

The Development of Conformity Among Chinese Children Aged 9–15 Years in a Public Choice Task

Peng Zhang^{1,2}, Yibin Zhang³, Zhaoran Mu^{1,2}, and Xiangping Liu^{1,2}

Abstract

Both children and adults exhibit moderate conformity behaviors when facing group pressure. While some studies purport that children conform more with age, others have shown the opposite. The publicity of decision-making might be a major factor influencing the development of children's conformity behavior. In this study, we recruited 295 Chinese children aged 9–15 years. We observed no significant correlation between children's age and conformity behaviors when their answers were kept confidential. However, older children showed stronger conformity behaviors when their answers were made public. According to cultural evolutionary theory, with age, children find group acceptance and social recognition increasingly more important, which explains why older children are more likely to conform—namely, doing so has adaptive value. Further research should explore the cross-cultural coherence of this phenomenon and the genuine motivation behind children's conformity behaviors. Meanwhile, designing a more reliable and valid experiment would also be a fruitful direction.

Keywords

conformity, children, development, public, anonymous

Date received: May 18, 2017; Accepted: October 10, 2017

As a group-living species, humans have developed various social behaviors such as conformity. Conformity refers to the common phenomenon that individuals' behaviors or attitudes become consistent with those of other group members under the real or imagined pressure from those group members (Asch, 1956; Cialdini & Goldstein, 2004). Although conformity usually has negative connotations—such as a lack of independence and assertion—it is nevertheless important for adapting to a changing society in most cases. Conformity is an important mechanism for social learning and can help individuals learn social information quickly and accomplish socialization smoothly (Boyd & Richerson, 1985). Formal cultural evolution theory holds that conformity promotes the development of cultural diversity and in-group stability (Henrich & Henrich, 2007).

Conformity tends to appear at around age 3 and persists into adulthood (Corriveau & Harris, 2010). Furthermore, children's conformity has been shown to increase with age. Costanzo and Shaw (1966) investigated participants' conformity behavior at different ages and found that conformity was lowest among those aged 7–9; it then increased with age to an asymptotic

point at 11–13 years of age. Other researchers have reported only a slight increase in conformity between 3 and 10 years of age (Hamm & Hoving, 1969; Iscoe, Williams, & Harvey, 1963). Morgan, Laland, and Harris (2015) predicted that, as they age, children's conformity behavior approaches that of adults—that is, children become more sensitive to the unanimous majority opinion. According to cultural evolutionary theory, this conformity is adaptive. However, a few studies have shown that children become less prone to conform with age. For instance, some researchers showed that children's level of conformity decreased significantly between 3 and 10 years of age (Bishop & Beckman, 1971; Cohen, Bornstein, &

¹ Department of Psychology, Beijing Normal University, Beijing, China

² Beijing Key Laboratory of Applied Experimental Psychology, Beijing, China

³ School of Government, Beijing Normal University, Beijing, China

Corresponding Author:

Xiangping Liu, Department of Psychology, Beijing Normal University, 1512 Houzhu Building, 19 Xijiekouwai St., Beijing 100875, China.
 Email: lxp599e@163.com



Sherman, 1973). Similarly, Walker and Andrade (1996) reported a decline in conformity responses between 3 and 17 years of age, while Ceci and Bruck (1993) concluded that the younger the children are, the more susceptible they are to information given by others.

Using mathematical models and experimental studies, researchers have identified various factors that can influence individuals' conformity behaviors such as the objects of conformity (e.g., parents or peers; Costanzo, 1970), cognitive style (Witkin, Moore, Goodenough, & Cox, 1977), gender (Bishop & Beckman, 1971; Haun & Tomasello, 2011), race (Chen, Corriveau, & Harris, 2013), and task difficulty. These factors may be the reason for the lack of consistency in study results. For instance, a recent study found that 7-year-olds, but not 3-year-olds, copied others more on difficult trials than on easy trials (Morgan, Laland, & Harris, 2015). For the easy trials, children aged 3–9 years showed no significant differences in conformity. In another study, a sample of Caucasian females aged 7–15 years conformed more than did African American females of a similar age range (Iscoe, Williams, & Harvey, 1964). Similarly, rural Mexican children aged 7–9 years conformed more than did their Anglo-American counterparts (Kagan, 1974).

