate the sources of motivation in stable dispositions characteristic of individuals (Yuill, 1992). Although even quite young children appreciate people may differ in what they want (Repacholi & Gopnik, 1997), they do seem more influenced by situational or objective determinants of desirability. For example, young children are likely to believe that someone will be sad if he/she receives a sex-inappropriate toy, despite a stated preference for the toy (Rieffe, Terwogt, Koops, Stegge, & Oomen, 2001). In the same way, young children generally do not locate the sources of belief in individual dispositions (Chandler & Lalonde, 1996). Knowing what someone should do informs young children of what the person wants; knowing the truth informs children of what a person thinks.

If norms and preferences are relatively undifferentiated, children might use information about one to infer the other. Adults tend to see rules and preferences as alternatives; they discount. If someone plays with a toy because they had to, the person is judged to like the toy less relative to someone who freely chose to play with it. In contrast, Costanzo, Grumet, and Brehm (1974) found that young children expect correspondence; a forbidden toy is liked less than a permitted toy (see also Aloise & Miller, 1991). External information about norms was supportive of ascription of preference, if someone is supposed to play with a particular toy, he or she must like it. Cultures likely support different ideas about the relations

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[4] Formal models of decision have tended to collapse norms and preferences into a single notion of "utility." There is considerable debate about whether obligations and permissions can be completely accounted as preferences. See Searle (2001) for discussion.

between norms and preferences. Iyengar and Lepper (1999) found school-aged children from an interdependent culture show higher motivation toward "normatively correct" options (options selected by valued peers or authority figures). Anglo-American children liked tasks less when they did what they had to or what others expected. It is interesting to speculate whether the relations run the other way as well; might young children also infer that people are supposed to do what they like?

Psychological perspectives on the development of social cognition have emphasized the importance of trait attributions. This emphasis may reflect a particular cultural pattern (Miller, 1984). However, it is the case that even individualistic western adults appreciate the importance of rules, norms, obligations, and permissions in organizing and explaining social behavior. Concepts of social agents fundamentally involve systems of norms. To understand the behavior of a waiter, a citizen, and even (in many respects) a father' requires reasoning about the permissions and obligations associated with each role. As Ryle (1949) pointed out, most of the time social explanation does not require reference to mental processes. It is often sufficient to refer to the way people are supposed to behave. Typically people do follow the rules and obey the laws (hence the dual senses of "norm"). A challenge for research in social cognition is to describe the principles of deontic reasoning (Manktelow & Over, 1995) and to explore how such forms of inference are integrated with notions of individual-level mental processes.

Acknowledgments

Appendix A. Items used in Experiment 1

Story	Rule information	Preference information
(IS)	The rule is to share food .	Karen likes to share.
(1A)	The rule is to not share food.	Mark likes to not share his food.
(2S)	The rule is to put away toys after playing.	Eric likes to pick up after himself.
(2A)	The rule is to leave the toys out after playing.	Jessica likes to not pick up after herself.
(3S)	The rule is to work with a friend.	Stephanie likes to work with people.
(3A)	The rule is to work by yourself.	Mike likes to not work with people.
(4S)	The rule is to help wash dishes after dinner.	Leslie likes to help wash the dishes.
(4A)	The rule is that Mom washes the dishes herself after dinner.	Joey likes to not help wash the dishes.
(5S)	The rule is to wear shoes in the house.	Ann likes to wear shoes in the house.

(5A)   The rule is to take your shoes off   Bill likes to not wear shoes in the house.
         in the house.

(6S)   The rule is to keep the toys in the   Joan likes to keep toys in the closet.
         closet.

(6A)   The rule is to keep the toys in the   Jimmy likes to keep toys in the toy box.
         toybox.

(7S)   The rule is to wear a blue shirt to   Lisa likes to wear a blue shirt when she
         play soccer.   plays soccer.

(7A)   The rule is to wear a red shirt to   Jeff likes to wear a red shirt when he
         play soccer.   plays soccer.

(8S)   The rule is to eat an apple for   Jeremy likes to eat an apple for snack.
         snack.

(8A)   The rule is to eat crackers for   Kathy likes to eat crackers for snack.
         snack.

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