RUNNING HEAD: DEVELOPMENT OF FRIENDSHIP UNDERSTANDING

Affection, Virtue, Pleasure, and Profit:

Developing an Understanding of Friendship Closeness and Intimacy in Western and Asian Societies

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Abstract

The development of friendship understanding has rarely been explored from a cross-cultural perspective. In the present study, children and adolescents from Iceland, China, Russia, and former East Germany were investigated in one longitudinal and three cross-sectional samples. Children from three different Chinese ecologies were interviewed to account for within-culture variation. Participants were interviewed about friendship closeness and intimacy at ages 7, 9, 12, and 15. Their statements were scored according to (1) structural-developmental stages and (2) content aspects of friendship reasoning. Results reveal that the development of friendship reasoning of participants from all societies could be captured by the cognitive-structural stages and content categories developed in Western cultures. At the same time, distinct cultural differences emerged, especially between the Russian and Chinese participants on the one hand and the Icelandic and East German participants on the other. The within-China analyses reveal little differences for the content aspects of friendship understanding between the three ecologies, but differences in the cognitive-structural aspects of friendship reasoning were found.

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Be it David and Jonathan, Ronia, the robber's daughter, and her friend Birk, the fox Tod and the hound Copper, Doraemon and Nobita, the "sworn brothers" Liu Bei, Guan Yu, and Zhang Fei, or Winnie-the-Pooh and his friends in the Hundred Acre Wood, friendship tales from around the world seem to tell the same story: Friends trust each other and share intimate feelings; they have a good time together but can also sacrifice their own benefit for each other; they are loyal and stand by each other against all odds. In this paper we want to investigate whether these tales also have an equivalent in the friendship reasoning of children and adolescents in different cultures. We know that the ideas children have about friendship change with age, but are these changing friendship conceptions influenced by their cultural background? Although there is abundant research on friendship in Western cultures (see Bukowski, Newcomb, & Hartup, 1996), we know very little about the development of friendship in a cross-cultural context. As Chen, French, and Schneider (2006) point out, peer relationships and friendships might be influenced by cultural beliefs, since activities between friends are based on social norms and perceptions, evaluations, and reactions related to them. In the following, we will first review research on the development of friendship reasoning, especially how children of different ages understand closeness and intimacy in friendship, and then address the cultural characteristics of this development in a cross-cultural context.

The Development of the Friendship Concept

Two lines of research on children's understanding of close friendship can be distinguished: First, researchers have focused on the content of friendship reasoning (e.g. Berndt, 1982; Berndt & Savin-Williams, 1993; Bigelow, 1977; Bigelow & La Gaipa, 1975; French, Pidada, & Victor, 2005; La Gaipa, 1979; Sharabany, Gershoni, & Hofman, 1981) by studying age-related changes in the use of content categories. Younger children more often

spontaneously concentrate on concrete aspects of interactions, such as playing, common activities, helping and sharing, physical attributes, and global qualities of being nice and good (Furman & Bierman, 1984; La Gaipa, 1979). From preadolescence onward, children regard characteristics, such as intimacy, loyalty, authenticity, and trust, as being important for friendships and begin to take into account underlying personality characteristics that might govern their friends' overt behavior (Berndt & Hoyle, 1985; Bigelow, 1977; Bigelow & La Gaipa, 1975; Furman & Bierman, 1984; Sharabany et al., 1981). Based on their research findings, Bigelow (1977) and Bigelow and La Gaipa (1975) formulated a three-stage model of the development of friendship expectations: At the first *situational and self-centered* stage, the child focuses on common activities and propinquity, and friendships are valued for utilitarian reasons. The second stage is characterized by a *contractual and sociocentric perspective*. Normative expectations become important at this stage and their violation leads to negative (emotional) sanctions, for example, disapproval and guilt feelings. At the *internal-psychological and empathic level*, adolescents appreciate the psychological function of friendship (intimacy, loyalty, commitment, empathy). Understanding and mutual self-disclosure are important means for establishing an intimate relationship.

