“Simon Says”: Young children’s understandings of norms modeled by peers

Bari Britvan

A thesis submitted to the Department of Psychology and Neuroscience for honors

Duke University

Durham, North Carolina

2019
Abstract

Social norms are mutually agreed upon standards of behavior that are expected among group members and guide essentially all aspects of human social behavior. Previous theory has suggested that children undergo a two-step sequence in normative development. First, children below age 3 have a dyadic, sympathetic orientation towards others. Then, at around age 3, children are believed to transition into a group-level, norm-based orientation. At this second stage, children interpret norms as group-level expectations (rather than solely as individual directives) and develop the ability to follow and enforce social norms. However, this two-step sequence in normative development was hypothesized based on the results of many studies but has not yet been directly tested. The current study addresses this gap by using preferences as a control to norms since both have a world-to-mind direction of fit (i.e., they both convey a desire for a certain state of the world) and therefore should appear the same to children who lack awareness of the difference in generalizability. Furthermore, we investigated whether children would prioritize complying with norms over complying with preferences when they are modeled by similar-age peers to further reveal whether children at the age of three begin to respect norms as such, rather than as commands given by adult authority figures. Among three-and-a-half-year-olds, we found that most children either did not conform to anything or conformed to everything, but among those that favored a testimony type, significantly more complied with norms than complied with preferences.
Acknowledgements

I would like to thank Dr. Michael Tomasello, Leon Li, and Dr. Michael Gaffrey for taking the time to sit on my thesis committee. I would also like to thank Dr. Tomasello and Leon for their invaluable guidance, support, and confidence in my work. I would like to extend my gratitude to the incredible members of the Tomasello Lab for their support in my research. Their hard work made the completion of my data collection possible and their encouragement created a lab environment in which I enjoyed working. I am very thankful for the Duke Undergraduate Research Support Office as well as the Charles Lafitte Foundation for their generosity. Finally, I would like to thank all of the participants and their families for taking the time to have a tea party with me.
“Simon Says”: Young children’s understandings of norms modeled by peers

1. Introduction

What color should you avoid wearing to a wedding? What article of clothing should you take off during the National Anthem? What do you say when someone sneezes? If you answered white, a hat, and bless you, respectively, you have the ability to recognize the social norms that exist in American society. But, at what age did we develop this ability?

Social norms are mutually agreed upon standards of behavior that are expected among group members and guide essentially all aspects of human social behavior (Tomasello, 2014). Children as early as two years old have been shown to enforce norms on others (Rakoczy, Warneken & Tomasello, 2008); however, rather than understanding norms as a mutual agreement, two-year-olds may comply with norms due to their understanding of the norm as a command from an adult or simply due to imitation of adults (Tomasello & Vaish, 2013; Rakoczy, Hamman, Warneken, & Tomasello, 2010). Thus, there is a dearth of knowledge regarding the age at which children begin to understand norms as such (i.e., as different from individual directives). One way of getting at this question is by studying whether children differ in compliance between norms and preferences expressed by peers. Norms and preferences both have a world-to-mind direction of fit (Seale, 2001). In other words, they both convey a desire for some state of the world, and therefore should appear the same to children who lack understanding of their difference in generalizability. Furthermore, considering peer-modeled norms, the possibility of a child’s compliance due to a presumed pressure from an authority figure would no longer be a problem; thus, in this kind of scenario, a child’s prioritization of complying with norms over preferences would be attributable to their respect for norms.

The ability and motivation to recognize and respect norms reveals a significant finding about human nature. Human beings differ from all other animals in their cooperative nature—
specifically, in their desire to conform to and fit in with a group (Tomasello, 2014). Thus, understanding the age at which children begin to recognize social norms as norms, rather than as commands, is crucial to understanding human prosocial behavior. By studying group norms modeled by peers, we can further our understanding of cooperation among children, as well as other aspects of peer relationships.

1.1 Role of Norms in Our Society

Norms are a ubiquitous part of humans’ everyday lives. They guide our behavior in various settings—whether at school, home, or sporting events—guide what is appropriate to say and to whom, and even guide what to wear. The ability to understand social norms is a uniquely human capacity and extends back to evolutionary theory, as humans’ ability to follow norms reflects evolved social and cognitive abilities, such as the ability to track others’ intentions, form joint commitments, participate in self-reflection, and engage in group-mindedness (Tomasello, 2014). However, humans’ skills alone are not enough to explain our respect for norms—we are also motivated to do so. Humans want to engage with others who are helpful, so partner selection favors people who are cooperative and have the ability to self-regulate in order to maintain a positive reputation. It is therefore adaptive for each individual to not only be cooperative but also have a reputation as such, so that they will receive help from others in return (Tomasello & Carpenter, 2007). Specifically, these skills and motivations contribute to the ability to engage in shared intentionality, the ability to align psychological states with others, which seems to develop in humans’ first year of life. Shared intentionality may be crucial to their ability to understand normativity, as social norms are created and maintained through collective beliefs and mutual agreement (Tomasello & Carpenter, 2007; Tomasello, 2009).

