



ELSEVIER

Contents lists available at [ScienceDirect](http://www.sciencedirect.com)

Cognitive Development



Normativity and context in young children's pretend play

Emily Wyman*, Hannes Rakoczy, Michael Tomasello

Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany

ARTICLE INFO

Keywords:

Pretend play
Normativity
Social cognition

ABSTRACT

In two studies 3-year-olds' understanding of the context-specificity of normative rules was investigated through games of pretend play. In the first study, children protested against a character who joined a pretend game but treated the target object according to its real function. However, they did not protest when she performed the same action without having first joined the game. In the second study, children protested when the character mixed up an object's pretend identities between two different pretend games. However, they did not protest when she performed the same pretend action in its correct game context. Thus, the studies show that young children see the pretence–reality distinction, and the distinction between different pretence identities, as normative. More generally, the results of these studies demonstrate young children's ability to enforce normative rules in their pretence and to do so context-specifically.

© 2009 Elsevier Inc. All rights reserved.

When growing into their society, young children must come to understand that social practices have a cultural dimension to them, such that members of their group do things a certain way. Some activities, particularly those of a more conventional nature, have a *normative* quality—it is implicit within the group that they *ought* to be done that way. For instance, in some cultures people may greet each other with a handshake, whereas in other cultures this greeting may be considered inappropriate and three kisses on alternating cheeks might be the convention.

In investigating the development of children's moral judgment, [Piaget \(1932\)](#) examined children's ability to practice and theorize about conventional rules in their games. A central idea arising from his research was that before around age 10, children view conventional rules as akin to both moral rules and natural contingencies, that is, as unchangeable and as existing universally. Work in this tradition has, however, gone on to show that children distinguish well between moral and conventional

* Corresponding author at: Max Planck Institute for Evolutionary Anthropology, Department of Developmental and Comparative Psychology, Deutscher Platz 6, D-04103 Leipzig, Germany. Tel.: +49 341 3550 409; fax: +49 341 3550 444.

E-mail address: wyman@eva.mpg.de (E. Wyman).

norms. Children claim, for example, that while it might be acceptable for people to dress according to different conventions in different cultures, it is unacceptable to steal regardless of the cultural background (Nucci & Nucci, 1982; Turiel, 1978, 1983). Other work has similarly shown that children also distinguish between conventional rules such as ‘children cannot play in the snow without clothes on’, and natural contingencies like ‘children cannot turn into fish’ (Kalish, 1998) and, additionally, recognize that norms such as ‘Anne ought to work alone’ may serve to motivate and guide Anne’s behaviour (Kalish & Shiverick, 2004). Interestingly, young children are better able to reason from prescriptive or ‘deontic’ conditional norms such as ‘if Anne wants to play outside, she must wear her coat’, than descriptive conditionals of similar form, as in ‘when Anne plays outside, she always wears her coat’. Furthermore, this deontic understanding applies both to rules that are set by higher adult authority, as well as those that emerge more organically between children, for example in agreements to swap toys (Harris & Nunez, 1996; Harris, Nunez, & Brett, 2001; Nunez & Harris, 1998). Finally, children appreciate that violations of prescriptive rules may result in upset, such that if Maxi’s mother buys him a bike in return for cleaning his room and Maxi breaks his part of the bargain, his mother might be sad (Keller, Gummerum, Wang, & Lindsey, 2004).

However, developmental work on conventionality since Piaget has focused almost exclusively on children’s understanding of so-called regulative rules, that is, rules that regulate already existing activities. To take an already mentioned example, Anne can play outside, whether the norm is to do so with or without her coat. The fact that the conventional norm is to do so whilst wearing a coat serves to shape her already existing activity. A relatively neglected area in normativity research concerns children’s understanding of the norms associated not with ‘regulative’ rules but with ‘constitutive rules’ (see Rawls, 1955; Searle, 1995). Such rules bring into existence the very activities they govern, and they do this by imposing non-physical or ‘status functions’ on objects and actions. Structurally, status functions have the logical form ‘X counts as Y in a certain context C’. For example, a piece of paper may count as money within the context of our exchange practices, or giving that money away may count as making a purchase in a particular social situation. The point is that the very rules of the exchange make the piece of paper a money token, and make performing a certain action an act of purchasing or selling, etc. (Searle, 1995). Thus, the imposition of non-physical status functions create what are then understood to be ten dollar bills and acts of monetary exchange. Importantly, these practices are also normatively governed in that there are certain ways that objects with status ought to be treated and certain ways that actions with status should be performed. An open developmental question, then, relates to whether young children grasp the norms associated with constitutive rules.

