

## Who Makes the Choice? Rethinking the Role of Autonomy and Relatedness in Chinese Children's Motivation

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The importance of autonomy for children's motivation in collectivistic cultures has been debated hotly. With the understanding that autonomy is not equivalent to freedom of choice, 4 studies addressed this debate by investigating how socioemotional relatedness, choice, and autonomy were related to Chinese children's motivation. Study 1 ( $N = 56$ , mean age = 10.77 years), Study 2 ( $N = 58$ , mean age = 10.59), and Study 3 ( $N = 48$ , mean age = 10.53) found consistently that freedom of choice mattered less if children were socioemotionally close to the adults who made choices for them. However, Study 4 ( $N = 99$ , mean age = 11.27) showed that autonomy mattered at every level of socioemotional relatedness. These results suggested that socioemotional relatedness might have facilitated internalization and that children who did not have choice might still feel autonomous.

Much research has demonstrated the pivotal role of autonomy in motivation (see Ryan & Deci, 2000b, for a review). The sense of having a choice and experiencing oneself as the initiator of one's actions can promote motivation. In contrast, controlling environments, such as engagement-contingent rewards (Deci, 1971), deadline and surveillance (Deci, Koestner, & Ryan, 1999), and controlling teaching approaches (Grolnick & Ryan, 1987) will elicit a feeling of coercion that diminishes motivation. According to self-determination theory (Deci & Ryan, 1985, 2000), autonomy is a universal basic need. Many studies have shown that, across ethnic and cultural backgrounds, autonomy facilitates motivation. For example, parenting styles which granted high degrees of autonomy have been associated with Chinese students' social and school adjustment (Chen, Dong, & Zhou, 1997). Similarly, autonomy support from parents and teachers has been found to have positive association with the academic motivation of high school students in both the United States and Russia (Chirkov & Ryan, 2001).

The cultural universality of the importance of autonomy, however, has been challenged in recent years. In a cross-cultural investigation, Iyengar and Lepper (1999) found that the choices made by the

students themselves were more motivating for Anglo American children, but the choices made by in-group others (mothers or classmates) were more motivating for Asian American children. Iyengar and Lepper argued that the lack of choice did not diminish the motivation of Asian children because the self-construal of these children was different from that of their American counterparts.

According to self-construal theory (Markus & Kitayama, 1991), people in the West tend to endorse independent self-construal. They perceive themselves as unique entities, different from all others. They value independence and do not mind standing out assertively in a group. In contrast, people in the East tend to endorse interdependent self-construal. They value interdependence and are more likely to perceive themselves as part of a group. As they strive to fit in and belong, they are eager to promote the goals of their groups. Invoking the cultural distinction of self-construal, Iyengar and Lepper (1999) interpreted their findings as evidence for Asian American children becoming more motivated in the contexts that emphasize conformity with in-group others and less motivated in situations that highlight autonomy. Their findings have challenged the importance of autonomy in Asian children's motivation and generated an important debate on its cultural universality.

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### *Choice, Autonomy, and Relatedness*

A possible way to make sense of these apparent contradictory views and findings is to rethink the

meaning of choice and autonomy. Iyengar and Lepper (1999) equated freedom of choice with autonomy. As a logical corollary, after they had found that lack of personal choice did not diminish the motivation of Asian American children, they concluded that autonomy might have less relevance for children from interdependent societies. However, freedom of choice is not equivalent to autonomy. According to self-determination theory, "the issue of autonomy concerns the extent to which one fully accepts, endorses, or stands behind one's actions" (Chirkov, Ryan, Kim, & Kaplan, 2003, p. 99). It is possible for individuals to feel autonomous when they follow a choice made by others as long as they concur fully with and endorse this choice. Along the same reasoning, it is also possible for individuals not to feel autonomous when they are offered a choice but none of the options is preferred. In response to the challenge of Iyengar and Lepper to the importance of autonomy, Deci and Ryan (2000) argued that there may be cultural differences in how autonomy is expressed. People from collectivistic cultures may still be motivated when they act on the demands of in-group others' because they can internalize such demands. The degree of internalization moderates the effect of freedom of choice on motivation. If individuals can internalize the demands of others, they will be motivated to act on these demands as if they themselves had the freedom to make the choice. Deci and Ryan have argued that fulfillment of the need for relatedness, another universal basic need, can facilitate internalization.

It is noteworthy that the Asian American children in Iyengar and Lepper's (1999) studies were motivated by the choices made by in-group others (mother or classmates) but not by the choices made by out-group others (experimenter or students in another school). The in-group and out-group distinction suggested that when there was no freedom of choice, the motivation of Asian American children depended on how close they felt toward the person who made the choice for them. Close relationships might have prompted them to perceive in-group others as benevolent agents rather than power seizers. As a result, they were eager to act on the choices made by the in-group others. These findings are in line with the claim of Deci and Ryan (2000) that relatedness facilitates internalization and motivation. The Asian American children in Iyengar and Lepper's studies might still have felt autonomous and motivated when they adopted choices made by trusted others. Socioemotional relatedness is a key predictor of internalization and the subsequent motivation on a task demanded by others.

There is some suggestive evidence that socioemotional relatedness could indeed play an important role in children's motivation (e.g., Furrer & Skinner, 2003; Grolnick, Ryan, & Deci, 1991; Moss & St-Laurent, 2001; Ryan, Stiller, & Lynch, 1994; Skinner & Belmont, 1993; Stipek, Salmon, Givvin, & Kazemi, 1998; Turner et al., 2002; Wentzel, 1997). Early relationships have also been found to have a stable positive influence on later cognitive and motivational outcomes (Moss & St-Laurent, 2001). Parental involvement seems to affect children's academic motivation and the extent of their internalization of the value of school work (Grolnick & Ryan, 1989). In addition, socioemotional relatedness with parents and teachers seems to make a unique contribution to students' motivational orientation and academic engagement (Furrer & Skinner, 2003; Ryan et al., 1994; Wentzel, 1998). We therefore expect that socioemotional relatedness may help predict how much freedom of choice matters to the motivation of children.

With the understanding that lack of choice is not equivalent to lack of autonomy, we speculate that children will feel autonomous and be motivated when following the choices of the adults to whom they feel attached. In other words, we expect that socioemotional relatedness will modulate the robust effects of freedom of choice that are so well documented in the literature. When socioemotional relatedness is high, lack of choice will not decrease motivation because internalization may leave the sense of autonomy intact. In contrast, when socioemotional relatedness is low, lack of choice will result in low motivation because internalization does not take place and the sense of autonomy is jeopardized. In this set of studies, we tested these speculations with Chinese children. In a collectivistic culture, such as the Chinese one, children strive for interconnectedness and belongingness with their social in-groups. According to Iyengar and Lepper (1999), the exercise of personal choice may have considerably less intrinsic value for these children. The emphasis on socioemotional relatedness in the Chinese culture offers a valuable platform to investigate the universal importance of freedom of choice and autonomy in children's motivation.

