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ORIGINAL ARTICLE

# Children's and Guardians' Awareness of the Child's Self-Determination Behavior

## －A Comparative Study of Japan, China, and South Korea－

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**ABSTRACT**

We aimed to investigate the actual state on children's self-determination behavior in Japan, China, and South Korea. A questionnaire survey was given to 4th, 6th, and 8th grade students and their guardians (649 children and 683 guardians in Japan, 795 children and 911 guardians in China, and 756 children and 596 guardians in South Korea). Five factors of self-determination behaviors for guardians and children were extracted by factor analysis: daily routine, time management, types of activities, unusual occasion, and career choice for guardians; and daily routine, time management, career choice, unusual occasion, and play for children. An analysis of variance (ANOVA) revealed that guardians from all three countries, except area of career choice, were aware that their children should have more self-determination as they become junior high students, and Japanese guardians were generally more aware than South Korean and Chinese guardians. Furthermore, for children, the results of the frequency of self-determination were the same in Japan and China; i.e., the frequency increased as the children became older, but this increase was not notable in South Korea. A comparison of the three countries showed that children in Japan had a higher awareness of self-determination than children in China and South Korea.

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## Ⅰ. Introduction and Purpose

Self-determination is one of the most basic human needs, and it is thought to have the impact on a person's mental and physical well-being (Deci, 1980). According to Deci & Ryan (1985), self-determination is defined as "an experience of making choices, which is a nature of human function that includes the feeling of intrinsic causality (the feeling of self-initiation)." In other words, self-determination is basically the experience of making choices. However, Yamaji (1988) states that this "experience" is not to be treated simply as a cognitive factor, but he indicates that it is "a case when a person has a sense of freedom on the said behavior, while other options can be seriously considered whether instinctively or consciously," and it also encompasses competency. Self-determination's impact on a person's mental and physical well-being is supported by many studies. For example, Deci et al. (1985) reported that a self-supporting tendency in the management of subordinates at an office equipment company is related to employee satisfaction with salary and benefits for upper management (Yamaji, 1988), and autonomy at work is associated with burnout syndrome, a recent mental health issue in the work field (Kubo, 2004).

Meanwhile, in the late 1970s-1980s, child advocacy earned global spotlight as the "Convention on the Rights of the Child" was adopted by the UN General Assembly in 1989. In this stream, empirical research on child rights and self-determination has increased in recent years (Peterson-Badali & Ruck, 2008). In Japan, in line with Deci (1980), Arai (1996) pointed out that there were the lag of children's independence and autonomy and what we can call as over-protection and school managerism is being criticized in the recent state of society. This has led to recognizing the importance of children's accumulation of experiences of self-determination from such point of view. He and his colleagues have conducted a series of studies on self-determination systematically and vigorously (i.e., Arai, 1996, 1997, 1998, 1999; Matsuo & Arai, 1999; Arai, Sawada, Tate et al., 2002, 2003; Choi & Arai, 2003), Next, we review some major findings in their earlier studies.

First, Arai's (1996) investigation of elementary school students' experience of self-determination found low experience in items asking whether the children woke up on their own in the morning, purchased their own clothes, started studying on their own at home, and so on. Another study targeted junior high and senior high school students and focused on three activities: waking up in the morning, starting to study at home, and selecting representatives in class. It found that a high majority of students started studying at home on their own and selected representatives in class. Especially for starting study at home, a higher percentage of students made their own decision as their grade increased. However, a low percentage woke up on their own regardless of their grade. In addition to focusing on the actual self-determination behavior, Amagai & Arai(2000) focused on self-determination awareness. Therefore, a multifaceted approach

has been employed, including a one-dimensional 20-item self-determination behavior scale (Yajima, Arai, Matsuo, 1996) and a 25-item self-determination awareness scale consisting of five factors: self-determination disposition, low preference for other-determination, low anxiety for self-determination, low negative affect of self-determination, and efficacy of self-determination (Sato, Arai, Yajima et al., 1996; Arai & Sato, 2000). Regarding the association of self-determination behaviors and self-determination awareness, Amagai & Arai(2000) found a moderate correlation between self-determination behaviors and self-determination awareness. Above all, "self-determination disposition" or "low negative affect of self-determination" and self-determination behaviors correlate in all grades, with the coefficient of correlation in junior high students being the highest. This suggests that junior high students have the highest awareness in "making their own decisions" when making self-determination behaviors. Self-determination awareness is also associated with motivation for learning, and a weak correlation regardless of grade is observed with motivation for learning's subscale, goal realization motivation. Regarding rewards and punishment motivation, a weak positive correlation observed in 5th graders gradually changes to a negative correlation from junior high to high school students, and the rewards and punishment learning attitude decrease as they grow older. They seem to think, "I do not want my parents and teachers complaining," especially those with higher self-determination awareness (Arai, 1998).

Further, Arai, Sawada, Tate et al.(2002) defined "self-determination environment" as children's perception of how much self-determination is allowed at home or how much responsibility they are allowed. They investigated children and their guardians (parents). The results showed that both children and guardians had higher self-determination environment scores as the children grew older, and many items indicated that more children in elementary and junior high schools felt they were given more self-determination opportunities than their guardians felt about their children. Choi & Arai (2003) conducted a survey consisting of 13 items on self-determination behavior and 16 items on self-determination awareness of elementary and junior high school students and their guardians in Japan and South Korea. Japanese children and their guardians had higher self-determination awareness than South Korean children and their guardians, and female pupils, students, and their guardians had higher self-determination behaviors than male pupils, students, and their guardians (Choi & Arai, 2003).

Regarding the comparison between Japan and China, Shuto, Ninomiya, & Lan (2004) reported that Japanese guardians were more likely to recognize their children's self-determination than Chinese guardians. While Deci's self-determination theory has been introduced in China, few studies have investigated children's development of self-determination, although some have addressed the self-determination of children with special needs (Bao & Zhang, 2005; Xu & Zhang, 2009).