Social norms share three commonalities: they have conventionality, generality, and context specificity (Rakoczy & Schmidt, 2012). Social norms are socially constructed and
created by a mutual agreement among members of a group. Thus, they exist due to the shared intentionality of a group—resulting in beliefs about the ways we do things—and therefore have conventionality (Tomasello & Rakoczy, 2003; Rakoczy & Schmidt, 2012). Furthermore, social norms have normative force and generality, so that humans feel obligated to respect norms. Social norms guide us in acting in agreed upon ways in order to correctly follow a group’s expectations as well as avoid rejection towards those who do not act in accordance with the group. Human societies and our institutions therefore rely on norms, as they set standards that provide members of the group with information about how to act appropriately (Rakoczy & Schmidt, 2012). Lastly, social norms are context specific, in that what is acceptable in one situation may not be acceptable in another. For example, although dancing to music at a party is appropriate, dancing to music at a funeral would clearly not be.

The desire to follow norms simply because of a mutual agreement between members is epitomized by humans’ compliance to “arbitrary” conventional norms (Turiel, 1983). Unlike moral norms, which act on human’s natural tendency to avoid harm and help others, conventional norms do not directly harm other’s well-being, yet are still complied with because of humans’ desire to fit in with their identified groups and to avoid negative consequences from other group members for not conforming as expected (Turiel, 1983; Tomasello, 2009).

1.2 Young Children’s Understanding of Conventional Norms

Piaget (1932) believed that young children are heteronomous; they recognize rules as being absolute and created by adults. Thus, according to Piaget, they don’t understand rules as created by agreement between members of a group. However, later research has revealed that children do not treat all norms the same. Rather, they have the ability to distinguish moral, more absolute, norms from social, more arbitrary, norms (Turiel, 1983). As early as preschool, children have been found to distinguish between conventional and moral transgressions,
assessing conventional transgressions as significantly more likely to be allowable in the absence of a rule than moral transgressions (Smetana, 1981). Furthermore, although children recognize that most conventional norms are created by adults, children have demonstrated autonomous agency when creating their own rules, thus supporting the idea that children recognize the arbitrary nature of conventional rules and their reliance on a consensus among group members (Nobes, 1999; Hardecker, Schmidt, & Tomasello, 2017).

Not only are children able to recognize conventional norms, but previous research has also revealed that children begin enforcing them early in ontogeny— as early as 2 years old. Rakoczy et al. (2008) exposed 2 and 3-year-old children to conventional rules in the context of a game and later tested their ability to protest when the rule was broken. Significantly, both 2 and 3-year-old-children showed an awareness of conventional normativity, although the 3-year-olds were more explicit in their protest of the broken rule. Moreover, the children protested the norm violation from a third-party stance, indicating their understanding that norms should be conformed to even when the violation did not affect them. Doing so is precarious for a child, as protesting may lead the transgressor to act in retaliation (Tomasello, 2014). Yet children still protest, leading to the belief that children do not solely act on personal motives, but rather at this age have already started to identify with a cultural group, leading them to act in line with the group’s norms (Schmidt & Tomasello, 2012).

Not only do children act in line with their cultural group, but also, they understand the limitations in generalizability of social norms to other cultural groups. As a result, they enforce conventional norms on members of their own social group significantly more than they enforce them on out-group violators; yet, they protest both groups equally after a moral violation (Schmidt, Rakoczy, & Tomasello, 2012). In addition to the understanding that conventional norms are group-specific, children also understand that they are context-specific. For example,
while a pen may normally serve a purpose of drawing, after an experimenter declared that they would pretend that the pen was a toothbrush in a “toothbrush game”, children protested when a puppet who expressed intent to play the game used the pen to write (Wyman, Rakoczy, & Tomasello, 2009). However, when the puppet did not declare intent to play the game, children did not protest drawing with the pen, as there was no mutual agreement that the pen was something other than a pen.

Nevertheless, despite children’s demonstrated ability to enforce norms, it is unclear whether or not they understand norms as such. In fact, it has been hypothesized that young children may not enforce norms because they are violating a group agreement, but rather because they are imitating adults (Hardecker & Tomasello, 2016). Comparing children who had previously experienced enforcement of a game rule by an adult to those who had been taught the rule but had not witnessed an adult enforce it, Hardecker and Tomasello (2016) found that children protested significantly more to a norm violation after they had witnessed an adult enforce that same norm. Therefore, children’s enforcement of norms at this age may not indicate that they understand normativity, but rather may be due to imitation.

