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MATERNAL BELIEFS, IMAGES, AND METAPHORS OF CHILD DEVELOPMENT IN THE UNITED STATES, KOREA, INDONESIA, AND JAPAN

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ABSTRACT

The present study examined mothers' thinking about child development, childhood, and childrearing. Participants were mothers of children attending middleclass preschools in the cities of Provo, Utah, U.S.A. ($n = 101$), Seoul, Bucheon, and Incheon, South Korea ($n = 221$), Jakarta, Indonesia ($n = 312$), and Sapporo, Japan ($n = 172$). There were both cross-cultural differences and similarities on most measures. With regard to basic issues of development, mothers in all four cultures tended to agree more with the influence of environment than heredity on their children, and more with the idea of unique paths of development than universal stages. With the exception of the Jakarta sample, mothers agreed most strongly with the image of children as pure by nature, less so with the image of children as blank slates, and least with the image of children as mischievous. Again with the exception of Jakarta mothers, the cross-cultural tendency was to agree more with the formism root metaphor of child development (Pepper, 1942), second most strongly with the contextualist metaphor, and less so with the mechanistic and organismic root metaphors. Regarding images of childrearing as analogous to plant cultivation vs. animal training, the general tendency across cultures was to prefer the plant cultivation analogy, although the Seoul and Jakarta mothers responded more favorably than the Sapporo and Provo mothers to the animal training analogy. In response to analogies of growing up, mothers in all four cultures were more in agreement with the image of growing up as akin to crossing a stream together with the mother, although Seoul mothers rated the image of children crossing a stream alone more positively than did the other three samples. Sapporo mothers were notable in their agreement with the image of children as lonely. Among the four samples, only Sapporo mothers tended to disagree with the statement that "religion plays an important part in my thinking about children," whereas Provo mothers were in near-unanimous agreement with the impact of religious beliefs. Very few main effects were found for either maternal level of educational background, or for religious affiliation, on any of the preceding variables. Despite sampling and measurement limitations, the data showed both significant cultural group differences and similarities in how mothers think about their children, and indicated that metaphors, images, analogies, and beliefs mothers have about their children are not mutually exclusive. In fact, individual mothers have some degree of belief in multiple competing images of child development. There were indeed substantial individual differences in the data, suggesting that each mother invokes both a cultural ethnotheory and a uniquely personal understanding of children, child development, and childrearing.

Key Words: Maternal beliefs, Images of childhood, Parental ethnotheory, Cross-cultural research, Metaphors

Scholars have studied parental beliefs about child development for decades, showing that parental thinking varies between and within cultures (Harkness & Super, 1996). Maternal “beliefs” are assumed by scholars to mirror the values, environment, and experiences common in each society, and were defined by Sigel (1985) as “knowledge in the sense that a person knows that what he (or she espouses is true or probably true, and evidence may or may not be deemed necessary...” (p. 348). “Images” of childrearing and development were defined by Hwang, Lamb and Sigel (1996, p. 3) as “basic assumptions or concepts about children and the factors that influence their ontogeny”; what we refer to below as an “analogy” is one type of image. A “root metaphor” is the set of assumptions that underlie a worldview or view of development (Super & Harkness, 2003). The research reported here focused on beliefs, images, analogies, and root metaphors of development, from the perspective of mothers of preschoolers in four societies. The rationale for our study was derived from three sources.

BASIC ISSUES OF DEVELOPMENT

The first goal of this research was explore maternal beliefs concerning developmental issues that have been debated throughout the history of the developmental sciences, and as outlined in developmental psychology textbooks such as Berger (2009), Berk (2009), and Bukatko (2007). We wanted to know how mothers in four cultures would respond to what Berk (2009, p. 6-8) called three “basic issues”: (1) “continuous or discontinuous development,” (2) “one course of development or many,” and (3) “relative influence of nature and nurture.” These issues have been used to compare competing theoretical perspectives, but they are also relevant to individual parents’ beliefs about their children. Parental beliefs about these basic issues are related to their wider cultural belief systems (e.g., McGillicuddy-De Lisi & Sigel, 1995), which in turn have an impact on parental behavior and children’s developmental outcomes. As access to higher education and scientific information about child development expands worldwide, growing numbers of parents are exposed to developmental theories and the three basic issues. For many decades, philosophers, educators, and child development experts discussed the nature of children as inherently good, bad, or neutral. But this discussion, like developmental psychology itself, has taken a primarily Western perspective (Azuma, 2005). The present study, therefore, was designed to present cross-cultural data on maternal beliefs about basic issues about development.

IMAGES OF CHILDREN AND CHILDREARING

Images of children are relevant to parents’ beliefs, and therefore are relevant to parental behavior and developmental outcomes. For example, Japanese scholars have noted changes in parents’ “view of children” (*jidoh-kan*, Shwalb, Chen, MacKay, & Wilkey, 2003) over centuries of history. Parents indeed construct images of the nature of their children, of childrearing, and of child development. The second goal of this study was to compare maternal images from a cross-cultural standpoint. Chen (1996) suggested several images worth exploring across cultures, and discussed images as

“mental representations (‘pictures in the head’) as can be provoked by sayings, proverbs, and symbols, or inferred to be underlying customs and practices” (p. 114). Specifically, Chen wrote about Japanese parents’ images of (1) children as innately good, bad, or neutral; (2) childrearing as parent-directed, child-centric, or based on a mutual relationship, and (3) childrearing as analogous to cultivation of plants or trees (“cultivation metaphors”) or training of animals (“animal lore” models). Images of children may be changing in the context of globalization, as parents are exposed to worldwide images of children. The present study considered whether cultural group membership would be associated with traditional or global maternal images of children and child development. We explored the cultural relevance of various images of children, childhood, and childrearing in four societies.