The present research was designed to investigate the role of personal choice, autonomy, and relatedness in Chinese children's motivation. It consisted of four studies, using both naturalistic and experimental designs to examine the effects across two significant social partners of children, namely parents and teachers. With the understanding that freedom of choice is not equivalent to autonomy, we investigated in the first three studies how socioemotional

relatedness moderated the effect of choice on Chinese children's motivation. We predicted that the motivational impact of freedom of choice would depend on the strength of the socioemotional bond between children and those who made choices for the children. Studies 1 and 2 focused on mother–child socioemotional relatedness, whereas Study 3 focused on teacher–student socioemotional relatedness. Study 1 used naturalistic data, whereas Studies 2 and 3 manipulated freedom of choice experimentally to explore how this might affect children who reported different degrees of closeness to their mothers or teachers. Across these three studies, we expected that both relatedness and freedom of choice would predict children's motivation. However, the effect of choice would be moderated by relatedness. Specifically, if children had good relationships with their mothers or teachers who made the choices for them, freedom of choice might not be decisive for their motivation. Conversely, when they did not have close relationships with their mothers or teachers, freedom of choice could play a crucial role in shaping their motivation.

Unlike Studies 1, 2, and 3, Study 4 did not examine freedom of choice. Instead, it investigated autonomy directly. It tested whether teacher–student relatedness would moderate the impact of autonomy on student motivation. If freedom of choice is not equivalent to autonomy, the results of Study 4 would be different from those in the first three studies. There would not be any interaction effect between autonomy and socioemotional relatedness, that is, autonomy would play a crucial role in motivation at every level of socioemotional relatedness.

### Study 1

Chinese parents seem to have high expectations for their children's achievement (Chao, 1994; Chen, Lee, & Stevenson, 1996). In Hong Kong, many Chinese parents sign their children up for a number of extracurricular activities such as piano, art, ballet, karate, and various sports. Some children attend such activities of their own choice; others do so according to their parents' wishes. Study 1 examined how mother–child socioemotional relatedness and children's freedom of choice interacted to affect children's motivation. We hypothesized that, given a close mother–child relationship, freedom of choice would have little effect on the child's motivation. In contrast, freedom of choice would be a powerful determinant of a child's motivation when the mother–child relationship was more distant.

## Method

### Participants

The participants were 60 Chinese fourth, fifth, and sixth graders from two elementary schools in Hong Kong. We focused on middle childhood because, in both American and Asian cultures, this is an age when children are expected to be increasingly capable and responsible (Warton & Goodnow, 1991). As parents start sharing control with their children (Maccoby, 1984), autonomy emerges as an important developmental issue. The participants of the present study attended extracurricular courses arranged by their schools. These courses were taught by external experts who received tuition fees directly from the parents. Enrolment in these courses was optional. Because this study focused on mother–child relatedness, four children were excluded from the study because two reported that their fathers chose the course for them and the other two reported that their fathers knew more than their mothers about their school lives. The sample was therefore reduced to 56 children (mean age = 10.77 years,  $SD = 1.20$  years; 25 girls and 31 boys).

### Procedure

The extracurricular courses were held in a group of 10–20 in the children's classrooms after school. With parental consent, we invited the children to complete a questionnaire before their instructors started the lessons. The questionnaire took about 10–15 min for completion. It assessed the children's motivation in the course and their sense of relatedness to their mothers.

### Measures

*Freedom of choice.* The children reported who chose the extracurricular course that they were attending. Among the 56 children, 33 reported that they had made their own choice (20 boys and 13 girls) and 23 reported that their mothers had made the choice for them (5 boys and 18 girls).

*Motivation.* The children answered three questions in the questionnaire: (a) "How willing are you to attend this course?" (b) "How interesting is this course to you?" and (c) "How much do you like this course?" Many psychologists (e.g., Ryan & Deci, 2000a; Slavin, 2006) have defined motivation as an internal process that determines the intensity and direction of behavior. The three questions tapped the children's task commitment and pleasure in the task. These were indicators for both the intensity and the direction of behavior. Responses to the three

questions were made on a 6-point Likert scale ranging from 1 to 6. For the first question, 1 was *not willing at all* and 6 was *willing completely*. For the second question, 1 was *very uninteresting* and 6 was *very interesting*. For the third question, 1 was *dislike strongly* and 6 was *like strongly*. Cronbach's alpha of the scores of the three questions was .92, indicating high internal consistency. The three scores were averaged to indicate the motivation reported by the children.

*Mother-child relatedness.* We measured the children's perceived relatedness with their mothers with the short form of Parental Acceptance-Rejection Questionnaire (Rohner, 1980). This questionnaire contains 24 items that are divided into four subscales: (a) warmth/affection, for example, "my mother says nice things about me"; (b) hostility/aggression, for example, "my mother goes out of her way to hurt my feelings"; (c) indifference/neglect, for example, "my mother ignores me as long as I do not do anything to bother her"; and (d) undifferentiated/rejection, for example, "my mother does not really love me." The questionnaire was translated into Chinese with a back-translation procedure. The children indicated the degree of agreement with each of the items on a 6-point Likert scale ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). Scores on the four subscales were averaged after the last three subscales were coded reversely. The average score was an index of mother-child relatedness perceived by the children. Cronbach's alpha of the four subscale scores was .81 for this study.

## Results

### Comparison of the Two Groups

The children were divided into either the child choice group or the mother choice group according to who chose the course. There was no significant difference in mother-child relatedness reported by the child choice group ( $M = 4.79, SD = 0.54$ ) and the mother choice group ( $M = 4.49, SD = 0.69$ ),  $t = 1.82, df = 54, p > .05$ . However, the child choice group reported higher motivation in the course ( $M = 5.09, SD = 0.69$ ) than did the mother choice group ( $M = 4.51, SD = 1.13$ ),  $t = 2.40, df = 54, p < .05$ .

### Intercorrelations Between the Variables

To examine the intercorrelations between the variables, we coded the mother choice group as 0 and the child choice group as 1. There was little correlation between choice condition and mother-child relatedness ( $r = .24, p > .05$ ). However, there was significant correlation between choice condition and motivation

( $r = .31, p < .05$ ) and between mother-child relatedness and motivation ( $r = .56, p < .001$ ).