In light of the earlier works, the present study aims to clarify the aspect of self-determination behaviors of elementary and junior high school students and their guardians in Japan, China and South Korea. The first purpose is to reconstruct the self-determination behavior scale. A series of research conducted by Arai et al. has examined self-determination from a multifaceted perspective including not only the self-determination of behavior but also the self-determination awareness, self-determination environment (Arai, Sawada, Tate et al., 2002), desire of self-determination, and consciousness of the right for self-determination (Arai, Sawada, Tate et al., 2003). However, the details of "what the decision is for" are not necessarily consistent. The present study aimed to construct new multifaceted items to clarify the aspect of self-determination behaviors by the subordinate concepts. The second purpose is to obtain contemporary actual state. Arai et al.'s series of research began in the same year when the Convention on the Rights of the Child was ratified: 1994. Over fifteen years have passed since then, and various aspects of Japanese society, including the lives of children, have changed. In the series of research, Arai has mentioned change in the situation regarding children's self-determination, indicating that "At home, the reduced birthrate has allowed parents to pay more attention to parenting, whereas children's each and every action has become subject to parental 'control' in exchange. Children may be forced to 'other-determination'," (Arai, 1996); and later reporting that "Some say children have recently been seeking self-determination." (Arai, Sawada, Tate et al., 2003). Specifically, economic disparity has increased in Japan since the 2000s, and the income of families with younger children has drastically declined (Cabinet Office, 2010). In addition, as a reason behind the trend of "desire for self-determination," the fact that "Attentive" parenting which was possible before has become difficult in the past 10 years. The third purpose is to conduct an international comparison in Japan, China, and South Korea. Just as in Japan, industrialization has led to South Korea's trend of nuclear families and a decrease in the national birthrate, and "Family disorganization including its multicultural situation is now a serious social issue, while heightened needs for family diversification has created a complicated situation" in modern-day Korea (Kim, 2007). Furthermore, in South Korea, not a few children receive early education such as for English and sports before age three (Choi, 2006). Higgins (2009) compared 5th graders in five countries—South Korea, Japan, China, the U.S., and Spain, and reported that the percentage of children attending cram schools after school was 36.3% in South Kore, wihle below 2% in all other countries. Additionally Kim (2007) suggests that such condition as obsession with education from a very early age in Sourth Korea influences family function and parent–child relationship. In China, social change including urbanization and women's advancement in society, coupled with the one-child policy enacted in 1979, has led to over-protection, excessive meddling, and over-emphasis on intellectual education in families with few children, which is now leading to disciplinary problems such as children's lag in learning basic daily life routine (Lei & Murayama,

2006). In addition, it is said that although "an only child" in China has excellent physical qualities and intellectual development, their social development such as character and daily life routines are not as good, and these children are more spoiled, selfish, and dependent on their parents than children with siblings (Feng, 2007).With this background, it is meaningful to compare the current situations of Japan, China, and South Korea.

In summary, the present study is based on earlier studies, and it aims to attain a contemporary perspective on children's self-determination behavior in Japan, China, and South Korea by asking children and their parents about their awareness on the children's degree of self-determination behavior.

## Ⅱ. Method

### 1. Participants

The participants were 4th, 6th, and 8th graders who are likely to become more self-dependent as they reach adolescence. The distribution by grades is as follows: Japan—263 4th graders, 234 6th graders, 152 8th graders, 263 guardians of 4th graders, 234 guardians of 6th graders, and 186 guardians of 8th graders; China—214 4th graders, 267 6th graders, 314 8th graders, 203 guardians of 4th graders, 258 guardians of 6th graders, and 450 guardians of 8th graders; and South Korea—202 4th graders, 128 6th graders, 426 8th graders, 213 guardians of 4th graders, 129 guardians of 6th graders, and 271 guardians of 8th graders. All 4th and 6th grade students and their guardians in Japan and South Korea, 43 pairs of 8th graders and their guardians in Japan, 266 pairs of 8th graders and their guardians in South Korea, 192 pairs of 4th graders in China, 257 pairs of 6th graders in China, and 302 pairs of 8th graders in China came from the same family; however, all other data had no correspondence between children and guardians, and guardians and children were used as independent groups.

### 2. Questionnaire items

Three types of questionnaires were prepared for Japan, China, and South Korea: one for 4th graders, one for 6th and 8th graders (these two questionnaires are grouped as "for children"), and another for guardians. For children, the questionnaire items mainly consisted of a) a face sheet, b) self-determination behavior, c) satisfaction of self-determination, and d) self-value (Sakurai, 1992), with a scale for measuring e) motivation for learning (Shimoyama, Hayashi, Imabayashi et al., 1993) added for the 6th and 8th graders' questionnaire. The questionnaire for guardians consisted of a) a face sheet, b) concerns about the child (10 items on physical factors, play, career, etc.), c) self-determination behavior, d) satisfaction with self-determination (two items on a 4-point scale—guardian's satisfaction with the child's self-determination and what the guardian assumes as the child's satisfaction), and e) thoughts on the child's

self-determination (free form). Below are the items on the face sheet and self-determination behaviors used in this study.

**Face sheet**: The questionnaire for children asked the participant's grade, gender, number of siblings, and place in the birth order. The questionnaire for guardians asked for their age, relationship with the child, number of children, ages of oldest and youngest children, residence form, number of people living together, and work status and hours.

**Self-determination behavior**: For the items on self-determination behavior, four Japanese psychologists referred to Arai's (1996) 11 items, Yajima, Arai, Matsuo et al.'s (1996) 20 items (see Arai (2000) for the item details), and Arai, Sawada, Tate et al.'s (2002, 2003) 14 items. They also deliberated repeatedly to scrutinize for other self-determination situations in the children's lives. In this process, seven areas of self-determination—physical factors, daily life, play, learn, career, media, and money—were assumed, and ultimately 35 items were selected after further item organization. These 35 items on self-determination are common to all questionnaires, with a change in wording of the 4-point scale: "1. Someone other than me decides" to "4. I decide" for children and "1. Someone other than the child decides" to "4. The child decides his/herself" for guardians.