FOUR ROOT METAPHORS OF DEVELOPMENT

A third focus for the present study was derived from discussions of the fundamental assumptions that underlie theoretical models of developmental psychology (Lerner, 2005; Overton, 2005). For example, Dixon and Lerner (1999) compared the approaches of five models of development: organicism, mechanism, contextualism, psychodynamic, and dialecticism. Our goal was to relate parental beliefs about children to these models. The present study was further guided along these lines by the work of philosopher Pepper (1942) and developmental scientists Super and Harkness (2003). Pepper’s *World Hypotheses: A Study of Evidence* posited four fundamental “world hypotheses” that individuals invoke to understand human behavior, and Super and Harkness (2003) applied the “root metaphor” underlying each worldview to explain parental ethnotheories of development. Ordinary adults are not conscious of these metaphors or models of development, but mothers’ degree of agreement with each metaphor can be compared. The following outlines how each metaphor has previously been related to parental ethnotheories.

Metaphor 1: “Formism.” In this view of the world, people are most interested in fitting objects (or people, or experiences) into categories, classifications, or hierarchies, based on similarities and differences between objects/people/experiences, in terms of prototypes. Theorists or parents who form their worldview around “formism” are most interested in analyzing, classifying, and comparing children. Super and Harkness (2003) cited Chess and Thomas (1986) and Kagan (1989) as proponents of formism in developmental psychology, because they were interested in categorizing children and behavior, e.g., regarding temperament. The “formism” metaphor did not seem to coincide with any of the main theoretical models outlined by Dixon and Lerner (1999).

Metaphor 2: “Mechanistic.” In this worldview, people are most interested in analyzing the parts of a person, object, or experience, and in finding causal relations between people and events. Accordingly, it emphasizes explanation of behavior. Pepper (1942) gave Locke as an example of a mechanistic philosopher, and Super and Harkness (2003) suggested that Pavlov and Skinner were examples of mechanistic psychological theorists in positing specific causes for all behavior. Dixon and Lerner (1999) also gave Watson and Bijou as further examples of a mechanistic model of child development, because of their emphasis on environmental influences, continuous and quantitative

change, and a passive organism.

Metaphor 3: "Organismic theories." This view of the world focuses on internal regulation and patterns of change, looking at how elements of the whole organism create a changing totality. Pepper described Hegel as an organismic philosopher, and Super and Harkness gave Piaget, and Kohlberg as examples of organismic developmental theorists because they studied transformations of individuals into higher levels of organization. Dixon and Lerner (1999) indicated that an organismic approach emphasizes maturation, qualitative development, and irreversible stages, listing Werner and Freud as examples.

Metaphor 4: "Contextualism." This worldview understands people, objects, and events as influenced by the historical moment and by contexts of development. It emphasizes a "mutual" and "dynamic interaction" between the child and environment (Dixon & Lerner, 1999, p. 27). Super and Harkness (2003) offered Shweder and Rogoff as examples of contextualist developmental theorists because they emphasize historical, situational, and cultural influences. Dixon and Lerner (1999) discussed other examples of contextualism, e.g., Bronfenbrenner's emphasis on contextual systems and Baltes' and Schaie's (Baltes, Lindenberger, & Staudinger, 2006; Schaie, 2005) emphasis on historical influences.

The assumption that culturally based parental beliefs influence child development is rooted in over a half-century of cross-cultural research (Gardiner & Kosmitzki, 2010). However, Azuma (2005) distinguished culture (previously equated with a society or nationality) from "functional" culture, which he called "the total set of cultures that constitute the milieu for the activities and development of a person or a group of people" (p. xii). The idea of functional culture challenges us as researchers to distinguish between culture and nationality. It also suggests that while parental ethnotheories may derive from broad societal values, they are also likely to reflect parents' memberships in various sub-cultural groups. Accordingly, we expected that while one root metaphor of development may be predominant in a society, the four metaphors probably coexist in a pattern as prioritized by individuals. Indeed, Pepper (1942), Super and Harkness (2003), and Dixon and Lerner (1999) all had indicated that worldviews, metaphors, and theories are not mutually exclusive. As a result, we anticipated individual differences in mothers' agreement with the four metaphors, and cultural group differences in the relative importance assigned to each metaphor.

The present study of parental beliefs and images was conducted in the U.S., Japan, South Korea, and Indonesia. There had been many studies of parental beliefs in Japan and the U.S. (Levine & Shimizu, 2000; Tobin, Xue, & Karasawa, 2009), but parents from other Asian cultures such as Korea and Indonesia are unrepresented in the child development literature (e.g., Park & Cheah, 2005; Zevalkink & Riksen-Walraven, 2001). Korea was also of interest because, like Japan, it has become part of the West and yet retains an ancient traditions and heritage (Kim & Choi, 1994). Indonesians were also sampled, because Indonesian culture was viewed is a less Westernized Asian culture, and has been the site of a number of cross-cultural studies (e.g., Eisenberg, Liew, & Pidada, 2004; Farver, 1998; French, Pidada, Denoma, McDonald, & Lawton, 2005). The four samples were not representative of their respective national populations, but group

comparisons are at least thought-provoking because each sample reflected the influence of multiple contexts on mothers' thinking.

METHOD

Participants

Participants were mothers of children attending middle-class suburban preschools in the cities of Provo, Utah, U.S.A. ($n = 101$), Seoul, Bucheon, and Incheon, Korea (hereafter "Seoul"; $n = 221$), Jakarta, Indonesia ($n = 312$), and Sapporo, Japan ($n = 172$). Mean ages of participants were as follows: Provo = 35.10 ($SD = 5.87$), Seoul = 33.95 years ($SD = 3.85$), Jakarta = 33.09 ($SD = 4.74$), and Sapporo = 32.99 ($SD = 4.97$). Children of the mothers in all four samples were between ages 3-5 years, with 4-year olds the modal age group in each sample. Provo participants were all members of the Church of Jesus Christ of Latter-Day Saints (hereafter "LDS"). The Seoul sample consisted of Buddhists, Christians (there was no differentiation between Protestants and Catholics), and those identifying with "No Religion." The Jakarta sample reported their religious affiliation as Islamic, Catholic, Protestant, Hindu, or Buddhist. Finally, Sapporo participants completed the same questionnaire as did the other cultural samples, but based on a decision of the research team religious group affiliation was not asked in Japan. Demographic characteristics of the four samples are presented in Table 1.

Materials

Participants completed a six-page self-report questionnaire about parenting, child development, childrearing and childhood. The questionnaire was constructed by adapting items from previous studies of parenting styles and behavior (e.g., Hart et al., 2000; Okagaki & Sternberg, 1993; Wu et al., 2002), the results of preliminary interviews with 60 parents from the four societies, and issues raised in previous publications about basic issues, images, and metaphors. The questionnaire included items about demographics, children's daily life and relationships, parenting styles, parental behavior, beliefs, expectations, and images.