### Moderating Effect of Mother-Child Relatedness

We performed hierarchical regression analysis to examine the effects of freedom of choice, mother-child relatedness, and their interaction in children's motivation. Children's motivation was first regressed on freedom of choice and mother-child relatedness in Model 1 and then on the interaction term between the two variables in Model 2. Model 1 explained 35% of the total variance,  $F(2, 53) = 14.18, p < .001$ . Motivation in the course was predicted significantly by the closeness of mother-child relationship ( $\beta = .52, p < .001$ ) but not freedom of choice ( $\beta = .19, p > .05$ ). Although children in the child choice group reported higher motivation than their peers in the mother choice group, the effect of freedom of choice disappeared once the mother-child relatedness was taken into consideration. When the interaction term between freedom of choice and relatedness was entered into the equation, Model 2 explained 42% of the total variance,  $F(3, 52) = 12.47, p < .001$ . Compared to Model 1, Model 2 had a significant change in the percentage of variance being explained ( $\Delta R^2 = 7\%$ ,  $p < .05$ ). The change could be attributed to the interaction effect between freedom of choice and relatedness ( $\beta = -.37, p < .05$ ). In Model 2, the main effect of mother-child relatedness was still significant ( $\beta = .77, p < .001$ ), whereas the main effect of freedom of choice was still nonsignificant ( $\beta = .18, p > .05$ ).

Simple slope analysis (Aiken & West, 1991) was adopted for post hoc probing into the interaction effect between freedom of choice and relatedness. Motivation was regressed on choice, with relatedness fixed as 1 *SD* above the mean, the mean, and 1 *SD* below the mean (see Figure 1). The result of *t* tests showed that only the slope at the level of 1 *SD* below the mean was different significantly from zero,  $\beta = .45, t = 2.96, df = 52, p < .01$ , whereas the other two slopes were not (mean:  $\beta = .18, t = 1.63, df = 52, p > .05$ ; 1 *SD* above:  $\beta = -.09, t = -0.59, df = 52, p > .05$ ). The findings indicated that, given low mother-child relatedness, children who had freedom of choice were more motivated to attend the courses than their peers who had to follow their mothers' choices. However, when the children had good relationships with their mothers, freedom of choice had no effect on their motivation.

## Discussion

These findings supported our hypothesis that effect of freedom of choice on motivation depends

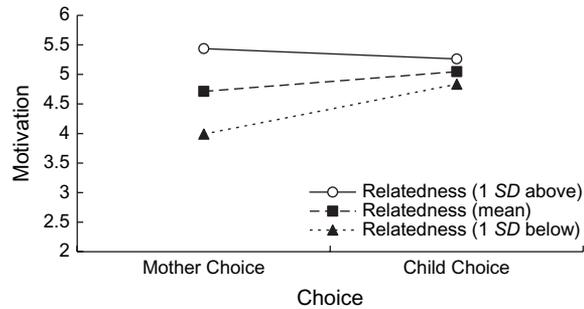


Figure 1. The interaction effect between choice and relatedness on motivation in Study 1.

on mother–child relatedness. Given close mother–child relatedness, freedom of choice did not play a decisive role. The children who did not make their own choice were still motivated in the courses as long as they felt closely related to their mothers. In contrast, when the mother–child relationship was not close, freedom of choice emerged as a decisive factor in the children’s motivation. The claim of Iyengar and Lepper (1999) that personal choice is not critical for Asian children tells only half of the story—the story of children who felt close to their mothers. Their claim is not valid for the other half of the story—the story of children who did not feel close to their mothers. Although we found that personal choice did not matter for the children who felt close to their mothers, we could not conclude that autonomy did not matter for them because freedom of choice is not equivalent to autonomy. These children might still feel autonomous because they might have internalized the choices made by their mothers. According to self-determination theory (Deci & Ryan, 2000), relatedness might have facilitated internalization and, as a result, the motivation of these children remained high.

Our findings, however, afford an alternative explanation. Perhaps, the children who felt close to their mothers were motivated by freedom of choice just like their peers who did not report a close mother–child relationship. And such closeness may have enabled their mothers to choose activities that the children would have chosen on their own anyway. If this were the case, then the children’s strong motivation might be due to their engaging in what they preferred without having to choose the activities explicitly. To address this alternative explanation, Study 2 adopted an experimental design to separate mother–child relatedness from freedom of choice.

## Study 2

In Study 2, participants were assigned randomly to either the child choice condition or the mother choice

condition. Participants in the child choice condition could choose an experimental task by themselves, whereas participants in the mother choice condition had to work on a task purportedly chosen by their mothers. If mother–child relatedness moderated the effect of chooser (self vs. mother) on motivation, then children’s motivation in the two choice conditions should differ reliably for children who did not feel close to their mothers. Freedom of choice should matter less in this case for children who felt close to their mothers.

## Method

### Participants

Participants were 58 Chinese fifth graders (mean age = 10.59 years,  $SD = 0.64$  years; 30 girls and 28 boys) from two classes in an elementary school in Hong Kong. One class was assigned randomly to the child choice condition ( $n = 27$ , 13 boys and 14 girls) and the other to the mother choice condition ( $n = 31$ , 17 boys and 14 girls).

### Procedure

The experiment was conducted in the classrooms during regular school hours. Parental consent for participation was obtained in advance. The children were asked to complete a questionnaire measuring mother–child relatedness. One week later, they were invited to work on a Chinese anagram and complete a questionnaire. The anagrams assigned to participants in the mother choice condition were yoked to those chosen by participants in the child choice condition to equate the content of the anagrams in the two conditions.

*Child choice condition.* Two experimenters entered the classroom and told the class that they would like to know how Hong Kong fifth graders performed on Chinese anagrams. Each child was given a booklet of three anagrams bound in random order. One experimenter told the children in Chinese: “You have three anagrams with different themes, namely ‘people,’ ‘animals,’ and ‘places.’ But you only need to complete one of them. In the past, some students who participated in this activity worked on the one chosen by their parents or teachers. As for you, the last page of the booklet indicates that you can choose to work on any one of the anagrams that you prefer.” Children were then given 10 min to work on the anagram they had chosen. After that, they were asked to complete a questionnaire to assess their thoughts and feelings about the anagram. Children were then debriefed

about the purposes of the study and thanked for their participation.

*Mother choice condition.* The procedure was similar to that of the child choice condition except that the children were told: "You have three anagrams with different themes, namely 'people,' 'animals,' and 'places.' But you only need to work on one of them. In the past, other students who participated in this activity worked on the one they chose for themselves. As for you, the last page of the booklet indicates which anagram your mother has chosen for you." The anagrams assigned to the participants were yoked to those in the child choice condition. To convince the children that their mothers made the decision for them, the experimenter told them that she had contacted their mothers about the experiment by phone. At the end of the experiment, the children were debriefed. They were told that the experimenters did not actually contact their mothers, and their mothers had not made the choice for them. We provided normative information to children in both conditions because at around the age of 8 or 9 years, children's sensitivity to themselves in relation to others their own age increases significantly (Ruble & Frey, 1991). We expected that the normative information about having choice or not would heighten the children's awareness of their conditions and increase the effect of having or not having choice on their motivation.