### 3. Methods on creating Chinese and Korean versions of the questionnaire

A Korean researcher who is bilingual in Japanese and Korean translated the Japanese questionnaire into Korean. During the translation procedure, content and expressions were adjusted to meet both cultural backgrounds and to omit items that are common in Japan but not in South Korea or an item that exists in both countries but have different meanings. The Korean questionnaire constructed by this procedure was back-translated into Japanese by two researchers bilingual in Japanese and Korean. Through this procedure, the final Japanese and Korean versions were cross-checked. A Chinese doctoral student who is bilingual in Japanese and Chinese translated the Japanese questionnaire into Chinese. During the translation procedure, content and expressions were adjusted in the similar way as the Japanese version was translated into Korean. The Chinese version constructed by this procedure was cross-checked and made final confirmation by a Chinese developmental psychologist who completed her doctorates with a dissertation written in Japanese.

### 4. Method and survey periods

As distribution and collection methods, a mail survey was employed through elementary and junior high schools in Japan, and a placement method was employed in China and South Korea. Surveys were conducted between November 2009 and January 2010 in Japan and South Korea. Additional surveys were conducted in September and October 2010 in South Korea. In China, surveys were conducted from April to June 2012.

## Ⅲ. Results

### 1. Factor analysis of guardians and children's self-determination

We performed a factor analysis with the 35 items on self-determination with all the data on Japanese, South Korean, and Chinese children and guardians. Though it is general to conduct factor analysis by each country due to consideration for its background, we used the all data in order to describe the tendency of East Asian children's self-determination behaviors on the whole. First, we employed a factor analysis using a maximum likelihood method for the 35 items on self-determination answered by the guardians. Because the change in scree plot was 7.47, 2.53, 1.88, 1.58, 1.41, 1.19, 1.09…, five factors seemed suitable, which were specified when reperforming the factor analysis using a maximum likelihood method and promax rotation. Using the results and .30 as the standard value or factor loading, we deleted the items that did not meet the standard value for any factors or exceeded the standard value in multiple factors, and repeated the factor analysis until we reached a simple factor structure. Through this process, we obtained a factor structure that explains 36.51% of the overall variance comprised of 5 factors and 21 items, as seen in Table 1.

**Table1 Factor analysis of guardians' awareness of children's self-determination behavior**

| | | F1 | F2 | F3 | F4 | F5 |
|---|---|---|---|---|---|---|
| 4 | To eat breakfast or not | **.65** | .04 | −.13 | −.10 | .05 |
| 3 | What time to wake up in the morning | **.55** | .01 | −.05 | −.05 | −.01 |
| 11 | What and how much to eat | **.54** | −.12 | .12 | .02 | −.11 |
| 13 | To bathe/shower or not | **.54** | .03 | .12 | .01 | −.17 |
| 18 | What time to sleep at night | **.39** | .28 | −.01 | .08 | −.06 |
| 12 | What hairstyle to wear | **.32** | .00 | .11 | .03 | .06 |
| 17 | How long to play video games or portable video games | −.17 | **.85** | −.03 | .07 | .03 |
| 5 | How long to watch TV or videos | .18 | **.69** | −.08 | −.15 | .04 |
| 14 | How long to play | .09 | **.53** | .15 | .02 | .03 |
| 25 | To play sports or not | .02 | **−.02** | **.69** | −.02 | .04 |
| 24 | What kind of club or extracurricular activities to do at school | −.02 | −.12 | **.68** | −.04 | .09 |
| 27 | What to do for fun | .01 | .10 | **.56** | −.10 | .03 |
| 22 | How to use allowance | −.01 | .10 | **.36** | .06 | −.02 |
| 19 | How much allowance to get | −.10 | .03 | −.07 | **.72** | −.05 |
| 21 | To have a pet or not | −.09 | −.01 | .00 | **.53** | −.03 |
| 8 | To stay home from school or not when sick or injured | .21 | −.14 | −.08 | **.40** | .23 |
| 15 | To go to the hospital or not when sick or injured | .17 | .05 | −.13 | **.39** | .15 |
| 35 | How to use the internet | −.03 | .23 | .17 | **.33** | −.11 |
| 31 | To help with chores or work at home | .13 | −.08 | .20 | **.31** | −.07 |
| 9 | To attend college or not in the future | .00 | −.03 | .08 | .02 | **.71** |
| 2 | What kind of high school to attend in the future | −.09 | .11 | .07 | −.04 | **.63** |
| Factor correlations | | | .58 | .43 | .51 | .39 |
| | | | | .37 | .36 | .34 |
| | | | | | .16 | .27 |
| | | | | | | .16 |

Factor 1 was named “daily routine” because it consisted of items associated with daily life routine such as breakfast, bath, and waking and sleeping times. Factor 2 was named “time management” because it consisted of items associated with playing time, including play equipment such as video games and TV/video. Factor 3 was named “types of activities” because many items were associated with daily leisure activities and free-time activities including play, such as “what kind of club or extracurricular activities to do at school” and “what to do for fun.” Factor 4 was named “unusual occasion” because making decisions for these items was required less often, such as “when sick or injured” or “to have a pet or not.” When it comes to “allowance,” we can assume that many children receive an allowance on a regular basis; however, the item in this factor asks about making a decision for “how much the allowance is,” and because children do not often have to decide on the amount once it has already been decided, we assumed this item as an unusual occasion (Kamiya, Kato, Wakashima et al., 2011). Factor 5 was named “career choice” because it was directed toward going to high school and college. The factor structure is generally the same as the results from the analysis of the data from Japan and South Korea (Kamiya, Kato, Wakashima et al., 2011).

Using these factors as subscales, the average scores for all items were used as scale scores. The Cronbach’s α values for each subscale were as follows: α = .69 for daily routine, α = .75 for time management, α = .66 for types of activities, α = .63 for unusual occasion, and α = .64 for career choice. For career choice, it is generally undesirable to have a scale structure of just two items. Because an earlier study by Kamiya, Kato, Wakashima et al. (2011) included another item, “what kind of profession to choose in the future,” we checked for internal consistency with these three items, which yielded a slightly better reliability of α = .66, and thus, we employed three items for career choice.