Similarly, Tomasello and Vaish (2013) propose that young children may not understand social norms before the age of three. Rather than complying due to an agreement among members of one’s group, children younger than three may understand norms as commands from adults and thus be compliant to the directive. Tomasello and Vaish (2013) argue that children undergo a two-step sequence in development in which there is an initial second-personal morality, in which children are sympathetic to others. At around age 3, the child is believed to transition into norm-based, impartial normativity. In this second stage, children begin to interpret norms conveyed by adults as group-level expectations, rather than as individual directives, and thus follow and enforce social norms (Tomasello & Vaish, 2013). However, this two-step
sequence in normative development is based on the results of many studies but has not yet been directly tested. The current study addresses the issue by using preferences as a control to norms, since both have a world-to-mind direction of fit and therefore should appear the same to children who lack awareness of the difference in generalizability (Searle, 2001). Furthermore, studying the age at which children develop the ability to recognize norms when they are modeled by peers will further reveal whether children at the age of three begin to recognize norms as such, rather than as directives given by an authority figure.

Few studies have investigated children’s understanding of norms in peer studies. In fact, it was previously believed that children only understand norms as being established and enforced by adults (Piaget, 1932). However, although children understand that most conventional rules are created by adults, they also understand that some rules may be created by a mutual agreement between peers (Turiel, 1983; Nobes, 1999). Hardecker et al. (2017) found that 5- and 7-year-old children utilized normative language to enforce and transmit both self-created game rules and those taught by an adult. Although the 5-year-old children believed that their self-created rules were more alterable than those taught by an adult, they enforced these arbitrary norms to the same extent as they did preexisting norms, which indicates their understanding of their conventionality. Compared with the 5-year-old children, 7-year-olds did not differ in their flexibility in changing self-created and adult-taught rules and thus may have a deeper understanding of rule normativity (Hardecker et al., 2017).

However, although previous research has investigated norms created by peers, few studies investigate the recognition of norms when explicitly modeled by similar-age peers. In one such study, Rakoczy et al. (2010) compared children’s imitation of adults to their imitation of peers in order to investigate normative learning while playing games. After observing contradicting testimony regarding how to play a game with made-up actions like “dax”, 3- and 4-
year-old children were asked to perform the action themselves and were significantly more likely to perform the action based on the adult’s testimony than the child’s, as well as protest against a third-party that performed the same action as the child informant. However, given that there is only one correct way to “dax”, in this case children could only imitate one of the conflicting testimonies, thus forcing them to decide whether adults or peers were more reliable. Utilizing a within-subjects design in which participants hear both norm and preference testimonies from a peer informant, our study addresses this weakness.

Notably, children do not always assume that their peers are unreliable; the application of different measures, such as question asking, have produced different results. For example, when asked who they would direct a question about a particular toy to, 3- to 5-year-old children stated that they would ask a child informant rather than an adult one, given that they would assume children to be more knowledge about toys than adults (VanderBorght & Jaswal, 2009). Thus, children may trust other kids depending on the content of the information and the presence of contradicting information. Similarly, 2-year-old children have been found to imitate actions from both adults and peers but imitate just the peer model after a 10-minute delay (Seehagen & Herbert, 2011). However, it’s important to note that this study measured imitation of actions, not norms. The present study will investigate whether children understand norms modeled by peers during pretend play.

1.3 Present Study

This study expands upon previous research to study the age at which children understand norms when modeled by similar-age peers. One way of getting at the question of whether children experience a shift in their understanding of normativity is whether they distinguish norms from preferences. Although similar in their desire for a certain state of the world, norms and preferences differ in source and generalizability. Norms represent group-level expectations
and are thus generalizable to everyone that is part of the group. On the other hand, preferences are specific to each individual, and are thus not generalizable to others. For example, when a mom tells their child “don’t eat with your hands”, a young child may not understand if the mom is expressing a preference (e.g., she prefers that the child does not eat with their hands) or if the command is expressing a norm (e.g., we, as a group, do not eat with our hands). Both norms and preferences should appear the same to children who lack awareness of their difference in generalizability. At some point, however, the child develops the ability to differentiate norms from preferences and becomes motivated to comply with group norms in order to be affiliated with the group. Thus, children who have the ability to understand norms will be more motivated to comply with a presented norm than with a presented preference; meanwhile, those who are not yet able to understand norms will not prioritize conforming to norms over conforming to preferences.

1.4 Hypothesis

Given the previous research, specifically Tomasello and Vaish’s (2013) proposed two-step sequence, it is hypothesized that three-and-a-half-year-old children will have the ability to recognize norms and therefore are expected to conform to them more often than they conform to their peer’s individual preferences.