The impact of gender, race, and task difficulty on children's tendency to conform has been previously explored. However, there have been few studies on the effect of the publicity of decision-making on the development of children's conformity behavior. Researchers have suggested that in an anonymous context, in both childhood and adulthood, individuals consciously or unconsciously make judgments and decisions by referring to others' behaviors and opinions in order to ensure that they have acted properly (Deutsch & Gerard, 1955; Hornsey, Majkut, Terry, & McKimmie, 2003). By contrast, in public conditions, individuals tend to go against their own opinions to match those of the majority in order to avoid group isolation or obtain a positive assessment from others (Mann, 1969). For example, Haun and Tomasello (2011) asked 4-year-olds to make a judgment anonymously under the pressure of a unanimous majority opinion; later, the children were informed that their judgment would be revealed and were given the opportunity to revise the decision. They found that most of the children with the minority opinion chose to alter their judgment to fit with the majority. Thus, children appear to be differently sensitive to the unanimous majority opinion depending on whether their responses are anonymous or public.

Our study examines the influence of publicity on children's conformity behavior from a developmental perspective. We presume that older children are more likely to conform in a public context. Previous studies have demonstrated that older children are more sensitive to group opinions compared to younger children (Morgan et al., 2015). Additionally, Aloise-Young (1993) found that conformity can be used strategically by children to manage others' evaluations of their public self after 8 years of age. The potential conflict that could arise from standing alone against a majority, based on past experience, compelled children to avoid such conflicts by

giving the same response as the majority (Haun & Tomasello, 2011). Therefore, the older the children, the more readily they will go against their own judgments and respond in a way consistent with the majority when they are in conflict with other group members.

Specifically, children may show less conformity as they grow older in an anonymous context. Previous studies have shown that, in early childhood, the mechanism for integrating social information into decision-making is immature. Thus, younger children are more likely to rely on guidance from others when they encounter uncertain or difficult problems (Corriveau & Harris, 2010; Herrmann, Legare, Harris, & Whitehouse, 2013; Williamson, Meltzoff, & Markman, 2008). However, they appear to grow more decisive with age. Children continue to accumulate historical experience through constant study and practice, which in turn makes children relatively likely to stand firm in their opinion when faced with conflicting views, especially in an anonymous context (Rebecca & Deborah, 2014). In fact, individuals' degree of confidence is a strong predictor of whether they ultimately revise their initial judgment (Minson & Mueller, 2012; Morgan, Rendell, Ehn, Hoppitt, & Laland, 2011; See, Morrison, Rothman, & Soll, 2011; Soll & Mannes, 2011).

In summary, we assume that children are more likely to conform in a public context, whereas they will be less likely to in an anonymous context. To test this hypothesis, we conducted an experimental study in which children aged 9–15 years were asked to execute a modified Asch conformity task. We measured participants' preestablished convictions in order to help eliminate bias in our results. Previous studies on the conformity of young children typically used the classical Asch paradigm, with the index of conformity being whether children's answer was consistent with the majority. However, that paradigm does not account for the possibility that children made the same answer as the unanimous majority independently, without feeling pressured by other members of their group. Thus, if the results of the preestablished convictions measurement are incompatible with those of the formal task, we then can say that the minority children submitted to group pressure when giving their judgment publicly. In this experiment, three participants were chosen as the size of the majority in order to guarantee optimal results.

Material and Method

Participants

A total of 309 children were recruited through broadcasts and flyers at a primary school from Grades 3–6 in Gansu Province. Ultimately, 295 nine- to fifteen-year-old children participated in the study with the consent of their guardians (14 children's guardians did not provide informed consent). All children were Han Chinese and had normal vision and were without color blindness or mental illness. Furthermore, none was receiving psychological treatment. Each of the participants received US\$10 in return for their participation in the experiment.

