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Rules Trump Desires in Preschoolers' Predictions of Group Behavior

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Abstract

The objective of this article is to investigate the way children weigh conventional rules against desires when considering how a group will behave. To do so, two experiments involving a prediction task in which desires were pitted against conventional rules were presented to three- to five-year-old children. In Experiment 1, four scenarios were established as classroom scenes in which either one protagonist or three protagonists had a desire that went against an explicit conventional rule. In the individual control condition, the choices linked to the rules were at chance whereas, in the group condition, the participants predicted that all the protagonists would end up following the rule. Given that both conditions in Experiment 1 implied four rule followers in the design, Experiment 2 staged not three but seven potential rule transgressors to see whether the desire of the majority might undermine the rule. Results showed no majority effect: participants expected protagonists to act counter to their desire and to follow the rule. Such results suggest that children as young as three-year-old favor rules over desires when they have to predict the behavior of a group, whether it be the majority or not. Possible implications of these intriguing findings are discussed.

Keywords: conventional rule; desire; deontic reasoning; social cognition

Introduction

To make sense of their complex social environment, children have to be able to predict others' behaviors. Among the main cognitive abilities necessary to cope with the challenges of social life is the capacity to understand and to predict the behaviors of others in terms of mental states, a capacity that the philosopher Daniel Dennett (1987) termed the *intentional stance*, which is also often referred to as 'theory of mind.' In developmental psychology, a very important body of evidence has shown the capacity of children to attribute mental states, such as beliefs and desires, to others and to use this capacity as a basis for inference and action (e.g., Wellman, Cross, & Watson, 2001; Wellman & Liu, 2004). In particular, several studies have

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demonstrated that preschoolers possess a rather sophisticated concept of desire (Rakoczy, Warneken, & Tomasello, 2007; Repacholi & Gopnik, 1997; Smith & Warneken, 2014). Indeed, three-year-olds are able to predict an individual's action by inferring his desire (Wellman & Woolley, 1990), even if the desire in question is different from theirs (Cassidy et al., 2005). Moreover, three-year-olds are able not only to predict but also to explain an individual's action by reference to that individual's desire (Bartsch & Wellman, 1995).

However, children are not confronted with others in a social vacuum. They also face rule-governed behaviors and institutional situations whose processing requires deontic concepts such as rules, prescriptions, status, or conventions (Jackendoff, 1999; Kalish, 2005; Rakoczy & Schmidt, 2013). Deontic reasoning, that is, the processing of what one may, must, or must not do in a given set of circumstances, is what Rakoczy and Schmidt propose to call the *normative stance*. Such a stance leads children to interpret social activities as actions that are governed by conventional, communally shared social norms.

These two lines of research on social cognition give rise to an interesting question: which context is susceptible to elicit the adoption, by young children, of the *intentional stance* (based on mental states) vs. the *normative stance* (based on social rules)? This question is all the more interesting as rules and desires are often in conflict in everyday life. Furthermore, little is known about how young children handle and predict the outcome of this kind of conflict.

While the *intentional stance*, which consists in seeing others as having inner mental states (intentions, desires, or beliefs) and acting upon them, is very well-known in developmental research, the *normative stance* has drawn much less attention. For the time being, the *normative stance* is associated with several, somewhat scattered research areas. For instance, studies have shown, by way of the the well-known Wason selection task, that young children and adults use reasoning to solve logical problems with more ease in a deontic context than in an epistemic one (Cosmides & Tooby, 2005; Cummins, 1996). Developmental studies have also shed light on preschoolers' capacity to evaluate the consequences of rule violations: they are not only able to distinguish between a deliberate and an accidental breach of rules (Nunez & Harris, 1998) but are also able to predict the cognitive and emotional states of the violator (Lagattuta, 2005; Nunez & Harris). A complementary line of research, that of moral psychology, has demonstrated a long time ago that children as young as three years of age perceive the difference between moral and conventional rules, judging conventional violations as less reprehensible than moral transgressions (Smetana, 1981; Turiel, 1983). Last but not least, more recent research has directly addressed the main workings of the *normative stance* by emphasizing young children's capacity to use rules in order to predict, evaluate, and enforce others' behaviors (Clément, Bernard, & Kaufmann, 2011; Kalish, 1998; Kalish & Shiverick, 2004; Kalish, Weissman, & Bernstein, 2000; Rakoczy & Schmidt, 2013; Schmidt & Tomasello, 2012; Wang, Zhu, & Shi, 2011).