2. Methods

2.1 Participants

The sample consisted of 52 3.5-year-old children who were recruited from the Research Participation at Duke Pool (29 boys, 23 girls; 38.53–44.84 months; Mean = 41.73 months; SD = 1.62 months). The majority of participants came from White affluent families (> $70,000 annual household income). Fifteen additional three-and-a-half-year-old children also participated but were excluded from the final sample (1 did not want to participate, 1 did not speak enough
English, 3 did not understand the study instructions, 1 did not watch enough of the videos, 1 was influenced by their parent, 1 was not yet of age, and 7 children were excluded due to experimenter error).

Participants’ parents gave written informed consent to participate in the study, which was approved by the Duke University Institutional Review Board. Parents were offered $10 in gas compensation and children were offered a toy or t-shirt for their participation.

2.2 Design

This study employed a within-subjects design, in which each participant was exposed to both levels of the independent variable—the norm testimony, which indicates a group-level expectation, and the preference testimony, which indicates an informant’s personal choice. Both the order of the testimony and the pairing of condition with materials (e.g., selection of plates and cups with the norm testimony) were counterbalanced so that a child watched one of four possible videos.

2.3 Procedure

Upon entering the lab, participants and their families were led into a waiting room, in which the main experimenter, who acted as the host of the tea party, introduced the child to a squirrel puppet, allowing the child to play with and warm up to the puppet to reduce timidity and fear of protesting during the experiment. The child was also introduced to a second experimenter, who was featured in the Skype videos that the child would later watch, in order to ensure believability.

Once the child appeared comfortable, the participant and his or her parent were led by the two experimenters into the study room, in which a table was set up in the middle of the room with a computer on top, and two short shelves were covered with plastic table cloth on each side of the table. Under the plastic cloth on one shelf were stacks of four different plates, two
considered to be more exciting (e.g., rainbow and zebra plates) and two considered to be less exciting (e.g., round white and square white plates). In every video, the peer informant chose a less exciting option; thus, by providing more exciting options, we believed that children would be less likely to prefer the same option that the informant chose in the video in the absence of any influence. As a result, a child’s compliance would be due to the informant’s testimony, rather than their own personal preference. Each shelf had two more exciting and two less exciting options for the other objects (e.g., cups, teas, and snacks) that were used. Above each shelf, pictures of the four objects that the shelf held were taped to the wall.

Once everyone entered the room, the tea party host began administering the script (Appendix). The experimenter handed the child a blue sticker that both experimenters were also wearing, which served as a symbolic marker to indicate that the child was considered a part of the “Duke” group. Minimal group markers have been used in previous studies with three-year-old children and provide support for the idea that assigning a child to wear a specific color can result in an ingroup affiliation with others wearing that color—although in addition to stickers, materials such as armbands and scarves have also been utilized (Richter, Over, & Dunham, 2016). The child was informed that they would be setting up for a Duke tea party today. The second experimenter then left the room, and the host pretended to “Skype” the second experimenter, who acted as if they were in a different tea party room. The experimenter in the prerecorded video introduced the participant to another child, also wearing a blue sticker, who was the informant for the rest of the study. For each item, the host then directed the child’s attention to four pictures of one of the objects (e.g. plates, cups, teas, snacks) on the wall and asked the participant which of the four objects (e.g. which of the four plates) he or she liked best. Once the participant answered, the experimenter then directed the child’s attention to the computer and played the Skype video containing the testimony, expressing either a norm or a
preference, for that object. The videos were counterbalanced so that children heard either two norm or preference testimonies first and set up either the plates and cups or teas and snacks first.

We used a selective trust paradigm, in which a similar-age peer served as an informant who delivered both norm and preference testimonies (Corriveau, Meints, & Harris, 2009). The norm and preference testimonies differed in three important ways. First, they differed in terms of cultural category— the norm condition specified “tea parties at Duke” while the preference testimony stated, “my tea party today”. Furthermore, a group, “we”, was emphasized in the norm condition while the preference condition stated “I”. Lastly, the norm condition utilized generality, such as “We always use” compared to a variable statement, such as “I feel like using” in the preference condition.

In order to ensure that the child heard the informant, the host restated the testimony after each video. For example, the experimenter may have stated “So, we always use square white plates for our tea parties at Duke” or “So, [informant’s] using square white plates for her tea party in her room”. Afterwards, the experimenter asked the participant to get an object for “our” tea party.

2.4 Measures

The two measures included compliance and protest to the norm or preference. The main experimenter administered compliance and posed as the puppet when administering the protest measure.