Independent and Dependent Variables

Independent variables. "Culture" is not the same as "nationality," but for convenience sake nationalities were coded as an independent variable and included in the title of this article. We refer to the cultural samples by the names of cities rather than countries because none were national samples. A second independent variable was religious group membership. As mentioned above, this variable was not included on the Sapporo questionnaire and Provo participants were all members of one religious group (LDS). Responses to a question about the importance of religion, included on all four language versions of the survey, were analyzed to assess the effects of religious beliefs on dependent variables. Because parental beliefs may differ according to parental educational background, level of maternal education (i.e., less than bachelor's degree vs. bachelor's degree or higher) was also used as an independent variable.

Dependent variables. All dependent variable items reported here were rated by mothers using a 6-point scale rating (1 = strongly disagree; 6 = strongly agree). First,

Table 1. Demographic characteristics of four samples

	Provo	Seoul	Jakarta	Sapporo
<i>n</i>	101	221	312	172
Religion				
Church of Jesus Christ of Latter-Day Saints	101			
Christian		111		
Islamic			69	
Catholic			88	
Protestant			108	
Buddhist		25	47	
No Religion		85		174
Mother's Education				
Less than Bachelor's Degree	16	121	110	92
Bachelor's Degree or Higher	81	100	201	78
Mother's Marital Status				
Married	98	216	301	168
Other	3	5	11	4
Three-Generation Household				
Yes	2	36	75	21
No	99	185	237	153

regarding key issues of development cited by many writers (e.g., Berk, 2009; Berger, 2009, Bukatko, 2007), agree/disagree ratings for seven items were subjected to univariate analyses to examine cross-cultural and intra-cultural trends (the 8th item had been suggested by Chen, 1996):

1. Environment is the most important influence on children.
2. Heredity is the most important influence on children.
3. All children go through the same stages.
4. Each child has a unique path of development.
5. At birth, children are like "blank slates," to be influenced by all experiences.
6. Children are born pure of heart and free of sin.
7. Children by nature are mischievous and misbehave.
8. Young children often tend to be lonely.

The first two items related to the nature-nurture issue; items 3-4 related to the issues of multidirectional development and stage development; the remaining four items concern concerned images of children as malleable, pure, impure, and vulnerable.

The next set of dependent variables concerned maternal images of childrearing and growing up. The analogies were based on Chen's (1996) writing about parental images:

"Childrearing" is like:

1. breaking in a horse (bend child's will)
2. cultivating a plant (grow, prune)
3. growing a flower (let grow naturally, providing soil & water)
4. raising an animal (shepherd, train, control)

"Growing up" is like...

1. crossing a stream alone (parent beckons child to cross from opposite shore)
2. crossing a stream alone (child crosses bridge built by parents)
3. crossing stream together (parent carries child / takes child's hand guiding across)

The third set of dependent variables (four composite indexes) was constructed based on items concerned with mothers' beliefs about the nature of children, development, and childrearing. Items were organized into the four groupings based on a consensus reached through discussions among the co-authors. Definitions of the four metaphors of child development were based on the writings of Pepper (1942), Dixon and Lerner (1999), and Super and Harkness (2003). Table 2 lists the four groupings of variables, which were combined into four composite variables, computed as the mean rating of items within each composite. Cronbach *alpha* statistics for these four indexes, also presented in Table 2, ranged from .67 to .70.

Procedures

Children carried six-page questionnaires home from their preschools, and brought them back to the preschool completed by their mothers. The overall return rate across the four cultural groups was 80.1%.

RESULTS

Basic Issues of Development

Table 3 presents the results for mothers' ratings of eight items about basic issues of child development, and images of the nature of children. These data were analyzed separately by two-way Analysis of Variance, for the effects of cultural group and maternal educational background. For each of these items a mean score on the 6-point rating scale greater than 3.5 (midway between the minimum/maximum points of 1 and 6) would indicate that on the group level there was agreement with a statement, and a mean below 3.5 may indicate a group tendency to disagree with a statement. Seoul mothers tended to rate all items higher than mothers in the other three cultures, but inspection of the tables (including standard deviations) and figures reveals trends within each culture.

Nature and nurture. In all four cultural groups, as shown in Figure 1, mothers agreed more (averaging one point higher on the 6-point rating scale) with the statement that "Environment is the most important influence on children" than with the statement "Heredity is the most important influence on children," i.e., endorsing nurture over nature. Provo mothers had a significantly lower level of agreement with environmental

Table 2. Composite items for four root metaphors

Formism (alpha = .65)

Children are born pure of heart and free of sin.
 Children should be allowed to develop in their own ways.
 Children should be independent and able to look after themselves.
 Each child has a unique path of development.
 Individual uniqueness is the most important goal of growing up.
 Positive self-esteem is an important accomplishment of development.

Mechanistic (alpha = .68)

At birth, children are like “blank slates,” to be influenced by all experiences.
 Children are readily changed and influenced by their environment.
 Environment is the most important influence on children.
 It is important for children to learn step by step, learning the right thing at the right time.
 Physical punishment is necessary for most children.
 Spare the rod and spoil the child.
 Strong discipline is one way to show one’s affection for a child.
 Strong training, management, and control of children are essential for family life.

Organismic (alpha = .67)

All children go through the same stages.
 Child development unfolds mainly by biological maturation.
 By nature, children are pleasure-seeking and self-centered.
 Heredity is the most important influence on children.
 There is an “age of reason” in childhood, when children begin to think rationally.
 We should help children grow out of their immaturity as soon as possible.
 Young children often tend to be lonely.

Contextualist (alpha = .70)

Adult interference with children’s natural development is the cause of most problems and misbehavior.
 Becoming part of and contributing to a group is an important part of growing up.
 By exposure to or involvement in the adult world, children learn proper behavior by example.
 Children should respect and obey their parents no matter what.
 Cooperative skills and behavior are important goals of children’s development.
 Gaining individual social status and recognition is an important part of maturity.
 Group harmony (with family, work, friends) is a major goal of growing up.