Beyond their differences, these lines of inquiry into deontic understanding have an important feature in common: they are all focused on the behavior of individuals and not on the behavior of groups. Yet behavioral predictions, which are fundamental for successful navigation of the social world, do not focus only on what an individual will do but also on what a group will do (Hirschfeld, 2001). Preschoolers show abstract expectations about how group members relate to one another and use social categories, such as gender, ethnicity, or age, as an inductively powerful

means of predicting others' behavior (Diesendruck & Eldror, 2011; Dunham, Baron, & Carey, 2011; Olson, Dweck, Spelke, & Banaji, 2011; Rhodes, 2012). Despite developmental psychologists' recent revival of interest in group membership and social categories, it is not yet known how children process group behavior in relation to social rules. This article aims precisely to bridge the gap between developmental research on deontic reasoning and developmental research on groups by testing children's deontic prediction of group behaviors. Do groups elicit an *intentional stance* rather than a *normative stance* on the part of children?

To start addressing this question, we propose to test whether children's group-level and individual-level predictions of behavior within a deontic context are different. In this regard, two main hypotheses can be drawn from the literature—in this case, from adult psychology literature. The first hypothesis suggests that group targets might elicit the adoption of a *normative stance*. Indeed, research on adults' reasoning shows an asymmetry between individual vs. group behavioral predictions: when a group is the target, adults tend to focus on the push of social forces and deontic norms that compel behavior; on the contrary, when the target is an individual, they tend to focus instead, on the pull of his or her internal moral conscience (Critcher & Dunning, 2013). The second hypothesis suggests that group targets might elicit the adoption of an *intentional stance* in which they are treated as purposeful entities whose mental states are irreducible to any of their members (Dennett, 1987). As long as 'non-object individuals' such as groups satisfy the Gestalt principle of convergent motion and common fate, either perceptually (Bloom & Veres, 1999) or conceptually (Campbell, 1958; Yzerbyt, Castano, Leyens, & Paladino, 2000), they tend to be treated as single persons or 'big people'. Our aim is thus to see which hypothesis, intentional or normative, young children's predictions about group behavior supports.

Experiment 1

Experiment 1 introduced children to forced choice situations in which a deontic rule was in conflict with an intentional desire of a single individual (*individual control condition)* vs. a group of individuals (*group condition*). To the best of our knowledge, this kind of conflict between rule and desire has not been tested before. Although related, studies by Kalish and Shiverick (2004) differ in the sense that they did not test group targets and did not pit rules against desires but against preferences. Thus in their Experiment 2, Kalish and Shiverick asked participants to predict the behaviors of individual characters facing a preference (for instance, 'Johnny likes to flimmer') in conflict with a rule ('The rule is to not flimmer'). Five- to seven-year-olds showed no significant differences between preference prediction and rule prediction in their responses to the prediction question ('What will Jimmy do?'). These results, however, could be due to the fact that preferences, as psychological dispositional traits, are notoriously difficult to understand for children (Yuill & Pearson, 1998). Moreover, pitting preferences against rules requires children to infer the fact that preferences generate desires (if 'a likes to do x', then 'a wants to do x'). To avoid this inferential complication, we have chosen to straightforwardly resort to desires that refer to a singular state of mind *hic et nunc* ('a wants to do x'). Using desires rather than preferences also allows us to test children younger than five-year-old, who have difficulty attributing personal traits such as preferences but have no difficulty attributing desires. Indeed, a large body of research has

shown that three-year-olds do understand the subjective nature of the desires of others (Rakoczy et al., 2007). As three-year-olds also understand the normative force of rules (Kalish & Cornelius, 2007; Wang et al., 2011), a task pitting desires against rules does not seem too complicated to be used with three- to five-year-olds.

To test how children weigh rules against desires, two pitfalls had to be avoided. First, we had to prevent children from projecting their own preferences. This is why the kind of desires mentioned in the stories was completely neutral (e.g., putting away one's drawing in one place or another). Indeed, three- and four-year-olds have difficulty correctly identifying the desires of the characters in a story when they are in conflict with their own actual desires (Moore et al., 1995). Second, we had to avoid the specific weight and saliency of moral rules, which are non-arbitrary and tend to apply universally to all beings (Lagattuta, Nucci, & Bosacki, 2010; Turiel, 2008). To test rule compliance as such, we chose conventional, that is contextual and contingent rules (e.g., putting one's drawing in the school locker).

To sum up, Experiment 1 aims to test preschooler's predictions when they are confronted with an individual or a group whose desire is opposed to a conventional rule.