2.4.1 Compliance

After “Skyping” the child in the other tea party room, the participant was asked to choose one of each item (e.g., plate, cup, tea, snack) to set up for “our” tea party. After the child chose, the participant was distracted for a couple of minutes with a toy ball until the procedure was repeated for the next object. After setting up two items in either the norm or preference
condition, a line was administered informing the child that it was time for the “second part of setting up the tea party,” in order to reduce the likelihood that participants would act the same across both conditions. For each object, the participant’s choice to set up an item that was chosen by the peer informant in the video was given a compliance rating of 1 and the choice to not comply received a score of 0. Each item was given a different score, so that the participant had four measurements of compliance.

2.4.2 Protest

Similar to Schmidt et al. (2012), we utilized a puppet to measure children’s protest. After setting up a plate, cup, tea, and snack, the child was reintroduced to the Squirrel puppet that they had previously met in the waiting room. The experimenter highlighted that the Squirrel had never set up for a tea party at Duke before and asked the child to watch as she set up. The Squirrel then chose one of each kind of item (in the same order as the videos) but, in each case, selected an object that had not been chosen as a favorite of the child, chosen in the videos, or set up by the participant. Whenever possible, this object was one of the “less exciting” options.

Upon choosing an item, the puppet stated, “Maybe I’ll use this one,” and if the child did not respond, the puppet followed up with the question “Should I use this one?” If the child protested the puppet’s choice, (i.e., saying no or suggesting a different item), the child received a protest rating of 1 and the type of protest was noted. A note was also made if the child protested and suggested the item that was used in the testimony, or if the child protested but suggested a different item that the peer informant did not choose (in which case, we did not consider the protest to count as a real protest). If the child did not protest the puppet’s choice, the participant received a protest rating of 0. The child received a protest score for each item and therefore had four measurements of protest.
2.5 Pilot Study

We piloted the study on 15 2.5-year-old children, but due to time constraints, a full sample could not be collected (3 boys, 11 girls; 27.09-32.58 months; Mean = 31.14; SD = 1.91). 5 additional two-and-a-half-year-olds were recruited but were excluded from the pilot sample (2 children did not want to participate, 1 did not speak enough English, 1 did not understand the study instructions, and 1 child was excluded due to experimenter error). Descriptive statistics revealed that out of the 15 2.5-year-old pilot participants, 4 children conformed to the norm testimony more than the preference testimony and 2 children conformed to the preference testimony more than the norm testimony. Two children conformed to one norm and one preference testimony (thus not leaning towards either testimony type) and the remainder of the children (7) did not conform to any of the testimonials.

2.6 Analysis Strategy

Descriptive statistics were first conducted to analyze the number of three-and-a-half-year-old children who did not conform to anything, conformed to everything, or prioritized either the norms or the preferences expressed by the peer informant. A two-sided binomial test was then run to see whether the norms were prioritized over the preferences among the children who conformed to one testimony over the other. We found that children conformed to the norm testimony significantly (p<.05) more than they did the preference testimony. We then ran a Shapiro-Wilk normality test in order to determine the statistical analyses (paired samples t-test or non-parametric Wilcoxon signed-rank test) needed to determine whether results were significant at the item-selection level. On the basis of the Shapiro-Wilk normality test, we ran a Wilcoxon signed rank test, which compared the repeated measurements of the single sample to determine the number of times that the child selected the item of interest.
3. Results

Given previous research and theory, we predicted that three-and-a-half-year-old children have the ability to recognize norms and therefore were expected to prioritize conforming to them over conforming to their peer’s individual preferences. Each tea party session was coded for compliance and protest by one of three experimenters that ran the study. Ten out of the 21 participants who conformed more to norms or preferences were then randomly selected, and a coder who was uninformed about the study hypothesis coded the videos. Interrater reliability coding was 100%.

Descriptive statistics revealed that of the 52 3.5-year-old participants, 27 children did not conform to any of the peer informant’s testimonies and 4 conformed to all of the testimonies. Out of the 21 children who conformed to one testimony more than another, 16 children prioritized the norm testimony while 5 children conformed more to the preference testimony (see Figure 1).

Figure 1. Children’s Compliance to Peer-Modeled Norms and Preferences. Norm indicates the child conformed to the norm testimony more often than they conformed to the preference testimony, and vice versa.
A two-sided binomial test was then run to see whether the children who did conform to one testimony over the other prioritized the norms over the preferences. We found that children prioritized conforming to the norm testimony significantly more (p<.05) than they did the preference testimony. Thus, our hypothesis that three-and-a-half-year-old children could recognize norms was confirmed.