### Materials

The anagrams used in the present study were Chinese word-search tasks that varied in three themes: people, animals, and places. Children were asked to search for the words that were hidden in an 8 × 9 matrix of 72 Chinese characters. The words might be read horizontally, vertically, or diagonally in this matrix. All the words consisted of two or three characters, and they were selected from Chinese textbooks of Grade 4 to Grade 6. A pilot study was administered to 13 fifth graders to test the appeal and difficulty level of the anagrams. Each anagram was chosen by roughly the same number of participants,  $\chi^2 = .15, p > .05$ . The 13 children were also asked to indicate how interesting and difficult the three anagrams were on a 6-point Likert scale ranging from 1 (*very uninteresting/very easy*) to 6 (*very interesting/very difficult*). They rated the three anagrams to be comparable: interesting,  $F(2, 10) = .62, p > .05$ , and difficult,  $F(2, 10) = .28, p > .05$ . Their performance across the anagrams was also similar,  $F(2, 10) = .33, p > .05$ . The pilot data suggested that the three anagrams had similar appeal and difficulty levels for fifth graders in Hong Kong.

### Measures

*Freedom of choice.* Participants in the child choice condition had the freedom to choose an anagram, whereas the participants in the mother choice condition did not.

*Mother-child relatedness.* As in Study 1, we used the short form of the Parental Acceptance-Rejection Questionnaire (Rohner, 1980) to measure the strength of mother-child relatedness. Cronbach's alpha of the four subscale scores in the present study was .86, showing an acceptable level of internal consistency.

*Motivation.* Participants were asked to respond to two questions: (a) "How much do you like the anagram chosen by you (or your mother)?" and (b) "How interesting is the anagram chosen by you (or your mother)?" The responses were made on a 6-point Likert scale that ranged from 1 (*dislike strongly/very uninteresting*) to 6 (*like strongly/very interesting*). The correlation of these two items was .89. The average score of these two questions was used as a measure of the participants' motivation.

*Task performance.* Participants' performance in the anagram was measured by the number of words they identified correctly.

*Previous Chinese academic performance.* Because the participants' performance on the anagram would probably be affected by their proficiency in Chinese language, relevant information in their school records was used as a covariate in examining their performance on the anagram task.

### Results

#### Comparison of the Two Conditions

Children in the child choice condition reported similar mother-child relatedness ( $M = 4.41, SD = 0.87$ ) as those in the mother choice condition ( $M = 4.55, SD = 0.70$ ),  $t = -.69, df = 56, p > .05$ . However, they reported higher motivation ( $M = 5.00, SD = 0.76$ ) than their peers in the mother choice condition ( $M = 4.32, SD = 1.44$ ),  $t = -2.28, df = 56, p < .05$ . They also performed better in the anagram ( $M = 16.11, SD = 4.54$ ) than their peers in the mother choice condition ( $M = 13.52, SD = 5.19$ ),  $t = 2.01, df = 56, p < .05$ .

#### Intercorrelations Between the Variables

Similar to the procedure in Study 1, we coded the mother choice group as 0 and the child choice group as 1. There was no correlation between choice condition and mother-child relatedness ( $r = -.10, p > .05$ ). However, there were significant correlations between choice condition and motivation ( $r = .28, p < .05$ ),

between motivation and performance ( $r = .39, p < .01$ ), and between choice condition and performance ( $r = .30, p < .05$ ). There was also significant correlation between mother-child relatedness and motivation ( $r = .51, p < .001$ ). However, there was little correlation between mother-child relatedness and performance ( $r = .15, p > .05$ ).

#### Moderating Effect of Mother-Child Relatedness

We performed a hierarchical regression analysis to examine if and how the effect of freedom of choice on children's motivation might depend on mother-child relatedness. Motivation was first regressed on freedom of choice and mother-child relatedness in Model 1 and then the interaction term between the two variables in Model 2. Model 1 explained 37% of the total variance,  $F(2, 55) = 16.04, p < .001$ . Motivation in the anagram was predicted by both freedom of choice ( $\beta = .33, p < .01$ ) and mother-child relatedness ( $\beta = .54, p < .001$ ). When the interaction term between the two variables was entered into the equation, Model 2 explained 43% of the total variance,  $F(3, 54) = 13.69, p < .001$ . Main effects of freedom of choice ( $\beta = .33, p < .01$ ) and relatedness ( $\beta = .83, p < .001$ ) were still significant in Model 2. Consistent with our expectation, there was also a significant interaction between freedom of choice and relatedness ( $\beta = -.39, p < .05$ ). Compared to Model 1, Model 2 had a significant change in the percentage of the variance being explained ( $\Delta R^2 = 6%, p < .05$ ). This significant change was due to the interaction effect.

By simple slope analysis (Aiken & West, 1991), motivation was regressed on choice, with relatedness fixed as 1 SD above the mean, the mean, and 1 SD below the mean (see Figure 2). The  $t$  test results showed that the slope at the level of 1 SD above the mean was not different significantly from zero,  $\beta = .07, t = .51, df = 54, p > .05$ . This implied that when the children had good relationships with their mothers, the effect of freedom of choice on motivation was not pronounced. However, the slopes at the levels of the mean and 1 SD below the mean were different significantly from zero (mean:  $\beta = .33, t = 3.23, df = 54, p < .01$ ; 1 SD below:  $\beta = .59, t = 4.00, df = 54, p < .001$ ). This indicated that, given a lukewarm or unsatisfactory mother-child relationship, children who had freedom of choice were more motivated in the task than their peers who had to follow their mothers' choice.

These results converged with those of Study 1 to suggest that the effects of freedom of choice on motivation depend on mother-child relatedness. If children do not feel close to their mothers, giving

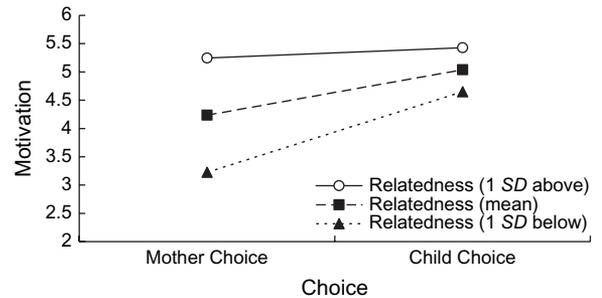


Figure 2. The interaction effect between choice and relatedness on motivation in Study 2.

them freedom of choice can enhance their motivation. In contrast, if children feel close to their mothers, they can be equally motivated regardless of whether they or their mothers have chosen the task.