Method

Participants. One hundred and twenty-nine children participated in this study. They were divided into three age groups: 45 three-year-olds (25 girls, *M*age = 41.42, *SD* = 2.98, range 36–47), 43 four-year-olds (21 girls, *M*age = 53.02, *SD* = 3.71, range 48–59), and 41 five-year-olds (19 girls, *M*age = 66.85, *SD* = 3.47, range 60–73). All children were recruited from four French schools in Lyon. The majority of participants came from middle and upper-middle class families. Each child was interviewed individually in a room adjacent to their classroom by a single experimenter for about 10 min.

Materials and Procedure. Four school stories, with pictures of Playmobil's characters, were presented in a randomized order to children on a computer screen. All stories depicted classical school situations involving one teacher and several pupils. Participants were divided into two conditions: in the individual condition (control condition), one story character had a desire that went against a conventional rule (N = 63); in contrast, there were three story characters in the group condition (N = 66). All stories were built on the same model for both conditions.

The scenario for the *individual control condition* can be described as follows: the first vignette depicted a young character (different in each story, order counterbalanced; two boys and two girls) in the center of a room with a given object (e.g., a drawing) and a teacher and four children at his left side (the places were counterbalanced); the four children were performing a given action (e.g., putting their drawings into their school lockers). The experimenter said: 'Children have just made a drawing. In this school, there is a rule: children have to put their drawing in their school locker. Arthur [experimenter pointed at the boy on the center] wants to put his drawing in his schoolbag. What will happen?' (Figure 1, Vignette 1). After this, two pictures were simultaneously presented in a randomized order (Figure 1, Vignette 2): one picture depicted Arthur putting his drawing in his school locker (*rule picture*) while the other showed Arthur putting his drawing in his schoolbag

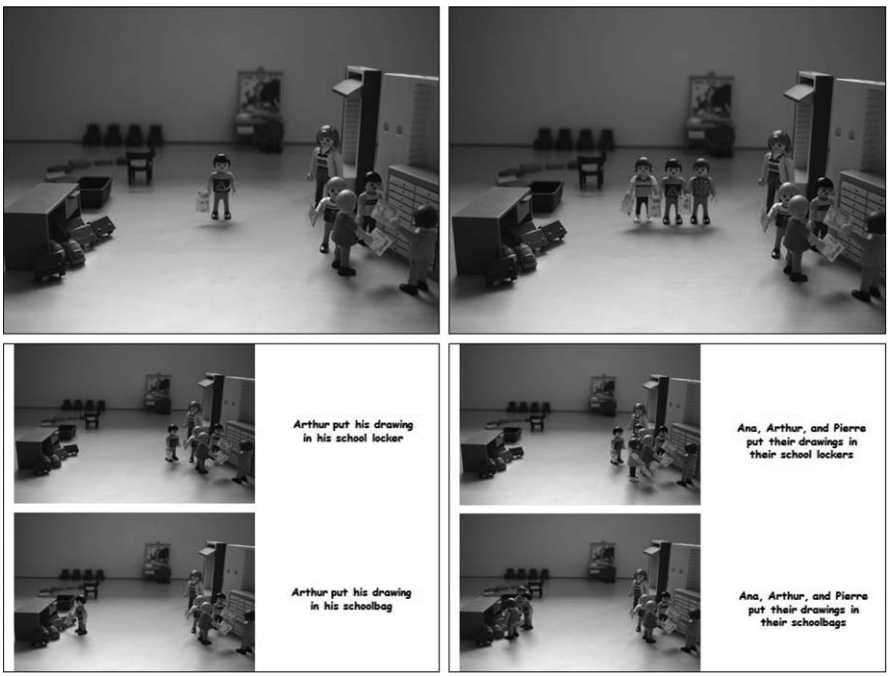

Figure 1. Vignettes 1 (at the Top) and 2 (at the Bottom) for the Drawing Scenario in the Individual Control Condition (Left) and in the Group Condition (Right).

(*desire picture*). Then, the experimenter added: 'Will Arthur put his drawing in his school locker [pointing to the *rule picture*] or in his schoolbag [pointing to the *desire picture*]?' (order counterbalanced).

The same kind of story was used in the *group condition* except that, this time, three characters instead of one were in opposition to the rule (e.g., two boys and one girl or two girls and one boy; order counterbalanced). For the drawing story, for instance, the experimenter said: 'Children have just made a drawing. In this school, there is a rule: children have to put their drawing in their school locker. Ana, Arthur, and Pierre [the experimenter pointed at each character] want to put their drawing in their schoolbags. What will happen?'[1] (Figure 1, Vignette 1). As in the individual condition, two pictures were simultaneously presented in a randomized order (Figure 1, Vignette 2): one picture depicted the three characters putting their drawings in their school lockers (*rule picture*), while the other showed the three characters putting their drawings in their schoolbags (*desire picture*). The experimenter added: 'Will Ana, Arthur, and Pierre put their drawings in their school lockers [pointing to *the rule picture*] or in their schoolbags [pointing to the *desire picture*]?' (order counterbalanced).