We then ran a Shapiro-Wilk normality test in order to establish the statistical analyses needed to determine whether results were significant at the item-selection level, which would indicate the average amount of times that a participant conformed to a norm or preference. The Shapiro-Wilk normality test was significant (W = 0.78, p<.01). Thus, on the basis of the significant result generated by the Shapiro-Wilk normality test, we ran a Wilcoxon signed-rank test, which revealed whether children tended to select items based on the norm testimony more so than they did for the preference testimony. The Wilcoxon signed rank test was significant (V = 172.5, p<.05, two-tailed), indicating that results were also significant on an item-selection level. Thus, not only did more children prioritize conforming to norms over preferences, but also in the two trials each child, on average, complied to the norm testimony (1.1) more often than they did preference testimony (.42, respectively). Therefore, on average children selected an item based on the norm testimony approximately 1 out of every 2 times. On the other hand, when each child is given 2 opportunities to select a preference, they will choose a preference approximately 1 out of every 5 times. Again, these results confirm our hypothesis that three-and-a-half-year-olds would prioritize conforming to norms over preferences—therefore indicating that they can recognize norms as norms.

After children watched all of the testimony videos and set up four items for their tea party, they were asked to watch as a Squirrel puppet set up her spot at the tea party. If the child protested the puppet’s choice (i.e., saying no or suggesting a different item), the child received a
NORMS MODELED BY PEERS

protest rating of 1. Thus, there were four measurements of protest for each participant, and therefore 208 opportunities among all of the participants. Out of the 208 total opportunities, there were only 10 occasions in which a child protested the Squirrel’s selection and suggested an item on the basis of testimony in the videos (i.e., suggesting a square white plate). Therefore, children only protested 4.8% of the time, so there was not enough data to run analyses on the protest measure.

Lastly, upon analysis of the influence of children’s initial preferences on their compliance, we concluded that their initial selections before hearing the testimonies did not significantly impact their compliance. Among all those that conformed to a norm testimony, the children had initially chosen the plate selected in the videos 1 out of the 4 times that they conformed, initially chosen the selected cup 3 out of the 10 times, initially chosen the selected tea 3 out of the 5 times, and never preferred the selected snack. Therefore, 30.4% of the time that a child conformed to a norm testimony, the child had initially chosen that item anyway. Given that baseline probability of initially choosing the selected item is 25%, a binomial revealed that the difference was not significant. Among children who complied to testimonies portraying preferences, children had initially preferred the item chosen in the video 11% of the times.

4. Discussion

This study aimed to address the age at which children develop the ability to understand norms as group-level expectations rather than personal preferences. Both norms and preferences have a world-to-mind direction of fit (i.e., they both convey a desire for a certain state of the world), and therefore would appear the same to children who lack awareness of the difference in generalizability. We hypothesized that three-and-a-half-year-old children would be able to differentiate between norms and preferences, and therefore would comply with norms more so than with preferences. Our results confirmed this hypothesis, as among the children who favored
a testimony type, significantly more favored norms (16) over preferences (5) than expected by chance.

Our study directly tested the two-step sequence of normative development. Tomasello and Vaish (2013) proposed that children undergo a transformation in development in which children prior to the age of 3 engage in an initial second-personal, dyadic prosociality towards others. In this stage, children can offer instrumental support to others, provide comfort to distressed others, and coordinate intentional joint goals with another individual (Warneken & Tomasello, 2006; Eisenberg & Fabes, 1998; Warneken, Gräfenhain & Tomasello, 2012). Then, at around age 3, children transition into a group-level, norm-based morality, in which they protest norm violations from a third-party stance, allot resources equitably after working together, and feel guilty after causing harm to another individual (Rakoczy et al., 2008; Hamann, Warneken, Greenberg & Tomasello, 2011; Vaish, Carpenter & Tomasello, 2016). Prior to our research, no study has directly tested this hypothesis. Our results indicate that three-year-old children favored norms over preferences—thus, our study provides support for the theory that children understand norms by age three-and-a-half (Tomasello & Vaish, 2013).

Few previous studies have investigated children’s recognition of norms with the use of similar-age peers. Studying children’s conformity to adult-modeled norms leaves open the possibility that children are conforming to norms due to a presumed pressure from the authority figure that is providing the testimony. Furthermore, among studies that have utilized peer-modeled norms, they did so by pitting peer and adult testimonies against each other, thus forcing children to decide whether adults or peers were more reliable (Rakoczy et al., 2010). Thus, from our knowledge our methodology is rather unique with its use of similar-aged informants, without the presence of conflicting adult testimony, to study the recognition of social norms among
three-year-old children. Our results indicate that children do recognize and conform to peer-modeled norms.