One particularly early and important area in which children appear to learn about constitutive rules is that of pretend play. In pretence, children must grasp that, for instance, a stick may count as a toothbrush, or that side-to-side movements may count as brushing within the context of their game, and they often witness and participate in the creation of constitutive rules of this nature (unlike the pre-established rules of non-pretend rule games; see, e.g., Piaget, 1932; Rakoczy, Warneken, & Tomasello, 2008). It is thus noteworthy that young children appear to understand the basic structure of constitutive rules in their pretence by proficiently and creatively tailoring their pretend actions to an object’s fictional status (Harris & Kavanaugh, 1993) even when this changes between contexts (Wyman, Rakoczy, & Tomasello, *in press*). However, relatively little is known about children’s understanding of the normative component of constitutive rules, and so games of joint pretence offer an interesting opportunity to probe this understanding.

Among established findings in the pretence literature is that 3-year-old children understand the *pretence–reality* distinction. They correctly state, for example, that while an object really is an X (e.g., a spoon), one may pretend that it is a Y (e.g., a ‘telephone’) in the context of a certain make-believe game (Abelev & Markman, 2006; Flavell, Flavell, & Green, 1987; Lillard & Flavell, 1992). Children of this age also differentiate between different pretence identities in different game contexts (what might be called the *pretence–pretence* distinction)—they understand that one and the same object may acquire a fictional identity in the context of one pretence game (e.g., as a ‘car’) and another fictional identity in the context of a second pretence game (e.g., as a ‘horse’) (Bruell & Woolley, 1998; Gopnik & Slaughter, 1991; Hickling, Wellman, & Gottfried, 1997).

But do children at this age also understand these distinctions (between pretence and reality, and between different pretence games) in normative terms? With regard to the *pretence–reality*

distinction, do they understand that when an X (e.g., a spoon) counts as a Y (e.g., a 'telephone') in the context of a given pretence game (context C), it ought to be treated according to its fictional and not its real identity within the game (that is, used to make calls with and not to eat with)? And regarding the pretence–pretence distinction, do they understand that an X ought to be treated according to different fictional identities in the different contexts (C1 and C2, say) of different pretence games?

To our knowledge, there exists only a single study that indicates children's appreciation that constitutive rules in pretence have a normative dimension. In this study (Rakoczy, 2008), 3-year-olds watched a puppet confuse pretend status functions within a game, for instance, by pretending to eat the pretend knife. Children's responses were to normatively protest, for example, shouting 'No! That's our knife!', and they did not do so in a control condition in which the character pretended to eat the pretend carrot. Thus, within a pretend game, young children appear to recognize mistakes and protest normatively. But this study involved no contrast *between* contexts and so it remains unclear whether young children understand the pretence–reality or pretence–pretence distinctions as normative.

More widely, children's grasp of the normative dimension of these distinctions speaks to the issue of their ability to apply normative rules context-specifically. This is important because the essence of constitutive rules is that they, and their related norms, exist only within the context of certain cultural practices. For example, using a playing card to fan oneself might be perfectly acceptable during conversation, but highly inappropriate within the context of an ongoing game of Bridge. Similarly, a given card may count as a valuable trump card in Bridge but a poor, low value card in another card game, and ought to be treated accordingly.

In the two studies presented here, we sought to address multiple issues. First, we aimed to extend developmental normativity research by investigating whether young children grasp the norms associated with constitutive rules. Second, we aimed to extend existing pretence research by asking whether young children understand the pretence–reality and pretence–pretence distinctions as being normatively governed. Thus, we sought to contrast the norms operative in a pretend game (within context C) with reality (outside context C) in Study 1, as well as those that differ between pretence games (contexts C1 and C2) in Study 2. More generally, via this method, we hoped to investigate children's awareness of the context-relativity of conventional norms.