Next, we performed a factor analysis using a maximum likelihood method with the 35 items on self-determination answered by the children. The change in scree plot was 4.97, 1.64, 1.48, 1.36, 1.23, 1.11…, which supported our assumption of 4 or 5 factors. Next, we specified 4 factors and 5 factors and performed a factor analysis using maximum likelihood method and promax rotation. Thereafter, again using its results and .30 as the standard value or factor loading, we deleted items that did not meet the standard value for any factors or exceeded the standard value in multiple factors, and repeated the factor analysis until we reached a simple factor structure. From this process, we obtained a factor structure of 4 factors with 15 items (variance accountability of 51.50%) and 5 factors with 24 items (variance accountability of 45.50%), and employed 5 factors because of the better chance of explanation. The results are shown in the table2.

Factor 1 was comprised of the same items as factor 1 for guardians, such as waking time and breakfast, added with studying, helping at home, and room cleaning; thus, it was labeled “daily routine.” Factor 2 was called “time management,” just like factor 2 for guardians, because it consisted of items that were associated with playing time, including TV and games. Factor 3 contained four items including items in factor 5 for

guardians—choosing high schools and colleges—added with items on profession and marriage; it was also named "career choice." Factor 4 was comprised of the same four items in factor 4 for guardians and was thus labeled "unusual occasion." Factor 5 was named "play" because all its items were associated with play, such as the two items in factor 3 for guardians—"what to do for fun" and "where to play"—added with "who to play and be friends with."

**Table2 Factor analysis of Children's awareness of their own self-determination behavior**

| | | F1 | F2 | F3 | F4 | F5 |
|---|---|---|---|---|---|---|
| 34 | To do homework or not | **.73** | .00 | .01 | −.22 | −.02 |
| 28 | To attend school or not | **.56** | −.02 | .06 | .02 | −.06 |
| 13 | To bathe/shower or not | **.44** | −.01 | −.07 | .06 | .04 |
| 6 | To study at home or not | **.43** | .15 | .03 | −.04 | −.04 |
| 20 | To clean his/her own room or not | **.38** | −.06 | −.05 | .08 | .04 |
| 3 | What time to wake up in the morning | **.37** | .03 | −.07 | .05 | .03 |
| 4 | To eat breakfast or not | **.36** | .10 | −.03 | .06 | .02 |
| 31 | To help with chores or work at home | **.33** | −.07 | −.02 | .08 | .06 |
| 29 | To attend cram school or not | **.32** | .01 | .20 | .10 | −.03 |
| 5 | How long to watch TV or videos | −.02 | **.79** | .04 | −.09 | −.05 |
| 17 | How long to play video games or portable video games | −.01 | **.76** | .01 | .06 | −.05 |
| 14 | How long to play | .10 | **.45** | −.02 | .08 | .16 |
| 18 | What time to sleep at night | .24 | **.31** | −.07 | .08 | .06 |
| 2 | What kind of high school to attend in the future | −.14 | .09 | **.72** | −.03 | −.04 |
| 9 | To attend college or not in the future | .11 | −.04 | **.61** | .02 | −.05 |
| 23 | What kind of profession to attend in the future | .02 | −.04 | **.44** | −.04 | .15 |
| 16 | To get married or not in the future | −.03 | .01 | **.42** | .02 | .12 |
| 15 | To go to the hospital or not when sick or injured | .07 | −.06 | .04 | **.57** | −.02 |
| 8 | To stay home from school or not when sick or injured | .12 | −.09 | .09 | **.51** | −.07 |
| 19 | How much allowance to get | −.06 | .07 | −.11 | **.50** | .04 |
| 21 | To have a pet or not | −.05 | .05 | −.01 | **.46** | −.02 |
| 27 | What to do for fun | .08 | −.06 | −.01 | −.09 | **.67** |
| 7 | Where to play | −.08 | .03 | .07 | .07 | **.60** |
| 1 | Who to play and be friends with | .04 | −.01 | .06 | −.01 | **.38** |
| Factor correlations | | | .60 | .50 | .54 | .35 |
| | | | | .34 | .42 | .40 |
| | | | | | .33 | .30 |
| | | | | | | .27 |

Just as was done with the results of the guardians' answers, these factors were used as subscales, and the average scores for all items were used as scale scores. The Cronbach's α values for each subscale were as follows: α = .70 for daily routine, α = .74 for time management, α = .64 for career choice, α = .58 for unusual occasion, and α = .58 for play. Although internal consistency was not adequate for unusual occasion and play, we included them in the further investigation because it was a similar content as that for guardians.

### 2. Guardians' awareness of children's self-determination behavior

To investigate how the awareness of children's self-determination behavior differs among Japan, China, and South Korea and also with grade, we performed a two-way ANOVA with country and grade as independent variables and the subscales of

self-determination behavior as dependent variables. The results were shown in Table 3. First, the main effect of grade and country and their interaction were significant for daily routine ($F(2, 1996) = 108.35$, $p < .001$, $\eta^2 = .10$; $F(2, 1996) = 9.73$, $p < .001$, $\eta^2 = .01$; and $F(4, 1996) = 6.34$, $p < .001$, $\eta^2 = .01$, respectively). Because of the significant interaction, we performed a simple main effect test for both country and grade. The simple main effect of grade was significant for Japan, China, and South Korea ($F(2, 1996) = 73.89$, $p < .001$, $\eta^2 = .07$; $F(2, 1996) = 25.03$, $p < .001$, $\eta^2 = .02$; and $F(2,1996) = 20.64$, $p < .001$, $\eta^2 = .02$, respectively). In Japan, a significant difference was found between grades: 8th grade > 6th grade > 4th grade. In South Korea, the 6th and 8th grades had significantly higher scores than the 4th grade, and in China, the 8th grade had significantly higher scores than the 4th and 6th grades. Further, a test of the simple main effect of grade by country showed all grades were significant (4th grade: $F(2, 1996) = 4.97$, $p < .01$, $\eta^2 = .01$; 6th grade: $F(2, 1996) = 5.86$, $p < .01$, $\eta^2 = .01$; 8th grade: $F(2, 1996) = 10.92$, $p < .001$, $\eta^2 = .01$). Moreover, South Korea was significantly higher than Japan for the 4th grade and higher than China for the 6th grade, and Japan was significantly higher than both China and South Korea for the 8th grade.