The second line of research emerged in the tradition of Piaget (1965). In these cognitive-structural theories, the development of the friendship concept is defined as a sequence of developmental stages. Selman (1980) proposed that age-related differences in friendship understanding could be attributed to an underlying social-cognitive process of perspective differentiation and coordination. These changes can be described by five developmental stages, at which social experiences and relationships are perceived differently, due to the underlying organization (or logic) of perspective differentiation and coordination. Content aspects in Selman's (1980) theory are defined in the form of six different topics or issues of friendship reasoning: friendship formation, closeness and intimacy, trust, jealousy,

conflict resolution, and termination of friendship, which are conceptualized at each stage with a particular stage-related quality and scored independently. For example, at Stage 0, closeness and intimacy in friendship equal physical proximity and at Stage 1, friendships become close because friends know each other longer and are therefore better acquainted with the other's likes and dislikes. At Stage 2, friends are close because they get along with each other and know the other's attitudes, whereas at Stage 3, close friendships are based upon intimacy, being concerned and caring about the other. Finally at Stage 4, close friendship involves moral commitment and respect for the other person as an individual. Thus, content aspects in Selman's theory are subordinated to the social-cognitive organization of perspective-taking abilities. As a consequence, information about when and how often children and adolescents spontaneously mention different content aspects as the most important characteristics of their friendship (e.g. joint activities, intimacy, trust) is lost.[1]

Friendship in a cross-cultural context

Whether the structural and content aspects of the development of friendship understanding are affected by culture-specific views on interpersonal relationships and norms has to date only rarely been investigated (see French et al., 2005; Keller & Wood, 1989; Krappmann, 1996; Verkuyten & Masson, 1996). The goal of this study was to explore whether the Western theories and findings about friendship development can be generalized to other cultures. Studying the development of friendship reasoning cross-culturally provides a powerful test of these theories (Bukowski & Sippola, 1998).

Cross-cultural differences especially between Asian and Western societies have often been attributed to the degree of individualism and collectivism in these cultures (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, 1995). However, the broad differentiation of societies in individualistic and collectivistic culture has been increasingly criticized (see Kagitcibasi, 1994; Voronov & Singer, 2002). One major criticism alludes to the fact that the

individualism–collectivism concept does not differentiate between "collectivist" (e.g., between India and China) or "individualist" (e.g., between USA and Iceland) societies. Further, variations of individualism and collectivism or multiple social orientations within one culture are ignored (Turiel, 1998). To address this criticism, we investigated the development of friendship understanding of children and adolescents in three societies (China, Russia, and former East Germany) that have been considered to be similar with regards to their political—that is, (formerly) socialist—system, but are clearly different concerning their traditional cultural heritage. We compared the development of friendship reasoning with a sample of participants who were longitudinally assessed in Iceland (see Keller, 1996). This allows investigating whether results obtained in a Western, capitalist society also generalize to other cultural contexts. Moreover, we will account for within-culture variations by studying the development of friendship understanding in three different Chinese school ecologies.

The Sociocultural Background of the Different Societies. China, Russia, and former East Germany (GDR) are usually not regarded as similar in terms of their traditional cultural heritage. China has commonly been seen as a collectivist culture (e.g. Hofstede, 1980; Triandis, 1995) but less so than, for example, India. Ho and Chiu (1994) concluded that individualist and collectivist attitudes and values seem to coexist in modern Chinese social relationships (Bond, 1996; Roetz, 1997). Russia (especially the Western part) and the GDR, on the other hand, have been associated with the rest of Europe regarding their political system and moral values (e.g. absolutism, enlightenment) well into the 20th century and share many Western, "individualistic" norms and values (Grunenberg, 1990). What connected the three countries was their political system, namely a socialist regime, which intensely propagated socialist ideology and permeated (almost) every aspect of the lives of their citizens (Schneider, Smith, Poisson, & Kwan, 1997).