Modified Asch Paradigm

Our experiment used the modified Asch paradigm created by Zhang, Deng, Yu, Zhao, and Liu (2016). First, participants were given the following instructions: "Please determine whether the pair of pictures shown on the left side of the screen are uniform in size. Meanwhile, the decisions from the other three students will appear on the right side of the screen; you can either choose to ignore or refer to their answers. Please try to make your own judgment. Press the Y button if you believe that the two pictures are the same size. If not, please press the N button. To continue the experiment, please press Q when you are ready." Then, pictures and other participants' judgment appeared after a 500-ms period, during which a fixation point was displayed. Another 500 ms was given before the start of the next trial. We prepared 12 pairs of pictures, 6 of which were uniform in size. The conformity information was always unanimous and always incorrect (i.e., it showed "N" when the two pictures were actually the same and "Y" when they were different). Children completed 24 trials in total, which took about 10 min or so. We ran the experiment on a PC with a 19-in. display (resolution: 1,440 × 900, refresh rate = 70 Hz) using E-prime 2.0 (Psychology Software Tools Inc., Pittsburgh, PA). The screen background was black with white text for instructions. All the pictures were presented in green, and participants were about 60 cm from the display. The viewing angle was about 3°.

Procedure

The entire experiment was approved by the ethics committee of the psychology laboratory at Beijing Normal University. On the first day of the experiment, participants were asked to indicate whether each pair of pictures was uniform in size. The results of this experiment were regarded as participants' preestablished convictions. Over the next 2 days, participants completed the Asch paradigm under public and anonymous conditions, respectively. In the public condition, we told children that all participants' answers (including their own and those of the three other students) would be shown to each other. By contrast, in the anonymous condition, each participant was told that he or she would be able to see the choice of the other three students but that these students would not know the participant's final decision. Participants did not know the age or gender of the three other students. To avoid sequence effects, we randomly divided participants into two groups. The first group completed the public condition on the second day and the anonymous condition on the third day, while the second group completed the conditions in reverse. All participants entered the 15-m² laboratory, which was appropriately lighted, alone and completed the preestablished convictions test and Asch paradigm presented on a PC.

Results

Data Reduction

A total of 27 participants' data were excluded: 6 voluntarily left during the experiment, 9 failed to complete the experiment

because of physical discomfort or a time conflict, and 12 had error rates exceeding 2 standard deviations (*SDs*) in the Asch task. Thus, the final data analysis included data from 268 valid subjects (females: $n = 126$, $M_{\text{age}} = 12.46$, $SD = 1.32$; males: $n = 142$, $M_{\text{age}} = 12.16$, $SD = 1.51$); participants' attrition rate was 9.15%. Data were assessed using SPSS Statistics 19.0 (IBM Corporation, Armonk, NY).

Correlations Between Age and Conformity

All participants showed 100% correct answers on the preestablished convictions test. Thus, if participants made the incorrect judgment in the formal task, they would have shown conformity to the unanimous majority. Therefore, we used the error percentage in the Asch task as an indicator of conformity. A higher error percentage would imply a greater tendency to conform. We found that age was not significantly correlated to conformity in the anonymous condition (i.e., anonymous conformity; $r = -.003$, $p = .966$), but it was significantly correlated in the public condition (i.e., public conformity; $r = .230$, $p < .001$). Furthermore, grade was significantly correlated with age ($r = .704$, $p < .001$) and public conformity ($r = .141$, $p = .021$) but not with anonymous conformity ($r = .011$, $p = .855$). There is substantial evidence that females, compared to males, are more likely to conform (Bond & Smith, 1996; Costanzo & Shaw, 1966). In our study, females did indeed show greater conformity than males in the public condition (females: $M = 0.52$, $SD = 0.108$; males: $M = 0.48$, $SD = 0.095$, $t = -3.173$, $p = .002$); however, the difference in conformity between females and males was not significant in the anonymous condition (females: $M = 0.50$, $SD = 0.122$; males: $M = 0.51$, $SD = 0.104$, $t = 0.221$, $p = 0.826$). Therefore, we defined gender as a dummy variable and conducted a hierarchical multiple regression analysis to understand the specific relationship between age and conformity in the public condition. The error percentage was set as the dependent variable in this analysis. Gender and grade were included in the first step of the regression equation and age in the second step. The results indicated that age still positively predicted conformity in the public condition even after controlling for error percentage and grade (see Table 1).

