



Contents lists available at ScienceDirect

Journal of Experimental Child Psychology

journal homepage: www.elsevier.com/locate/jecp

Preschoolers, but not adults, treat instrumental norms as categorical imperatives

Audun Dahl^{a,*}, Marco F. H. Schmidt^b^a Department of Psychology, University of California, Santa Cruz, Santa Cruz, CA 95064, USA^b International Junior Research Group Developmental Origins of Human Normativity, Department of Psychology, Ludwig-Maximilians University (LMU) Munich, 80802 München, Germany

ARTICLE INFO

Article history:

Available online xxxx

Keywords:

Norms
Instrumental rationality
Moral development
Social domain theory
Social cognition
Collective intentionality

ABSTRACT

Hypothetical norms apply only when agents have specific goals, whereas *categorical norms* apply regardless of what agents want. Deciding whether a rule is hypothetical or categorical is crucial for navigating many social situations encountered by children and adults. The current research investigated whether preschoolers viewed *instrumental norms* (about how to accomplish practical tasks), *prudential norms* (pertaining to agent welfare), and *moral norms* (pertaining to others' welfare) as hypothetical or categorical. A second main question was whether preschoolers draw distinctions between instrumental and other norms. Participants were interviewed about norm violations in which the agent did or did not have the relevant goal. The goal manipulation had no effect on children's judgments of permissibility; most children treated all three norm types as categorical. Nevertheless, children distinguished instrumental events from prudential and moral events along several dimensions. In contrast, participants in two adult samples treated instrumental norms, and some prudential norms, as hypothetical, but treated moral norms as categorical (applicable regardless of agent goal). These findings suggest that preschoolers do not yet reliably distinguish between hypothetical and categorical norms, yet do view rules of instrumental rationality as a distinct type of norms.

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* Corresponding author.

E-mail address: dahl@ucsc.edu (A. Dahl).

Introduction

All imperatives command either *hypothetically* or *categorically*. Hypothetical imperatives declare a possible action to be practically necessary as a means to the attainment of something else that one wills (or that one may will). A categorical imperative would be one which represented an action as objectively necessary in itself apart from its relation to a further end.

[Kant (1785/1991, p. 78)]

Imagine a child repeatedly hitting the side of a nail with a hammer. After inferring that the child wants to hit the nail into the wood, her parent may say, “Don’t hit the side of the nail with the hammer!” Now imagine the same child hitting a friend. In this case, a parent may say, “Don’t hit your friend!” without consideration of the child’s goals. The instrumental command about how to hit the nail into the wood is a *hypothetical* imperative because it applies only when the agent has the goal promoted by the proscribed action. For instance, the norm about hitting the nail on its head applies only if the agent wants to hit the nail into the wood. Hence, hypothetical imperatives imply that “if you want goal X, then you should do action A” (Kant, 1785/1991; Kohlberg, 1971; Turiel, 1983). The second command about how to treat another person exemplifies *categorical* imperatives, which apply independently of the agent’s goal and simply say that “you should do C (regardless of what you want).”

The formal distinction between hypothetical and categorical norms is central to most theories of the development of norms. Theorists have often proposed that some types of norms are viewed as hypothetical, whereas other types of norms are viewed as categorical. By most accounts, *instrumental* norms—which specify how to reach practical goals—are a prototypical case of hypothetical norms (e.g., Kant, 1785/1991). For instance, the rule about how to make a Martini applies only to agents who wish to make a Martini (Kohlberg, 1971), and rules for how to put together IKEA furniture apply only to agents who wish to put together IKEA furniture.

In contrast, most theorists view moral norms about how to treat others as categorical and, hence, applicable regardless of what the agent wants (Josephs & Rakoczy, 2016; Kohlberg, 1971; Turiel, 1983). According to these accounts, most people endorse categorical moral obligations to promote and protect the welfare of others by not harming others and, in some situations, by helping others (Miller, Bersoff, & Harwood, 1990; Turiel, 2015b). These moral obligations are said to be categorical in the sense that they are viewed as applicable regardless of whether the agent happens to be concerned with other people’s welfare. However, these proposed connections between the perceived categorical or hypothetical *form* of norms and the moral, instrumental, or other *substance* of the norm have not been directly tested in past research on children’s and adults’ conceptions of norms.

The ability to distinguish between hypothetical and categorical norms is integral to developing an understanding of the function and scope of norms. For instance, if a parent tells a child, “Don’t do your jigsaw puzzle by the staircase!” a child’s response to this command may depend on whether the child perceives this as a hypothetical or categorical imperative. If the parent means, “If you want good lighting when you do the puzzle, you should not do it by the staircase” (a hypothetical imperative), the child may agree with the parent yet decide to remain by the staircase because she does not care about better lighting. In contrast, if the parent means, “You shouldn’t do your puzzle by the staircase no matter what” (a categorical imperative), the child will need to decide whether to comply or explicitly challenge the parental command.

One main goal of the current research was to investigate whether preschoolers distinguished between hypothetical and categorical norms when reasoning about three common types of norms: instrumental norms for how to carry out material tasks, prudential norms for how to protect agents’ own welfare, and moral norms for how to protect others’ welfare. A second main goal was to investigate preschoolers’ conceptions of instrumental norms.

Instrumental norms have received little attention in past research on the development of normative orientations (see, e.g., Killen & Smetana, 2015; Smetana, 2013; Turiel, 2015a). Because so little is known about adults’ distinctions between hypothetical and categorical norms, or about their conceptions of instrumental norms, the current research also included a sample of adults. The adult sample

allowed us to investigate whether adults view instrumental, prudential, and moral norms as hypothetical or categorical.

To investigate whether participants viewed instrumental, prudential, and moral norms as hypothetical or categorical, we manipulated whether an agent had the goal promoted by the proscribed action. (Henceforth, we refer to this goal as the *relevant* goal.) For instance, when asking about the instrumental norm about hitting a nail with a hammer, we varied whether the agent had the relevant goal of hitting the nail into the wood. If participants judged that it was permissible to violate the norm when the protagonist did not have the relevant goal, this would indicate that participants viewed the norm as hypothetical (applicable only for agents who have the relevant goal). In contrast, if participants judged the violation of the norm as wrong regardless of whether the protagonist had the relevant goal, this would indicate that participants viewed the norm as categorical.