The interview data with children and adolescents we present in this paper were collected cross-sectionally in the years 1989 and 1990 in the GDR and Russia (shortly after the fall of the wall in Germany and before Gorbachev resigned as president of the Soviet Union) and 1991 in China, two years after the 1989 uprising on Tiananmen Square. This means that the Chinese, GDR, and Russian children and adolescents in our sample were socialized during a period (the 1980s), in which basic features of the political systems still prevailed but orthodox socialism was relaxed in both the political and economic realm in all three states. In China, the reforms started by Deng Xiaoping in 1978 introduced significant economic and societal changes. As Braungart and Braungart (1994) and Shi (2000) show from survey data from the late 1980s, although Chinese adolescents and adults were welcoming governmental economic reforms, they still supported features of both socialism and capitalism. Particularly issues of social justice were important, and young Chinese people seemed to aspire to a reformed socialist society. In Russia and the GDR, social reforms were strongly connected to the concepts of *glasnost* (openness) and *perestroika* (reformation) initiated by the former secretary general Mikhail Gorbachev. They entailed both internal political and social reforms and an opening toward the West. As Goodwin and Emelyanova (1995) showed for family values, these reforms might have led to a return of traditional (i.e., more individualistic and Western) values in Russian society (see Hart, Yang, Nelson, Robinson, Olsen, Nelson et al., 2000). Western influences were always strong in the GDR, and especially since the 1980s, individualist ideas became more important for the younger generation than the acclaimed socialist values (Kolbe, 1998).

Iceland is usually referred to as being a prototypical Western society (e.g., Keller et al., 1998), in which individualism, autonomy, and equality play important roles. As Björnsson, Edelstein, and Kreppner (1977) showed, Icelanders perceive their culture as being high in equality and one in which people can choose their social and cultural roles freely. On

the other hand, even in modern Iceland there exists a strong orientation on family relationships and familial values, which results from the long agrarian tradition in stray settlements of the Icelandic society (Edelstein, 1999).

Development of friendship conceptions in Western and Asian cultures. In Selman's (1980) cognitive-structural theory of friendship development, contextual factors, such as culture, educational background, or gender, are believed to change the speed of this development, but not the developmental sequence itself. However, there exists hardly any research that would support this proposition in a cross-cultural context. One exception are the studies of Keller and colleagues who confirmed the validity of Selman's developmental sequence for friendship reasoning in a longitudinal study with Icelandic children and adolescents in an urban and a rural context (Keller, 1996, Keller and Wood, 1989). Unlike Selman´s (1980) participants, those in Keller and colleagues' studies showed systematic differences concerning the speed of development in the different content issues. At each measurement occasion, closeness, intimacy, and trust seemed to be the defining features of friendship in the transition to a higher stage.

Researchers studying content aspects of friendship reasoning have never explicitly claimed the universality of their findings, and a handful of studies and theoretical investigations have both shown differences and similarities in how adults, adolescents and children conceptualize friendship in different cultures. Argyle, Henderson, Bond, Ilzuka, and Contarello (1986) found that adults from Hong Kong viewed friendship as a highly intimate relationship, similar to their Western counterparts. Vong (1996) could show that Chinese and British 7- and 9-year-old children used similar criteria to differentiate between a "good friend" and a "not so good friend". Goodwin and Lee (1994) argued that Chinese sharply distinguish between a casual and a close friend, and that close friendship is higher in intimacy in China than in Western cultures and an important determinant of Chinese adolescents'

psycholosocial adjustment (Chou, 2000). According to Goodwin and Tang (1996), in traditional China, friends are chosen for ethical reasons: People make good friends if they are humane, honest, and lead the friend the right way. Moreover, within Confucianist philosophy, friendships are regarded as important for the stability of society (see French et al., 2005).

Kon and Losenkov (1978) demonstrated that Russian adolescents from both urban and rural contexts consider intimacy, confidentiality, and steadiness as very important in friendships. Friendship is either defined in terms of mutual aid and loyalty or by empathic understanding. Moreover, Russian adolescents clearly differentiate friendships from other relationships, such as acquaintanceship or relations with family members. Horenczyk and Tatar (1998) reported in a study with immigrated Russian and Israeli adolescents that the Russian immigrants expected more help, status, and similarity from their friends than Israeli adolescents. Overall, these findings indicate that friendship in Russia is a special and all-encompassing relationship that implies strong obligations (Richmond, 1996).

Krappmann, Uhlendorff, and Oswald (1999) examined the differences and similarities in friendship quality and concept of 6- to 14-year-old children from West and East Berlin shortly after the break-down of the Socialist regime. They found few differences in content aspects of friendship reasoning between the two samples, but East Berlin children's level of friendship reasoning was slightly more advanced than that of children from the Western part of the town. This might be due to the explicit educational aims concerning prosocial behavior in the GDR educational system, which were missing in the West.