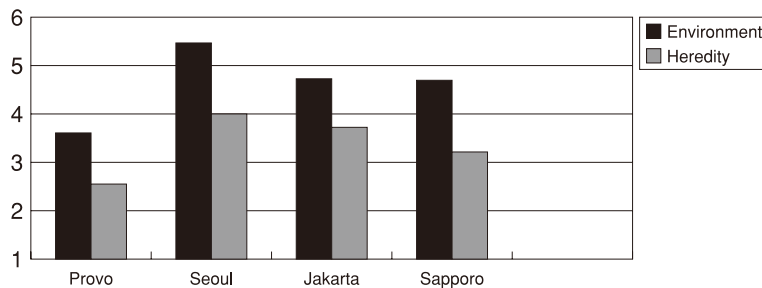
influences compared with the other three samples, regardless of maternal educational levels.

Unidirectional and multidirectional development. There was a main effect for culture for the item representing unidirectional development (“all children go through the same stages”) and for the item representing multidirectional development (“each child has a unique path of development”). There was also a main effect for maternal educational background for both these items. An interaction effect (culture X maternal education) indicated that Jakarta mothers of higher educational background (mean = 4.61) tended to agree more strongly that “each child has a unique path of development,” $F(3) = 2.80, p < .05$, compared with Jakarta mothers of lower educational background (mean = 4.01).

Figure 2 shows that all four samples tended to agree with the idea of multiple

Table 3. Cultural Group Comparisons of Ratings of Basic Issues of Development and the Nature of Development

	Provo	Seoul	Jakarta	Sapporo
Basic Issues of Child Development				
Environment is the most important influence on children; $F(3) = 73.20, p < .001$	3.59 (1.19)	5.42 (.74)	4.69 (1.19)	4.64 (.88)
Heredity is the most important influence on children $F(3) = 40.24, p < .001$	2.55 (.88)	3.98 (1.13)	3.71 (1.41)	3.18 (.88)
All children go through the same stages. $F(3) = 24.62, p < .001$	3.12 (1.33)	4.08 (1.44)	3.28 (1.61)	2.36 (1.10)
Each child has a unique path of development. $F(3) = 44.40, p < .001$	5.29 (.69)	5.29 (.87)	4.41 (1.36)	5.31 (.72)
Characteristics of the Nature of Children				
At birth, children are like “blank slates,” to be influenced by all experiences. $F(3) = 24.62, p < .001$	3.16 (1.49)	4.37 (1.53)	4.50 (1.35)	4.20 (1.07)
Children are born pure of heart and free of sin. $F(3) = 20.97, p < .001$	5.69 (.72)	5.00 (1.34)	4.54 (1.50)	4.76 (1.34)
Children by nature are mischievous and misbehave. $F(3) = 67.47, p < .001$	2.31 (1.08)	1.60 (1.06)	2.12 (1.47)	3.42 (1.25)
Young children often tend to be lonely. $F(3) = 107.55, p < .001$	2.13 (.93)	3.70 (1.34)	3.51 (1.58)	4.99 (.73)

**Figure 1.** Agreement with Importance of Nature (Heredity) and Nurture (Environment)

Note. Rating for these and Figures 2-5 items: 6 = “Completely agree,” 1 = “Completely disagree”

paths of development more strongly than with the idea of developmental stages. Only the Seoul mothers tended to agree with the idea of universal stages; this may have been due to a response bias to agree with items, or it may reflect the genuine view of Seoul mothers, since the influence of heredity and environment are not mutually exclusive. The mean ratings in the other three cultural groups were below 3.5 and therefore indicated a group-wide tendency to disagree with the stage view. The gap between agreement with multiple paths and disagreement with universal stages was clearest in the Provo and Sapporo samples. Jakarta parents were significantly less in agreement with the idea of multiple paths than the other three groups, yet the overall trend across cultures was consistently in favor of multidirectional development.

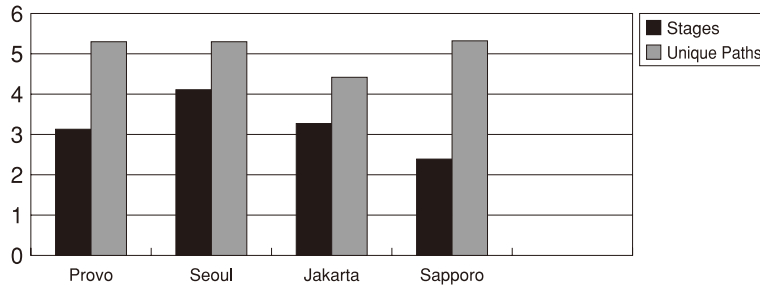


Figure 2. Agreement with Developmental Stages and Unique Paths of Development

The nature of children. Figure 3 demonstrates cross-cultural and intra-cultural variability in mothers' images of the nature of children. First, the Provo mothers overall clearly rejected the images of children as blank slates, mischievous, and lonely, and almost unanimously agreed with the image that children were "born pure of heart and free of sin." Second, in contrast with Seoul and Jakarta mothers' endorsement of the images of children as both pure and blank slates (and mixed ratings about loneliness), the most striking result was their rejection of the image that children "by nature are mischievous and misbehave." The Sapporo data were striking in their significantly higher levels of agreement with the images of children as mischievous and lonely.

