



Strong and strategic conformity understanding by 3- and 5-year-old children

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'Strong conformity' corresponds to the public endorsement of majority opinions that are in blatant contradiction to one's own correct perceptual judgements of the situation. We tested strong conformity inference by 3- and 5-year-old children using a third-person perspective paradigm. Results show that at neither age, children spontaneously expect that an ostracized third-party individual who wants to affiliate with the majority group will show strong conformity. However, when questioned as to what the ostracized individual *should* do to befriend others, from 5 years of age children explicitly demonstrate that they construe strong conformity as a strategic means of social affiliation. Additional data suggest that strong and strategic conformity understanding from an observer's third-person perspective is linked to the passing of the language-mediated false belief theory of mind task, an index of children's emerging 'meta' ability to construe the mental state of others.

Statement of contribution

What is already known on this subject?

- 'Strong conformity' corresponds to the public endorsement of majority opinions that are in blatant contradiction to one's own correct perceptual judgements of the situation.
- Asch's (1956, *Psychological Monographs: General and Applied*, 70, 1) classic demonstration of strong conformity with adults has been replicated with preschool children: 3- to 4-year-olds manifest signs of strong conformity by reversing about thirty to forty per cent of the time their correct perceptual judgements to fit with contradictory statements held unanimously by other individuals (Corriveau & Harris, 2010, *Developmental Psychology*, 46, 437; Corriveau *et al.*, 2013, *Journal of Cognition and Culture*, 13, 367; Haun & Tomasello, 2011, *Child Development*, 82, 1759).
- As for adults, strong conformity does not obliterate children's own private, accurate knowledge of the situation. It is in essence a public expression to fit the group and alleviate social dissonance.

What does this study add?

- In three experiments, we explored the developmental emergence in the preschool years of strong conformity inference from a third-person perspective. Results show that by 5 years of age, and not earlier, children begin to construe strong conformity as a strategy that someone *should* use to gain social affiliation, even though they do not anticipate that a third-party individual *would* necessarily resort to such strategy.
- Additional data suggest that strong and strategic conformity understanding from an observer's third-person perspective is linked to the passing of the language-mediated false belief theory of mind task.

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'Strong conformity' is the process by which an individual publicly endorses a majority opinion to fit the group, even though this opinion contradicts his own correct perceptual judgement of the situation. Asch's (1956) classic demonstration of strong conformity with adults has been replicated with preschoolers. In various testing situations, 3- to 4-year-olds manifest strong conformity by reversing about 30–40% of the time their correct perceptual judgements to fit with contradictory statements held unanimously by other individuals (Corriveau & Harris, 2010; Corriveau, Kim, Song, & Harris, 2013; Haun & Tomasello, 2011). These studies also demonstrate that, as for adults, strong conformity does not obliterate children's own private, accurate knowledge of the situation. Strong conformity is, from the start, a public expression to fit the group.

It is known that children tend to prefer 'similar others' (e.g., Aboud, 1988; Kinzler, Shutts, DeJesus, & Spelke, 2009). It is therefore likely that displaying similarity with others is early on a major mechanism of social affiliation. For example, 5- to 6-year-olds who are primed with ostracism engage in more precise imitations of others' actions than children who are not (Over & Carpenter, 2009; Watson-Jones, Whitehouse, & Legare, 2016). Those primed with ostracism thus try to avoid social exclusion and gain social proximity by conveying similarity *via* imitation (see Cordonier & Deschenaux, 2014; Over & Carpenter, 2012, 2013). In the same vein, strong conformity could be a strategy to affiliate with others by communicating similarity. In the present research, using a third-person perspective paradigm, we explored whether and when preschoolers explicitly construe strong conformity as an affiliative strategy.

Previous research confirms that by at least 9 years of age, children understand that a person with atypical appearance or behaviour should conform to majority standards to be socially accepted (Killen, Crystal, & Watanabe, 2002). Therefore, from at least that age, children explicitly construe group conformity as fostering social integration. Preschoolers' social-cognitive development suggests that we might find earlier signs of such explicit understanding of conformity as an affiliative strategy. By their second birthday, children develop a meta-representation of their own public image and start to actively manage it (Rochat, 2009, 2015). What remains unclear is when they understand that others, just like themselves, take care of their own public image – for instance, in displaying conformity with individuals they would like to befriend. Between 3 and 5 years, children develop the capacity to adopt and construe at an explicit level the perspective of others, as indexed by the passing of the false belief theory of mind (ToM) test (Callaghan *et al.*, 2005; Wellman, 2002, 2013; Wimmer & Perner, 1983). From this point on, children start construing others on the basis of their mental states, including the third-party need to belong.