4.1 Limitations

We identify a few limitations in our study. First, although our total sample consisted of 52 children, only 21 children had conformed to one testimony type over another, which made the sample that we analyzed smaller than originally anticipated. This overall lack of conformity may be the result of the ability to recognize norms just beginning to develop around age three-and-a-half. Among the children that did comply to one condition over the other, however, we still found significant differences in compliance between the norm and preference condition.

Furthermore, while previous literature suggested that three-year-olds protest norms from a third-party stance, our study revealed very few instances of protest. However, while Rakoczy et al. (2008) found that 3-year-olds performed normative protest responses, the puppet in their study performed the incorrect action immediately after the experimenter and participants established the correct action. Meanwhile, in our study, 3-year-olds were asked to watch 4 testimonial videos and set up 4 different objects before they watched the puppet perform the incorrect actions. Thus, the greater amount of time that passed between the testimonial videos and the protest measure may account for the difference in findings. Additionally, adding a warm-up phase with the puppet, in which the child could protest a puppet’s instrumental error, could have improved our rates of protest. Rakoczy et al. (2010), utilized such a phase, and found that 3-year-old children protested in the experimental condition approximately 40% of the time. We decided not to include a warm up phase in order to ensure that the study wouldn’t be too lengthy for 3-year-old participants, but that decision may have hindered rates of protest among children who may be shy.
Additionally, although we identify the informant in the testimony videos as a peer, the child is actually 6 years old—two and a half years older than the participants. We chose to feature a 6-year-old in the video given that we needed her to read from a script and follow specific directions, which a three-year-old would not have been able to do. Thus, we decided to utilize a slightly older peer in order to ensure that the script was carefully followed.

Finally, after piloting the study on two-and-a-half-year-olds, we discovered that obtaining a full sample would have been extremely time-consuming, and we were thus unable to continue to collect data on this age group given time constraints. Therefore, although we found that three-and-a-half-year-olds understood norms, we were unable to compare their results to children younger than three years old. Thus, though our study supports the two-step sequence proposed by Tomasello and Vaish (2013), as the results indicate that three-and-a-half-year-old children are in the second, agent-neutral normativity stage, it does not reveal children’s development prior to age 3, and is thus unable to illustrate the shift in normative thinking.

4.2 Future Directions

Future research (currently in progress) can investigate whether children differ in their conformity to norms when the informant is an adult versus another child. Doing so would allow us to understand if there are any differences in the likelihood of conformity, as the majority of children (53.8%) did not conform to any of the peer informant’s testimonies. We wonder if children would be more likely to assume a pressure from the adult informant and therefore conform to all of the testimonies, thus increasing the likelihood of conformity in general but decreasing the contrast between conformity to norms versus conformity to preferences.

On the other hand, it may be possible that children conform to a peer’s testimony more often than an adult’s testimony. VanderBorght and Jaswal (2008) found that 3- to 5-year old children were more likely to direct a question about toys to a child informant rather than an adult
informant, as they assumed that children would be more knowledgeable about the subject. Given that a tea party may be considered a game that children play with other peers, it is possible that they assume that another child would be more knowledgeable about the game rules than adults—thus resulting in children conforming to their testimony more often than an adult’s testimony. Overall, our results indicate that children were able to recognize a difference in the norm and preference testimony when a peer expressed each but investigating whether children understand the testimonies in the same way when an adult expresses them is a question that still needs to be addressed.

Additionally, as discussed previously, our study utilized a peer informant that was two-and-a-half years older than the participant. However, it is possible that the three-and-a-half-year-old participants would react differently towards a child of the same age compared to one that is slightly older (Zmyj, Daum, Prinz, Nielsen & Aschersleben, 2011). Thus, by modifying the methodology to include more simple lines and tasks for the informant, future research could utilize a three-year-old informant and thus investigate whether children differ in their recognition of norms when the informant is the same age as the participant.

Lastly, future research should investigate the mechanisms at play that result in the “normative turn” at age 3. Although our study supports the shift proposed by Tomasello and Vaish (2013), the reasoning behind the transition from a simple prosociality to a group-level morality is still unknown.

4.3 Conclusion

Social norms permeate seemingly all aspects of our daily lives. Although understanding what to wear to a wedding, what to take off during the National Anthem, or what to say when someone sneezes may seem instinctive, humans were not born with the ability to understand group norms. Rather, our research suggests that humans develop the ability to recognize these
norms at three years of age. Understanding social norms, and consequently our desire to conform to and fit in with a group, helps set us apart from all other animals. Therefore, the study of this conceptual development is critical.
NORMS MODELED BY PEERS