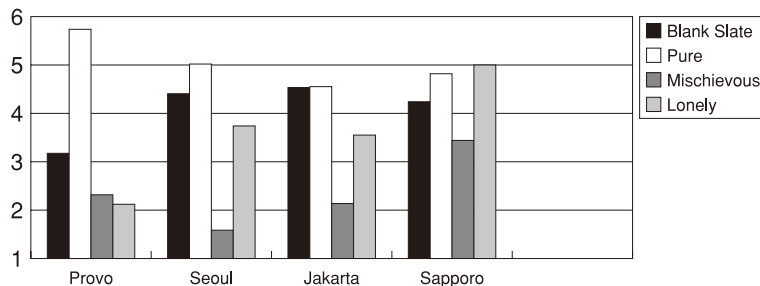


Figure 3. Agreement with Four Characteristics of the Nature of Children

Analogies of Childrearing

Table 4 and Figure 4 report the results of univariate Analysis of Variance, for effects of cultural group and maternal educational level, for mothers' ratings of eight images that represent analogies of childrearing and growing up. These data revealed different preferences and patterns in the four respective cultural groups, but there were no main effects or interactions involving maternal educational level. First, concerning the analogies of raising plants and animals, the Provo mothers clearly agreed with what Chen (1996) called the cultivation (plant) model and disagreed with the "animal lore" models. Their strongest level of agreement was with the image of childrearing as like "cultivating a plant...grow, prune." By contrast, the highest-rated analogy in the other three cultures was to "grow a flower...naturally." In all four cultures, the modal response to "break in a horse" was to disagree, which in the case of Seoul mothers was the only analogy with which they tended to disagree. Jakarta mothers also tended to agree with all but the horse-breaking analogy, and expressed the highest level of agreement among

the four groups with the analogy of “raising an animal...training/control.” Among the four groups, the Sapporo mothers were the only group to disagree with the analogy of “cultivating a plant.” In addition, the only image for which Sapporo mothers’ modal rating was in agreement was the analogy of “grow a flower...let grow naturally.”

Table 4. Cultural Group Comparisons of Analogies of Child Development and Childrearing

	Provo	Seoul	Jakarta	Sapporo
Childrearing is like...				
cultivating a plant (grow, prune) <i>F</i> (3) = 139.90, <i>p</i> < .001	4.92 (.94)	4.24 (1.10)	4.12 (1.37)	2.29 (.95)
breaking in a horse (bend child’s will) <i>F</i> (3) = 51.98, <i>p</i> < .001	2.12 (.99)	3.26 (1.17)	3.49 (1.50)	2.30 (1.01)
growing a flower (let grow naturally, providing soil & water) <i>F</i> (3) = 41.02, <i>p</i> < .001	4.10 (1.26)	5.34 (.85)	4.83 (1.24)	4.24 (1.20)
raising an animal (shepherd, train, control) <i>F</i> (3) = 79.29, <i>p</i> < .001	2.90 (1.12)	4.31 (1.36)	4.80 (1.26)	3.39 (1.29)
“Growing up” is like...				
crossing a stream alone (parent beckons to child to cross, from opposite shore) <i>F</i> (3) = 46.98, <i>p</i> < .001	2.36 (1.14)	4.26 (1.25)	3.78 (1.51)	3.60 (1.09)
crossing a stream alone (child crosses bridge built by parents) <i>F</i> (3) = 30.87, <i>p</i> < .001	2.93 (1.29)	3.93 (1.14)	3.90 (1.34)	3.07 (1.11)
crossing stream together (parent carries child / takes child’s hand guiding across) <i>F</i> (3) = 28.49, <i>p</i> < .001	5.22 (.75)	5.25 (.89)	4.89 (1.26)	4.27 (1.16)

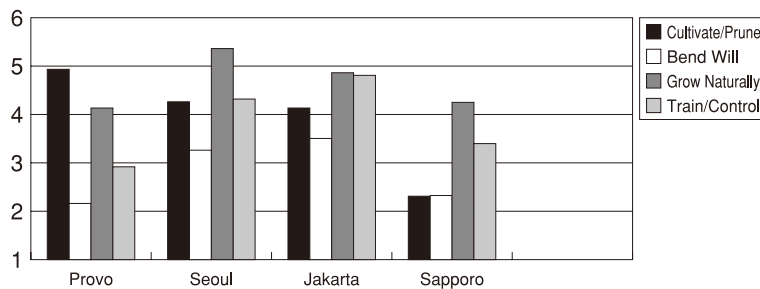


Figure 4. Agreement with Four Metaphors of Childrearing

In reference to Chen’s (1996) metaphor of growing up as analogous to “crossing a river,” the consistent finding across the four cultural groups was a high level of agreement with the analogy of the child crossing a stream together with the parent (“parent carries child / takes child’s hand guiding across”). Provo mothers stood out in their rejection of both analogies of crossing a stream alone (“parent beckons to child to cross from opposite shore” and “child crosses bridge built by parents”). Mothers in Seoul and Jakarta tended to agree with these analogies, albeit at a level significantly lower than the image of the child crossing together with the parent. The modal responses of Sapporo mothers agreed only with “crossing together.”

Four Root Metaphors of Development

Multivariate Analysis of Variance was conducted for the independent variables of cultural group (Provo, Seoul, Jakarta, Sapporo), and maternal education background (less than bachelor's degree vs. bachelor's degree or higher), for the four metaphor indexes. Main effects for cultural group were found for all four indexes (see Table 5). For the formism, mechanistic, and organismic indexes, Student-Newman-Keuls tests distinguished all four groups; for the contextualistic index the Jakarta and Sapporo ratings were equal, and lower than the other two groups. There was a main effect for maternal level of education for the contextualist index, $F(1) = 4.35, p < .05$ (means: less than bachelor's = 4.13, bachelor's or higher = 4.25); there were no cultural group X maternal education interactions. Regression analysis on the four metaphor indexes was next conducted for the item, "Religion plays an important part in my thinking about children." The religion regression coefficient was significant for the formism index, $r = .09, \beta = 2.35, p < .05$; mechanistic index, $r = .19, \beta = 5.41, p < .001$; organismic index, $r = .08, \beta = 2.32, p < .05$; and contextualist index, $r = .21, \beta = 6.03, p < .001$.

Table 5. Cultural Group Comparisons of Ratings of Agreement with Four Root Metaphors of Child Development

	Provo	Seoul	Jakarta	Sapporo
Formism Index Mean Rating (<i>SD</i>) $F(3) = 71.36, p < .001$	4.54 (.43)	4.86 (.61)	3.95 (.84)	4.37 (.46)
Mechanistic Index Mean Rating (<i>SD</i>) $F(3) = 56.43, p < .001$	3.31 (.52)	4.37 (.59)	3.96 (.73)	3.64 (.49)
Organismic Index Mean Rating (<i>SD</i>) $F(3) = 35.37, p < .001$	2.99 (.54)	4.00 (.62)	3.72 (.78)	3.57 (.42)
Contextualist Index Mean Rating (<i>SD</i>) $F(3) = 105.82, p < .001$	4.22 (.44)	4.83 (.52)	3.87 (.79)	3.94 (.44)

Figure 5 shows that in the Provo sample there was significantly more agreement with the formism and contextualist metaphors, whereas these same tendencies were less pronounced in the Seoul and Sapporo samples. Jakarta mothers did not distinguish statistically between the four metaphors. Consistently across cultures, mothers agreed most with the formism metaphor and least with the organismic metaphor, although the mean differences on the 6-point rating scale were not as striking as the group differences for the other dependent variables reported earlier.