We reasoned that these social-cognitive developments would allow preschoolers to construe and reflect explicitly about what other individuals should do to affiliate with a group. Our hypothesis was that children's third-person perspective conformity understanding would co-emerge with the development of a full-fledged ToM, as it depends on the construal of others' perspective as developmental milestone.

In the current research, we ran three experiments based on the same general procedure to document the early development of strong conformity understanding from a third-party perspective. Using three puppets depicted as friends, we asked 87 3- and 5-year-old children (tested individually) to anticipate the behaviour of a fourth, ostracized and otherwise identical puppet wanting to befriend the others. Following a treasure hunt script, all puppets discovered and looked into the same treasure box, announcing confidentially to the child distinct finds: object X for the three friends and object Y for the ostracized individual. The experimenter then asked the three friends to announce publicly what they saw in the box. After they declared that they saw object X, they turned

towards the fourth puppet asking what it saw in the box. At this point, the child had to guess what he or she thought the fourth puppet *would* say. In a follow-up question, the experimenter asked the child what he or she thought the fourth puppet *should* say to befriend the other three puppets (in Experiment 2, the order of questions was reversed).

With the *will* test question, we probed whether the child spontaneously anticipated that the ostracized puppet would persist in declaring what it saw in the box, or whether it would change its answer by announcing to the group of friends that it saw the same object as they saw. With the *should* test question, we probed whether the child thought that the ostracized puppet would be better off displaying strong conformity to befriend the other three puppets. A response pattern consisting of a *non-conformist* answer to the *will* question (i.e., the child answering that the ostracized puppet *would not* conform its public claim to that of the three friends) along with a *conformist* answer to the *should* question (i.e., the child answering that the ostracized puppet *should* conform its public statement to that of the three friends) was interpreted as indexing a genuine *strategic* understanding of the affiliative potential of strong conformity. Our rationale was that in this response pattern, expectation for conformity only occurs when the child is specifically prompted to imagine which might be the best strategy the ostracized puppet could use to fulfil its affiliative goal.

Finally, using a simplified version of the classic false belief ToM task, each child in Experiments 1 and 3 was tested for his or her ability to represent others' mental states. First established by Wimmer and Perner (1983), false belief ToM test has been widely used to assess the emergence of this competence between the age of 3 and 5 years (see Callaghan *et al.*, 2005; Wellman, 2002). We hypothesized that success at this task would be positively correlated with the understanding of the affiliative function of conformity from a third-person perspective, because anticipating that the ostracized puppet should display strong conformity to be socially accepted could require to adopt its cognitive perspective, that is, to understand its desire of social integration, and its beliefs of what is in the box and what the other puppets believe is in the box.

EXPERIMENT 1

Method

Participants

We individually tested 3-year-olds ($N = 20$, 11 females; 37–47 months, average 40.9 months) and 5-year-olds ($N = 19$, 12 females; 61–71 months, average 64.7 months) from middle- to upper-middle-class families living in metro-Atlanta, USA. Three 3-year-olds and one 5-year-old were excluded from the analysis as they did not answer correctly the control questions (see below).

Procedure

The child sat in front of a low table, next to the female experimenter (E). Four identical sock puppets resting on individual stands and wearing distinctive colour ribbons were lined up on the table facing the child (Figure 1). The E enacted the puppets during the experiment. Each puppet was named after the colour of its ribbon. Puppets' roles and locations on the table were randomized across participants.

The E instructed the child that three of the puppets (grouped on one side of the table) were 'very close friends', always enjoying playing together, and that the fourth puppet

was not friends with or liked by the other three, but really wanted to befriend them. The child was also told that because the three friends did not want it as a friend, the fourth puppet was sad and lonely.