**Table 3 Guardians' awareness of children's self-determination behavior**

| | | 4th grade | | 6th grade | | 8th grade | | Main effect of grade | Main effect of country | Interaction |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Mean | SD | Mean | SD | *F*-Value | *F*-Value | *F*-Value |
| Daily routine | Japan | 2.75 | 0.62 | 3.01 | 0.57 | 3.39 | 0.49 | $F(2, 1996) = 108.35^{***}$ | $F(2, 1996) = 9.73^{***}$ | $F(4, 1996) = 6.34^{***}$ |
| | China | 2.81 | 0.55 | 2.92 | 0.57 | 3.15 | 0.52 | | | |
| | Korea | 2.91 | 0.56 | 3.12 | 0.54 | 3.24 | 0.46 | | | |
| Time management | Japan | 2.68 | 0.73 | 2.94 | 0.80 | 3.35 | 0.54 | $F(2, 2012) = 91.19^{***}$ | $F(2, 2012) = 167.27^{***}$ | $F(4, 2012) = 4.94^{**}$ |
| | China | 2.20 | 0.65 | 2.18 | 0.70 | 2.55 | 0.79 | | | |
| | Korea | 2.47 | 0.67 | 2.64 | 0.69 | 2.84 | 0.69 | | | |
| Types of activities | Japan | 3.55 | 0.42 | 3.62 | 0.42 | 3.67 | 0.39 | $F(2, 2022) = 11.89^{***}$ | $F(2, 2022) = 41.45^{***}$ | $F(4, 2022) = .41$ |
| | China | 3.36 | 0.53 | 3.39 | 0.49 | 3.49 | 0.47 | | | |
| | Korea | 3.38 | 0.51 | 3.38 | 0.49 | 3.48 | 0.45 | | | |
| Unusual occasion | Japan | 1.88 | 0.48 | 2.01 | 0.48 | 2.29 | 0.52 | $F(2, 1994) = 37.95^{***}$ | $F(2, 1994) = 171.70^{***}$ | $F(4, 1994) = 5.92^{***}$ |
| | China | 2.49 | 0.51 | 2.46 | 0.50 | 2.64 | 0.59 | | | |
| | Korea | 2.41 | 0.52 | 2.53 | 0.49 | 2.56 | 0.49 | | | |
| Career choice | Japan | 3.32 | 0.54 | 3.37 | 0.52 | 3.24 | 0.49 | $F(2, 1986) = .96$ | $F(2, 1986) = 69.09^{***}$ | $F(4, 1986) = 2.28^{\dagger}$ |
| | China | 2.93 | 0.70 | 2.87 | 0.70 | 2.96 | 0.71 | | | |
| | Korea | 2.98 | 0.69 | 3.08 | 0.64 | 2.97 | 0.63 | | | |

$^{\dagger}p<.10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

| | Multiple comparison (Bonferroni) |
|---|---|
| Daily routine | Japan: 8th > 6th > 4th; China: 8th > 6th, 4th; Korea: 8th, 6th > 4th<br>8th: Japan > China, Korea; 6th: Korea > China; 4th: Korea > Japan |
| Time management | Japan: 8th > 6th > 4th; China and Korea: 8th > 6th, 4th<br>For all grades: Japan > Korea > China |
| Types of activities | 8th > 6th, 4th<br>Japan > China, Korea |
| Unusual occasion | Japan: 8th > 6th > 4th; China: 8th > 6th and 4th; Korea: 8th > 4th<br>China and Korea > Japan in all grades |
| Career choice | Japan > Korea > China |

For time management, the main effect of grade and country and interaction were significant ($F$(2, 2012) = 91.19, $p$ < .001, $\eta^2$ = .08; $F$(2, 2012) = 167.27, $p$ < .001, $\eta^2$ = .14; and $F$ (4, 2012) = 4.94, $p$ < .01, $\eta^2$ = .01, respectively). Because of the significant interaction, we performed a simple main effect test for both country and grade. The simple main effect of grade by country was significant for Japan, China, and South Korea ($F$(2, 2012) = 50.92, $p$ < .001, $\eta^2$ = .05; $F$(2, 2012) = 24.33, $p$ < .001, $\eta^2$ = .02; and $F$(2, 2012) = 16.56, $p$ < .001, $\eta^2$ = .02, respectively). In Japan, a significant difference was found between grades: 8th grade > 6th grade > 4th grade. In South Korea and China, the 8th grade was significantly higher than the 4th and 6th grades. Further, a test of the simple main effect of grade by country showed all grades were significant (4th grade: $F$(2, 2012) = 26.46, $p$ < .001, $\eta^2$ = .03; 6th grade: $F$(2, 2012) = 74.47, $p$ < .001, $\eta^2$ = .07; 8th grade: $F$(2, 2012) = 76.20, $p$ < .001, $\eta^2$ = .07). In addition, South Korea was significantly higher than China, and Japan was significantly higher than South Korea in all grades.
For types of activities, the main effects of grade and country were significant, ($F$(2, 2022) = 11.89, $p$ < .001, $\eta^2$ = .01; $F$(1, 2022) = 41.45, $p$ < .001, $\eta^2$ = .04, respectively), but the interaction was not significant ($F$(4, 2022) = .41, *n.s.* $\eta^2$ = .00). A multiple comparison (Bonferroni, same for below) of the main effect of grades revealed that the 8th graders had a significantly higher frequency of self-determination than the 4th and 6th graders (8th and 6th $p$<.01, $d$=.12, 8th and 6th $p$<.001, $d$=.19). When compared by country, Japan had a significantly higher score than China and South Korea (Japan and Korea $p$<.001, $d$=.43, Japan and China $p$<.001, $d$=.42).