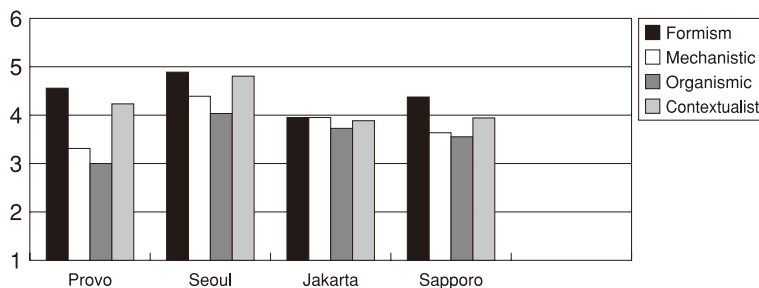


Figure 5. Agreement with Four Root Metaphors of Development

Religious Group Comparisons

Direct comparisons of the beliefs of mothers belonging to different religious groups were only possible for the Jakarta and Seoul samples, because the Provo sample was all from one religious group (LDS) and the Sapporo sample was not asked about religious affiliation. Univariate Analysis of Variance for religious group membership was conducted for the above-mentioned items and composite indexes, separately for the Seoul and Jakarta data. Different religious groups were included in these two samples, i.e., no Islamic participants in Korea and absence of “no religion” responses in Jakarta. For the Seoul data, ANOVAs indicated that there was a significant religious group main effect only for the formism composite index, $F(2) = 3.06$, $p < .05$, with mothers reporting no religion agreeing rating the formism metaphor items slightly higher (means: No religion = 4.97, Buddhist = 4.76, Christian = 4.77). Otherwise, mothers from the three Seoul religious groups rated all the metaphors and images similarly. In the Jakarta sample, there were religious group differences for two metaphor indexes. Catholics rated the formism index more positively (mean = 4.19) and Protestants rated it lower (3.76), although all four religious groups rated this composite favorably on average, $F(3) = 4.59$, $p < .01$. On the contextualist metaphor index, Islamic mothers made the most positive ratings (4.03) and Buddhists gave the lowest ratings (3.66), $F(3) = 2.76$, $p < .05$. However, none of the religious group differences, although significant, amounted to more than a half-point on the six-point scale between the highest and lowest group means. In other words, there were few religious group differences overall, and the few group differences were small in magnitude.

Regression analysis. Univariate ANOVA for the effect of cultural group on the item, “religion plays an important part in my thinking about children” revealed a significant group difference, $F(3) = 240.57$, $p < .001$. Provo mothers almost unanimously agreed strongly with this statement ($M = 5.64$, $SD = .61$), followed in order by Jakarta ($M = 4.78$, $SD = 1.23$) and Seoul mothers ($M = 4.55$, $SD = 1.33$). Only Sapporo mothers ($M = 2.14$, $SD = 1.30$) tended to disagree with this statement. Clearly, the importance of religion differed between the four samples. To evaluate the specific influence of religious beliefs between the groups, regression analysis was conducted for ratings of the “religion plays an important part” variable. Regression analysis indicated that religious beliefs predicted participants’ scores on all four metaphors of development, as follows: Formism r-square = .007, beta = , $p < .001$; Mechanistic r-square = , beta = , $p < .001$; Organicism r-square = , beta = , $p < .001$; Contextualism r-square = , beta = , $p < .001$.

DISCUSSION

Provo

The Provo sample was most supportive of the cultivation metaphors, but unlike the other three samples they expressed stronger agreement with the “growing, pruning” image than the “let grow naturally” image. They expressed by far the strongest agreement that children are pure and free of sin by nature, and generally disagreed with the other three images of the nature of children. In particular, the Provo mothers expressed less agreement with the view of children as either blank slates or lonely

compared with the other three cultural groups. They also preferred the formism and contextualist root metaphors over the mechanistic and organism metaphors, tending to disagree with the latter two. Finally, they agreed overwhelmingly that religion was important for their thinking about children.

The formism metaphor was the most fitting for mothers in the LDS (Mormon) culture. We predicted this outcome, because in Provo “culture” and generally in the LDS “culture,” people tend to analyze and place individuals or experiences into categories and hierarchies. Many are quick to judge whether someone or something is good or bad, to label and quickly take action for or against that person or thing. LDS mothers also actively analyze the social, physical, and spiritual development of their children. They want their children to follow a certain path, and bad activities or experiences that detract from the path are discouraged. Indeed, many of the actions taken by such mothers come back to the “formism” metaphor, yet this metaphor probably overlapped with other metaphors for the Provo sample.

Provo mothers agreed most strongly with the analogy of cultivating a plant (grow, prune). Many tend to look at childrearing as like cultivating a plant because they strive to create a good environment for growth, just as a gardener provides good soil and water. For example, a good home and good values could help a child grow. To a lesser degree, Provo mothers also agreed with the analogy of growing a flower (let grow naturally, providing soil and water). This approach, however, was more hands-off than the grow/prune analogy, and LDS mothers tend to be hands-on while appreciating the natural tendencies of their children. As to breaking in a horse (bending the child’s will), LDS mothers tended to disagree, but this analogy might become more salient as children get older if they strayed from the path. Similarly, they often disagreed with the analogy of raising an animal (shepherd, train, control). This may have been because LDS mothers do not like to control, thinking that this could drive their children away later in life.

The LDS religion encourages development that comes from structure and the examples of others. As a result, mothers were highly receptive to the analogy of crossing a stream together. This image is almost the ideal for LDS mothers, in that they are not telling the child what to do but rather guiding by example. Provo mothers tended to disagree with the other two river-crossing options because they would never leave their children entirely alone to make their own decisions, and rather would guide children across in a hands-on manner.