Learning to distinguish between hypothetical and categorical norms

Several factors may make it difficult for children to distinguish between hypothetical and categorical norms. First, when (as above) the antecedent clause for hypothetical imperatives (“If you want X”) is merely implied, hypothetical and categorical commands are expressed in similar terms (“You should do Y”). Second, hypothetical imperatives are typically easier to verify empirically than categorical imperatives. By using a hammer on a nail, children can see that hitting the nail on its head is an efficient way of getting the nail into the wood, confirming the means–end structure of the hypothetical imperative. By comparing the use of a hammer with the use of other available objects, such as a sponge, children may even verify that the hammer is the best available tool for hitting the nail into the wood. In contrast, no experiences can demonstrate that it is categorically wrong to hit others. A person can observe that hitting causes pain in others without thinking that it is wrong to cause pain (i.e., the person may observe what *does* happen without inferring what categorically *ought* to happen; Moore, 1903).

On the one hand, young children could view all norms and commands as categorical, applying regardless of what the agent is seeking to accomplish. That is, they may think that people who use hammers and nails are obligated to hit the nail on the head with the hammer, as opposed to hitting the nail in some other way, even if the agent has no interest in hitting the nail into the wood. Such an early categorical conception of norms could be rooted in capacities for collective intentionality. That is, young children may view norms as transcending individual goals, and hence to be applicable unconditionally, because “we do it this way” (Schmidt & Rakoczy, *in press*; Schmidt & Tomasello, 2012). On the other hand, young children may initially view most norms and commands as hypothetical and as applicable only if the agent has the relevant goal. For instance, they could view moral violations such as hitting as wrong because they assume that everyone wants to see others be happy. If the transgressor does not wish others to be happy, children would then view hitting others as permissible.

Children’s conceptions of instrumental, prudential, and moral norms

By their third birthday, young children readily generate normative evaluations of actions. These evaluations are indicated by their expressed judgments about right and wrong as well as by their protests in response to others’ perceived transgressions (Dahl & Kim, 2014; Nucci & Weber, 1995; Rakoczy, Warneken, & Tomasello, 2008; Schmidt, Rakoczy, & Tomasello, 2011; Smetana & Braeges, 1990). For instance, after observing an adult intentionally engaging in a novel action (e.g., using one object to push another object across the table), 3-year-olds protest when a puppet engages in a different action with the same material result (Schmidt, Butler, Heinz, & Tomasello, 2016; Schmidt et al., 2011). These protests occur even when an adult does not express a rule or use pedagogical cues to demonstrate an action.

Children’s evaluations of actions are based on qualitatively different considerations about issues such as welfare, rights, traditions, and social coordination (Killen & Smetana, 2015; Turiel, 1983; Turiel, 2015a; Turiel & Dahl, *in press*). These considerations are reflected in the justifications for their judgments (e.g., references to welfare), in their judgments about the scope and changeability of rules (e.g., whether adults can change a given rule), and in the conditions under which they protest rule

violations (e.g., whether the transgressor is a member of a particular group). Preschoolers' abilities to draw conceptual distinctions between different types of norms provides one reason for expecting that preschoolers would treat instrumental and prudential norms, but not moral norms, as hypothetical imperatives.

Instrumental norms

Instrumental norms, specifying how to accomplish a practical task, pervade the lives of adults and children. People repeatedly encounter such explicit norms, be it when they read the instructions for how to assemble a piece of furniture or when they read an article on how to make New York-style bagels.

Despite the prevalence of instrumental norms, little research has investigated how children view them. To our knowledge, the most relevant studies are those in which instrumental norm violations have been used as a warm-up task in several studies of preschoolers' third-party protests (Rakoczy et al., 2008; Schmidt, Rakoczy, & Tomasello, 2012; Schmidt et al., 2011). Schmidt et al. (2012) reported that when 3-year-olds witnessed a puppet engage in an instrumental violation—for instance, incorrectly operating a music box so that no music played—children protested in approximately half of the trials. Still, these studies do not reveal whether children negatively evaluate these instrumental violations because they assume that the puppet tries to attain the relevant practical goal (e.g., playing music) or they negatively evaluate such violations without consideration of the agent's goal.

Prudential norms

Preschoolers also negatively evaluate prudential violations such as touching a hot plate and running down a staircase and falling (Dahl & Kim, 2014; Tisak, 1993; Tisak & Turiel, 1984). Children typically justify judgments about prudential violations with references to the consequences to the transgressor and view prudential evaluations as less contingent on existing rules than evaluations of conventional (e.g., dress code) violations. These latter findings suggest that even at this age prudential evaluations are not merely based on existing rules but also are based on considerations of the direct consequences of actions (Dahl & Kim, 2014; Tisak & Turiel, 1984). However, as with the studies of instrumental violations, these studies do not tell us whether children merely think that the prudential violations are wrong because they assume that the agents are concerned with their own welfare.

Despite the lack of research on the distinction between hypothetical and categorical norms, there are reasons for expecting that adults treat at least some prudential norms as hypothetical. Indeed, Kant originally proposed that imperatives that pertained to the promotion of one's own happiness (which he called prudential) were hypothetical, applicable only insofar as an agent wanted to be happy (Kant, 1785/1991). Moreover, over the course of childhood and adolescence, individuals come to view many prudential issues as matters of personal choice (Nucci, Guerra, & Lee, 1991; Nucci, Killen, & Smetana, 1996). Thus, we expected that adults would view at least some prudential norms as hypothetical.

Moral norms

Preschoolers also negatively evaluate moral violations involving harming others or violating property rights (Dahl & Kim, 2014; Nucci & Weber, 1995; Schmidt et al., 2012; Smetana & Braeges, 1990; Vaish, Missana, & Tomasello, 2011). By early in the fourth year of life, children indicate that prohibitions against such moral violations are generalizable and less dependent on existing rules than prohibitions against conventional violations (Schmidt et al., 2012; Smetana & Braeges, 1990). Both 3- and 4-year-olds justify judgments about moral violations by reference to intrinsic consequences to the victim (Dahl & Kim, 2014; Nucci & Weber, 1995). However, these studies did not determine whether children view harming others as wrong only because they assume that the agent cares about others' well-being or whether they consider moral norms to apply regardless of the goal of the agent. One study found that preschoolers did not view harming others as acceptable even when the agent was described as having mean intentions (Zelazo, Helwig, & Lau, 1996), giving some indication that preschoolers may view moral norms as applicable regardless of whether the protagonist has the relevant goal of protecting others' welfare (i.e., categorical).