#### Task Performance

Performance on anagrams was first regressed on previous Chinese academic performance, freedom of choice, and relatedness in Model 1 and then on the interaction between freedom of choice and relatedness in Model 2. Model 1 explained 21% of the total variance,  $F(3, 54) = 4.76, p < .01$ . Children's anagram performance was predicted by previous Chinese academic performance ( $\beta = .31, p < .05$ ) and freedom of choice ( $\beta = .38, p < .01$ ). However, it was not predicted by relatedness ( $\beta = .13, p > .05$ ). When the interaction term between freedom of choice and relatedness was entered into the equation, Model 2 explained 22% of the total variance,  $F(4, 53) = 4.76, p < .01$ . The change in variance being explained was not significant ( $\Delta R^2 = 1.5%, p > .05$ ). The interaction effect between freedom of choice and relatedness was not significant ( $\beta = .19, p > .05$ ). The main effect of previous Chinese academic performance ( $\beta = .28, p < .05$ ) and freedom of choice ( $\beta = .37, p < .01$ ) remained statistically significant, whereas the main effect of relatedness remained nonsignificant ( $\beta = .02, p > .05$ ).

#### Discussion

Studies 1 and 2 converged to suggest that the effects of choice on Chinese students' motivation can be moderated by mother-child relatedness. Freedom of choice was not a crucial factor in facilitating motivation for children who had good relationships with their mothers. They were still motivated to do the anagram chosen by their mothers. In contrast, freedom of choice was an important motivational factor for children who were not close to their

mothers. They were more motivated when they had freedom of choice than when did not.

Anagrams performance was predicted reliably by previous Chinese academic performance and freedom of choice. There was no main effect of relatedness and no reliable interaction between relatedness and freedom of choice. Those with high performance in Chinese language and freedom of choice tended to show better performance on the anagrams.

Study 2 revealed that both freedom of choice and mother–child socioemotional relatedness are important predictors of children’s motivation. Importantly, both naturalistic correlations (Study 1) and experimental evidence (Study 2) suggest that children who feel close to their mothers can be motivated to perform a task regardless of whether they or their mothers have chosen the task. For children who do not feel close to their mothers, freedom of choice does matter. Children are more motivated by doing a task they have chosen than one chosen by their mothers. In short, the findings of Studies 1 and 2 converge to suggest that socioemotional relatedness between a child and someone who makes choices for the child can modify the effects of freedom of choice on Chinese children’s motivation. These results provide support to the speculation that socioemotional relatedness helps facilitate the internalization of a choice made by trusted others. As children can internalize the request of a person to whom they feel attached, they are motivated to perform this request.

### Study 3

Teachers play an important role in children’s school adjustment (Birch & Ladd, 1997; Lynch & Cicchetti, 1992, 1997). Can the results of Studies 1 and 2 be generalized to a classroom setting? Study 3 focused on teacher–student relatedness and how they may interact with freedom of choice in predicting student motivation. The design of Study 3 replicated that of Study 2. Participants in the student choice condition could make their own choices, whereas participants in the teacher choice had to accept the choices purportedly made by their teachers. Based on the findings of Studies 1 and 2, we expected main effects for freedom of choice and relatedness. We also expected a significant interaction effect between these two predictors of student motivation.

#### Method

##### Participants

Participants were 48 fifth graders from two classes in an elementary school in Hong Kong (mean age =

10.53 years,  $SD = 0.61$  years; 21 girls and 27 boys). One class was assigned randomly to the student choice condition ( $n = 24$ , 12 boys and 12 girls) and the other to the teacher choice condition ( $n = 24$ , 9 boys and 15 girls).

##### Procedure and Materials

The procedure and materials of Study 3 were the same as those of Study 2. The only difference was that this study focused on the teacher–student rather than the mother–child relationship.

##### Measures

*Teacher–student relatedness.* In Hong Kong elementary schools, a homeroom teacher is assigned to every class. The homeroom teacher is not only an instructor of certain academic subjects but also a mentor who takes care of the school life of the students in their homeroom. Students usually spend more time with and have a closer relationship with their homeroom teachers than other teachers. The present study focused on the relationship between the students and their homeroom teachers. Their relationship was measured by the teacher involvement subscale (short form) from the Teacher as Social Context questionnaire (TASC–Student Report; Belmont, Skinner, Wellborn, & Connell, 1992). This scale contained eight items that tapped students’ perceptions of their relationship with their homeroom teachers, for example, “My homeroom teacher knows me well.” The scale was translated into Chinese using a back translation procedure. Cronbach’s alpha of this scale in the present study was .85. Participants indicated how much they agreed that the items described their homeroom teachers accurately on a 6-point Likert scale ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). Higher scores indicated higher teacher–student relatedness.

The measures of freedom of choice, motivation, task choice, task performance, and previous Chinese academic performance were the same as those in Study 2.

#### Results

##### Comparison of the Two Conditions

The students in the student choice condition reported similar teacher–child relatedness ( $M = 3.58$ ,  $SD = 1.13$ ) as their counterparts in the teacher choice condition ( $M = 3.78$ ,  $SD = 1.32$ ),  $t = -.56$ ,  $df = 46$ ,  $p > .05$ . However, they reported higher motivation ( $M = 4.96$ ,  $SD = 0.76$ ) than those in the teacher choice

condition ( $M = 4.00$ ,  $SD = 2.03$ ),  $t = 2.16$ ,  $df = 29$ ,  $p < .05$ . They also performed better on the anagram tasks ( $M = 16.71$ ,  $SD = 4.42$ ) than those in the teacher choice condition ( $M = 12.83$ ,  $SD = 4.49$ ),  $t = 3.01$ ,  $df = 46$ ,  $p < .05$ .

#### Intercorrelations Between the Variables

To examine the intercorrelations between the variables, we coded the teacher choice group as 0 and the child choice group as 1. There was little correlation between choice condition and teacher–child relatedness ( $r = .10$ ,  $p > .05$ ). However, there were significant correlations between choice condition and motivation ( $r = .30$ ,  $p < .05$ ), between motivation and performance ( $r = .55$ ,  $p < .001$ ), and between choice condition and performance ( $r = .41$ ,  $p < .01$ ). There was also significant correlation between teacher–child relatedness and motivation ( $r = .57$ ,  $p < .001$ ). However, there was little correlation between teacher–child relatedness and performance ( $r = .16$ ,  $p > .05$ ). The results were very similar to those in Study 2.

#### Moderating Effect of Teacher–Student Relatedness

We performed hierarchical regression analysis to examine the moderating role of relatedness in the effect of freedom of choice on motivation. Motivation was first regressed on freedom of choice and teacher–student relatedness in Model 1 and then the interaction term between the two variables in Model 2. Model 1 explained 45% of the total variance,  $F(2, 45) = 18.46$ ,  $p < .001$ . Motivation in the anagram task was predicted by both freedom of choice ( $\beta = .35$ ,  $p < .01$ ) and student–child relatedness ( $\beta = .60$ ,  $p < .001$ ). When the interaction term between the two variables was entered into the equation, Model 2 explained 51% of the total variance,  $F(3, 44) = 15.29$ ,  $p < .001$ . Compared to Model 1, Model 2 had a significant change in the percentage of variance being explained ( $\Delta R^2 = 6\%$ ,  $p < .05$ ). This change could be attributed to the interaction effect between freedom of choice and relatedness ( $\beta = -.32$ ,  $p < .05$ ). The main effect of both freedom of choice ( $\beta = .35$ ,  $p < .01$ ) and relatedness ( $\beta = .81$ ,  $p < .001$ ) remained significant in Model 2.