Repeated Measures Analysis of Variance (ANOVA)

Furthermore, we conducted a repeated measures ANOVA to compare the mean differences between error percentages that had been split across ages and conditions. The main effect of condition was not significant, $F(1, 261) < 1$. The main effect of age was significant, $F(6, 261) = 2.823$, $p = .011$, $\eta^2 = .061$. The error percentages increased with age (see Table 2). The Condition × Age interaction was critically significant, $F(6, 261) = 1.894$, $p = .082$, $\eta^2 = .042$. Simple contrast analyses revealed that the error percentages increased with age in public condition, $F(6, 261) = 3.507$, $p = .002$, $\eta^2 = .075$ (see Table 2), while the same was not significant in anonymous condition, $F(6, 261) = 1.596$, $p = .148$, $\eta^2 = .035$.

Table 1. Results of the Hierarchical Multiple Regression Analyses.

Step	Variables	Predicting Social Anxiety β
1	Sex	-.179**
	Grade	.124*
	Multiple r^2	.045
2	Age	.247**
	Multiple r^2	.072
	Δr^2	.027

* $p < .05$. ** $p < .01$.

Table 2. Mean Error Percentages Between Ages and Conditions.

Age (Number)	Female Ratio (%)	Anonymous		Public	
		M	SD	M	SD
9 (8)	25.0	.43	.094	.38	.048
10 (26)	34.6	.52	.119	.48	.084
11 (28)	42.9	.49	.109	.49	.081
12 (96)	47.9	.52	.112	.49	.106
13 (51)	51.0	.49	.119	.50	.114
14 (43)	58.1	.50	.102	.52	.096
15 (16)	37.5	.50	.100	.56	.095
Total (268)	47.0	.51	.112	.50	.103

Note. SD = standard deviation.

Discussion

We used a modified Asch paradigm to investigate the development of conformity behaviors under public and anonymous conditions using 268 nine- to fifteen-year-old children. We found that children's conformity behaviors were relatively stable with age in the anonymous condition. However, children showed greater conformity with age when they had to make a decision in public. We measured participants' preestablished convictions to ensure that the results were more valid; in other words, it ensured that children's conformity behaviors in the Asch task were actually due to the effect of the unanimous majority rather than random choices.

It is not difficult to understand why children would submit to the unanimous majority. Early studies by Asch (1956) and Deutsch and Gerard (1955) argued that conformity behaviors are, in most cases, adaptive. Indeed, the theory of cultural evolution explains that conformity behaviors promote in-group consistency and help individuals acquire appropriate behavioral norms (Henrich & Henrich, 2007). Children, as a vulnerable group in society, tend to lack adaptive conventional knowledge and thus are perhaps able to account for their weaknesses through conformity. Therefore, they conformed to majority in both public and anonymous conditions.

We found that children showed a greater tendency to conform with age in the public condition, which is consistent with our assumptions. Previous studies have shown that, with age, children become more adept at adjusting their degree of conformity according to the privacy of their response (Haun &

Tomasello, 2011). When making decisions in public, the older they were, the more children would submit to others' opinion, even if they knew the others' opinion was wrong. Similarly, there is evidence that children manage others' evaluations of their own public images at the age of eight onward, as part of seeking group acceptance and a more positive self-concept (Cialdini & Goldstein, 2004). These studies all revealed that, as age increases, children become increasingly concerned with others' opinions. Accordingly, they show greater conformity in public. Our results also support these conclusions.

We found no significant differences in children's conformity tendency across ages in the anonymous condition, which is not consistent with our assumptions. Previous research found that older children possess more advanced cognitive abilities, are more confident, and are less reliant on social information when compared to younger children, especially when they would not have to worry about pressure from the majority (Rebecca & Deborah, 2014). This means children would show less conformity in the anonymous condition with age. However, we found that children's conformity tendency changed little in the anonymous condition across ages. This implied that 9- to 15-year-olds have developed relatively stable conformity tendency. Previous experience has taught them that it is useful to be in line with the majority, even though they know their choices will not be seen by others. Moreover, this evolved behavioral strategy was free from specific environmental influences. Another possible reason for this is that our pattern judgment task is too simple for children aged 9–15. Preestablished convictions test showed that children of different ages may have the same degree of confidence in their judgments. However, the distinction between younger and older children in conformity is only evident when the experimental task has a certain degree of difficulty (Hanayama & Mori, 2011). In addition, females show more conformity to the unanimous majority than males when making decisions publicly but not when they are made anonymously, and this pattern has been observed in previous studies (Lee, 2006). Researchers believe that females are usually expected to be gentle and submissive, and females tend to behave more in conformity with expectations (Cross, Brown, Morgan, & Laland, 2017).