Next in the protocol, the three friends decided to go on a treasure hunt. They discovered a closed and opaque treasure box (25 × 12 cm) that the E put on the table. The three friends wanted to see what was inside the box. The fourth puppet who was off to the side stated 'I also want to see, please let me see!' After refusing two times, the three friends reluctantly accepted, one of them saying 'Ok, I guess, you can see in the box', and the two other friend puppets agreeing 'Ok!' Then, all four puppets simultaneously looked in the box, the child not seeing what was inside. The E then told the child that all of the puppets were going to tell her 'in secret' what was in the box. Enacted by the E, the three friends began, in turn, to whisper in the child's ear what each saw in the box. They whispered that they saw object X ('It's a blue ball!'). Lastly, the fourth puppet whispered to the child that it saw object Y ('It's a yellow duck!'). Objects X and Y were randomized across participants.

In the test phase, the E told the child that all of the puppets were going to announce publicly (i.e., out loud) what they saw in the treasure box. One of the three friends announced what it saw (e.g., a blue ball), the other two agreeing enthusiastically ('Yeah, yeah, yeah! It's a blue ball!'). They then all turned towards the fourth puppet, asking emphatically: 'And you, what did you see in the box?' The E then turned towards the child and asked the *first test question*: 'What do you think the 4th puppet [named after its color ribbon] will answer to the others?' After the child answered the first question, the E asked the *second test question*: 'Ok! Now, let me ask you another question. Remember, the 4th puppet [named after its color ribbon] really wants to be friends with the other puppets. What do you think it *should* answer to the others *if it wants to be friends with them*?'

To check comprehension of the script, prior to the two test questions the E asked the child to show her who the three friends were, as well as who was lonely and wanted to gain friendship from the others (first control question). As a second control question, the child



Figure 1. Illustration of the experimental set-up, with the 'three friends' (grouped to the left of the child) and the 'ostracized puppet' (on the right) looking at the closed treasure box. Each of the puppets wears a distinct colour ribbon.

was then asked to indicate to the E what each of the puppets did see in the box ('Can you tell me what Purple *saw* in the box?'; identical question for each puppet). If the child did not answer correctly to one of the control questions, the question was asked again. Participants answering incorrectly twice to a control question were excluded from analysis.

It is worth noting that in the procedure we used, children did not directly witness that the three friends and the ostracized puppet saw distinct objects in the box. We used this procedure to avoid confusion between what the child might have witnessed directly and what is reported by the puppets. However, with this procedure, there is still the possibility that the child does not clearly understand that the ostracized puppet has to override its perceptual judgement to publicly conform with the group's opinion.

To control for this possibility, prior to asking the two test questions, we asked the child which object each puppet *did see* in the box (second control question mentioned above). A correct response to this question confirmed that the child agreed on the fact that the three friends and the ostracized puppet did actually see distinct objects. This ensured that those children showing an anticipation of conformity by the ostracized puppet did indeed understand that its public, group conforming response went against its own actual perception, an index of the child's understanding of strong conformity in the classical Asch's sense, but from a third-person perspective.

At the end of the session, each child was tested for his or her ability to represent the mind state of another using the 'unexpected location change' classic false belief task, in which the child is asked to guess at which of two locations an individual will look for a toy object that has been displaced in her absence by another individual, the child witnessing the displacement (see Callaghan *et al.*, 2005; Wellman, 2002).

Results

Results show that 88.2% of the 3-year-olds and 94.5% of the 5-year-olds gave a *non-conformist* answer to the *will* question, expecting above chance that the fourth puppet would *not* publicly conform its claim to the unanimous judgement held by the three friends (binomial tests with a probability of .5: $p = .002$ and $p < .001$, respectively). 64.7% of the 3-year-olds and 33.3% of the 5-year-olds gave a *non-conformist* answer to the *should* question. Three-year-olds' expectation that the fourth puppet should *not* conform and 5-year-olds' expectation that it *should* conform to befriend the other three puppets are not statistically different from chance ($p = .33$ and $p = .24$, respectively). Direct comparison between the two test questions showed that the 5-year-olds, but not the 3-year-olds, gave significantly different answers to the *will* and *should* questions, (McNemar's tests with Yates' correction: 3-year-olds: $\chi^2 = 2.25$, $p = .13$; 5-year-olds: $\chi^2 = 9.09$, $p = .003$; Figure 2).