By simple slope analysis (Aiken & West, 1991), motivation was regressed on choice, with relatedness fixed as 1 *SD* above the mean, the mean, and 1 *SD* below the mean (see Figure 3). The *t*-test results showed that the slope with 1 *SD* above the mean was not different significantly from zero,  $\beta = .10$ ,  $t = .65$ ,  $df = 44$ ,  $p > .05$ . However, the slopes at both the levels of the mean and 1 *SD* below the mean were different significantly from zero (mean:  $\beta = .35$ ,  $t =$

$3.30$ ,  $df = 44$ ,  $p < .01$ ; 1 *SD* below:  $\beta = .61$ ,  $t = 4.00$ ,  $df = 44$ ,  $p < .001$ ). These findings implied that when the students had good relationships with their teachers, the effect of freedom of choice on motivation was not significant. Nevertheless, given low teacher–child relatedness, children who had freedom of choice were more motivated in the task than their peers who had to follow their teachers' choice. These results replicated those in Study 2.

#### Task Performance

Anagram performance was first regressed on previous Chinese academic performance, freedom of choice, and strength of relatedness in Model 1 and then interaction term between freedom of choice and relatedness in Model 2. Model 1 explained 29% of total variance,  $F(3, 44) = 5.95$ ,  $p < .01$ . The students' performance in the anagrams was predicted significantly by previous Chinese academic performance ( $\beta = .30$ ,  $p < .05$ ) and freedom of choice ( $\beta = .46$ ,  $p < .01$ ). However, it was not predicted by relatedness ( $\beta = .16$ ,  $p > .05$ ). When the interaction term between freedom of choice and relatedness was entered into the equation, Model 2 also explained 29% of the total variance,  $F(4, 43) = 4.36$ ,  $p < .01$ . There was no change in the percentage of variance being explained ( $\Delta R^2 = 0\%$ ,  $p > .05$ ). The interaction effect between freedom of choice and relatedness was not significant ( $\beta = .01$ ,  $p > .05$ ). In Model 2, the main effect of previous Chinese academic performance ( $\beta = .30$ ,  $p < .05$ ) and freedom of choice ( $\beta = .46$ ,  $p < .01$ ) remained significant, whereas the main effect of relatedness remained nonsignificant ( $\beta = .15$ ,  $p > .05$ ). These results replicated those of Study 2.

#### Discussion

The results in Study 3 were almost an exact replica of the results in Study 2. Teacher–student relatedness was found to be a significant moderator of the effects

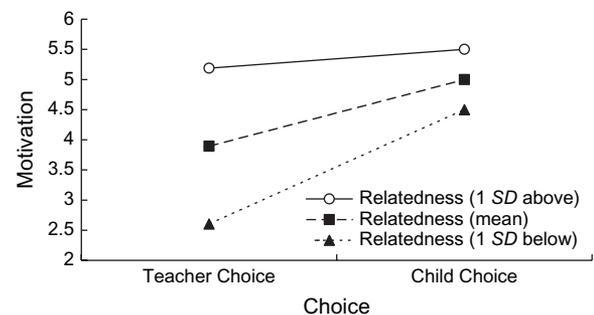


Figure 3. The interaction effect between choice and relatedness on motivation in Study 3.

of choice on students' motivation. Freedom of choice was important when teacher–student relatedness was low, but it was unimportant when teacher–student relatedness was high. Students in the teacher choice condition still reported high motivation if they had a good relationship with their teachers.

The three studies reported so far were consistent in their results. All of them, unequivocally, indicated a strong interaction effect between freedom of choice and relatedness on Chinese children's motivation. Socioemotional relatedness was consistently a significant moderator of the effects of freedom of choice on motivation. We attribute these results to internalization and speculate that children in the mother or teacher choice condition still felt autonomous because they had internalized their mothers' or teachers' choices. However, we did not measure the children's sense of autonomy or degree of internalization in these three studies. Without direct measurement of these constructs, our speculations remain as speculations, yet to be proved. Further to this, we assumed that freedom of choice was not equivalent to autonomy, although we had not provided empirical evidence of this. This assumption was based on the definition provided by self-determination theory (Chirkov et al., 2003; Ryan & Deci, 2000b). To make this assumption solid, empirical evidence was required. As an effort to plug these loopholes, we conducted Study 4.

#### Study 4

In Study 4, we measured children's sense of autonomy directly. Unlike the last three studies that focused on the interaction between freedom of choice and socioemotional relatedness, the present study focused on the interaction between sense of autonomy and socioemotional relatedness. If autonomy is indeed a construct different from that of freedom of choice, the results of this fourth study should be different from those of the last three studies. In other words, relatedness might not be a significant moderator of the effect of autonomy on children's motivation, although both relatedness and autonomy could predict children's motivation.

#### Method

##### Participants

Participants were 99 Chinese students from three Grade 5 classrooms in an elementary school in Hong Kong (mean age = 11.27 years,  $SD = 1.02$  years; 45 girls and 54 boys). Parental consent was obtained prior to the students' participation.

##### Procedure

Like Study 3, the present study also focused on the relationship between the students and their homeroom teachers. The three classes in the present study each had their own female homeroom teacher. The study was conducted in classrooms during regular school hours. The students were asked to complete three self-report scales in one class period of 30 min.

##### Measures

*Relative Autonomy Index (RAI).* Self-determination theory postulates that individuals will experience more autonomy if their regulation involves a higher degree of internalization (Deci & Ryan, 2000). External regulation involves the lowest degree of autonomy, with behaviors controlled by external forces. Introjected regulation represents a partial internalization, with behaviors performed to protect self-esteem or to avoid anxiety. Identified regulation involves a higher degree of autonomy because people recognize and accept the value of a behavior as personally important. However, it still has a lower degree of autonomy than intrinsic regulation, which refers to having inherent enjoyment in performing the behaviors. We measured participants' degree of autonomy in doing school work by a questionnaire (Lam, Cheng, & Ma, 2004) that was adapted from the Stepping Motivation Scale developed by Hayamizu (1997). Participants were asked to indicate how much they agreed with 20 statements that described reasons for doing work in their homeroom teacher's class. The 20 reasons were organized into four subscales: (a) external regulation, for example, "because my homeroom teacher monitors me"; (b) introjected regulation, for example, "because I want my classmates to think that I am smart"; (c) identified regulation, for example, "because it is important to study new things"; and (d) intrinsic motivation, for example, "because it is fun to learn." Participants indicated their agreement to these reasons on a 6-point Likert scale ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). There are five items in each subscale. Cronbach's alphas of these subscales ranged from .69 to .82 in the present study. An RAI score (Ryan & Connell, 1989) was calculated by the formula:  $RAI = 2 \times (\text{intrinsic motivation}) + 1 \times (\text{identified regulation}) - 1 \times (\text{introjected regulation}) - 2 \times (\text{external regulation})$ . A higher score in RAI indicated higher level of autonomy.