Our research has some limitations. First, previous research has shown that children are highly sensitive to social information (Fusaro & Harris, 2008). It is possible that, because the unanimous majority's judgments in our task were always wrong, children engaged in speculation about the purpose of the trial. Additionally, their conformity behaviors might have been affected by their repetitive encountering of information that is inconsistent with their preestablished convictions. Future research might seek a better balance (half vs. half) between consistent and inconsistent tasks. Second, Corriveau and Harris (2010) pointed out that being from a collectivist culture (e.g., China) influences the results of conformity experiments; in particular, when using the Asch paradigm, children from such cultures are more likely to conform to the majority. This is because they are more concerned with social expectations. Future research should explore the cross-cultural

consistency in the development of children's conformity behaviors when making public decisions. Finally, while previous literature has suggested that children's conformity behavior is adaptive, we did not directly investigate children's motivations in this study. Any number of motivations might compel individuals to conform, and it would be necessary to understand these motivations in order to fully understand the development of children's conformity behaviors. Future research should indeed examine the perspective of motivation.

Despite these limitations, we believe our findings are meaningful. When in a public situation, children become increasingly likely to conform to others' opinions as they age even in the event of the other individual's opinions being wrong, while their conformity behaviors remain relatively stable in anonymous situations. This finding emphasizes the impact of group stress on children. It is adaptive to learn how to better get along with the group as early as possible. Humans have evolved a series of behavioral strategies, such as conformity, to benefit from groups through long-term social life and culture. Older children seem to be better than younger children at maintaining their image in front of a group through conformity, because they show more conformity in a public choice. This tendency ensures that children engage in smooth socialization. Our research supports the theory of cultural evolution and provides some clues on how conformity behaviors develop.

Acknowledgment

We thank Editage for its linguistic assistance during the preparation of this article.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by The National Social Science Foundation of China (14BSH082) and Beijing Happy Commonwealth Foundation (0020344).