The present research

In Study 1, we presented preschoolers and adults with situations in which a protagonist violated an instrumental, prudential, or moral harm norm. We also manipulated whether the protagonists had the relevant practical goal (instrumental situations), were concerned with their own welfare (prudential situations), or were concerned with the welfare of others (moral situations).

The first question of the study was (1) whether children would view instrumental and prudential norms as hypothetical and view moral norms as categorical. That is, would children think that it was permissible for the protagonist to violate an instrumental or prudential norm if the protagonist did not have the relevant goal but was not permissible to violate a moral norm regardless of the protagonist's goal? Based on past philosophical treatments of moral norms as categorical, along with children's concerns with others' well-being, we predicted that most children would treat moral norms as categorical. In contrast, past research did not yield a basis for hypothesizing that children would view instrumental or prudential norms as hypothetical; on the contrary, it may be that children understand these norms as categorical given the proposition that they see norms in general as going beyond individual goals and as based on collective intentions (Schmidt & Rakoczy, *in press*; Schmidt & Tomasello, 2012).

The second question was (2) whether children would distinguish instrumental norms from prudential and moral norms in the *justifications* of their judgments, in their ratings of *severity* of the norm violation, and in their evaluative labeling of the action. Specifically, we expected that (2a) judgments that the instrumental violations were wrong would be justified by reference to the protagonist's goal and the material outcome of the action. This prediction was based on past findings that young children provide qualitatively different justifications for judgments about moral, prudential, and other events (e.g., Dahl & Kim, 2014; Davidson, Turiel, & Black, 1983; Lagattuta, Nucci, & Bosacki, 2010; Nucci & Weber, 1995). Second, we hypothesized that (2b) children would rate instrumental violations as less serious than prudential and moral violations because instrumental violations do not have direct consequences for the well-being of individuals.

The final question was whether children would use different evaluative labels for instrumental violations than for other violations. Because violations of instrumental norms lack direct negative consequences to the agent (unlike prudential violations) or to someone else (unlike moral violations), we suspected that instrumental violations may be evaluated in different terms than those used in past research such as okay/not okay, good/bad, and permissible/wrong. To simplify the task for preschoolers, we used a forced-choice format in which participants were asked to indicate whether the action was "silly" or "mean." Our past experience suggested that these terms would be familiar to most child participants. We expected that, when asked whether the target actions were mean or silly, (2c) children would label instrumental violations as "silly" but label moral violations as "mean" (and would pick randomly between silly and mean for prudential violations). This prediction was based on the expectation that children would view instrumental violations as irrational (silly) but not as rooted in malevolent intentions (mean).

We also hypothesized that adult participants would distinguish among instrumental, prudential, and moral events along the above dimensions by (1) judging instrumental and prudential violations as wrong only when the protagonist had the relevant goal but judging moral violations as wrong regardless of the protagonist's goal, (2a) giving different justifications for judgments about instrumental, prudential, and moral violations, (2b) rating instrumental violations as less serious than prudential and moral violations, and (2c) labeling instrumental violations, but not prudential or moral violations, as silly rather than mean.

Study 1

Method

Participants

The participants in the study were 69 preschool-age children (40 female and 29 male; $M_{\text{age}} = 4.5$ years, range = 3.2–5.8) and 30 undergraduate students (17 female and 13 male; $M_{\text{age}} = 19.9$ years,

Please cite this article in press as: Dahl, A., & Schmidt, M. F. H. Preschoolers, but not adults, treat instrumental norms as categorical imperatives. *Journal of Experimental Child Psychology* (2017), <http://dx.doi.org/10.1016/j.jecp.2017.07.015>

range = 18–26). The children were recruited from seven preschools in a coastal region of the Western United States. Parents of the children provided written consent before the children were invited to participate. Adult participants were recruited from a research participant pool at a public research university in the Western United States and received course credit for their participation. Adult participants provided written consent before participating. The consent forms described the study purpose in broad terms as well as the confidentiality of participant responses.

Materials and procedures

Child interviews were conducted at preschools in a separate space and with a preschool teacher nearby. Adult interviews were conducted in person in a research laboratory. A trained research assistant interviewed child and adult participants. Interviews were videotaped. The research assistant told child and adult participants that she would describe some social situations and ask a few questions about each situation. The interviewer then proceeded to describe a series of six situations. Each situation involved a protagonist who either did or did not have a goal that was either an instrumental goal (e.g., getting a nail into a piece of wood), a prudential goal (e.g., being happy), or a moral goal (e.g., making another person happy). Each participant received a goal variant and a no-goal variant of each of the three situation types. The order of goal condition (goal and no goal) and situation type (instrumental, prudential, and moral) was counterbalanced.

In this initial study, we designed highly simplified situations for children to ensure that they would be able to understand the cause–effect relations in the situations. If children could not easily understand these cause–effect relations it would be difficult to interpret the findings. However, pilot interviews suggested that adults found the simple child scenarios to be somewhat comical due to their simplicity. Therefore, we were concerned that adults' responses to the child situations would not be valid indexes of their conceptions of hypothetical and categorical norms or of instrumental, prudential, and moral norms. Because so little was known about how adults think about these distinctions, we decided to create slightly more complex and realistic scenarios for adult participants in Study 1. We subsequently conducted a second study in which adults responded to the scenarios used by children in Study 1 (see below). Importantly, all child and adult scenarios were created in accordance with the same definitions of hypothetical and categorical norms and of instrumental, prudential, and moral events. In all situations, the consequences of the target action (instrumental outcome, harm to protagonist, or harm to other) were portrayed as certain. Moreover, the omitted action was always described as a necessary but not sufficient condition for successful action. For instance, participants were told that the nail would not go into the wood if the protagonist used a sponge, but they were not told that the nail would definitely go into the wood if the protagonist used a hammer. Descriptions of the situations used are listed in Table 1.

For child participants, situations were illustrated using two 5 × 6-in. color illustration cards. For instance, the situation involving a person hitting a nail with a sponge (instrumental situation used for child participants) went as follows:

[Experimenter points to first picture:] This is John. He has a sponge, a nail, a hammer, and a piece of wood. John [wants (goal)/doesn't want (no goal)] to hit the nail into the wood.

[Experimenter points to second picture:] When John hits the nail with a sponge, the nail won't go into the wood. You see how the nail doesn't go into the wood when John hits it with the sponge? And remember, John really [wants (goal)/doesn't want (no goal)] to hit the nail into the wood.