*Teacher–student relatedness.* The measure of teacher–student relatedness was the same as that in Study 3.

*Motivation.* The students' motivation was measured by the behavioral engagement subscale in the Engagement versus Disaffection with Learning Questionnaire (short form; Furrer & Skinner, 2003; Skinner & Belmont, 1993). The 10 items in this subscale assessed the students' perceptions of their effort, attention, and persistence during learning activities in their homeroom teachers' classes, for example, "I try hard to do well in my homeroom teacher's class." The students were asked to indicate how much they agreed that the items accurately described their behaviors in their homeroom teachers' classes on a 6-point Likert scale ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). Cronbach's alpha of this subscale was .75 in this study. A higher score indicated a higher degree of motivation.

## Results

### Intraclass Correlation

As three classrooms were used in the present study and the research questions pertained to the teachers in those classrooms, we conducted an unconditional hierarchical linear modeling (HLM) analysis (Raudenbush & Bryk, 2002) to determine the extent to which teacher-student relatedness varied between classes. The results indicated little between-class variation in teacher-student relatedness,  $\chi^2(2) = 1.02, p > .50$ . The intraclass correlation (ICC) showed that only .01% of the variance in the teacher-student relatedness resided between classes. We did the same HLM analysis on motivation and got similar results. The variation between classes in motivation was insignificant,  $\chi^2(2) = 4.27, p > .10$ . The ICC indicated that only .03% of the variance in motivation resided between classes. As the between-class variance in both relatedness and motivation was trivial (Lee, 2000), we treated the participants as independent cases by pooling the three classes for further analyses.

### Intercorrelations Between the Variables

RAI was associated positively with motivation ( $r = .53, p < .001$ ) and teacher-student relatedness ( $r = .29, p < .01$ ). Teacher-student relatedness was also associated positively with motivation ( $r = .37, p < .01$ ).

### Autonomy, Teacher-Student Relatedness and Their Interaction

We performed a hierarchical regression analysis to examine whether the effect of RAI on students'

motivation might depend on teacher-student relatedness. We regressed motivation first on RAI and relatedness in Model 1 and then the interaction term between the two variables in Model 2. Model 1 explained 38% of the total variance,  $F(2, 96) = 29.66, p < .001$ . Motivation in the homeroom teacher's class was predicted by both RAI ( $\beta = .38, p < .001$ ) and teacher-child relatedness ( $\beta = .35, p < .001$ ). However, when the interaction term between the two variables was entered into the equation, the change of variance being explained was not significant ( $\Delta R^2 = 0.1\%, p > .05$ ). Model 2 also explained 38% of the total variance,  $F(3, 95) = 19.69, p < .001$ . There was no increase from Model 1 to Model 2. The main effect of RAI on motivation was still significant ( $\beta = .38, p < .001$ ), as was the main effect of relatedness ( $\beta = .35, p < .001$ ). However, there was no interaction effect between RAI and relatedness ( $\beta = -.04, p > .05$ ). Teacher-student relatedness did not moderate the effect of RAI on students' motivation.

To understand better the lack of interaction effect between RAI and relatedness on motivation, we conducted a simple slope analysis (Aiken & West, 1991). Motivation was regressed on RAI, with relatedness fixed as 1 SD above the mean, the mean, and 1 SD below the mean (see Figure 4). Results showed that the slopes at all the three levels were generally the same. All of them were different significantly from zero (1 SD above:  $\beta = .35, t = 2.89, df = 95, p < .01$ ; the mean:  $\beta = .38, t = 4.28, df = 95, p < .01$ ; 1 SD below:  $\beta = .42, t = 3.70, df = 95, p < .01$ ). These results showed that RAI was associated positively with students' motivation at every level of teacher-student relatedness. Regardless of the levels of teacher-student relatedness, RAI played a decisive role in students' motivation.

## Discussion

The results of Study 4 were different from those in the last three studies. Unlike freedom of choice,

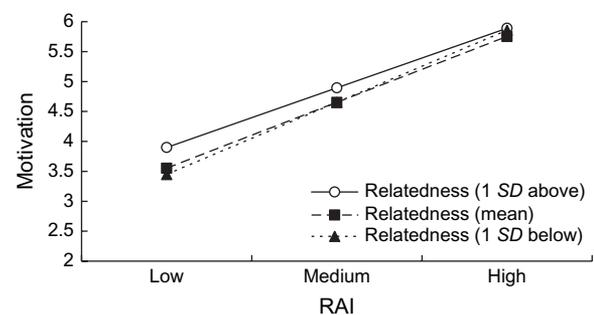


Figure 4. Relationships between Relative Autonomy Index (RAI), relatedness, and motivation in Study 4.

autonomy was associated positively with motivation regardless of the levels of relatedness. There was no interaction effect between autonomy and teacher–student relatedness on students’ motivation. In other words, the effect of autonomy on students’ motivation was not moderated by teacher–student relatedness. As revealed in Figure 4, autonomy was associated positively with motivation at every level of teacher–student relatedness. Even when teacher–student relatedness was high, students with a high sense of autonomy reported higher motivation than students with a low sense of autonomy.

Together with the previous three studies, this study provided some empirical evidence that freedom of choice is different from autonomy. Freedom of choice may be orthogonal to internalization. Children who do not have freedom of choice may or may not internalize the choices made by others for them. It depends on the socioemotional relatedness between the children and the person who makes the choice. The results of Studies 1, 2, and 3 repeatedly revealed this pattern of relationships among freedom of choice, relatedness, and children’s motivation. In contrast, the results of Study 4 were different. Unlike freedom of choice, autonomy is intertwined with internalization. It reflects the extent to which one fully accepts, endorses, or stands behind one’s actions (Chirkov et al., 2003). As internalization is already embedded in autonomy, relatedness, a catalyst for internalization may not have too much extra impact on the effect of autonomy on children’s motivation. As a result, we observed autonomy playing a decisive role in students’ motivation at every level of socioemotional relatedness.

### General Discussion

The Asian American children in Iyengar and Lepper’s (1999) studies were most motivated when the choices were made by in-group others (mothers or classmates). However, the Chinese children in our studies were not like that. The results of Studies 1, 2, and 3 showed consistently that if relatedness was not taken into consideration freedom of choice was associated strongly and positively with motivation. Children with freedom of choice reported higher motivation than their peers who had to follow the choices purportedly made by their mothers or teachers. The results of Studies 2 and 3 indicated even further that freedom of choice was associated with better task performance. Nevertheless, if relatedness was taken into consideration, part of our results did replicate the findings of Iyengar and Lepper: freedom of choice

could be unimportant to Chinese children’s motivation. Across the first three studies, we found consistently that the effect of choice was moderated by children’s socioemotional relatedness with the decision makers. When the children had good relationships with the people who made the choices for them, their motivation was as strong as if they had made their own choices. The effect of personal choice no longer prevailed when the relationship was good.