In both studies, a pretence game was created between the child and an experimenter, and a puppet entered and performed an action. Crucially, this action was identical in both an experimental and a control condition, the only difference being that in the experimental condition she first joined the pretend game (that is, entered C), and in the control condition she did not (that is, remained outside C). In consequence, the very same action that constituted an error within the target context should have been of no concern outside it, either because the puppet never joined the game at all (Study 1) or because she had decided to join a different pretend game (Study 2). Children's spontaneous protest and critique in response to the puppet's actions in each condition were investigated.

1. Study 1

1.1. Method

1.1.1. Participants

Twenty-four 3-year-olds (12 girls; mean age 36 months, range 35–38 months) were included in the final sample. Three were excluded due to experimental error and two because they were uncooperative. Children were recruited in urban day-care centres around Leipzig, East Germany. All were native German speakers and came from mixed socioeconomic backgrounds.

1.1.2. Design

In a within-subjects design, each child received two experimental and two control trials in blocks. The order of blocks was counterbalanced so that half the children received experimental trials first and the other half received control trials first. There were four different tasks (each existing in an experimental and a control version) and task order was also fully counterbalanced.

1.1.3. Materials and procedure

Each test session was conducted by two experimenters in a quiet room at the children's day-care centre and lasted around 20 min. At the start of the session, the first experimenter (E1) introduced a puppet named 'Max' who was animated by the second experimenter (E2). During a short warm-up phase, E1, Max and the child played with some conventional toys on which Max demonstrated some basic instrumental incompetence, and then engaged in a short pretend game with replica objects, in order to get the child used to pretending. Then the test trials began.

The common structure to both experimental and control trials was as follows: E1, the child and Max sat at a table and E1 produced an object with a conventional function, such as a pen. All three parties engaged in the functional activity associated with the object (in this case drawing) and then Max left. While he was absent, E1 declared that she and the child would play another game called, in this case, the 'toothbrush game'. She and the child pretended that the pen was a toothbrush and then called Max back for his turn. In both experimental and control conditions, Max returned and was told by E1 'We're playing the toothbrush game and this is our toothbrush'. He then performed the functional activity, that is, used the pen to draw with and afterwards lay the object on the table. However, in the experimental condition, before drawing, he asked the child, 'can I play with you?' and upon an answer declared, 'then I will play the toothbrush game'. By contrast, in control conditions, before Max drew, he explained 'no, I don't like the toothbrush game, I'd prefer to draw.' Therefore, while Max drew in both cases, in the experimental condition he had declared an intention to join the pretend game and so his drawing was inappropriate, but in the control condition he had never expressed such an intention so his drawing should have been of no particular concern.

The other three tasks followed the same procedural structure but involved the use of different objects with different functions and pretend identities: a sponge used both instrumentally to wipe up chalk marks and as a pretend 'bread roll', a pair of children's scissors used both to cut paper with and as a pretend 'spoon', and a dustpan brush used both to sweep with and as a pretend 'bottle of lemonade'.

1.1.4. Observation and coding

Sessions were videotaped and coded by a single observer. Twenty-five percent of trials were coded by a second, independent coder who was blind to trial condition (the section of film in which the puppet declared his intention to join or not to join the game was cut out).

All relevant verbal and non-verbal responses were precisely described and then coded as either *intervention* or *acceptance* from one of two coding hierarchies. Children's *intervention* responses were coded hierarchically as follows. The strongest category was *explicit intervention*, in which the child protested against the puppet's functional action, gave normative instruction to pretend or explicitly showed the puppet how to do the pretend action (e.g., the child said 'No! You must brush the teeth'). The second strongest was *implicit intervention*, in which the child instructed the puppet to act according to the pretend game (e.g., the child said 'tooth brushing!'), and the least strong was *descriptive intervention*, in which the child described the puppet's action forcefully (e.g., 'he's drawing!') or described something relating to the pretend game (e.g., 'this here is our toothpaste').