In the group condition, the group was operationalized as a collection of individuals who all wanted to behave in the same way (e.g., each child wanted to put his drawing in his locker) and whose actions conflict with the rule. Given that three-year-olds are able to detect rule violators (e.g., Kalish et al., 2000) and that they establish group membership on very minimal criteria of behavioral similarity (having the same color shirt, the same food preference) (e.g., Dunham et al., 2011), the

possession of the same counternormative desire will most likely elicit group-based expectations.

For each condition, the child could obtain a maximum score of 4 points (1 point for each story when the *rule picture* was chosen). In the two conditions, two questions were introduced after the last story: a justification question ('Why?'), asked after the last child's choice, and a rule reminder question ('What's the rule in the classroom when children [activity linked to the last story]?').

Results

In the individual control condition, four three-year-olds and one four-year-old were not able to respond correctly to the rule reminder question. Therefore, 58 children were included in the analyses for this condition: 18 three-year-olds (11 girls, *M*age = 42.22, *SD* = 3.12, range 36–47), 19 four-year-olds (9 girls, *M*age = 53.84, *SD* = 4.39, range 48–59), and 21 five-year-olds (10 girls, *M*age = 69.29, *SD* = 2.1, range 66–73). In the group condition, two three-year-olds were not able to respond correctly to the rule reminder question. For this condition, analyses have thus been conducted with 64 children: 21 three-year-olds (11 girls, *M*age = 41.24, *SD* = 2.75, range 36–45), 23 four-year-olds (12 girls, *M*age = 52.30, *SD* = 3.08, range 48–59), and 20 five-year-olds (9 girls, *M*age = 64.30, *SD* = 2.71, range 60–69).

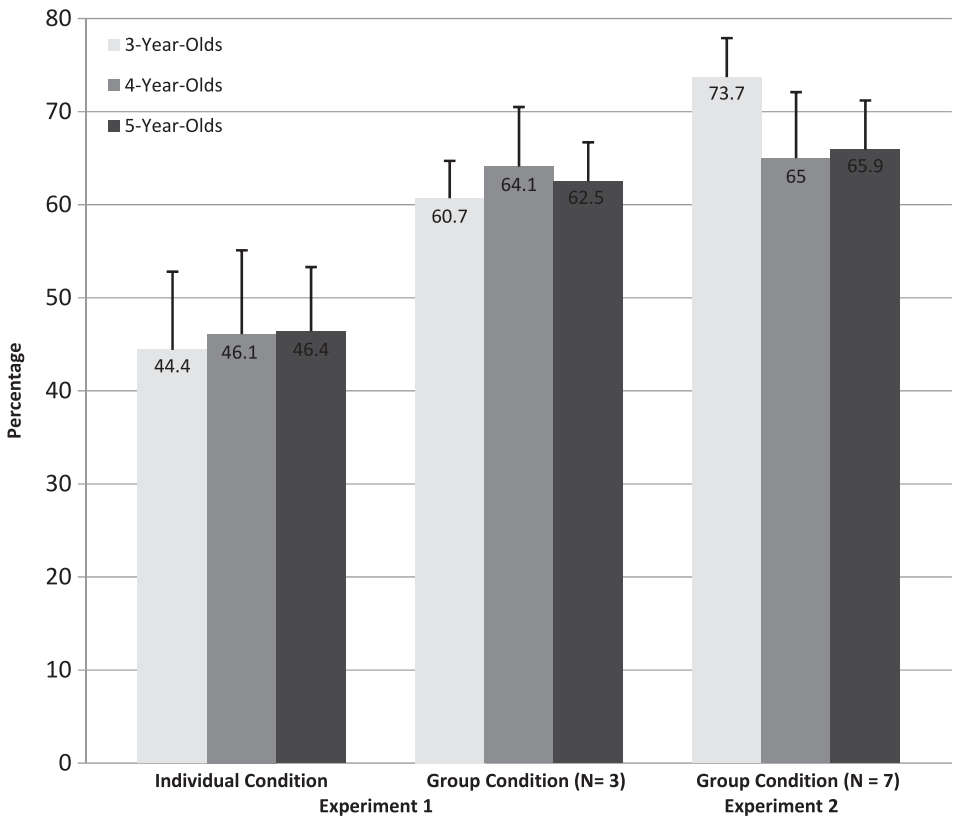

Figure 2. Percentage of Choices Linked to the Rules as a Function of Age Group and Experiment.