For each situation, participants were first asked whether the protagonist had the relevant goal, for example, *hit the nail into the wood* (goal attribution, included as a manipulation check). If children answered the goal attribution question incorrectly, the experimenter reminded them of the protagonist's goal or lack of goal. Next, the interviewer asked participants (1) whether it was okay for the protagonist to engage in the action (*permissibility judgment*), (2a) why the action was okay or not okay (*justification*), (2b, asked only if participants said the action was not okay) how bad the action was (not bad, a little bad, or really, really bad; *severity rating*), and (2c) whether the action was mean or silly (*mean vs. silly judgment*).

Table 1

Overview of situations presented to participants.

Type	Action	Outcome	Agent wants/does not want ...
<i>Child participants (Study 1) and adult participants (Study 2)</i>			
Instrumental	Hitting nail with sponge instead of hammer	Nail won't go into the wood	to get the nail into the wood
	Using a short rake instead of a long rake	Won't get leaves off the roof	to clear the leaves off the roof
Prudential	Touching hot plate	Agent gets sad	to be happy
Moral	Running down stairs and falling	Agent gets sad	to be happy
	Shoving someone	Victim gets sad	victim to be happy
	Hitting someone with a toy	Victim gets sad	victim to be happy
<i>Adult participants (Study 1)</i>			
Instrumental	Watching TV instead of training for a race	Agent doesn't do well in race	to do well in the race
	Leaving vacuum cleaner outside instead of bringing it to apartment	Floor remains dirty	floor to be clean
Prudential	Eating unknown mushroom in the forest	Agent gets stomachache	to feel good
	Biking without a helmet	Agent falls and hits head	to avoid injuries
Moral	Hitting someone in the face	Victim is in pain	victim to be happy
	Pulling someone's wheelchair away in class	Victim falls and breaks tailbone	victim to be happy

Note. See online supplementary materials for complete situation descriptions.

Coding and data analysis

Justifications were coded using the categories listed in Table 2. Coding categories for justifications were developed from past research on young children's moral and social reasoning and from a review of a subset of the data (Dahl & Kim, 2014; Nucci & Weber, 1995; Turiel, 2008). Agreement for justification coding was calculated for 30% of the data, Cohen's $\kappa = .82$. All dependent variables were dichotomous; severity ratings were converted to "really, really bad" (=1) and "other" (=0) because the rating data were highly negatively skewed (Pearson's moment coefficient of skewness = $-.96$). We chose to distinguish between "really, really bad" and "other" because the severity question was asked only to children who had already stated that there was something wrong about the protagonist's action. Hence, the main purpose of the severity ratings was to see whether children distinguished between very severe and less severe violations. Each justification type was analyzed separately by predicting the presence (=1) versus absence (=0) of the given type. Data were analyzed using generalized linear mixed models with binomial error distribution and logistic link function fitted with the lme package in R 3.2.5. Models included child age (child data only), situation type, goal condition, and situation by goal interaction terms unless otherwise noted. When no significant situation by goal interaction was found, we fitted a model including only main effects. Hypotheses were

Table 2

Justification coding categories.

Code	Definition	Example
Consequence to agent	Reference to how action affects agent's welfare	"He'll be sad"
Consequence to others	Reference to how action affects others' welfare	"His friend will be sad"
Evaluation:	Evaluative statement about treatment of others	"That's mean," "Hitting others is wrong"
Interpersonal		
Evaluation: Other	Other evaluative statement	"That's just common sense," "That's stupid"
Failed action	Statement that action failed or was insufficient	"It won't go in," "It can't reach"
Goal	Reference to what the agent wanted	"He wanted to make the other person happy"
Other justifications	Explanations not fitting into above categories	"It'll get messy"

tested using likelihood ratio tests (D = change in $-2 \log$ [model likelihood]) and Wald tests for individual regression coefficients (Hox, 2010).

Results

Child responses

Attribution of goal. Children correctly indicated the protagonist's goal state in most situations. Children said the protagonist had the relevant goal in 85% of situations in the goal condition but in only 18% in the no-goal condition, $D(1) = 202.00$, $p < .001$. There was no significant effect of child age, $D(1) = 2.56$, $p = .11$, or domain, $D(2) = 0.11$, $p = .95$, nor was there a significant domain by goal interaction, $D(2) = 2.69$, $p = .26$. Preliminary analyses of subsequent responses yielded the same conclusions when including all data and when including only data from the cases in which children correctly attributed agent goal. Therefore, we included data from all cases in the analyses reported below.

Permissibility judgments. There was no significant interaction between domain and goal condition, $D(2) = 1.54$, $p = .46$ (Fig. 1). Because children rarely viewed the moral and prudential actions as permissible, the model including the domain by goal interaction encountered convergence problems (as evidenced, e.g., by very large standard errors). Therefore, we fitted separate models for each situation type testing for the effect of the goal manipulation. There was no significant effect of protagonist goal for instrumental situations, $D(1) = 0.39$, $p = .53$, prudential situations, $D(1) = 0.24$, $p = .63$, or moral situations, $D(1) = 0.34$, $p = .56$. Across goal conditions, children were more likely to view the instrumental violations (31%) as permissible than to view the moral (4%) and prudential (9%) violations as permissible, $D(2) = 54.09$, $p < .001$. There were no significant effects of protagonist goal, $D(1) = 0.03$, $p = .87$, or child age, $D(1) = 0.33$, $p = .56$.

Justifications for "not okay" judgments. Table 3 shows the proportions of participants who used the different justification categories as a function of situation type and goal. Analyses of "okay" judgments