Why are Chinese children motivated to do the tasks chosen by the people who are close to them? As discussed earlier, we believe that the crux lies in the fulfillment of the need for relatedness. From the perspective of self-determination theory, Chinese children may have internalized the demands of the people to whom they feel attached. Deci and Ryan (2000) argued that fulfillment of the need for relatedness can facilitate internalization. They further argued that the issue of autonomy is concerned with the extent to which one fully accepts, endorses, or stands behind one’s actions. If Chinese children have internalized the choices made by trusted others, they might experience autonomy although they did not make the choice. The surface behavior of conforming can be associated with an experience of either autonomy or heteronomy (Chirkov et al., 2003). People will experience autonomy if they can consent fully to, concur with, or identify with an external influence. Conversely, people will experience heteronomy if they are pressured to do something they do not believe in or identify with. In our studies, the Chinese children who had good relationships with their mothers or teachers might have experienced autonomy, although they had to conform to the choices made by these significant others. In contrast, the Chinese children who did not have good relationships with their mothers or teachers might have experienced heteronomy when they were forced to conform.

With reference to self-construal theory (Markus & Kitayama, 1991), Iyengar and Lepper (1999) interpreted their findings as evidence for autonomy having less relevance to the motivation of children from collectivist cultures. Although their challenge to the universal importance of autonomy was based on self-construal theory, this theory is not necessarily contradictory to self-determination theory that advocates the universal importance of autonomy. These two theories can be complementary to each other in explaining why Chinese children are motivated to do the tasks chosen by the people whom they trust and care about. According to Markus and Kitayama (1991), people with interdependent self-construal see themselves “as part of an encompassing social

relationship" (p. 227). As a result, they may not regard people who are close in social relationship as being outside the self-systems of interdependent selves. They may consider these people to be interconnected with their own identities. The choice made by these people is as motivating as the one made by themselves because these people are not outside of their self-systems. To follow the choice made by the people in their self-systems does not go against the principle of self-determination. Therefore, conformity does not necessarily imply heteronomy and predict negative outcome in collectivistic cultures. This explanation indeed converges with that provided by self-determination theory. Chirkov et al. (2003) have argued that autonomous functioning is not incompatible with collectivistic cultures that emphasize interdependence and relatedness. They pointed out that because autonomy concerns volition, individuals who are connected strongly with others would be willing to keep those others' interests in mind. Conforming to others' interests or requests could be fully volitional. When Confucius, an influential philosopher in ancient China, reviewed his life achievements at the age of seventy, he concluded that he had been able to follow the wishes of his heart without breaching any norms (*cong xin suo yu, bu yuju*; The Analects, Chapter 2, Verse 4). Conformity and autonomy can be synthesized if internalization is achieved.

Given the importance of interdependence in Chinese cultures, Chinese children can be highly motivated if they want to please the persons to whom they are closely attached. Lepper, Corpus, and Iyengar (2005), for instance, found that the correlation between intrinsic motivation and the desire to please the teacher was negative for Caucasian students ( $r = -.14$ ) but positive for Chinese students ( $r = .15$ ). Pleasing others is not necessarily oppositional to seeking challenge, being curious, and desiring independent mastery. Lepper et al. argued that "where children in the United States may see pressure from parents or teachers as externally imposed constraints, children in more interdependent contexts may see useful supports that serve the needs of the family and society" (p. 193).

Self-construal theory and self-determination theory can be complementary to each other in understanding the motivation of children from collectivistic cultures. The debate about the universal importance of autonomy may not arise from the contradiction between the two theories. Instead, it may arise from the different ways in which people define autonomy. If autonomy equates with freedom of choice, one would easily come to the conclusion that autonomy has less relevance to Asian children's motivation

when empirical evidence shows that lack of choice does not affect Asian children's motivation. However, autonomy is not equivalent to freedom of choice. The present set of studies has provided some evidence that autonomy and freedom of choice are indeed two different constructs. In Studies 1, 2, and 3, socioemotional relatedness was consistently a significant moderator of the effect of choice on children's motivation. However, it could no longer moderate the effect of autonomy on children's motivation in Study 4. Autonomy was found to be associated positively with children's motivation at every level of socioemotional relatedness.

The findings of our studies make an important contribution to the debate on the cultural universality of autonomy. Freedom of choice may or may not play a decisive role in Chinese children's motivation. Freedom of choice does not matter when relatedness is high but it does matter when relatedness is low. We can say that the importance of freedom of choice in Chinese children's motivation is conditional upon the levels of socioemotional relatedness. However, we cannot say that the importance of autonomy in Chinese children's motivation is also conditional. Neither can we say that the Chinese children do not feel autonomous when they conform to the choices made by the people they trust and care about. Socioemotional relatedness might have helped these children to internalize the choices that are not made by themselves. Autonomy is still important to the motivation of children from collectivistic cultures that emphasize interdependence and interconnectedness.

Although the present research has made an important contribution to the debate on the cultural universality of autonomy, it has some limitations. We interpret the results of Studies 1, 2, and 3 as indicative of internalization. We speculate that it was the underlying mechanism that motivated the children who had good relationships with their parents or teachers, although they had no freedom of choice. However, we only measured internalization in Study 4. In the first three studies, we had no measures of internalization. We only inferred that internalization was taking place and that it was the underlying mechanism linking relatedness and motivation. Future studies that include direct measures of internalization will help elucidate how this mechanism promotes motivation in the children who have good relationships with the adults who ask them to complete a task.

We did our investigation with Chinese children because they grow up in collectivistic societies and tend to strive for interconnectedness and belongingness with their social in-groups. They thus provide a very good testing ground for the universal

importance of autonomy. Our results indicate that socioemotional relatedness moderates the effect of freedom of choice on Chinese children's motivation. We are curious whether this moderation is unique to Chinese children or universal to all children across different cultures. Our studies did not include a Caucasian sample and therefore could not address this question. To gain a more comprehensive picture about how this moderation functions in different cultures, it is worthwhile to include Caucasian children as participants in future studies.

In spite of the above limitations, the findings of the present research have useful implications for parents and educators who strive to promote achievement motivation in Chinese children. The distinctions between autonomy versus conformity and intrinsic versus extrinsic motivation may not be apparent readily in collectivistic cultures. These seemingly opposite constructs may be fluid and overlapping for Chinese children. If internalization is achieved, conformity may be autonomous and extrinsic motivation may be compatible with intrinsic motivation. To promote motivation in Chinese children, freedom of choice is important. However, socioemotional relatedness that fosters internalization is also indispensable. It is particularly important for the learning activities that may not be motivating to children intrinsically at the beginning.

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