The responses of LDS parents were strong when the items in question touched on spiritual or religious themes. Spirituality and commitment to religion, with regard to families, is something that LDS people consider “Mormon.” This is not to say that other religions or parents from the other samples were not concerned or focused on religion; rather this is a matter of the stronger degree to which religion shaped Provo mothers’ responses. For example, Provo mothers overwhelmingly agreed that “children are born pure of heart and free of sin.” A common phrase in LDS thought, and probably in the minds of LDS parents of young children, is that children are “gods in embryo” (Shwalb, Chen, MacKay, & Wilkey, 2003). In addition, LDS parents strongly agreed that “children are readily changed and influenced by their environment,” “exposure to or involvement

in the adult world, children learn proper behavior by example,” and “most of children’s early problems can be overcome by time and experience.” From this viewpoint young children are pure, but they still have to learn and grow to become god-like. In sum, Provo mothers agreed or disagreed with items to a large extent based on a regard for religious teachings.

Seoul

Korean mothers agreed more with the images of children both as pure and blank slates, and they strongly disagreed with the image of children as mischievous by nature. They very strongly agreed with the “growing a flower” analogy, and to a lesser extent supported the plant cultivation and animal training analogies. But like the other three cultural groups, they expressed little support for the “breaking in a horse” analogy to childrearing. They favored the formism and contextualist metaphors most strongly, although they tended to agree with all four metaphors. Finally, Korean mothers tended to agree with the “religion plays an important part” item.

The image of crossing the river together reflects the close nature of Korean mother-child relations. Korean mothers are highly involved in all aspects of their children’s lives, and many could be considered highly intrusive. Korean family life is highly child-centered; one might even say that the image of the Korean child often is inseparable from the image of the Korean mother.

It was predictable that agreement with the formism metaphor would be strong. Korean mothers often evaluate their children’s development and compare it to that of other children in other families. They compare their children with peers in terms of independence and social development, and value cognitive abilities over emotional development, as shown in the Korean emphasis on early education for writing, reading, expressive abilities, number concept, and English. As for the mechanistic metaphor, which they rated second highest, Korean mothers rely on rewards and punishments to control and guide children. They tend to use corporal punishment and criticism when children’s misbehave or do not reach expectations, rather than using rewards. Both mothers and teachers use punishment and criticism to control or guide children, and believe that it is for the good of the child. An expression in Korean for this attitude toward discipline is the “rod of love.” The heavy involvement of the Korean mother in her child’s life (in decision-making, education, daily life tasks, etc.) might also be related to the high scores on the mechanistic metaphor, reflecting the belief that mothers can have a strong cause/effect influence on children’s development through control and even intrusion.

The high level of agreement on numerous items by Korean mothers was not necessarily a response bias, but may have reflected genuine agreement with multiple images, analogies, and metaphors. Indeed, items were not presented as mutually exclusive choices, and Korean maternal beliefs and images may value various viewpoints. More in depth study is required to ascertain the actual reasons for their high ratings. Previous research has suggested that Korean mothers’ attitudes and behavior with regard to children do not always coincide (Hyun, 2004a, 2004b), and future research is warranted in all four cultural groups, on the relation of the present findings to actual

maternal behavior and child developmental outcomes.

Jakarta

Jakarta mothers agreed with all of the childrearing analogies, although they agreed more with the flower and animal-training than with the images of plants (grow, prune) or breaking in a horse. Like the Seoul mothers, they agreed more with two images of the nature of children (both as blank slates and as pure) rather than the image of loneliness. Their lowest level of agreement with any dependent variable reported here was for the item of children as mischievous. Although their standard deviations were higher than in the other three cultural groups for the four root metaphors, their mean levels of agreement with these metaphors were all very similar (3.72~3.96). Finally, Jakarta mothers expressed strong agreement for the influence of religion on their thinking about children.

Tradition plays an important role in most Indonesian families, and many Indonesian traditions are strongly influenced by religions. Indeed, failure to educate children is considered a sinful act and religious figures are important models. Most Jakarta families use religious teachings as standard of good and bad behavior. For example, any act that is different than what is written in the Qur-an or Bible can be considered as bad. But since there are also a variety of behavioral standards in different religious books, Jakarta parents have multiple interpretations of behavior even within a single religion.

As for the formism metaphor, most Jakarta families place great value on the influence of heredity and genetics, although this was not affirmed by the question on the importance of heredity. In many Indonesian families, heredity and genetics are considered very important (the Jakarta sample agreed more with the statement "Heredity is the most important influence on children" than did Sapporo or Provo mothers). Children's behavior is thought to reflect on the parents and even the entire family, not only as a reflection of quality of parenting but also quality of heritability of psychological characteristics. In most cases, mothers have ethnic pride and expect children to carry on their ethnic tradition. Even when children are growing up, mothers are concerned with their children's choices of partners and friends and expect them to associate with members of the same ethnic group, religious group, or race. While Jakarta is a melting pot of many cultures, traditions are retained to reinforce family bonds. Jakarta mothers also tend to compare their children with peers, mostly on school achievement, and parents conform to the standards of the better students.

In relation to a mechanistic mentality, most Jakarta mothers tend to use punishment for their children's failures, especially for low school achievement. Otherwise, many mothers feel helpless and unable to do anything to improve their children's behavior. They may see punishment as easier than reward as the way to control children, and in Indonesia fear of authoritarian parents is part of growing up even into adulthood. Respect for parents may be seen as a positive result of this tendency among Jakarta mothers. A small percentage of mothers use rewards for their children's success at school, usually in the form of money or possessions rather than praise or attention, which again refers back to the mechanistic metaphor. It was striking

in the Jakarta data that mothers did not differentiate much between the metaphors, meaning either that they agreed equally with all the root metaphors or that the metaphors were not a valid reflection of their beliefs.

With regard to the analogy of childrearing as “raising an animal...training/control” (rated higher by Jakarta mothers than by their counterparts in the other three cultures) the data suggest that Jakarta mothers incorporate both a child-centered and parent-centered mentality. Apparently they want to allow children to develop naturally (as shown in their stronger agreement with the cultivation model), but they also see the value of maintaining control over their children (as shown in their relatively strong agreement with the animal training/control analogy). Some Jakarta parents may perceive children as lacking the experience necessary to make their own decisions or determine right from wrong. In such instances, the mixed views of Jakarta parents might bring about conflict with their children.