Questions and Hypotheses

The first aim of the present study was to investigate whether "Western" theories about the development of friendship understanding can be generalized to other Western and non-Western cultures. In this study, children and adolescents from China, Russia, and the GDR were interviewed about close friendship and compared to a longitudinally assessed sample of

Icelandic participants. According to Bronfenbrenner's (2005) bioecological theory of human development, in this study we are investigating influences of the macrosystem, that is the cultural context, on our participants' developing understanding of friendship. Although the Chinese, Russian, and GDR societies no longer exist in the same form as during the time of data collection, the present study gives valuable insights concerning the relative influence of macrosocial variables, such as education system and cultural norms, on microsystem concepts (i.e. the development of friendship reasoning) and the interaction between environmental contexts and the development of social-cognitive abilities. As described above, children in all three states experienced a similar socialist socialization, despite dissimilar cultural traditions concerning the nature and norms of social relationships. Therefore, if the friendship concepts of Chinese, Russian, and GDR children and adolescents are more similar to each other than to the friendship reasoning of the Icelandic participants, this might indicate a stronger influence of socialist socialization than the traditional cultural background and vice versa.

We expected that our participants' cultural backgrounds would influence both structural and content aspects of the development of friendship reasoning. The sequence of stages of the friendship concept should also be found in the Chinese, Russian, and GDR sample although the speed of this development might be influenced by the specific cultural background. As for gender, neither Selman (1980) nor Keller and Wood (1989) reported significant differences. Nevertheless, as we cannot rule out gender differences in the non-Western samples studied, we included gender in the analyses.

Concerning the content aspects of friendship understanding, we expected both developmental and cultural effects. The content categories of friendship reasoning we distinguished in this study are similar to those used by Bigelow (1977) and Bigelow and La Gaipa (1975), and we expected age effects similar to those reported by these authors.

Although cross-cultural research on the development of content aspects of friendship reasoning is relatively sparse, we predicted the cultural differences based on the studies discussed above: Participants from China and Russia should refer to normative and internal-psychological aspects of friendship understanding more often than Icelandic children and adolescents, whereas GDR participants' friendship reasoning should be more similar to the Icelandic than to the Chinese and Russian participants. However, cultural differences should be moderated by age: As Keller and colleagues (1998) have shown, Icelandic and Chinese children's reasoning about a decision in a friendship dilemma situation became more similar with increasing age, probably because friendship and good relations with one's friends are universal values for adolescents in both cultures. We further predicted that girls more often than boys would mention content categories that refer to feelings, intimacy, and talking (see Berndt & Perry, 1990; Sharabany et al., 1981).

The second aim of this study was to compare the friendship reasoning of children and adolescents from three Chinese ecologies: two urban schools and one rural school. Deng Xiaoping's reforms had a different impact on urban and rural areas of China (Shi, 2000) and have shown to deepen the pre-existing gap between the rich urban coastal areas and the rural hinterland. As Hannum (1999) has shown for basic education, the promotion of economic goals led to a better-established educational infrastructure in urban compared to rural areas. Even within the urban context, education differences exist between general schools and so-called key-point or key schools. Re-established after the 1978 reforms, the latter schools enjoy national funding priority and aim to produce highly trained experts for China's developing market economy. Because level of education has been shown to influence the structural aspects of friendship development, we predicted that the friendship reasoning of students from the key school would be more advanced compared to the friendship reasoning of same-aged students from the urban general school. The urban pupils' friendship

understanding, on the other hand, should be more advanced than the friendship reasoning of students from the rural school. We did not have any specific predictions as to how possible differences between these three Chinese ecologies might influence the use of content categories. This question is thus investigated exploratively.

Method

Participants

Four studies were performed in Iceland, China, Russia, and East Germany. A total of 698 children and adolescents were interviewed.

The Icelandic participants were investigated in a longitudinal study based on two samples from different ecologies: an urban sample (N = 121), which was chosen from the population of all 7-year-old first graders in Reykjavik, and a rural sample (N = 64), which contained all 7-year-old first graders of three rural Icelandic communities. Gender was about equally distributed in both samples (86 girls, 99 boys). Children were re-interviewed at the ages of 9, 12, and 15 years.