Figure 2 shows the percentage of choices linked to the rules as a function of age group and condition. Inspection of Figure 2 shows that the percentage of choices linked to the rules was better in the group condition than in the individual condition, regardless of the age group.

To check this conclusion, a three-way analysis of variance (ANOVA) with age group (3, 4, 5), condition (Individual, Group), and gender (Girl, Boy) as between-subjects variables was performed for the proportion of times (with an arcsin transformation) children chose the rule response. This revealed only a significant main effect for the condition, $F(1,110) = 5.04$, $p = .027$, $\eta^2 = .04$. The choices linked to the rules were significantly better in the group condition than in the individual condition ($p = .027$).[2]

In the individual control condition, the choices linked to the rules were at chance, both for the children as a whole, and within each age group (see Table 1). In the group condition, the choices linked to the rules were better than chance, both for the children as a whole, and within each age group (Table 1).

To shed light on the reasons why children expect the three group members to follow the rule, we have investigated the answers they gave to justify this choice after listening to the last scenario presented to them (note that in the individual control condition, 50 percent of the children chose the *rule picture* in the last scenario. In the group condition, this was 70.3 percent). Four types of justification can be distinguished: (R) justifications linked to the rule (e.g., 'because it's the rule'), (A) justifications linked to the authority figure (e.g., 'because the teacher said that'), (C) justifications linked to consensus (e.g., 'because others also do this'), and (NRA) no related or absent justifications (e.g., 'because I want'). Figure 3 shows the percentage of responses for each type of justification in function of the condition. As can be seen, Figure 3 shows that justifications linked to the rules were predominant in each condition. In contrast, justifications linked to the authority figure or to the consensus were marginal.

Table 1. Proportion (Standard Deviation) of Times Children made the Rule-based Response by Experiment, Condition, and Age Group.

	Experiment 1				Experiment 2	
	Individual		Group (three characters)		Group (seven characters)	
Condition	*M (SD)*	*t*	*M (SD)*	*t*	*M (SD)*	*t*
All children	1.83 (1.40)	−.94	2.5 (.94)	4.24***	2.73 (1.03)	5.56***
Three-year-olds	1.77 (1.44)	−.66	2.43 (.74)	2.63*	2.95 (.76)	5.59***
Four-year-olds	1.84 (1.57)	−.44	2.56 (1.24)	2.19*	2.60 (1.27)	2.11*
Five-year-olds	1.86 (1.27)	−.51	2.5 (.76)	2.94**	2.63 (1.01)	2.98**