Children's *acceptance* responses were coded hierarchically in analogous ways as either *explicit acceptance* (strongest), in which the child verbally affirmed the puppet's functional action, gave normative instruction to act functionally or explicitly showed the puppet how to do the functional action (e.g., 'Yes! You must draw'), as *implicit acceptance* (next strongest), in which the child instructed the puppet to do the functional action (e.g., said 'drawing!'), or as *descriptive acceptance* (least strong), in which the child described something about the puppet's functional activity (e.g., 'he's drawing') or described something about the pretend game in a non-intervening way (e.g., 'that's not a toothbrush').

As the focus was on the most sophisticated form of intervention or acceptance produced, for each trial, the child was assigned two codes, one for their strongest verbal intervention and another for their strongest verbal acceptance. (Inter-rater reliability computed over these trial scores was very good .86 for intervention responses (weighted *Kappa*) and .97 for acceptance responses.) Then, over the two trials per condition, sum scores for intervention codes were computed (one sum for trials with explicit intervention as its highest code, one sum for trials with implicit intervention as its highest code and one sum for descriptive intervention as its highest code, each ranging from 0 to 2). Analogous sum scores were computed for acceptance responses. These formed the basis for statistical analyses.

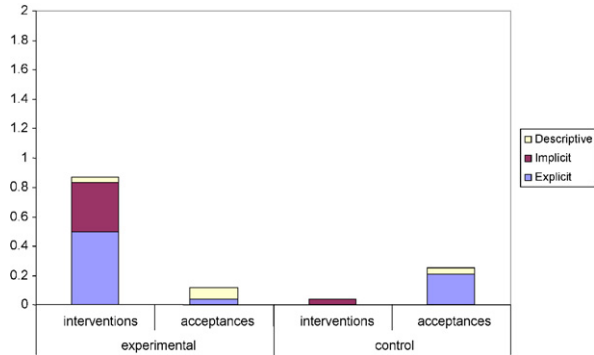


Fig. 1. Mean sum scores (0–2) of the different forms of intervention and non-intervention in Study 1.

1.2. Results

The mean sum of the different intervention and acceptance categories (explicit, implicit and descriptive) are presented in Fig. 1. On average, children intervened in 44% of experimental trials and 2% of control trials. They therefore intervened, significantly more often in the experimental than the control condition (Wilcoxon test, $p < .01$; this and all following p -values are 1-tailed). Children communicated acceptance of some sort on 6% of experimental trials and 13% of control trials, a pattern that revealed no significant difference between conditions (Wilcoxon test, $p < .20$). On an individual level, 12 children intervened on at least one experimental trial, and only one child intervened on at least one control trial. This difference also proved significant (McNemar's test, $p < .01$).

1.3. Discussion

Children in this study understood that the pretence–reality distinction is normatively governed. They grasped, for example, that in a pretend game not only might a pen be used as toothbrush, but that it *ought* to be used as such, and not for drawing. More generally, however, children showed understanding that the norms operative within a pretend game apply context-specifically. They protested when an individual joined the pretend game context and used the object functionally, but not when that individual performed exactly the same action without having first joined the game. In fact, in this situation, children often actively expressed acceptance (although not significantly more than in the experimental condition). In sum, then, 3-year-olds appear to understand something of the context-specificity of the normative rules that apply to games of joint pretence, as distinct from reality.

An analogous question arises here as to whether children of this age will apply different norms to different pretend games. That is, do they understand the pretence–pretence distinction as having normative consequences for action?

Additionally, it is possible that children in the experimental condition interpreted the puppet's declaration of intent to enter the game more richly than it in fact was. Although there is no direct evidence that they did so, perhaps they, for instance, interpreted the declaration 'I will play the toothbrush game' as an intention to perform a specific action of the form 'I will now do pretend tooth brushing'. If this were the case, children might have protested in the experimental condition because they felt the puppet failed to perform an action he had previously specified, and not in the control condition because they felt his declaration (for instance, 'I'd prefer to draw') to be consistent with his ensuing action.

Study 2, therefore, was conducted with two goals in mind—first, to explore children's normative understanding of the pretence–pretence distinction, and second, to rule out the unlikely possibility that children's previous protest could merely be due to perceived inconsistencies between the puppet's declarations and his ensuing actions.