Response patterns

Of the 17 3-year-olds and the 18 5-year-olds, 11 3-year-olds and 6 5-year-olds gave a *non-conformist* answer to the two questions; 4 3-year-olds and 11 5-year-olds gave a *non-conformist* answer to the *will* question along with a *conformist* answer to the *should* question; *no* 3-year-olds and *no* 5-year-olds gave a *conformist* answer to the *will* question along with a *non-conformist* answer to the *should* question; 2 3-year-olds and 1 5-year-old gave a *conformist* answer to the two questions. Chi-square tests of goodness-of-fit indicate that in both age groups, the occurrence of these four distinct response patterns is

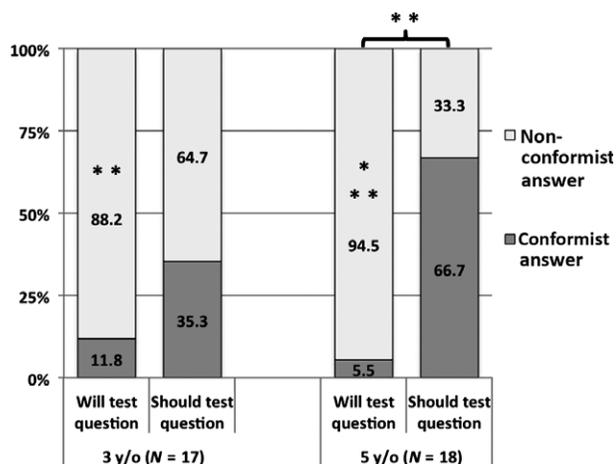


Figure 2. Experiment 1. Percentage of children by age group expecting a conformist/non-conformist answer to the first, *will test* question (i.e., what *would* the ostracized puppet answer to the others) and to the second, *should test* question (i.e., what *should* it answer to the others if it wants to befriend them). Asterisks inside the columns indicate significant conformist/non-conformist expectations. Asterisks above the columns indicate significant difference between answers to test questions 1 and 2. ** $p < .005$; *** $p < .001$.

significantly different from what is expected by chance, that is .25 for each pattern; 3-year-olds: $\chi^2(3, n = 17) = 16.18, p < .001$; 5-year-olds: $\chi^2(3, n = 18) = 17.11, p < .001$.

In the 3-year-olds, only the 'non-conformist answer to the two questions' response pattern occurred above chance (binomial test with a probability of .25: $p < .001$). Each of the three remaining response patterns was displayed by <25% of the 3-year-olds. In the 5-year-olds, only the 'non-conformist *will*/conformist *should*' response pattern occurred above chance ($p = .001$). The 'non-conformist answer to the two questions' response pattern is not different from chance ($p = .14$). Each of the two remaining response patterns was displayed by <25% of the 5-year-olds.

Regarding the false belief ToM task, 35.3% of the 3-year-olds and 88.9% of the 5-year-olds successfully passed it. The difference between the two age groups is statistically significant (Fisher's exact test: $p = .002$, OR = 14.67). A binary logistic regression assessing whether age (in months) and success at the ToM task predict the 'non-conformist *will*/conformist *should*' response pattern was performed, showing that age was not a factor (OR = 1.05). However, as shown in Table 1, success at the ToM task seems to be an impactful factor considering the odds ratio (OR = 3.78).

Discussion

Results show that at both ages, children did not anticipate without any framing that the ostracized puppet would override its perceptual judgement to publicly fit with the contradictory opinion held by the group. In other words, we found no signs of spontaneous strong conformity expectation from a third-person perspective in both 3- and 5-year-olds. However, when children were more specifically questioned as to which opinion the ostracized puppet *should* publicly endorse to befriend the other three puppets, results show that contrary to the 3-year-olds, a majority of 5-year-olds switched

Table 1. Binary logistic regression assessing the role of age (in months) and ToM in the occurrence of the ‘non-conformist *will*/conformist *should*’ response pattern

	Coefficients	Standard errors	<i>p</i>	Odds ratios	95% confidence limits	
					Low	High
Age	0.0473	0.0409	.2474	1.0485	0.9677	1.1360
ToM	1.3297	1.0716	.2147	3.7797	0.4627	30.8731
Intercept	−3.7805	2.0042	.0593			
Overall model fit: $\chi^2(2, n = 35) = 8.2147, p = .0165$						

their initial response, expecting this time a conformist behaviour by the ostracized puppet.