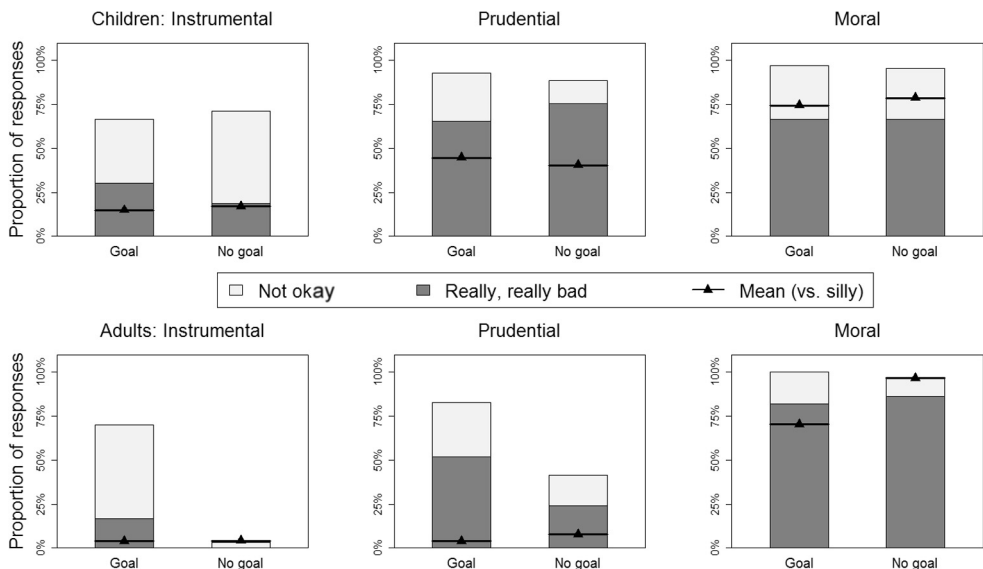


Fig. 1. Evaluations of actions in Study 1. The heights of the bars/lines show the proportions of participants who said the action was "not okay" (light gray), "really, really bad" (dark gray), and "mean" (vs. silly; black line with triangle) as a function of participant group, situation type, and goal condition. The severity (badness) question was asked only when participants said the action was "not okay."

Table 3

Study 1: Justifications for “not okay” judgments.

Participants	Situation	Goal	Consequence to agent	Justification category					
				Consequence to others	Evaluation: Interpersonal	Evaluation: Other	Failed action	Goal	Other
Children	Instrumental	Goal	.17	.00	.02	.09	.46	.00	.22
		No goal	.06	.00	.04	.10	.51	.00	.20
	Prudential	Goal	.72	.02	.00	.05	.00	.00	.20
		No goal	.82	.00	.00	.03	.00	.02	.10
	Moral	Goal	.03	.42	.30	.01	.00	.03	.15
		No goal	.05	.47	.29	.02	.02	.02	.11
Adults	Instrumental	Goal	.05	.00	.00	.29	.05	.76	.00
		No goal	–	–	–	–	–	–	–
	Prudential	Goal	.50	.00	.04	.21	.00	.25	.08
		No goal	.58	.00	.00	.42	.00	.08	.00
	Moral	Goal	.00	.48	.28	.22	.00	.27	.00
		No goal	.04	.32	.61	.25	.00	.04	.00

Note. Cells show proportions of participants who said action was “not okay” who provided the each justification type.

are reported in the online supplementary material because justifications for okay judgments were less central to the study purpose and were too infrequent in moral and prudential situations to allow for significance testing (2–8 cases per cell). Analyses of justifications did not include situation by goal interaction terms because no such interactions were expected for justifications of judgments. (Visual inspection of Table 3 gave no reason to question this assumption.) Because children rarely referenced agent goal when explaining why the action was not okay (1% of cases), these justifications were not analyzed.

For *consequences to agent*, there was a significant effect of situation type, $D(2) = 200.54$, $p < .001$. Such justifications were more common in response to prudential situations (77%) than in response to instrumental (12%) and moral (4%) situations. There were no significant effects of goal, $D(1) = 0.16$, $p = .69$, or child age, $D(1) = 1.46$, $p = .23$.

For *consequences to others*, there was a significant effect of situation type, $D(2) = 142.55$, $p < .001$, because such justifications were more common in response to moral situations (44%) than in response to instrumental (0%) and prudential (1%) situations. *Consequences to others* justifications were also more common among older children, $D(1) = 8.96$, $p = .003$. There was no significant effect of goal, $D(1) = 0.14$, $p = .71$.

Interpersonal evaluations (e.g. “that’s not nice”) were more common in moral situations (29%) than in instrumental (3%) and prudential (0%) situations, $D(2) = 77.98$, $p < .001$. *Interpersonal evaluations* were also more common among younger children than among older children, $D(1) = 5.09$, $p = .024$. There was no significant effect of goal condition, $D(1) = 0.00$, $p = .99$, on the use of *interpersonal evaluations*.

There was also a significant effect of situation type on the use of *other evaluations* (e.g. “that’s stupid”), $D(2) = 7.81$, $p = .020$. These were used by 9% of children saying the instrumental violations were wrong, 4% saying the prudential violations were wrong, and 2% saying the moral violations were wrong. There were no significant effects of the goal manipulation, $D(1) = 0.01$, $p = .94$, or child age, $D(1) = 1.77$, $p = .18$.

For *failed action* statements, there was a significant effect of situation type, $D(1) = 135.50$, $p < .001$, because these statements were more commonly used to explain judgments about instrumental situations (48%) than about moral (1%) and prudential (0%) situations. There was no significant effect of goal, $D(1) = 0.73$, $p = .39$, or child age, $D(1) = 1.12$, $p = .29$.

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For *other* justifications, there were no significant effects of situation, $D(2) = 2.90$, $p = .23$, goal, $D(1) = 2.72$, $p = .10$, or child age, $D(1) = 0.56$, $p = .45$. Justifications classified as *other* were used in 16% of situations.

Severity ratings. As noted, severity ratings were elicited only for cases in which participants said the protagonist's action was not permissible. There was a significant interaction between domain and goal in a model predicting whether participants gave the most severe rating ("really, really bad"), $D(2) = 10.38$, $p = .006$ (Fig. 1). For instrumental norms, participants were significantly more likely to give the most severe rating when the agent had the relevant goal (46% vs. 26% for no goal), $D(1) = 5.03$, $p = .025$. In contrast, for prudential norms, children were more likely to give the most severe rating when the protagonist had no goal of being happy (85% vs. 70% in goal condition), $D(1) = 4.89$, $p = .027$. The goal effect was not significant for moral events (69% for goal vs. 70% for no goal), $D(1) = 0.04$, $p = .84$. We note that the main effect of situation type was significant for both the goal condition, $D(2) = 9.44$, $p = .009$, and the no-goal condition, $D(2) = 46.00$, $p < .001$, because children were more likely to give the most severe rating to prudential and moral transgressions than to instrumental transgressions. Overall, there was no significant effect of child age on the tendency to give the most severe rating, $D(1) = 0.92$, $p = .34$.