For unusual occasion, the main effect of grade and country and interaction were significant ($F$(2, 1994) = 37.95, $p$ < .001, $\eta^2$ = .04; $F$(2, 1994) = 171.70, $p$ < .001, $\eta^2$ = .15; and $F$ (4, 1994) = 5.92, $p$ < .001, $\eta^2$ = .01, respectively). Because of the significant interaction, we performed a simple main effect test for both country and grade. The simple main effect of grade by country was significant for Japan, China, and South Korea ($F$(2, 1994) = 34.31, $p$ < .001, $\eta^2$ = .03; $F$(2, 1994) = 9.52, $p$ < .001, $\eta^2$ = .01; and $F$(2, 1994) = 5.23, $p$ < .01, $\eta^2$ = .01, respectively). In Japan, a significant difference was found between the grades: 8th grade > 6th grade > 4th grade. In South Korea, the 8th grade was significantly higher than the 4th grade, and in China, the 8th grade was significantly higher than the 4th and 6th grades. Further, a test of the simple main effect of grade by country showed all grades were significant (4th grade: $F$(2, 1994) = 95.49, $p$ < .001, $\eta^2$ = .09; 6th grade: $F$(2, 1994) = 62.38, $p$ < .001, $\eta^2$ = .06; 8th grade: $F$(2, 2012) = 27.40, $p$ < .001, $\eta^2$ = .03), and China and South Korea were higher than Japan in all grades.

Finally, for career choice, only the main effect of country was significant ($F$(2, 1986) = 69.09, $p$ < .001, $\eta^2$ = .07), not the main effect of grade ($F$(2, 1986) = .96, *n.s.*, $\eta^2$ = .00), and the interaction had a significant tendency ($F$(4, 1986) = 2.28, $p$ < .10, $\eta^2$ = .01). A multiple comparison by country yielded the highest score for Japan, followed by South Korea and then China (Japan and Korea $p$<.001, $d$=.53, Korea and China $p$<.05,$d$=.12).

### 3. Children's awareness of their own self-determination behavior

To investigate how children's awareness of their own self-determination behavior differs among Japan, China, and South Korea and also with grade, we performed a two-way ANOVA with country and grade as independent variables and the subscales of self-determination behavior as dependent variables, just as was done with the answers given by the guardians. The results were shown in Table 4.

**Table 4 Children's awareness of their own self-determination behavior**

| | | 4th grade | | 6th grade | | 8th grade | | Main effect of grade | Main effect of country | Interaction |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Mean | SD | Mean | SD | *F*-Value | *F*-Value | *F*-Value |
| Daily routine | Japan | 3.16 | 0.55 | 3.34 | 0.49 | 3.51 | 0.48 | $F(2, 2127) = 19.98^{***}$ | $F(2, 2127) = 34.76^{***}$ | $F(4, 2127) = 8.99^{***}$ |
| | China | 3.03 | 0.62 | 3.02 | 0.65 | 3.25 | 0.54 | | | |
| | Korea | 3.30 | 0.53 | 3.30 | 0.53 | 3.28 | 0.52 | | | |
| Time management | Japan | 2.98 | 0.82 | 3.28 | 0.67 | 3.64 | 0.49 | $F(2, 2168) = 61.92^{***}$ | $F(2, 2168) = 169.14^{***}$ | $F(4, 2168) = 19.88^{***}$ |
| | China | 2.40 | 0.81 | 2.48 | 0.79 | 2.99 | 0.71 | | | |
| | Korea | 3.07 | 0.79 | 3.31 | 0.67 | 3.14 | 0.72 | | | |
| Career choice | Japan | 3.46 | 0.58 | 3.58 | 0.53 | 3.59 | 0.43 | $F(2, 2114) = 3.83^{***}$ | $F(2, 2114) = 63.86^{***}$ | $F(4, 2114) = 19.88^{***}$ |
| | China | 3.16 | 0.68 | 3.14 | 0.64 | 3.31 | 0.58 | | | |
| | Korea | 3.54 | 0.53 | 3.37 | 0.59 | 3.43 | 0.50 | | | |
| Unusual occasion | Japan | 1.75 | 0.66 | 1.82 | 0.66 | 2.26 | 0.81 | $F(2, 2150) = 29.12^{***}$ | $F(2, 2150) = 57.23^{***}$ | $F(4, 2150) = 8.99^{***}$ |
| | China | 2.19 | 0.74 | 2.11 | 0.67 | 2.46 | 0.80 | | | |
| | Korea | 2.36 | 0.85 | 2.42 | 0.80 | 2.39 | 0.69 | | | |
| Play | Japan | 3.45 | 0.66 | 3.59 | 0.54 | 3.68 | 0.51 | $F(2, 2141) = 6.69^{**}$ | $F(2, 2141) = 26.11^{***}$ | $F(4, 2141) = 6.08^{**}$ |
| | China | 3.49 | 0.55 | 3.47 | 0.54 | 3.61 | 0.45 | | | |
| | Korea | 3.76 | 0.41 | 3.70 | 0.47 | 3.70 | 0.42 | | | |

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

| | Multiple comparison (Bonferroni) |
|---|---|
| Daily routine | Japan: 8th > 6th > 4th; China: 8th > 6th, 4th |
| | 8th: Japan > China, Korea; 6th: Korea and Japan > China; 4th: Korea > China > Japan |
| Time management | Japan: 8th > 6th > 4th; China: 8th > 6th and 4th; Korea: 6th > 4th |
| | 8th: Japan > Korea > China; 6th and 4th: Korea and Japan > China |
| Career choice | China: 8th > 6th and 4th; Korea: 4th > 6th |
| | 8th and 6th: Japan > Korea > China; 4th: Korea and Japan > China |
| Unusual occasion | Japan and China: 8th > 6th and 4th |
| | 8th: Japan > China; 6th: Korea > China > Japan; 4th: China and Korea > Japan |
| Play | Japan: 8th > 6th > 4th; China: 8th > 6th and 4th |
| | 6th: Korea and Japan > China; 4th: Korea > China and Japan |