***$p < .001$, **$p < .01$, *$p < .05$.

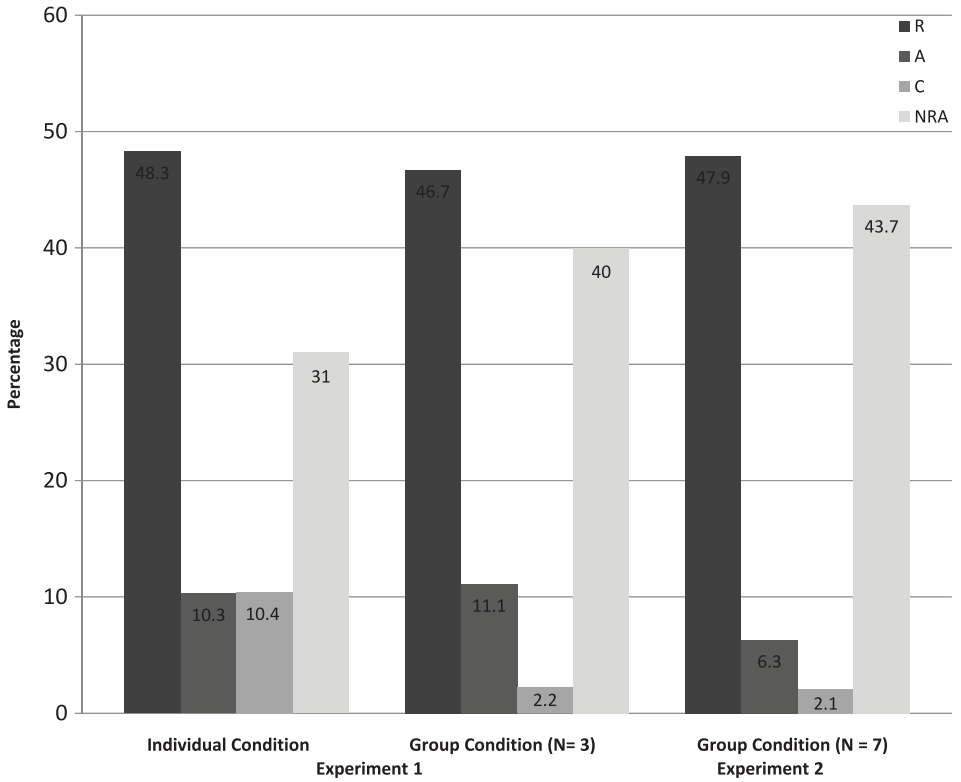

Figure 3. Percentage of Jusfications Linked to a Rule Choice in Each Experiment. R = justifications linked to the rule; A = justifications linked to the authority figure; C = justifications linked to the consensus; NRA = no related or absent justifications.

Discussion

The rationale of Experiment 1 was to see how children predict the hypothetical action of one vs. three characters within a deontic context: would his/their action be congruent with his/their desire/s or with the conventional rule he/they are supposed to follow? In the individual condition, when only a singular dissenter had a desire opposed to a rule (control condition), behavioral predictions did not differ from chance at any age. This result is consistent with Kalish and Shiverick's (2004) results concerning the age group that both our studies tested, that is, five-year-olds—even if their study pitted rules against preferences, not desires. Moreover, our study extends these chance results to three- and four-year-old children. A likely explanation is that individual-level forecasts depend on the personality of the character (Hamilton & Sherman, 1996): if Arthur, to follow our drawing example, is particularly afraid of sanctions, he would give up on his desires and follow the rule; if he is daring or antisocial, he would satisfy his desires no matter what rule surrounds him. In this sense, the fact that children are at chance to predict the behavior of Arthur—or of any character presented in our scenarios—is not surprising: after all, they lack crucial information about how Arthur usually behaves and cannot

decide whether he would follow the rules or his desires. In contrast, our results in the group condition show that children, with no difference between age groups, adopted a *normative stance* because they predicted that the group would end up following the rule. Our results thus suggest that group-level predictions differ from individual-level predictions and tend to favor the adoption of a *normative stance*.

This being so, one could argue that these diverging results might be due to the presence of an authority figure, in this case the teacher, as well as to the presence of four rule followers. Indeed, contextual cues such as the presence of an authority figure are known to increase the advantage of three- and four-year-olds when it comes to deontic over epistemic reasoning (Dack & Astington, 2011). Although the contextual effect of the presence of an authority figure would be interesting to investigate further, this does not seem to be a determining factor here because such an effect should be equal across our two conditions, which is not the case. Three- to five-year-olds performed at chance in the individual condition but not in the group condition. Moreover, very few children referred to the authority figure when justifying their choice of the rule (see Figure 3). In fact, the only difference between conditions was the number of potential transgressors. This is precisely the issue of the number of rule transgressors that Experiment 2 aims to address.

Experiment 2

To sustain the hypothesis according to which groups tend to trigger a *normative stance* within children, a major counter-argument has to be ruled out. Given that the group condition of Experiment 1 opposed three transgressors to four rule-followers, one might argue that children's choices are due to a kind of majority/minority reasoning. Indeed, recent studies inspired by research in social psychology have shown that children have an early sensitivity to group consensus when making an epistemic or perceptual judgment (Bernard, Proust, & Clément, 2015; Corriveau, Fusaro, & Harris, 2009; Haun & Tomasello, 2011). One might wonder whether this sensitivity is also present in a deontic situation when a majority of rule transgressors is pitted against a minority of rule followers. Do children assume that a majority of individuals have the power to discard a prevailing rule in order to satisfy their collective desire? To respond to this question, Experiment 2 replicated, with another sample of children, the group condition of Experiment 1, but featuring scenarios in which a majority of seven protagonists had a desire opposed to the rule.

Method

Participants. Sixty-five children participated in this study. They were divided into three age groups: 22 three-year-olds (10 girls, *M*age = 42.45, *SD* = 2.98, range 37–47), 21 four-year-olds (9 girls, *M*age = 53.90, *SD* = 3.43, range 48–59), and 22 five-year-olds (14 girls, *M*age = 64.68, *SD* = 3.84, range 60–71). The demographics were similar to those of Experiment 1. Each child was seen individually in a quiet place in the school for about 10 min.