Mean versus silly. When asked whether the protagonist's action was mean or silly, participants were more likely to describe the instrumental violations as silly (84%) than to describe the prudential (55%) and moral (19%) events as silly, $D(2) = 98.20$, $p < .001$ (Fig. 1). (Moral and prudential events also differed significantly from each other, Wald test, $p < .001$.) In contrast, there was no significant main effects of goal, $D(1) = 0.01$, $p = .91$, or child age, $D(1) = 0.97$, $p = .33$. There was also no significant goal by domain interaction, $D(2) = 1.06$, $p = .59$. (In 4% of cases, children did not indicate whether they thought that the action was "mean" or "silly." These data were not included in the above analyses of mean vs. silly responses.)

Adult responses

Attribution of goal. Adults nearly always (99% of cases) responded correctly to the question of whether the agent had the relevant goal.

Permissibility judgments. For permissibility judgments, the interaction between situation type and goal in predicting was not significant, $D(2) = 4.91$, $p = .09$ (Fig. 1). There was a significant main effect of situation type, $D(2) = 78.61$, $p < .001$; participants were more likely to say that the instrumental actions were okay (63%) than to say that the prudential (38%) and moral (2%) actions were okay. However, because there were very few cases in which participants said the moral event was permissible (0% for goal vs. 3% for no goal), the models using data from all three situations had problems converging (as evidenced, e.g., by very large standard errors for parameter estimates). Therefore, we proceeded to fit separate models testing the goal effect separately for instrumental and prudential situations. Participants were significantly more likely to say that the protagonist's actions were permissible when the agent did not have the relevant goal in instrumental situations (97% for no goal vs. 30% for goal), $D(1) = 38.85$, $p < .001$, and prudential situations (59% for no goal vs. 17% for goal), $D(1) = 12.22$, $p < .001$.

Justifications for "not okay" judgments. As in the analyses of children's justifications, the models for adults' use of justifications did not include a situation by goal interaction term. Analyses of justifications of "okay" judgments are reported in the online supplementary material. Because less than 5% of actions in the instrumental no-goal situations were judged as not okay, justifications for these judgments were not analyzed. Therefore, we did not test for situation by goal interactions. Failed action justifications were used too rarely to be analyzed (<2% of cases). Table 3 shows the proportions of participants providing the different types of justifications.

Consequences to agent justifications depended significantly on situation type, $D(2) = 43.41$, $p < .001$, being more common in prudential situations (53%) than in instrumental (5%) and moral (2%) situations. There was no significant effect of goal, $D(1) = 0.78$, $p = .38$.

References to *consequences to others* were more common in response to moral situations (41%) than in response to instrumental (0%) and prudential (0%) situations, $D(2) = 43.98$, $p < .001$. There was no significant effect of goal, $D(1) = 2.92$, $p = .09$.

Interpersonal evaluations were almost never used in response to instrumental (0%) and prudential (3%) situations, but they were common in response to moral situations (43%), $D(2) = 27.67$, $p < .001$. There was also a significant effect of the goal manipulation, $D(1) = 5.75$, $p = .016$, mainly because participants were more likely to use *interpersonal evaluation* justifications in the moral no-goal situations (61%) than in the moral goal situations (27%). The use of *other evaluations* did not depend significantly on situation type, $D(2) = 1.28$, $p = .53$, or goal, $D(1) = 1.32$, $p = .25$.

Goal references were more common in the instrumental situations (76%) than in the moral (16%) and prudential (19%) situations, $D(2) = 17.72$, $p < .001$. They were also more common for goal situations (40%) than for no-goal situations (5%), $D(1) = 9.12$, $p < .001$.

For *other* justifications, there were no significant effects of situation type, $D(2) = 2.90$, $p = .23$, or goal, $D(1) = 2.72$, $p = .10$. Overall, children used *other* justifications in 16% of cases. Justifications classified as *other* comprised a heterogeneous group of considerations, such as material consequences and the lack of authority permission, each of which was encountered too infrequently during the development of the coding scheme to warrant inclusion as a separate category.

Severity ratings. Because so few participants said the instrumental action was not okay in the no-goal condition, we analyzed only situation effects on *badness* judgments for the goal condition. There was a significant effect of situation type, $D(2) = 14.37$, $p < .001$ (Fig. 1), because participants were more likely to use the most severe rating (“really, really bad”) for moral (75%) and prudential (55%) situations than for instrumental situations (20%).

Silly versus mean. There was no significant interaction between situation type and goal for participants’ labeling of the action as silly (rather than mean), $D(2) = 3.11$, $p = .07$ (Fig. 1). There was a main effect of situation type because participants were more likely to say that the action was silly in the instrumental (96%) and prudential (94%) situations than in the moral situations (15%), $D(2) = 127.17$, $p < .001$. There was also a significant effect of goal; participants were more likely to describe the action as silly when the protagonist had the relevant goal (71%) than when the protagonist did not (61%), $D(1) = 6.71$, $p = .01$. (In 8% of cases, participants did not indicate whether they thought that the action was mean or silly. These data were not included in the analyses of mean vs. silly judgments.)

Discussion

As expected, adults in the current study exhibited a distinction between hypothetical norms, which apply only if agents have the relevant goal, and categorical norms, which apply regardless of agent goals. Adult participants typically treated instrumental and prudential norms in Study 1 as hypothetical. They viewed instrumental and prudential violations as permissible when the agent lacked the relevant goal and as not permissible when the agent did have the relevant goal. In contrast, adults appeared to view moral norms as categorical. Adults almost never viewed moral violations as permissible regardless of whether the agent had the goal of making the other person happy.

In contrast, 3- to 5-year-old children showed no evidence of viewing instrumental or prudential norms as hypothetical. Children were equally likely to view an instrumental or prudential violation as wrong when the protagonist had the relevant goal as when the protagonist did not have the goal. Similarly, children did not appear to take the agent’s goal into account in their justifications for their judgments or in their mean versus silly judgments. In contrast, they showed some sensitivity to the agent’s goal in their severity judgments, viewing instrumental violations as worse when the protagonist had the goal and viewing prudential violations as worse when the protagonist did not have the goal (of being happy). Children’s lack of sensitivity to agent goal in their judgments and justifications was not due to a lack of knowledge of the protagonist’s goal; in most cases (85%), children correctly indicated whether the protagonist did or did not have the relevant goal.