Children were engaged sequentially in two different pretend games. The contexts were now marked spatially (one at location A, the other at location B) and by some minimal costume (each involving the

wearing of a different hat). At test, the puppet asked to take a turn and either entered or did not enter the target context, but without referring in any way to the action that might be performed. While in both conditions she performed the same pretend action, this action was inappropriate when performed at location B (and wearing a hat related to the theme of this game). By contrast, it should have been of no concern when performed at location A (whilst wearing the hat related to this particular game).

2. Study 2

2.1. Method

2.1.1. Participants

Twenty-four 3-year-olds (7 girls, mean age 37 months, range 35–39 months), none of whom had participated in Study 1, were included in the final sample. One child was excluded because he was uncooperative and, again, all children were recruited in urban day-care centres around Leipzig, were native German speakers and came from mixed socioeconomic backgrounds.

2.1.2. Design

The same within-subjects design as in Study 1 was used. However, since now two different pretend games were to be played (as opposed to one pretend game and a functional activity), the order of pretend identities within each task were also counterbalanced.

2.1.3. Materials and procedure

At the start of the session, the first experimenter (E1) introduced a puppet named 'Lola' who was animated by the second experimenter (E2). During a short warm-up phase, E1, Lola and the child played some non-pretence related games, such as rolling a marble down a wooden ramp. Here Lola made instrumental mistakes (for instance, trying to roll a cube instead of a marble down the ramp) in order to acquaint children with the puppet and with situations in which errors occur and they might intervene. Then the test trials began.

The child sat directly between two low-standing tables approximately one meter apart. On the 'Zoo' table to the child's left sat three furry animals. On the slightly lower table to their right stood 'Bob the Builder's house' as well as Bob the Builder and, lastly, his dog. E1 and Lola sat opposite the child, also between the two tables.

The common structure to both experimental and control trials was as follows: E1 explained that they would now play a game at Bob the Builder's house. She explained that for this game they would need to wear their helmets (which were uncannily similar to Bob's). E1 then produced an object with no obvious function (such as a yellow stick), and explained that Bob had grimy teeth. She declared the yellow stick to be their toothbrush, and all three parties, once having placed their helmets on, pretended to brush Bob's teeth with the stick. The object was then placed on the floor in plain view of the child, and E1 suggested they play 'the other game'. The helmets were taken off and replaced.

E1 then explained that they would now play another game and that for this game, they would need their animal-keeper caps, which E1 and the child proceeded to put on. E1 pointed out that the animals sitting on the Zoo table were 'hungry', declared the yellow stick to be a carrot, and both E1 and the child pretended to feed the animals in the Zoo. Then, in both experimental and control conditions, Lola asked if she could have a turn and proceeded to pretend that the stick was a toothbrush. However, in the experimental condition, before pretending she declared that she would also play at the Zoo, placed her animal-keeper cap on and pretended to brush the animal's teeth. By contrast, before pretending in the control condition, she declared that she would play at Bob's house, placed her helmet on and pretended to brush the teeth of Bob's dog at Bob's house. Therefore, while she performed the same pretend action in both cases, in the experimental condition she had joined the Zoo game and so her pretend tooth brushing was inappropriate. However, in the control condition she had returned to the Bob the Builder game, and so her pretend tooth brushing should have been of no particular concern. (Since this action was performed after the puppet moved to Bob's house, care was taken to maintain participants' constant attention. If this waned at any point, the puppet banged the object until the child looked back, and then continued the target action.)

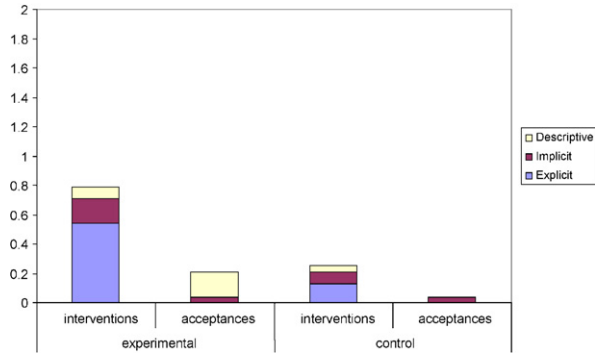


Fig. 2. Mean sum scores (0–2) of the different forms of intervention and non-intervention in Study 2.