Materials and Procedure. The same kinds of stories (N = 4) described in the group condition of Experiment 1 were used in this second experiment, but this time there were not three but seven characters who had a desire that went against a conventional rule (four boys and three girls or four girls and three boys; order counterbalanced). For the drawing story, for instance, the experimenter said: 'Children have

just made drawings. In this school there is a rule: children have to put their drawings in their school lockers. Ana, Arthur, Pierre, and their four friends [the experimenter pointed to each character] want to put their drawing in their schoolbags. What will happen?' (Vignette 1). As in Experiment 1, two pictures were simultaneously presented in a randomized order (vignette 2): one picture depicted the seven characters putting their drawings in their school lockers (*rule picture*), the other showed the seven characters putting their drawings in their schoolbags (*desire picture*). The experimenter added: 'Will Ana, Arthur, Pierre, and their four friends put their drawings in their school lockers [pointing to the *rule picture*] or in their schoolbags [pointing to the *desire picture*]?' (order counterbalanced). The child could obtain a maximum score of 4 points (1 point for each story when the *rule picture* was chosen). For the last story, the experimenter asked the same questions as those used in Experiment 1 (justification and reminder rule questions).

Results

Two three-year-olds and one four-year-old failed to mention the rule. Therefore, 62 children were included in the analyses: 20 three-year-olds (9 girls, *M*age = 42.55, *SD* = 2.91, range 36–47), 20 four-year-olds (8 girls, *M*age = 53.90, *SD* = 3.52, range 48–59), and 22 five-year-olds (10 girls, *M*age = 69.29, *SD* = 2.1, range 66–73).

Inspection of Figure 2 shows that the rule responses were chosen predominantly, irrespective of the age group. To check this conclusion, a two-way ANOVA with age group (3, 4, 5), and gender (Girl, Boy) as between-subjects variables was performed for the proportion of times (with an arcsin transformation) children chose the rule response. This yielded no significant main effect or interaction effect between these two factors.

The choices linked to the rules were better than chance, both for the children as a whole and within each age group (see Table 1). As in Experiment 1, inspection of Figure 3 shows that justifications linked to the rules were predominant. In contrast, justifications linked to the authority figure or to the consensus were marginal (note that 77.4 percent of the children chose the *rule picture* in the last scenario presented to them).

Discussion

Research on majority influence suggests that children might be inclined to predict that a group of dissenters who outnumber a group of rule-followers will follow their transgressive desire. Our results run against this hypothesis: the fact that a group is the majority or not does not make a difference. With no difference between age groups, children predicted that all protagonists ended up following the rule. Rather than conforming to the majority, they are inclined to go against the flow to better sustain and enforce the deontic rule. From a third-person stance, at least, children do not modify their predictions when they are presented with a conflict between a rule and a majority vs. a minority of dissenters.

General Discussion

Results of Experiment 2 replicated those from the group condition of Experiment 1. When the desire of a group was pitted against a conventional rule, children tended to predict that the group would follow the rule. This suggests that groups but not

individuals trigger a *normative stance*, meaning that groups are not treated as 'big people'. If they were, they would be as unpredictable as individuals in this context (see control condition in Experiment 1).

This pattern of results seems to confirm the individual-group forecast asymmetry that Critcher and Dunning (2013) have shown with adults. These authors show, indeed, that people identify and weigh internal experiences and their moral conscience when they predict the behaviors of single individuals, whereas they base their predictions on social constraints when they consider groups. Although the studies of Critcher and Dunning address population averages rather than groups *per se* ('What percentage of people will. . .') and test, above all, morally relevant behaviors, they suggest a framework whose applicability extends beyond the moral domain: by making social features salient, a population forecasting target (in our case, a group) triggers a shift in perspective and modifies hypothetical behavioral predictions.

Regarding the contrast between the group condition of Experiment 1 and the majority condition proper to Experiment 2, our results suggest that modifying the features of the group target, which goes from a minority to a majority of dissenters, does not modify children's predictions. In other words, children's early sensitivity to group consensus, increasingly shown in recent research (e.g., Bernard et al., 2015; Corriveau et al., 2009), is not boundless. In a deontic situation in which a majority wants to contravene a rule and in which group consensus is pitted against deontic requirements, children do not choose to 'go with the flow'. Rather, they tend to reinforce social norms by predicting that the group, even if it is the majority, will counter its desires and act upon the rules.