First, the main effect of grade and country and interaction were significant for dairy routine ($F(2, 2127) = 19.98$, $p < .001$, $\eta^2 = .02$; $F(2, 2127) = 34.76$, $p < .001$, $\eta^2 = .03$; and $F(4, 2127) = 8.99$, $p < .001$, $\eta^2 = .02$, respectively). Because of the significant interaction, we performed a simple main effect test for both country and grade. The simple main effect of grade by country was significant for only Japan and China ($F(2, 2127) = 19.67$, $p < .001$, $\eta^2 = .02$ and $F(2, 2127) = 15.20$, $p < .001$; $\eta^2 = .01$, respectively) but not for South Korea ($F(2, 2127) = .15$, *n.s.*, $\eta^2 = .00$). In Japan, a significant difference was found between the grades (8th grade > 6th grade > 4th grade), and in China, the 8th grade was higher than the 4th and 6th grades. Further, from a test of the simple main effect of grade by country, all grades were significant (4th grade: $F(2, 2127) = 11.84$, $p < .001$, $\eta^2 = .01$; 6th grade: $F(2, 2127) = 21.95$, $p < .001$, $\eta^2 = .02$; 8th grade: $F(2, 2127) = 12.69$, $p < .001$, $\eta^2 = .01$); from

the highest to lowest for the 4th grade, the order was South Korea, Japan, China; Japan and South Korea were significantly higher than China for the 6th grade; and Japan was significantly higher than China and South Korea for the 8th grade.

For time management, the main effect of grade and country and interaction were significant ($F$(2, 2168) = 61.92, $p$ < .001, $\eta^2$ = .05; $F$(2, 2168) = 169.14, $p$ < .001, $\eta^2$=.14; and $F$ (4, 2168) = 19.88, $p$ < .001, $\eta^2$ = .04, respectively). Because of the significant interaction, we performed a simple main effect test for both country and grade. The simple main effect of grade by country was significant for Japan, China, and South Korea ($F$(2, 2168) = 38.08, $p$ < .001, $\eta^2$ = .03; $F$(2, 2168) = 53.45, $p$ < .001, $\eta^2$ = .05; and $F$(2, 2168) = 4.00, $p$ < .05, $\eta^2$ = .00, respectively). In Japan, a significant difference was found between the grades (8th grade > 6th grade > 4th grade). In China, the 8th grade was significantly higher than the 4th and 6th grades, whereas in South Korea, the 6th grade was significantly higher than the 4th grade. Further, a test of the simple main effect of grade by country showed all grades were significant (4th grade: $F$(2, 2168) = 53.61, $p$ < .001, $\eta^2$ = .05; 6th grade: $F$(2, 2168) = 92.93, $p$ < .001, $\eta^2$ = .08; 8th grade: $F$(2, 2168) = 40.25, $p$ < .001, $\eta^2$ = .04); Japan and South Korea were significantly higher than China for the 4th and 6th grades; and China was significantly higher than South Korea, and Japan was significantly higher than South Korea for the 8th grade.

For career choice, the main effect of grade and country and interaction were significant, ($F$(2, 2114) = 3.83, $p$<.05, $\eta^2$ = .00; $F$(2, 2114) = 63.86, $p$ < .001, $\eta^2$ = .06; and $F$(4, 2114) = 19.88, $p$ < .001, $\eta^2$ = .01, respectively). Because of the significant interaction, we performed a simple main effect test of both country and grade. The simple main effect of grade by country was significant for Japan, China, and South Korea ($F$(2, 2114) = 3.43, $p$ < .05, $\eta^2$ = .00; $F$(2, 2114) = 8.29, $p$ < .001, $\eta^2$ = .01; and $F$(2, 2114) = 3.84, $p$ < .05, $\eta^2$ = .00, respectively). Only a higher tendency was found for the 6th and 8th grades than for the 4th grade in Japan. In South Korea, the 4th grade was significantly higher than the 6th grade, and in China, the 8th grade was significantly higher than the 4th and 6th grades. Further, a test of the simple main effect of grade by country showed all grades were significant (4th grade: $F$(2, 2114) = 24.50, $p$ < .001, $\eta^2$ = .02; 6th grade: $F$(2, 2114) = 37.47, $p$ < .001, $\eta^2$ = .03; 8th grade: $F$(2, 2114) = 12.12, $p$ < .001, $\eta^2$ = .01); China was significantly lower than Japan and South Korea for the 4th grade; and South Korea was significantly higher than China, and Japan was higher than South Korea for the 6th and 8th grades.

For unusual occasion, the main effect of grade and country and interaction were significant ($F$(2, 2150) = 29.12, $p$ < .001, $\eta^2$ = .03; $F$(2, 2150) = 57.23, $p$ < .001, $\eta^2$ = .05; and $F$ (4, 2150) = 8.99, $p$ < .001, $\eta^2$ = .02, respectively). Because of the significant interaction, we performed a test of the simple main effect of both country and grade. The simple main effect of grade by country was significant for Japan and China ($F$(2, 2150) = 24.86, $p$ < .001, $\eta^2$ = .02 and $F$(2, 2150) = 17.86, $p$ < .001, $\eta^2$ = .02, respectively) but not South Korea ($F$(2, 2150) = .24, *n.s.*, $\eta^2$ = .00). For Japan and China, the 8th grade was

significantly higher than the 4th and 6th grades. Further, a test of the simple main effect of grade by country showed all grades were significant (4th grade: $F(2, 2150) = 41.93$, $p < .001$, $\eta^2 = .04$; 6th grade: $F(2, 2150) = 27.43$, $p < .001$, $\eta^2 = .03$; 8th grade: $F(2, 2150) = 3.55$, $p < .05$, $\eta^2 = .00$); Japan was lower than China and South Korea for the 4th grade; the order was South Korea > China > Japan for the 6th grade; and Japan was significantly higher than China for the 8th grade.