Sapporo

Like mothers in all four cultural groups, the Japanese mothers showed a higher level of agreement with (1) multidirectional paths of development than stages, (2) environmental influences, and (3) the analogy of crossing a stream along with the parent. In addition, they agreed more with the plant cultivation analogies than the animal-raising analogies, and the image of children as pure rather than mischievous or blank slates by nature. They also were significantly different from the other three cultural groups in perceiving children as lonely and in rejecting the notion that religion plays an important part in their thinking about children. They agreed most with the formism metaphor, but their mean ratings for the other metaphors were not highly differentiated.

Japan is now a highly urbanized post-modern society, but has a historical legacy of rice paddy cultivation, and a cultivation mentality might persist as an analogy for childrearing beliefs. At the same time, while most Japanese now claim no religion, Japan has a legacy of Buddhism and nature worship in which spirits are gentle rather than punitive. In addition, Japanese mothers traditionally have tended to indulge their children and avoid confrontation, which better suits a childrearing model of cultivation or nurturance (Chen, 2007) than of training or control.

In one form of the cultivation analogy (Chen, 1996) mothers foster an environment in which children can grow naturally. This mentality supports the naturalist aspect of the nature/nurture continuum, in that mothers would nurture children’s natural development in the same way one would cultivate a flower’s natural growth. An example of the Japanese cultivation metaphor was seen in an essay (translated here), published in the Japanese *Asahi Shinbun* newspaper (September 10, 2005) by a 36-year old housewife, entitled “The Secret to Childrearing, Learned by Taking Care of Flowers.”

“Four years ago I started a garden by planting ten tulip bulbs. Since I had no actual space for a garden, I bought some soil and grew them in a planter. The first year I over-watered the plants and caused root rot, so that less than half of the flowers bloomed. The second year the garden was ruined by insects. In the third year, the flowers finally bloomed well, because I had learned from a neighbor

not to over-water. Now I raise primulas, which are easy to grow. When I'm a little more patient about my desire to water, they bloom well and grow heartily. I feel deeply that this experience was just like childrearing. When I water excessively I cause root rot. And when things start to wither, I try harder and harder, and then I clip them off. It's OK to fix things when they go wrong. But if the roots are strong a flower can always bloom. As I learned from the flowers and my neighbors, I want to do my best whether it is in gardening or childrearing."

Many of the Sapporo results reflected the general mentality of contemporary Japanese. For example, the stronger support for multiple paths of development than for stages was suggestive of the value placed on individuality in post-war discourse on educational issues. This was also true for the Seoul and Provo data. The perception of children as lonely by nature may be related to adults' sympathy, compassion, or positive view of children (Chen, 1996), although it could alternatively have been a projection of mothers' own loneliness or sense of guilt toward their children. As for the river-crossing analogy, the strongly protective tendency of Japanese mothers might have led them to choose to "cross the river together" analogy over options that emphasized children's independence; this image was commonly supported by all four cultural groups and may simply be a positive view of children across cultures in the era of globalization.

There are reasons why Japanese mothers might agree with any of the four root metaphors. Indeed, the data showed that it is impossible to identify a "typically Japanese" root metaphor in relation to childrearing. The Japanese like to classify people (e.g., personality as related to blood types) even if when their judgments are not based on scientific thinking. This would be more supportive of the formism metaphor. But the Japanese also are sensitive to environmental effects, for example in blaming society or institutions when there are problems in the school system. This mentality would support the contextualist metaphor, which had the second highest level of agreement in the Sapporo sample.

Religious Group Influences

It is fair to say that childrearing in Provo is to a strong degree rooted in participants' membership in the LDS religion (Hart, Newell, & Sine, 2000). For the Sapporo group, religion would not be considered an important influence on parenting behavior and thinking. In response to the statement "Religion plays an important part in my thinking about children," the modal response on a 6-point scale in Provo was "strongly agree" whereas the modal response in Sapporo was "strongly disagree." The Sapporo sample was probably better represented the broader Japanese middle class population than the Provo sample represented the broader American population, but in both Sapporo and Provo "functional culture" likely includes many other contextual influences besides religion (Azuma, 2005). It is not possible based on the present data set to distinguish between the effects of religion, geography, social class, politics, and other contextual influences. Finally, the Jakarta sample included a disproportionate number of Christians and other non-Muslims, and therefore did not represent the religious group demographics of Indonesian society. Jakarta has the widest variety of

sub-cultures, languages and dialects among our four localities (making it a highly complex functional culture), and so it was not surprising to find heterogeneity in the responses of Jakarta mothers.

CONCLUSIONS

Despite limitations in measurement and sampling, the data included several points of interest to developmental psychologists. The results concerning “basic issues” showed how mothers in a variety of cultural settings respond to assumptions made about child development by developmental scientists (Berger, 2009; Berk, 2009; Bukatko, 2007). Parents in the four samples viewed these issues through the lenses of their respective cultural values. But no single image, metaphor, or analogy was a perfect match for all mothers in any of the four cultural samples, in terms of their thinking about children, child development, or childrearing.

Western or American parental beliefs are by no means a world standard, and individual mothers in every culture construct their own understanding of children. It is possible that with further globalization cultural values and beliefs will converge, and this may result in a convergence in thinking about children and child development. But our data indicated that each cultural sample and every mother had their own set of answers to questions about children, development, and childrearing. Individual differences ultimately outweighed most group trends in our data. On the other hand, it was interesting that the cultivation analogies transcended the cultures here despite the fact that few participants were from farming backgrounds. Similarly, the image of unique paths of development was fairly consistent across the four samples, and may reflect the views of modern educators and childrearing experts who emphasize individuation and individuality. The image of children as pure of heart and free of sin was accepted in all four cultures, although the impact of religious beliefs on this image differed between cultures.

The present research did not assess children’s developmental outcome measures or measure the contexts in which children develop. Above all, this study showed the need to focus on intra-cultural variations. One goal of our ongoing research is to further clarify how images, analogies, and metaphors of children, child development, and childrearing change in a world where complex functional cultures are replacing or have already replaced national cultures.

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