Five-year-olds’ dominant response pattern (i.e., a *non-conformist* answer to the *will* question along with a *conformist* answer to the *should* question) manifests a genuine *strategic* understanding of the affiliative potential of strong conformity as they only expected a conformist behaviour by the ostracized puppet when they were prompted to take into account its needs and interests (i.e., its willingness to be accepted by the other puppets). The necessity to adopt the ostracized puppet’s perspective to understand that it should display strong conformity in order to be socially accepted may explain why success at the ToM task seems to predict the occurrence of this response pattern.

A limitation of the present experiment is that the order of the two test questions was not counterbalanced between participants. In Experiment 2, we repeated the procedure with another group of 5-year-olds, changing the order of the two questions, asking the *should* question always first. With this control, we expected to replicate the results found with 5-year-olds in Experiment 1, upholding our hypothesis that independently of order, children do not expect that the puppets *would* spontaneously conform, but that it *should* to befriend the majority.

EXPERIMENT 2

Method

Participants

We individually tested 5-year-olds ($N = 17$, 9 females; 62–77 months, average 66.3 months) from middle- to upper-middle-class families living in metro-Atlanta.

Procedure

The general procedure and treasure hunt script of Experiment 1 were repeated, except that we switched the order of the two test questions, now asking the *should* question first. Same control questions were used. As in Experiment 1 almost all 5-year-olds successfully passed the simplified ToM task, we decided not to test participants’ ToM in Experiment 2.

Results

Only 11.8% of the children gave a *non-conformist* answer to the *should* question, a significant majority of them expecting that the fourth puppet *should* change its public

claim by endorsing the other puppets' opinion to befriend them (binomial test with a probability of .5: $p = .002$). They were 94.1% to give a *non-conformist* answer to the *will* question, expecting above chance that the fourth puppet would *not* publicly conform its claim to the three friends' judgement ($p < .001$). Direct comparison between the two questions showed a significant difference in children's anticipation of conformity by the fourth puppet (McNemar's test with Yates' correction: $\chi^2 = 10.56$, $p = .001$; Figure 3).

Response patterns

Of the 17 5-year-olds, 1 gave a non-conformist answer to the two questions; 15 gave a non-conformist answer to the *will* question along with a conformist answer to the *should* question; 1 gave a conformist answer to the *will* question along with a non-conformist answer to the *should* question; and none gave a conformist answer to the two questions. A chi-square test of goodness-of-fit indicates that the occurrence of these four distinct response patterns is significantly different from what is expected by chance, that is .25 for each pattern; $\chi^2 (3, n = 17) = 36.41$, $p < .001$. Of the four possible response patterns, only the 'non-conformist *will*/conformist *should*' response pattern occurred above chance (binomial test with a probability of .25: $p < .001$). Each of the three remaining response patterns was displayed by <25% of the children.

Comparing 5-year-olds' answers to the two test questions in Experiments 1 and 2, results yielded no significant differences (Fisher's exact test: *will* question: $p = 1$;

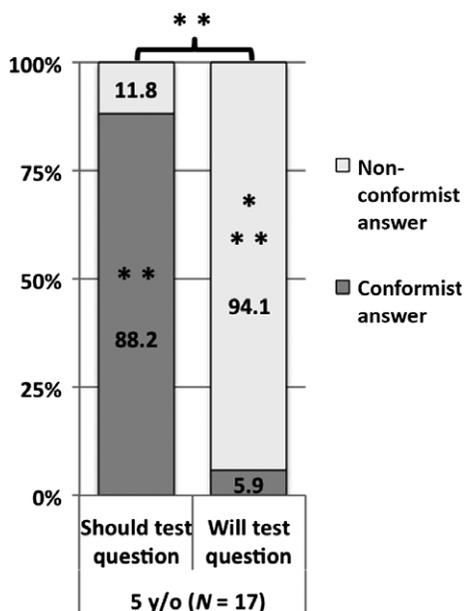


Figure 3. Experiment 2. Percentage of 5-year-old children expecting a conformist/non-conformist answer to the first, *should* test question (i.e., what *should* the ostracized puppet answer to the others if it wants to befriend them) and to the second, *will* test question (i.e., what *would* it answer to the others). Asterisks inside the columns indicate significant conformist/non-conformist expectations. Asterisks above the columns indicate significant difference between answers to test questions 1 and 2. ** $p < .005$; *** $p < .001$.