In China, GDR, and Russia, participants were studied cross-sectionally at the equivalent ages of 7, 9, 12, and 15 years. The Chinese participants (N = 350, 167 girls, 183 boys) were interviewed in 1990. Two urban samples from Beijing were drawn from a so-called key school, an elite school for the children of mainly government-employed academics (n = 114), and from a general urban school (n = 114). The third sample was drawn from a rural school on the outskirts of Beijing (n = 122). The Russian and GDR samples contained urban children and adolescents of the same age groups from Moscow (N = 123) and East Berlin (N = 104). In both samples, participants came from middle-class backgrounds, and they were interviewed in late 1989 and 1990. Gender was about equally distributed in all three cross-sectional samples (Russia: 61 girls, 62 boys; GDR: 49 girls, 55 boys).

Procedure

The participants were interviewed individually and the answers were tape recorded and transcribed. Interviews were translated into English by bilingual native translators. Interviewers were trained in the method of clinical-developmental interviewing. The Icelandic interviewers were young teachers who, with very few exceptions, participated in all data collection waves of the longitudinal study. For the Chinese, GDR, and Russian samples, interviewers consisted of researchers and graduate students.

As part of a more comprehensive interview exploring sociomoral understanding in a friendship dilemma (see Keller, 1984, 1996), participants were asked about the meaning and importance of friendship, corresponding to the issues of *closeness* and *intimacy* in Selman's (1980) friendship interview. Closeness and intimacy were chosen because they seemed to be two of the defining issues of friendship and were well understood even by the youngest children in the study by Keller and Wood (1989). In discussions with researchers from all participating cultures it was made sure that the concepts asked for in this issue would make sense to participants from their respective cultures, and that the wording of the questions was equivalent to Selman's original friendship interview. Three sets of questions were asked:

Differentiation: How do you know that you are best/good friends? What is the difference between a good friend and a best friend?

Importance: Why does one need best friends? Do you think close friendship is important? Why?

Closeness: What makes two people become good friends? What makes friendship very close?

Questions could be reworded by the interviewer in order to guarantee adequate understanding by the participant. Probing questions could be used to elicit further reasoning and understanding.

Scoring

Cognitive-developmental stages. The English transcripts served as bases for the coding of stages of the three sets of friendship questions. Participants' statements concerning these issues were recorded on a coding sheet. The assigned stage scores were based on a slightly modified version of Selman' s (1980) close friendship manual developed for an Icelandic sample (Keller, von Essen, & Moennig, 1987; Keller 1996). Full stages (0, 1, 2, 3, 4) and transitional stages (0–1, 1–2, 2–3, 3–4) were ascribed. The stages were validated in the Icelandic longitudinal sample (Keller, 1996; Keller & Wood, 1989). For the age groups studied, only scores up to Stage 3 were given.

Stage 0. Friendship is understood as momentary or repeated incidents of interaction between two persons who come together to play. Good friends are valued for functional reasons or because of admirable physical attributes. Conceptions of psychological closeness and intimacy cannot be distinguished from physical closeness.

Stage 1. Friends are regarded as essential for accomplishing (selfish) goals. A good friend is somebody who knows what the self likes to do and who will help fulfill these wishes. Closeness no longer stems only from physical propinquity; rather, friends are close because they like or dislike similar things. People who have been friends for a long time are more familiar with each others' interests and are thus better friends.

Stage 2. Friendship is seen as important in order to experience companionship. Best friends are those with whom one gets along and who like the same things. Mutual reciprocity gains special importance: Friends are no longer expected to one-sidedly fulfill the self's wishes, but this compliance will be reciprocated. This reciprocal satisfaction of needs is applied to individual friendship dyads.

Stage 3. Mutual understanding and support are the defining characteristics of a close friendship, which goes beyond the mere reciprocal satisfaction of Stage 2. Closeness in friendship is seen as the degree to which two people are intimate with each others' personal

concerns, personalities, and interests. A further relevant concept is trust, which is understood as the willingness to rely on each other.

The validity of the scoring categories, which were first established in the Icelandic sample, was discussed by expert raters and researchers from the respective cultures. For each age group and culture, two raters (one expert, one trained) scored between 20 and 30 interviews. Average agreement across the three questions ranged between 88 and 94% for the different age groups in the different cultures. These levels of agreement are comparable to those reported by Selman (1980). Disagreeing scores were discussed among the raters and with expert raters until agreement was reached. Participants' answers concerning the three friendship issues, differentiation, importance, and closeness, were summed up to one global *friendship stage score*, which was used for the subsequent statistical analyses.