The other three tasks followed the same procedural structure but involved the use of different objects and pretend identities—an oblong purple block used as pretend ‘shower gel’ in one game and a ‘bottle of milk’ in the other game, an orange cylinder used as a pretend ‘bottle of lemonade’ in one game and pretend ‘shampoo’ in the other, and a green disc used as pretend ‘soap’ in one game and a pretend ‘sandwich’ in the other.

2.1.4. Observation and coding

The observational, coding and scoring procedure was the same as in Study 1 although, of course, the coding of intervention and acceptance responses now focused on the two pretend games, rather than a pretend game and a functional activity. Thus, *explicit intervention* involved either protest against the puppet’s Bob game-related action, normative instruction to act according to the Zoo game or the demonstration of how to perform the Zoo game-related action; *implicit intervention* involved instructing the puppet to pretend according to the Zoo game; *descriptive intervention* involved description of something related to the Zoo game or forceful description of the puppet’s action. Analogously, *explicit acceptance* involved verbal affirmation of the puppet’s Bob game-related action or demonstration of such an action; *implicit acceptance* involved instructing the puppet to perform the Bob game-related action; *descriptive acceptance* involved the child describing something about the Bob game or the Zoo game in a non-intervening way.

Twenty-five percent of trials were coded by a second, independent coder who was blind to the hypotheses of the study. Inter-rater reliability computed over trial codes was .95 (weighted *Kappa*) for intervention responses. (It was not calculated for acceptance responses because both coders agreed that no child produced a response falling into this category on any trial.)

2.2. Results and discussion

The mean sum of the different intervention and acceptance categories (explicit, implicit and descriptive) are presented in Fig. 2. On average, children intervened in 40% of experimental trials and 13% of control trials. They, therefore, intervened significantly more often in the experimental than the control condition (Wilcoxon test, $p < .01$). They communicated acceptance of some sort on 11% of experimental trials and 2% of control trials, a difference which did not reach significance (Wilcoxon test, $p < .10$). On an individual level, 13 children intervened on at least one experimental trial and 6 children intervened on at least one control trial. This difference also proved significant (McNemar’s test, $p < .05$).

Children in this study understood that the pretence–pretence distinction is normatively governed. They grasped not just that an object may have two different pretend statuses, but that it *ought* to be treated according to one and not the other within a given game. Also, as in Study 1, children grasped that normative rules operate context-specifically. They protested when an individual performed some action having entered a particular pretend context but significantly less often when she performed the same action within a different context.

Unlike in Study 1, children rarely expressed acceptance in the control condition, although the reason for this is presently unclear. Perhaps they deemed returning to the game at Bob's house inadequate justification for failing to enter the Zoo game (thus intervening in 13% of control trials). However, since intervention behaviours are the target responses under investigation here, this will remain a question for future research.

Importantly, children intervened context-specifically in this study despite the removal of verbal cues that could potentially indicate the puppet's ensuing action. This suggests that children in the previous study may not have protested in the experimental condition on the basis of perceived inconsistencies between the puppet's declaration and his following action. It also suggests more generally that 3-year-olds understand that normative rules operate context-specifically, even when those contexts are marked implicitly by way of, for instance, spatial location and the wearing of associated clothing.

3. General discussion

Young children in the two studies presented here understood that the pretence–reality and pretence–pretence distinctions have normative consequences for action. They protested both when an individual joined their pretend game and acted instrumentally (Study 1) and when she joined their game but acted according to a different one (Study 2), and their interventions were unassociated with the particular way in which contexts were marked (verbally vs. non-verbally). Importantly, children failed to protest across both studies when exactly the same action was performed outside of the target context. This suggests that 3-year-olds apply norms context-specifically in their joint pretence.

These results are consistent with those of other studies in which children criticize the violation of norms within pretence games (Rakoczy, 2008). They also extend these findings by showing a grasp of the way in which an action becomes a violation depending on the context in which it occurs. In addition, they indicate an ability to judge instrumentally successful actions as nevertheless conventionally inappropriate (Study 1) and to judge actions that are conventionally appropriate in one context as conventionally inappropriate in another context (Study 2). More generally, their motivation to enforce game norms selectively is in line with findings in other areas such as non-pretence rule games (Rakoczy et al., 2008) but suggests further that this tendency may be generalized across various different types of activity.