should question: $p = .23$), showing no evidence that the order of the questions did play a role in children's answers. To further examine the role of questions order between the two experiments, a binary logistic regression assessing whether the order of the two questions predicts a conformist answer to the *should* question was performed. Results exposed in Table 2 indicate that asking the *should* question first seemed to favour a conformist answer to this question (OR = 3.75). However, we found no significant difference in the occurrence of the 'non-conformist *will*/conformist *should*' response pattern between the 5-year-olds tested in Experiments 1 and 2 (Fisher's exact test: $p = .12$).

Combining the 5-year-olds' results of Experiments 1 and 2 ($N = 35$ in total) shows that 94.3% of them displayed a *non-conformist* expectation regarding the *will* question (binomial test with a probability of .5: $p < .001$) and 77.1% a *conformist* expectation regarding the *should* question ($p = .002$). Moreover, 74.3% of the 5-year-olds tested in Experiments 1 and 2 displayed the 'non-conformist *will*/conformist *should*' response pattern (binomial test with a probability of .25: $p < .001$).

Discussion

Reversing the order of the questions yielded analogous results compared to the 5-year-olds tested in Experiment 1, although the *should* question tended to elicit more conformist answers when it was asked first (Experiment 2) than when it was asked second (Experiment 1). Experiment 2 thus confirms that from 5 years of age, children infer strong conformity in others as a strategic means towards social affiliation.

In a third experiment, we repeated the protocol with a novel cohort of 3- and 5-year-old children, in a situation probing the possibility that a weaker form of group conformity might facilitate children's spontaneous anticipation of conformity by a third-party individual.

EXPERIMENT 3

In the first two experiments, children did not know what was actually in the treasure box and therefore were forced to take for granted what each puppet reported seeing by whispering in turn to their ear. Accordingly, the fourth puppet reported seeing a completely different singular object. For children to anticipate strong conformity by the fourth puppet, they had to assume the public report of a radically different perception. This might have rendered spontaneous conformity anticipation too

Table 2. Binary logistic regression assessing whether the conformist answer to the *should* test question is a function of the order of the two test questions (the *should* test question was asked second in Experiment 1 and first in Experiment 2)

	Coefficients	Standard errors	p	Odds ratios	95% confidence limits	
					Low	High
Questions order	1.3218	0.9037	.1436	3.7500	0.6380	22.0424
Intercept	0.6931	0.5000	.1657			
Overall model fit: $\chi^2 (1, n = 35) = 2.3984, p = .1215$						

difficult and taxing for the child. In Experiment 3, we thus explored the possibility that children could anticipate a weaker form of conformity in a condition where the fourth puppet, to conform, would not have to completely override its perception of what is in the treasure box. We anticipated that this less self-compromising form of group conformity would facilitate children's spontaneous anticipation of conformity from a third-person perspective.

Method

Participants

We individually tested 3-year-olds ($N = 15$, 7 females; 37–47 months, average 41.8 months) and 5-year-olds ($N = 16$, 8 females; 61–72 months, average 66.06 months) from middle- to upper-middle-class families living in metro-Atlanta. One 3-year-old was excluded from the analysis as she failed one control question.

Procedure

In Experiment 3, the same procedure as in Experiment 1 was followed, except that, as a preliminary, the child placed him or herself in the treasure box *two* distinct objects (X and Y). The child thereby knew that all puppets saw both objects when looking into the treasure box. Following the same treasure hunt script as in Experiment 1, the three friend puppets discovered the treasure box and all four looked in succession inside it. The E then told the child that all of the puppets were going to whisper in his or her ear, secretly, what was in the treasure box. The three friend puppets whispered in turn in the child's ear that they saw object X in the box, not mentioning Y. Lastly, the fourth ostracized puppet whispered to the child that it saw object Y, not mentioning X. Objects X and Y were randomized across participants. The test phase and the control questions were the same as in Experiment 1. At the end of the session, each child was tested in the 'unexpected location change' classic false belief task.