Content categories. The content of participants' answers concerning the three friendship issues was rated independently of structural scoring by content analysis. Categories were defined on the basis of category systems developed by Bigelow (1977), Bigelow and La Gaipa (1975), and Keller (1996). Eight content categories were defined for all cultures.

Shared Activity: Friendship is important because friends share interesting experiences in their spare time (e.g., play with each other, go out). Doing these things with a friend and being together with a friend is more fun that being together with others. If one has no friends, life is boring.

Duration: The relationship with a friend is characterized by a long duration, intensive contact, and the regularity of meetings.

Specific Friendship Norms: The relationship with a friend is distinguished by certain forms of conduct (e.g., not quarreling, being nice to each other, having time for the friend). Best friends share the same interests and have similar attitudes toward things.

General Moral Norms: The relationship with a best friend is characterized by norms (e.g., not lying, keeping one's promises, being honest). The exclusiveness of the relationship is based on keeping these norms.

Helping: Good friends help each other, with both practical (e.g., helping with problems in school) and psychological assistance (e.g., giving advice).

Trust: Trust is regarded as one of the foundations of friendship. Without trust, a friendship would have no continuance. Friends reciprocally trust each other.

Feelings: The relationship with a best friend is associated with positive feelings of liking and intimacy. The best friend can be trusted with one's most intimate feelings and thoughts.

Talking: Best friendship is characterized as talking and chatting with each other, for example, confiding secrets or problems.

Following Bigelow (1977) and Bigelow and La Gaipa (1975), we regarded the categories of shared activities and duration as descriptions of the situational and self-centered level of the development of friendship expectations, specific friendship norms, general norms, and helping as descriptions of the contractual and sociocentric level, and trust, feelings, and talking as descriptions of the intra-psychological and empathic level.

Two independent raters coded 20–30 interviews of each age group and culture. Inter-rater agreement was above 90% for all eight categories. Disagreeing scores were discussed among the raters and with expert raters until agreement was reached. For each content category, the three scores for differentiation, importance, and closeness were combined to create one global score.

Results

Analyses of Friendship Stages

Cross-cultural comparison. A 4×4×2 analysis of variance (ANOVA) was computed to test the between-subjects effects of age (7, 9, 12, 15 years), culture (China, Iceland, Russia, GDR), and gender (male, female) on friendship reasoning. Because of unequal cell frequencies, the Games–Howell test was chosen for post hoc comparisons of effects, as it accounts for the inequality of error variance of the dependent variable across groups.

Results revealed statistically significant main effects for age, $F(3, 1{,}214) = 347.89$, $p = .000$, culture, $F(3, 1{,}214) = 48.19$, $p = .000$, and gender, $F(1, 1{,}214) = 14.68$, $p = .000$. Additionally, the two-way interactions of Age × Culture, $F(3, 1{,}214) = 7.77$, $p = .000$, and Age × Gender, $F(3, 1{,}214) = 4.79$, $p = .003$, were statistically significant. Moreover, a statistically significant three-way interaction of Age × Culture × Gender, $F(9, 1{,}214) = 2.39$, $p = .01$, was obtained. Post hoc Games–Howell tests ($\alpha = .05$) revealed a strong developmental effect. A significant difference was obtained in friendship reasoning between each of the age groups. This age effect could be observed in every individual culture. For culture, post hoc Games–Howell tests showed that overall the Chinese and Russian participants' friendship reasoning was significantly more advanced compared to the Icelandic and GDR participants. There was no significant difference between the friendship reasoning of Chinese and Russian participants on the one hand and the GDR and Icelandic participants on the other (see Table 1 for means). Figure 1 shows stages of friendship reasoning across ages and cultures.