It is worth noting here that, although more than half the children in each study intervened on at least one experimental trial, the overall intervention rates for the groups (as percent of trials) was below 50% in both cases. However, we used an especially demanding and particularly convincing measure of children's understanding of norm violations. Unlike in the case of card selection tasks (in which all possible answers are laid out as cards for the child to select from) or interview studies (in which children are given forced-choice questions), our focus on spontaneous and active protest required children not only to identify norm violations, but to actively police them. This, of course, produces a risk that the studies here underestimate young children's ability to identify normative rules violations. In particular, factors such as individual temperament or linguistic competence may have prevented children who recognized norm violations from expressing this understanding. However, even with such conservative measures, children demonstrated competence in this domain across both studies. And since children's tendency to protest normatively may not be something that is generally encouraged, and may indeed be actively discouraged, it seems all the more impressive that at least half of each group intervened at all. However, whether older children might intervene more readily is clearly an important question for future research.

Young children's appreciation of normativity and context has been assessed here through play, but later they will need to apply similar principles in order to understand more serious institutional practices. They will eventually need to appreciate, for example, that a hammer may be used in one context for carpentry and in another to adjourn court; that a hat may be used for rain protection in one context and in another to crown a king; or that while the words of a priest may constitute light conversation in one context, they may serve to consecrate a marriage in a different context. However, beyond this rather theoretical understanding, children may use context-specific normative rules to regulate their own actions. They may grasp, for instance, that in the context of the home or in the

company of kin, certain behaviours such as playing loudly, going naked or calling adults by their first name may be permitted, whilst in more public contexts, the same behaviours may be considered highly inappropriate. As children's own social status changes (they grow older, are formally initiated into their gender group and perhaps marry into new social or cultural groups, for instance), they must understand that this confers on them new rights, permissions and obligations—that is, that the normative context that a particular person inhabits changes through time.

Future research will elucidate the different cognitive skills that contribute to children's understanding of normativity and context. The possibility might be explored, for instance, that causal reasoning of the form 'if A happens, B will also happen' (Harris, 2000) forms some basis for subsequent deontic reasoning such as 'if A occurs, B *ought* to occur'. Another possibility is that a developing ability to switch between different conditional rules (Zelazo, Mueller, Frye, & Marcovitch, 2003) might contribute to an appreciation that normative rules operate context-specifically. Further open questions relate to how children develop an understanding of normativity and context across different domains (Kalish, 2005). Do they learn normative principles within each domain separately, for example, or first within a restricted set of activities which they then generalize to other areas? Interesting questions also remain with regard to the specific mechanisms by which they acquire such understanding. Candidate processes include experience and observation of the consequences of violations, of situations in which others use normative language ('you should/must/ought to X') and, perhaps, a broader assumption that the actions that they observe by others, including those on objects, all have a normative dimension to them (which would be in line with a seemingly human-specific and almost compulsive tendency to imitate others; Tomasello, 1999).

A complementary proposal is that children's conventional rule games, including those involving pretence, provide a developmental cradle within which young children come to understand the principles governing more serious institutional matters (Rakoczy, 2007; Rakoczy & Tomasello, 2007). In this regard, it seems significant that children equate game rules with conventional norms in some senses. They claim, for example, that in contrast to moral rules, acceptable variations in each may exist (Turiel, 1978). However, in addition to playing games in which the rules are pre-established, pretence may provide a particularly early and critical opportunity for young children to actively participate in the creation of conventional, constitutive rules. Experience with conventional and normatively regulated actions and objects in these non-serious and short-lived games, may familiarize young children with a rudimentary structure that they will later encounter as shaping important aspects of their adult life.

Acknowledgements

We would like to thank Jana Jurkat, Manja Teich and Elvira Plath for help in recruiting children and collecting data. Thank you to all day-care centres and children for their friendly cooperation.

This work was supported by the German Ministry for Education and Science (BMBF), research cluster 'Interdisciplinary Anthropology' (01GWS057).