One possible explanation for the difference between adult and child responses in Study 1 was that adults and children responded to different instrumental, prudential, and moral situations. Although

the situations were created based on the same definitions, the adult situations in this initial study were somewhat more complex (see Study 1 Method). For instance, although all prudential situations involved actual harm to the protagonist, the relation between the actions and the consequences may have been perceived as more certain in the child prudential situations (running down staircase and touching hot stove) than in the adult prudential situations (eating mushroom and biking without helmet) in Study 1. The purpose of Study 2 was to see whether adults tended to view instrumental and prudential norms as hypothetical and to view moral norms as categorical also in response to the situations presented to children.

Study 2

Method

Participants

A total of 30 undergraduate students participated (16 female and 14 male; $M_{\text{age}} = 20.0$ years, range = 18–25). Recruitment and consent procedures were identical to those for adult participants in Study 1.

Materials and procedures

Interview materials and procedures were identical to those used for children in Study 1 except that the pictures were not deemed necessary for adult interviews and, therefore, were not used. Because the focus of Study 2 was on the judgment patterns, only responses to the goal attribution, permissibility, severity, and mean versus silly questions were analyzed.

Results

Attribution of goal

Participants correctly attributed the protagonist's goal in 99.4% of situations.

Permissibility judgments

There was a significant interaction between goal and situation type, $D(2) = 7.87, p = .02$. For instrumental situations, participants were more than twice as likely to say that the action was permissible when the agent did not have the relevant goal (77%) than when the agent did have the relevant goal (33%), $D(1) = 11.88, p < .001$. In contrast, there was no significant effect of the goal manipulation for the prudential situations (37% okay for no goal, 39% for goal), $D(1) = 0.06, p = .81$, or moral situations (0% for no goal, 0% for goal; model could not be fitted because the dependent variable was constant). Overall, participants were more likely to say that the action was permissible in the instrumental (55%) and prudential (38%) situations than in the moral situations (0%), $D(1) = 60.05, p < .001$.

Severity ratings

Among participants who said the action was not okay, the most severe rating was more common in response to the moral situation (85%) than in response to the prudential (62%) and instrumental (15%) situations, $D(2) = 37.93, p < .001$. There was no significant effect of goal, $D(1) = 1.55, p = .21$, and no significant interaction between goal and situation type for whether participants said the action was "really, really bad," $D(2) = 4.50, p = .11$.

Mean versus silly judgments

Fully 95% of participants said the instrumental violations were "silly" rather than "mean," whereas 85% did so for prudential violations and only 7% for moral violations, $D(2) = 142.70, p < .001$. There was no significant effect of the goal manipulation, $D(1) = 3.23, p = .07$, but we note that the nonsignificant trend was consistent with the finding in Study 1 (66% silly for goal, 59% silly for no goal). As in Study 1, there was no significant interaction between situation and goal, $D(2) = 0.05, p = .97$.

Discussion

For instrumental and moral situations, the findings of Study 2 were consistent with adult responses in Study 1; most adults said the instrumental violations were permissible if the agent lacked the relevant goal but not if the agent had the relevant goal. In contrast, all adults in Study 2 said the moral violations were wrong regardless of whether the protagonist had the relevant goal. Furthermore, adults viewed moral violations as more severe than instrumental violations and were more likely to label them as “mean” rather than as “silly.”

Adults’ responses to prudential situations in Study 2 differed somewhat from adults’ responses to prudential situations in Study 1. Most adults said the prudential violations in Study 2 were wrong regardless of the agent’s goals, whereas most adults said the prudential violations in Study 1 were permissible if the agent did not have the relevant goal. A possible explanation for this difference is that the harm incurred in the prudential situations used in Study 2 (running down staircase and touching hot stove) was perceived as a more direct consequence of the actions than the harm in the prudential situations encountered by adults in Study 1 (eating mushroom and biking without helmet). Yet, in all prudential situations, it was stated that the protagonist did get hurt. The conditions under which prudential norms are viewed as hypothetical rather than categorical is a topic for future research. We note, however, that there were also consistencies between Study 1 and Study 2 in how adults viewed prudential situations. In both studies, adults tended to call prudential violations “silly” rather than “mean.” In addition, in both studies, about half of participants rated prudential violations as “really, really bad,” which was in between the frequencies of “really bad” ratings for instrumental and moral violations.

General discussion

Adults view some norms—here termed *hypothetical* norms—as applicable only when agents have specific goals (Kant, 1785/1991; Kohlberg, 1971; Turiel, 1983). For instance, instructions for how to assemble a cabinet or get in shape for a marathon apply only if a person wants to assemble the cabinet or run a marathon. In contrast, other norms—here termed *categorical*—transcend the preferences of individuals and apply regardless of agents’ goals. In both studies, adults tended to treat moral norms as categorical and instrumental norms as hypothetical. Findings were mixed regarding prudential norms; adults typically treated prudential norms encountered in Study 1 as hypothetical and prudential norms encountered in Study 2 as categorical. Future research is needed to determine when adults treat prudential norms as hypothetical rather than categorical. In contrast, there was no evidence that preschoolers viewed instrumental, prudential, or moral norms as hypothetical; children typically judged violations of these three types of norms as wrong regardless of agent goal.

Importantly, preschoolers did, however, distinguish instrumental norms from prudential and moral norms along several dimensions. The justification data provided perhaps the clearest evidence that children drew categorical distinctions among instrumental, prudential, and moral norms. In addition, the justification data shed novel light on how children reason about instrumental norm violations. When explaining why instrumental violations were wrong, participants commonly described the protagonist’s action as a failed goal, for instance, saying that the nail would not go into the wood. In contrast, participants typically referred to consequences to the protagonist (e.g., “he’ll get hurt”) when justifying why prudential violations were wrong. Finally, judgments that the moral violations were wrong were mainly justified by references to the consequences to the victim (e.g., “his friend will be sad”) or interpersonal evaluative statements (“that’s not nice”).

Moreover, children were more likely to say instrumental violations were permissible (approximately one third of cases) than to say prudential or moral violations were permissible (less than 10% of cases). Among children who said the action was not permissible, participants were more likely to give the most severe rating for moral and prudential violations than for instrumental violations. And whereas children tended to label instrumental violations as “silly,” they tended to label moral violations as “mean” (with labeling of prudential violations falling in between). Children’s distinct

conceptions of instrumental norms are particularly striking when considering that many of the children may have had limited experiences with the instrumental norms used in this research.