Results

Results show that 85.7% of the 3-year-olds and 100% of the 5-year-olds gave a *non-conformist* answer to the *will* question, expecting above chance that the fourth puppet would *not* publicly conform its claim to the unanimous judgement held by the three friends (binomial tests with a probability of .5: $p = .013$ and $p < .001$, respectively). 57.1% of the 3-year-olds and 37.5% of the 5-year-olds gave a *non-conformist* answer to the *should* question. Three-year-olds' expectation that the fourth puppet should *not* conform and 5-year-olds' expectation that it *should* conform to befriend the other three puppets are not statistically different from chance ($p = .79$ and $p = .46$, respectively). Direct comparison between the two test questions showed that the 5-year-olds, but not the 3-year-olds, gave significantly different answers to the *will* and *should* questions (McNemar's tests with Yates' correction: 3-year-olds: $\chi^2 = 1.13$, $p = .29$; 5-year-olds: $\chi^2 = 8.1$, $p = .004$; Figure 4).

Response patterns

Of the 14 3-year-olds and the 16 5-year-olds, 6 3-year-olds and 6 5-year-olds gave a non-conformist answer to the two questions; 6 3-year-olds and 10 5-year-olds gave a non-conformist answer to the *will* question along with a conformist answer to the *should*

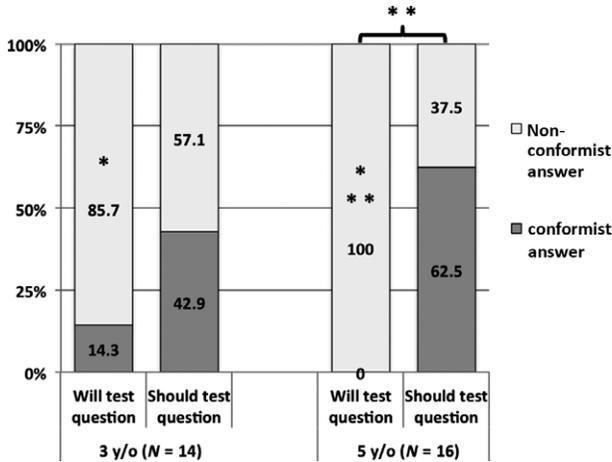


Figure 4. Experiment 3. Percentage of children by age group expecting a conformist/non-conformist answer to the first, *will test* question (i.e., what *would* the ostracized puppet answer to the others) and to the second, *should test* question (i.e., what *should* it answer to the others if it wants to befriend them). Asterisks inside the columns indicate significant conformist/non-conformist expectations. Asterisks above the columns indicate significant difference between answers to test questions 1 and 2. **p* < .05; ***p* < .005; ****p* < .001.

question; 2 3-year-olds and *no* 5-year-olds gave a conformist answer to the *will* question along with a non-conformist answer to the *should* question; *no* 3-year-olds and *no* 5-year-olds gave a conformist answer to the two questions. Chi-square tests of goodness-of-fit indicate that the occurrence of these four distinct response patterns is significantly different from what is expected by chance (i.e., .25 for each pattern) in the 5-year-olds, but not in the 3-year-olds; 3-year-olds: $\chi^2(3, n = 14) = 7.71, p = .051$; 5-year-olds: $\chi^2(3, n = 16) = 18, p < .001$.

In the 3-year-olds, no response pattern occurred significantly above chance (binomial tests with a probability of .25: *p* = .073 for the ‘non-conformist answer to the two questions’ response pattern; *p* = .073 for the ‘non-conformist *will*/conformist *should*’ response pattern; each of the two remaining response patterns was displayed by <25% of the 3-year-olds). In the 5-year-olds, only the ‘non-conformist *will*/conformist *should*’ response pattern occurred above chance (*p* = .001). The ‘non-conformist answer to the two questions’ response pattern is not different from chance (*p* = .11). No 5-year-olds displayed the two remaining response patterns.

Regarding the false belief ToM task, 21.4% of the 3-year-olds and 87.5% of the 5-year-olds successfully passed it. The difference between the two age groups is statistically significant (Fisher’s exact test: *p* < .001, OR = 25.67). A binary logistic regression assessing whether age (in months) and success at the ToM task predict the ‘non-conformist *will*/conformist *should*’ response pattern was performed, showing that age was not a factor (OR = 1.01). However, as shown in Table 3, success at the ToM task seems to be an impactful factor considering the odds ratio (OR = 2.68).