References

- Abelev, M., & Markman, E. (2006). Young children's understanding of multiple object identity: Appearance, pretense and function. *Developmental Science*, 9(6), 590–596.
- Bruell, M. J., & Woolley, J. (1998). Young children's understanding of diversity in pretence. *Cognitive Development*, 13, 257–277.
- Flavell, J., Flavell, E., & Green, F. (1987). Young children's knowledge about the apparent-real and pretend-real distinctions. *Developmental Psychology*, 23(6), 816–822.
- Gopnik, A., & Slaughter, V. (1991). Young children's understanding of changes in their mental states. *Child Development*, 62(1), 98–110.
- Harris, P. (2000). *The work of the imagination*. Oxford: Blackwell.
- Harris, P., & Kavanaugh, R. (1993). Young children's understanding of pretense. *Monographs of the Society for Research in Child Development*, 58(1), 1–92.
- Harris, P., & Nunez, M. (1996). Understanding of permission rules by preschool children. *Child Development*, 67(4), 1572–1591.
- Harris, P., Nunez, M., & Brett, C. (2001). Let's swap: Early understanding of social exchange by British and Nepali children. *Memory and Cognition*, 29(5), 757–764.
- Hickling, A. K., Wellman, H. M., & Gottfried, G. M. (1997). Preschoolers' understanding of others' mental attitudes towards pretend happenings. *British Journal of Developmental Psychology*, 15(3), 339–354.

- Kalish, C. (1998). Reasons and causes: Children's understanding of conformity to social and physical laws. *Child Development*, 69(3), 706–720.
- Kalish, C. (2005). Becoming status conscious: Children's appreciation of social reality. *Philosophical Explorations*, 8(3), 245–263.
- Kalish, C., & Shiverick, S. M. (2004). Children's reasoning about norms and traits as motives for behaviour. *Cognitive Development*, 19, 410–416.
- Keller, M., Gummerum, M., Wang, X. T., & Lindsey, S. (2004). Understanding perspectives and emotions in contract violation: Development of deontic and moral reasoning. *Child Development*, 75(2), 614–635.
- Lillard, A., & Flavell, J. H. (1992). Young children's understanding of different mental states. *Developmental Psychology*, 28(4), 626–634.
- Nucci, L. P., & Nucci, M. S. (1982). Children's social interactions in the context of moral and conventional transgressions. *Child Development*, 53(2), 403–412.
- Nunez, M., & Harris, P. (1998). Psychological and deontic concepts: Separate domains or intimate connection? *Mind & Language*, 13(2), 153–170.
- Piaget, J. (1932). *The moral judgment of the child*. New York: Free Press.
- Rakoczy, H. (2007). Play, games and the development of collective intentionality. *New Directions in Child and Adolescent Development (special issue on "Conventionality")*, (115), 53–68.
- Rakoczy, H. (2008). Taking fiction seriously: Young children understand the normative structure of joint pretend games. *Developmental Psychology*, 44(4), 1195–1201.
- Rakoczy, H., & Tomasello, M. (2007). The ontogeny of social ontology: Steps to shared intentionality and status functions. In S. L. Tsohatzidis (Ed.), *Intentional acts and institutional facts: Essays on John Searle's social ontology*. Berlin: Springer Verlag.
- Rakoczy, H., Warneken, F., & Tomasello, M. (2008). The sources of normativity: Young children's awareness of the normative structure of games. *Developmental Psychology*, 44(3), 875–881.
- Rawls, J. (1955). Two concepts of rules. *The Philosophical Review*, 64(1), 3–32.
- Searle, J. R. (1995). *The construction of social reality*. New York: The Free Press.
- Tomasello, M. (1999). *The cultural origins of human cognition*. Cambridge, MA: Harvard University Press.
- Turiel, E. (1978). Social regulations and domains of social concepts. In W. Damon (Ed.), *New directions for child development*. Vol. 1. *Social cognition*. San Francisco: Jossey Bass.
- Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge: Cambridge University Press.
- Wyman, E., Rakoczy, H., & Tomasello, M. (in press). Young children understand multiple pretend identities in their object play. *British Journal of Developmental Psychology*.
- Zelazo, P., Mueller, U., Frye, D., & Marcovitch, S. (2003). The development of executive function in early childhood. *Monographs of the Society for Research in Child Development*, 68(3), 1–156.