In short, preschoolers recognized that the instrumental norms pertained to the accomplishment of practical goals, yet they believed agents should follow these norms irrespective of whether they had the relevant practical goal. The findings suggest that children's protests against instrumental violations, reported in other studies, reflect children's view that some instrumental norms apply categorically (Rakoczy et al., 2008; Schmidt et al., 2011; Schmidt et al., 2012). This finding may represent an instance of young children's "promiscuous normativity" (Schmidt, Butler, et al., 2016)—the tendency to make normative evaluations about actions that adults view as matters of personal choice. This tendency may be based on young children's motivation to entertain collective intentional states ("how we do things"), thereby neglecting individual goals (Schmidt & Rakoczy, in press; Schmidt & Tomasello, 2012). However, children's normative evaluations are clearly sensitive to situational features because they view many issues as matters of personal choice and accept variability between individuals and groups (e.g., Nucci, 1981; Nucci & Weber, 1995; Schmidt et al., 2012). Thus, for children as for adults, situations appear to vary in the degree to which they *afford* the inference or application of norms (Gibson, 1979).

The current research does not indicate why some instrumental tasks lead preschoolers to view the corresponding instrumental norms as categorical. It is possible that children's focus on the typicality of the goal and the relevant means drove their interpretations (Schmidt, Rakoczy, Mietzsch, & Tomasello, 2016). Relatedly, some have suggested that young children sometimes believe agents are unable to engage in unusual or transgressive actions (Chernyak, Kushnir, Sullivan, & Wang, 2013; Shtulman & Phillips, 2017) and, thus, may have had difficulties in viewing the situations from the perspective of the transgressor (Perner & Roessler, 2012). To test these possibilities, it would be useful to present children with situations in which two opposing instrumental actions are equally common. Under such circumstances, we would expect that children would accept either action. For instance, children seeing a person with a nail halfway into the wood presumably would accept both the act of hammering the nail *into* the wood and that of using the hammer to pull the nail *out of* the wood. In both cases, the agent would be pursuing a common goal in accordance with an instrumental norm for how to use a hammer.

We note that there was some variability in responses to each situation type among both children and adults. For instance, in all three situation types, children occasionally provided justifications here classified as *other*. This category included references to material consequences of actions or lack of parental permission. Although the different types of *other* justifications were deemed too infrequent to be analyzed separately in the current research, these justifications deserve consideration in future research. Moreover, in most situations, some participants in both age groups judged the situations differently from the majority, for instance, saying that the prudential violations were wrong even though the agent did not have the relevant goal. In sum, it would be valuable to conduct similar studies with larger sample sizes, and more situations per category, to examine the nature and sources of intra- and interindividual differences in reasoning about instrumental, prudential, and moral violations.

A key developmental question is how children begin to consider whether agents have the relevant goals when evaluating instrumental and prudential events. As children grow older, they increasingly view prudential issues as matters over which children themselves, rather than their parents, should decide (Nucci et al., 1996). It is possible that similar transitions take place with regard to instrumental norms and that experiences with decisions about how and whether to engage in practical tasks lead children to view instrumental norms as applicable only when they have the relevant goal.

It may be surprising that more than two thirds of adults viewed the instrumental violation as "not okay" when the agent had the relevant goal. We believe it is likely that participants, if allowed to choose their own terms, would have preferred to describe the instrumental violation as "silly" or "irrational" rather than "not okay." Their overwhelming preference (96%) for describing instrumental violations as "silly" rather than "mean," as well as participants' frequent references to the agent's goal, supports this hypothesis. Still, one limitation of the current research is that participants were forced to choose between a few preselected evaluative labels (e.g., okay vs. not okay, silly vs. mean). The use of open-ended assessments of children's and adults' evaluative labels is an avenue for future research.

It will also be important to complement the assessment of responses to hypothetical situations with additional research on children's spontaneous reactions to observed violations (Schmidt, Butler, et al., 2016; Schmidt et al., 2011). This will help to address the concern that children in the current research were merely expressing personal preferences or causal knowledge when making judgments about hypothetical situations (Chernyak et al., 2013; Shtulman & Phillips, 2017).

Another limitation of this research is the study population. The two studies sampled from limited age ranges and from child and adult populations in the western United States. Because we did not sample older children or adolescents, this research does not reveal the developmental path from treating instrumental and prudential norms as categorical norms to treating them as hypothetical norms. A larger sample would also have allowed us to investigate individual differences in norm conceptions. Moreover, there will undoubtedly be variability across communities in the instrumental norms endorsed insofar as communities differ in the kinds of practices and goals they pursue (see Rogoff, 2003). A third limitation is the reliance on a relatively small set of instrumental norms. It will be important to investigate children of different ages using a wider range of instrumental events varying in familiarity and other features likely to matter for children's application and understanding of instrumental norms (Davidson et al., 1983).

The developing distinctions between hypothetical and categorical norms and children's learning, understanding, and application of instrumental norms are promising areas for future inquiry. In pursuing this work, we believe it will be important to distinguish between the formal properties of norms (e.g., hypothetical vs. categorical), the content of norms (e.g., instrumental, prudential, and moral), and the connections between features of situations and the norms endorsed by participants. For instance, individuals inevitably face situations in which both instrumental (hypothetical) and noninstrumental (and categorical) evaluations apply. When playing games, game conventions may at times apply hypothetically (if you want to play basketball, you must do as follows) and at other times categorically (you promised to play on our team, so you must follow the rules). Moreover, a given situation may simultaneously involve both hypothetical norms about how to achieve a social goal and categorical norms about how one ought to treat others. In his classic book *How to Win Friends and Influence People*, Carnegie (1936) wrote, "If you want others to like you [...], become genuinely interested in other people" (p. 62). Beyond such hypothetical recommendations, adults and children appear to think we have categorical obligations toward others regardless of whether we care about their well-being.

Acknowledgments

Audun Dahl was supported by grants from the National Institute of Child Health and Human Development (1R03HD077155-01) and the University of California, Santa Cruz (UCSC). Marco F. H. Schmidt was supported by a grant from the Elite Network of Bavaria, an initiative of the Bavarian State Ministry for Education, Science, and the Arts. We thank Gabriella F. Freda and research assistants at the UCSC Early Social Interaction Lab for assistance with data collection and coding.

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.jecp.2017.07.015>.

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Please cite this article in press as: Dahl, A., & Schmidt, M. F. H. Preschoolers, but not adults, treat instrumental norms as categorical imperatives. *Journal of Experimental Child Psychology* (2017), <http://dx.doi.org/10.1016/j.jecp.2017.07.015>

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