Finally, for play, the main effect of grade and country and interaction were significant ($F(2, 2141) = 6.69$, $p < .01$, $\eta^2 = .01$; $F(2, 2141) = 26.11$, $p < .001$, $\eta^2 = .02$; and $F(4, 2141) = 6.08$, $p < .001$, $\eta^2 = .01$, respectively). Because of the significant interaction, we performed a test of the simple main effect of both country and grade. The simple main effect of grade by country was significant only for Japan and China ($F(2, 2141) = 10.25$, $p < .001$, $\eta^2 = .01$ and $F(2, 2141) = 6.12$, $p < .01$, $\eta^2 = .01$, respectively) but not South Korea ($F(2, 2141) = 1.05$, *n.s.*, $\eta^2 = .00$). In Japan, the 6th and 8th grades were significantly higher than the 4th grade, and in China, the 8th grade was significantly higher than the 4th and 6th grades. Further, a test of the simple main effect of grade by country showed the results were significant for the 4th and 6th grades (4th grade: $F(2, 2141) = 23.40$, $p < .001$, $\eta^2 = .02$ and 6th grade: $F(2, 2141) = 9.41$, $p < .001$, $\eta^2 = .01$), and a significant tendency was found for the 8th grade ($F(2, 2141) = 2.85$, $p < .10$, $\eta^2 = .00$). For the 4th grade, South Korea was significantly higher than Japan and China, and for the 6th grade, Japan and South Korea were significantly higher than China.

## Ⅳ. Discussion

First, let us consider the results of the factor analysis. We conducted the factor analysis for guardians and children respectively using the combined data of Japan, China, and South Korea. Five factors were extracted for the guardians: daily routine, time management, types of activities, unusual occasion, and career choice. On the other hand, five factors were found for children: daily routine, time management, career choice, unusual occasion, and play. Initially, when selecting the 35 items, we had assumed seven areas of self-determination: physical factors, daily life, play, learning, career, media, and money; however, for guardians, some items associated with play and learning corresponded with types of activities factor and some items on daily life corresponded with daily routine factor, whereas for children, the items of media and play were combined, which had a different construction from the assumed one. This result may indicate that children's self-determination behaviors are not made merely by their intentions but are made when children make choices with daily parent–child interaction. Therefore, four factors were extracted for guardians and children with same labels: daily routine, time management, career choice, and unusual occasion. Making decisions in daily routine requires adjustments with other family members, such as for breakfast, waking time, and bathing. The decisions about time management are made on the basis

of a balance between a parent's daily discipline and their children's need for activities. Career choice must be made for graduation, and unusual occasion infrequently appears in daily life. As far as parent–child interaction is concerned, Arai (1997) found that many junior high and high school students reported a preference for waking up on their own but only a few students actually did, and the gap between the two was substantial for both junior high and high school students. Therefore, when it comes to behaviors in daily life, what children prefer to do is not necessarily pursued, which means that trying to self-determine and actually being able to do it are dissociated. This indicates the necessity for paying attention to the awareness aspect of self-determination, or how much intention lies in self-determination (Amagai & Arai, 2000).

Next, we will compare the guardians' awareness of children's self-determination behaviors by country and grade. First, the children in all countries generally shifted toward greater self-determination as their grade levels increased, but there was no main effect of grade on career choice, and guardians recognized their children as displaying more self-determination behaviors as they grew older, except in the field of career choice. The differences among grades were more significant with daily routine and time management for Japanese children than for Chinese or South Korean children. Japanese children had more self-determination behaviors than Chinese or South Korean children for all four factors, except unusual occasion, in the 8th grade. Therefore, Japanese guardians recognize themselves as encouraging more self-determination for their children when they enter junior high school, but Chinese and South Korean guardians' recognition of their encouragement may not increase as much.

Finally, with respect to the children's awareness of their own self-determination behavior, the differences among the countries were revealed in the changes in behavior by grades. For daily routine and time management, the 8th graders had more self-determination behaviors than the 4th graders in Japan and China, and their awareness appeared to be heightened as they grew older; however, such tendency was not found among grades in South Korea. This means that children, just as guardians, in Japan and China recognized themselves as more frequently "making their own decisions" as they grew older, but this recognition did not increase as children grew older in South Korea. However, it could also be stated that the score for Chinese children was not high in general, and South Korean children had a high awareness of self-determination from the beginning that did not fluctuate with grades, which was overtaken by Japanese children and caught up by Chinese children in the 8th grade.

Our results generally support the results of earlier studies: elementary and junior high school children in Japan have more self-determination and greater self-determination awareness as they grow older (Arai, 1998, 1999), on the other hand South Korean children have lower self-determination as they grow older (Ji Hyun & Jeeheon, 2007). In addition, in a comparison between Japan and South Korea, the children's self-determination behavior in South Korean 8th graders was especially low, and the

guardians of the 8th graders in South Korea recognized their children's self-determination behaviors as low (Choi & Arai, 2003). Choi & Arai's (2003) study of decision in after-school studies, career choice, and friends, as well as decision in school life, hair-style, and family life, included what profession to choose and whether or not to attend high school in the future, which overlapped with the items on career choice and time management in the present study. This study revealed the weak self-determination of South Korean and Chinese children in the 8th grade, which presumably is a representation of the cultural environments in which the children of, South Korea, and China live today. The cultural environments include difficulties adolescents face with entrance exams in South Korea and highly dependent children in China who are known to be called 'little emperor' (Xiǎo Huángdì) and 'little empress' (Xiǎo Huánghòu) influenced by the one-child policy (Feng, 2007). Clarifying the causal factors associated with self-determination in these areas may be necessary for further investigation.

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## *CONTENTS*

### ORIGINAL ARTICLES



### REVIEW ARTICLES



### SHORT PAPER



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