Discussion

In Experiments 1 and 2, to show strong conformity, the ostracized puppet had to override and totally transgress its own object perception. In this context, we found no evidence

Table 3. Binary logistic regression assessing the role of age (in months) and ToM in the occurrence of the 'non-conformist *will*/conformist *should*' response pattern

	Coefficients	Standard errors	<i>p</i>	Odds ratios	95% confidence limits	
					Low	High
Age	0.0050	0.0440	.9092	1.0050	0.9220	1.0955
ToM	0.9853	1.1000	.3704	2.6787	0.3102	23.1343
Intercept	-0.6933	2.0409	.7341			
Overall model fit: $\chi^2(2, n = 35) = 2.0707, p = .3551$						

that either the 3- or the 5-year-olds *spontaneously* expected strong conformity in the ostracized puppet.

With Experiment 3, we further explored whether we could eventually facilitate a weaker form of spontaneous conformity anticipation by same-age children in a situation with no requirement for a total overriding of object perception by the ostracized puppet. The data show that such facilitation, at either age, did not significantly matter. Experiment 3 replicated the results of Experiments 1 and 2.

GENERAL DISCUSSION

To our knowledge, the present research is the first to explore whether and when preschoolers might start to infer a strategic use of strong conformity in (ostracized) others (third-person perspective). We hypothesized that they would do so when they start to develop the 'meta' ability to construe the mental states of others.

We ran three experiments based on the same general procedure to test whether 3- and 5-year-old children anticipate strong conformity in a puppet depicted as desperately trying to befriend a group of three other puppets, and whether they explicitly construe strong conformity as a strategy that this ostracized puppet could use to gain social affiliation. The children were prompted to anticipate whether or not the ostracized puppet *would* publicly conform its conflicting judgement regarding what was in a treasure box to the judgement held by the three friends. The children were also asked to expect which opinion the ostracized puppet *should* publicly endorse in order to befriend the other three puppets.

Results of the three experiments show that by 5 years, and not earlier, children expect a *conformist* behaviour from the ostracized puppet when asked to guess what it *should* do in order to befriend the others. This result, which we reasoned necessitates basic social perspective taking ability, is predicted by the child's passing of the classic false belief theory of mind test. Five-year-olds thus start to demonstrate an explicit and strategic understanding of strong conformity in others as an affiliative means at the time they also begin to show an ability to construe various beliefs, perspectives, and values held by others. Interestingly, however, the 5- as well as the 3-year-olds did *not* anticipate that the ostracized puppet *would* conform its public statement to that of the majority group. On the contrary, at both ages an overwhelming majority of children expected that the ostracized puppet would publicly express what it actually saw in the box.

It is possible that 3- and 5-year-old children are still attached literally to what the puppet reported seeing in the box, not able yet to reframe this knowledge in reference to the demand of the social situation. In this context, asking what the ostracized puppet *should* do (as opposed to *would*) to befriend the other puppets might have helped the 5-year-olds to become less literal and more rationale regarding the affiliative demand of the situation. More research is needed to assess whether putting less emphasis on the third-party individual's affiliative need would have been sufficient to elicit 5-year-olds' strategic conformity understanding.

In conclusion, we demonstrated, to our knowledge for the first time, that by 5 years of age, children begin to construe strong conformity as a strategy that someone *should* use to gain social proximity, even though they do not anticipate that a third-party individual *would* necessarily resort to such strategy. These findings highlight a major social-cognitive development occurring in the preschool years by which children start to understand that, just like themselves, others are actively engaged in self-image management to gain social affiliation and recognition (Rochat, 2009, 2015). From this developmental point, similarity becomes construed as a social heuristics and explicit social rule to gain affiliation not only for self, but also for others from a third-person perspective.

This development appears to be linked to the capacity of explicitly construing the mental states of others. However, we did not control for other variables that might be related to the emergence of strong conformity understanding (e.g., executive functioning). More research is thus needed to further explore the underlying mechanisms of children's conformity understanding from a third-person perspective. Another limitation of the present study is that in all experiments, the three friend puppets actively rejected the fourth. Future research should test the impact of active ostracizing (i.e., bullying) in strategic conformity understanding by testing children in a situation where the dissenter is not actively ostracized by the group.

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