Appendix

<table>
<thead>
<tr>
<th>Greeting (after warm-up play in the waiting room. Also, introduce puppet in the waiting room.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOST: Welcome to our school! We're at Duke University! You're one of our friends now!</td>
</tr>
<tr>
<td>HOST: (give kid a sticker) We wear these stickers at our school! We are Duke!</td>
</tr>
<tr>
<td>HOST: We're having a Duke tea party today? Will you help us set up the tea party?</td>
</tr>
<tr>
<td>KID: Yes.</td>
</tr>
<tr>
<td>HOST: Great! Our school has 2 play rooms! We have another play room just like this one!</td>
</tr>
<tr>
<td>HOST: Lots of people are coming over for the tea party, so we're having tea parties in both rooms! We can use this computer to talk to our friends in the other room!</td>
</tr>
<tr>
<td>EXPERIMENTER 2: I'll go set up the tea party in the other room! Our friend KID-INFORMANT is in the other room right now! We'll talk to you on the computer! (leaves)</td>
</tr>
<tr>
<td>HOST: We're having another friend come over who will sit right here. You can help us set up for this guest! (point to mat)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Video believability (no break prior to this)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOST: Let's see what [EXPERIMENTER 2] is up to!</td>
</tr>
<tr>
<td><em>ring ring</em></td>
</tr>
<tr>
<td>EXPERIMENTER 2 and KID-INFORMANT: Hey!</td>
</tr>
<tr>
<td>HOST: Hey!</td>
</tr>
<tr>
<td>EXPERIMENTER 2: Can you hear us?</td>
</tr>
<tr>
<td>HOST: Yes.</td>
</tr>
<tr>
<td>EXPERIMENTER 2: Great! This is our friend KID-INFORMANT! (KID-INFORMANT: Hi!) We're in the other room! We're setting up the tea party in this room now! Talk to you later. (goes offscreen)</td>
</tr>
<tr>
<td>HOST: (distract kid with ball or stuffed animal)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Testimony</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOST: Hey, look at all these 000s (refer to pictures on the wall). Which 000 do you feel like using?</td>
</tr>
<tr>
<td>KID: That one (points to picture of 000).</td>
</tr>
<tr>
<td>HOST: Cool!</td>
</tr>
<tr>
<td>HOST: Let's see what [KID-INFORMANT's] up to!</td>
</tr>
<tr>
<td><em>ring ring</em></td>
</tr>
<tr>
<td>KID-INFORMANT: Hey!</td>
</tr>
<tr>
<td>HOST: Hey! What are you up to?</td>
</tr>
<tr>
<td>KID-INFORMANT: I'm getting 000s for the tea party now!</td>
</tr>
<tr>
<td>HOST: Oh cool! Which 000 are you using?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NORM INFORMANT</th>
<th>PREF INFORMANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>I'm looking for the kind of 000s we always use.</td>
<td>I'm looking for a 000 I feel like using today.</td>
</tr>
<tr>
<td>Oh look, here are some (description) 000s. But these aren't the 000s we always use for tea parties at Duke.</td>
<td>Oh look, here are some (description) 000s. But I don't feel like using this 000 for my tea party today.</td>
</tr>
<tr>
<td>Oh look, here are some (description) 000s. For tea parties at Duke, we always use this kind of 000. So, we're going to set up the ones that we always use!</td>
<td>Oh look, here are some (description) 000s. For my tea party today, I feel like using this 000. So, I'm going to set up this one that I feel like using!</td>
</tr>
</tbody>
</table>

| HOST: (at the end of the video): Okay, goodbye! |
| HOST: So, we always use (description) 000s for our tea parties at Duke. |
| HOST: Can you get a 000 for our tea party? (uncover tablecloth for 000) |
| KID: (sets up 000) |
| HOST: We're all done setting up the [plates & cups/teas & snacks]. In a minute, we'll set up the [plates & cups/teas & snacks]. Okay? |
| KID: Okay. (HOST: distract kid with ball or stuffed animal until next trial) |
| HOST: It's time to set up the [plates & cups/teas & snacks] now! This is the second part of setting up the tea party. Now that we've set up the [plates & cups/teas & snacks], let's set up the [plates & cups/teas & snacks]. |

<table>
<thead>
<tr>
<th>Puppet: If KID protests, comply. No break between the last testimony and puppet. Same order as the informant.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOST: This is our friend Squirrel! She'll be joining us for the tea party! She'll set up for herself right here.</td>
</tr>
<tr>
<td>HOST: Can you watch Squirrel? Squirrel's never set up for a tea party at Duke before.</td>
</tr>
<tr>
<td>HOST-AS-SQUIRREL: Hi, I'm Squirrel! I'm going to set up right here!</td>
</tr>
<tr>
<td>HOST-AS-SQUIRREL: Maybe I'll use this one... (pause) <em>if no protest</em>... Should I use this one?</td>
</tr>
</tbody>
</table>
References