References

- Aloise-Young, P. A. (1993). The development of self-presentation-self promotion in 6-year-old to 10-year-old children. *Social Cognition, 11*, 201–222.
- Asch, S. E. (1956). Studies of independence and conformity: A minority of one against a unanimous majority. *Psychological Monographs, 70*, 1–70.
- Bishop, B. R., & Beckman, L. (1971). Developmental conformity. *Developmental Psychology, 5*, 536.
- Bond, R., & Smith, P. (1996). Culture and conformity: A meta-analysis of studies using Asch's (1952b, 1956) line judgment task. *Psychological Bulletin, 119*, 111–137.
- Boyd, R., & Richerson, P. J. (1985). *Culture and the evolutionary process*. Chicago, IL: University of Chicago Press.
- Ceci, S. J., & Bruck, M. (1993). Suggestibility of the child witness: A historical review and synthesis. *Psychological Bulletin, 113*, 403–439.
- Chen, E. E., Corriveau, K. H., & Harris, P. L. (2013). Children trust a consensus composed of outgroup members: But do not retain that trust. *Child Development, 84*, 269–282.
- Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology, 55*, 591–621.
- Cohen, R., Bornstein, R., & Sherman, R. C. (1973). Conformity behavior of children as a function of group makeup and task ambiguity. *Developmental Psychology, 9*, 124–131.
- Corriveau, K. H., & Harris, P. L. (2010). Preschoolers (sometimes) defer to the majority in making simple perceptual judgments. *Developmental Psychology, 46*, 437–445.
- Costanzo, P. R. (1970). Conformity development as a function of self-blame. *Journal of Personality and Social Psychology, 14*, 366–374.
- Costanzo, P. R., & Shaw, M. (1966). Conformity as a function of age level. *Child Development, 37*, 967–975. doi:10.2307/1126618
- Cross, C. P., Brown, G. R., Morgan, T. J., & Laland, K. N. (2017). Sex differences in confidence influence patterns of conformity. *British Journal of Psychology, 108*, 655–667.
- Deutsch, M., & Gerard, H. B. (1955). A study of normative and informational social influences upon individual judgment. *Journal of Abnormal & Social Psychology, 51*, 629–636.
- Fusaro, M., & Harris, P. (2008). Children assess informant reliability using bystanders' non-verbal cues. *Developmental Science, 11*, 771–777.
- Hamm, N. H., & Hoving, K. L. (1969). Conformity of children in an ambiguous perceptual situation. *Child Development, 40*, 773–784.
- Hanayama, A., & Mori, K. (2011). Conformity of six-year-old children in the Asch experiment without using confederates. *Psychology, 2*, 661–664.
- Haun, D. B. M., & Tomasello, M. (2011). Conformity to peer pressure in preschool children. *Child Development, 82*, 1759–1767.
- Henrich, N., & Henrich, J. (2007). *Why humans cooperate: A cultural and evolutionary explanation*. Oxford, England: Oxford University Press.
- Herrmann, P. A., Legare, C. H., Harris, P. L., & Whitehouse, H. (2013). Stick to the script: The effect of witnessing multiple actors on children's imitation. *Cognition, 129*, 536–543.
- Hornsey, M. J., Majkut, L., Terry, D. J., & Mckimmie, B. M. (2003). On being loud and proud: Non-conformity and counter-conformity to group norms. *British Journal of Social Psychology, 42*, 319–335.
- Iscoe, I., Williams, M., & Harvey, J. (1963). Modification of children's judgments by a simulated group technique: A normative developmental study. *Child Development, 34*, 963–978.
- Iscoe, I., Williams, M., & Harvey, J. (1964). Age, intelligence, and sex as variables in the conformity behavior of Negro and white children. *Child Development, 35*, 451–460.
- Kagan, S. (1974). Field dependence and conformity of rural Mexican and urban Anglo-American children. *Child Development, 45*, 765–771.
- Lee, E. J. (2006). When and how does depersonalization increase conformity to group norms in computer-mediated communication? *Communication Research, 33*, 423–447.

- Mann, L. (1969). *Social psychology*. London, England: Wiley.
- Minson, J. A., & Mueller, J. S. (2012). The cost of collaboration: Why joint decision making exacerbates rejection of outside information. *Psychological Science, 23*, 219–224.
- Morgan, T. J., Laland, K. N., & Harris, P. L. (2015). The development of adaptive conformity in young children: Effects of uncertainty and consensus. *Developmental Science, 18*, 511–524.
- Morgan, T. J. H., Rendell, L. E., Ehn, M., Hoppitt, W. J. E., & Laland, K. N. (2011). The evolutionary basis of human social learning. *Proceedings of the Royal Society of London B: Biological Sciences, 279*, 653–662.
- Rebecca, S. S., & Deborah, K. (2014). Children's conformity when acquiring novel conventions: The case of artifacts. *Journal of Cognition and Development, 15*, 569–583.
- See, K. E., Morrison, E. W., Rothman, N. B., & Soll, J. B. (2011). The detrimental effects of power on confidence, advice taking, and accuracy. *Organizational Behavior and Human Decision Processes, 116*, 272–285.
- Soll, J. B., & Mannes, A. E. (2011). Judgmental aggregation strategies depend on whether the self is involved. *International Journal of Forecasting, 27*, 81–102.
- Walker, M., & Andrade, M. (1996). Conformity in the Asch task as a function of age. *Journal of Social Psychology, 136*, 367–372.
- Williamson, R. A., Meltzoff, A. N., & Markman, E. M. (2008). Prior experiences and perceived efficacy influence 3-year-olds' imitation. *Developmental Psychology, 44*, 275–285.
- Witkin, H. A., Moore, C. A., Goodenough, D. R., & Cox, P. W. (1977). Field dependent and field-independent cognitive styles and their educational implications. *Review of Educational Research, 47*, 1–64.
- Zhang, P., Deng, Y., Yu, X., Zhao, X., & Liu, X. (2016). Social anxiety, stress type, and conformity among adolescents. *Frontiers in Psychology, 7*, 1–6.