How can this deontic advantage be explained when it takes place even when the majority has the potential to carry out a 'putsch' against the rule in force? How should one explain the fact that children support rule compliance even when a group, however big, has a desire that goes against the rule? As seen above, it might be above all *a matter of attention*: the presence, perceptual or conceptual, of a group might orient children's attention toward social forces that guide behavior from the outside, in this case, conventional rules. In this respect, children's behavioral predictions would be similar to those of adults who, when considering groups, discard what a person would want or will in a situation and concentrate instead on factors that operate at a social level (Critcher & Dunning, 2013). Another possible hypothesis, which is not incompatible with the former one, is that deontic predictions are triggered by the anticipation of the possible consequences of the rule violation. The consequences are particulary important when the rule violation is performed by an entire group: whereas an individual violation is only an exception to the rule, the breach of a rule by a group tends to call into question the established order. The fact that children can intuitively anticipate the costs of group transgression is very likely, because a long tradition of research in moral development has shown that young children evaluate the intrinsic consequences of actions over the psychological or physical well-being of others to deliver judgments of right and wrong (Helwig & Turiel, 2011; Smetana, 1981; Turiel, 1983).

Another interpretation of our data could be that children reach the deontic decision by taking an indirect path. Indeed, in conflicting interactions with peers, children are very responsive to others' protests against norm transgressions and tend to resolve the conflict using normative appeals (Ingram & Bering, 2010). Given the prevalence of social rules in their real-life experience of conflicting situations (Dunn & Munn, 1987; Ingram & Bering, 2010; Shantz, 1987), children might use this

rule-oriented experience to predict that the group, in spite of the initial counternormative desires of its members, will finally comply with the rule.

Even if, as mentioned above, the presence of the authority figure cannot explain the difference in the results between the individual condition and the group condition, it would, nevertheless, be interesting to replicate the present research without it. Indeed, one might argue that the justifications involving the rule and those involving the authority figure are difficult to disentangle if children consider the teacher as 'the rule'. A setting without the presence of the authority figure could thus allow us to better weigh the extent to which children justify their choices according to the rule *per se*.

The possible influence of another factor, linked to the limitation of our sample, would also be interesting to investigate. The majority of children tested in the present study came from middle and upper-middle class families. However, an important number of studies have shown that poor or low socioeconomic status (SES) has negative influences on children's cognitive and socioemotional development (e.g., McLoyd, 1998). Concerning the topic of the present article more particularly, SES disparities have been shown to have an effect on cognitive control/self-regulation (e.g., Noble, McCandliss, & Farah, 2007) and on externalizing problems such as disobedience or difficulty getting along with others (e.g., Duncan, Brooks-Gunn, & Klebanov, 1994). Given the potential influence of these factors on desire-based vs. rule-based predictions of hypothetical behaviors, our results might be different with socioeconomically disadvantaged children.

It would also be interesting to see whether the nature of rules has an influence on children's predictions: given that moral rules address the intrinsic wrongness of an action and are thereby neither context-relative nor authority-dependent, desires of moral violation might be judged differently and give rise to different behavioral predictions (Smetana, 1981; Turiel, 1983).

Finally, one limit of the present study lies in the fact that children adopt the *normative stance* in a low-information situation. Indeed, they lack information about the relations between the characters forming the group (e.g., are they bonded together or do they have only weak and transitory connections?) or about their motivations (e.g., do they intend to act like the others or do they just want to follow their own counternormative desire?). Even if the fact that the deontic stance seems to be the *'default stance'* as regards groups is informative in itself, it would be interesting to investigate further how internal factors such as high levels of interaction or motivational investment might influence children's predictions. For instance, the groups depicted in our experimental scenarios have been described as an aggregate of separate individuals (e.g., Ana, Arthur, and Pierre), who have a common desire to realize individually an action that conflicts with a conventional rule. As seen above, the fact that those characters share a strong common property, that of being deviant, seems sufficient for children to see them as forming a group. Nevertheless, it could be interesting to investigate whether additional properties used by children as cues to identify the 'entitativity' of a group might increase their rule choices in our experiments. For instance, in 'minimal group' research (e.g., Dunham et al., 2011), groups are generally defined according to arbitrary perceptual properties such as shirt color. The same kind of similar perceptual property could be added in our design. Another interesting way to increase the degree of 'entitativity' of the group could be to depict the group members performing a unique action together (e.g., three characters putting a unique drawing in a locker).[3] The joint decision to act in the same way would attest to the cohesiveness and unity of the group and foster, thereby, the *normative stance*.

More generally, further research is required to address the link between group consensus and rule compliance, which are two important but different social phenomena. Groups, as an association of individuals, are social by definition. However, the term 'social' also refers to the set of deontic rules that underlie the functioning of any community. Our second experiment pitted one of these conceptions of the social against the other, showing that deontic information might be more salient than mere group consensus in preschooler's social predictions. The way in which developmental pathways and social experience might shape this deontic advantage warrants further research.

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Notes

1. Note that each child has made his own drawing.
2. All comparisons were calculated according to Bonferroni procedure.
3. We thank an anonymous reviewer for drawing our attention to this interesting point.