The effect of culture was tested for each age group separately (see Table 1, upper part, column-wise comparison). Post hoc Games–Howell tests revealed age-specific differences. For the 7-year-olds, the Russian participants' friendship reasoning was significantly more highly developed than that of any other group. Children from the GDR scored lowest but not significantly differently from the Chinese participants. Both the Chinese and the GDR participants scored significantly lower than the Icelandic children. For the 9-year-olds, again

the Russian group was advanced and differed significantly from the Icelandic and GDR children but not from the Chinese children. Participants from China scored significantly higher than those from Iceland and GDR, with no significant difference between the two latter groups. In the 12-year-olds, the Chinese and Russian adolescents were significantly more developed with no significant difference between their mean scores. The Russian sample differed significantly from the Icelandic and GDR groups, while the Chinese sample differed significantly from the Icelandic. Between the Icelandic and the GDR participants there was no statistically significant difference. For the 15-year-old adolescents a similar picture evolved: the two more advanced samples, Russia and China, both significantly differed from Iceland, whereas the GDR held a medium position, not being different from either of the remaining cultural groups. Thus, the significant Age × Culture interaction in the overall ANOVA can be attributed to some cultural samples changing their relative position in the different age groups. One major change can be observed for the Chinese sample, which scored lowest for the 7-year-olds but, together with the Russian participants, highest for the 9-, 12-, and 15-year-olds.

Concerning the effect of gender, *t* tests showed that only for the 12-year-olds, females were significantly more developed than males (Means = 2.16, 2.08; $t = -2.15$, $p = .03$). The Age × Gender effect can be attributed to the boys being slightly more advanced than the girls in the group of 7-year-olds, whereas in all other age groups, the friendship reasoning of females was more advanced. Further analyses of the Age × Culture × Gender effect yielded no significant effects, apart from the 12-year-old Russian girls being significantly more advanced than their male counterparts (Means = 2.83, 2.28; $t = -3.77$; $p = .001$).

Within-China comparison. A 4×3×2 ANOVA was computed to test the between-subjects effects of age (7, 9, 12, 15 years), school (key, general, rural), and gender (male, female) on friendship reasoning. Results revealed statistically significant main effects of age,

$F(3, 347) = 253.21$; $p = .000$, and school, $F(2, 347) = 24.80$, $p = .000$, and a significant two-way interaction of Age × School, $F(6,347) = 5.60$, $p = .000$. Post hoc Games–Howell tests ($\alpha = .05$) showed that the difference in friendship reasoning was highly significant between each of the four ages. Independent of age, the friendship reasoning of participants from the key school and the general school was at higher developmental stages compared to the participants from the rural school, and this difference was highly significant. The interaction of Age × School was tested for each age group separately (see Table 1, lower part, and Figure 2). Post-hoc Games-Howell tests revealed that at age 7, the friendship reasoning of participants from the key school was significantly higher than the friendship reasoning of participants from the general and rural schools. At age 9, both the key school and the general school students' friendship reasoning was significantly higher then the friendship reasoning of the rural school students. For the 12-year-olds, the same picture emerged. At age 15, the students from the general school were more advanced than the students from the rural school in their friendship reasoning, and the students from the key school held a middle position

Analyses of Content of Friendship Understanding

To test the assumptions about content aspects of friendship reasoning, for each content category hi-log-linear model procedures were performed to test main and interaction effects. To estimate single parameters, log-linear models were computed. First, a hi-log-linear model was fitted that contained the theoretically expected interactions and main effects of the factors included in these interactions. Second, to account for further relevant effects in the data that were not predicted by our hypotheses, a saturated hi-log-linear model for each set of variables per main category was computed. The model fit (χ^2) of the hi-log-linear procedure is presented in the text. A model having a value greater than $p = .05$ is considered to be fitting (Wickens, 1989). As the cell frequencies for some categories were rather low, the 7- and 9-year-old and the 12- and 15-year-old participants were pooled into one group, respectively,

thereby creating the factor *age group* with the values younger and older. If not otherwise stated, variables included in the hi-log-linear and log-linear analyses were content category [not chosen (*r*), chosen], age group [younger (*r*), older], culture [China, Iceland (*r*), Russia, GDR], and gender [male (*r*), female], with *r* indicating the reference category of each factor for the *z* value. Table 2 gives an overview of the significant effects (partial chi-squares) and corresponding parameter estimations (*z* values) for all log-linear analyses. Only main and interaction effects that included the content category variables are reported here. Other effects are of no interest, because they represent marginal differences due to an unbalanced design rather than substantive effects.[2]

Shared activities. We expected a significant interaction of Shared Activities × Age Group. The predicted model did not fit the data. The saturated hi-log-linear analysis produced the model of Shared Activities × Age Group and Shared Activities × Culture as the best-fitting model for the data (χ^2 = 20.12, *df* = 22, *p* = .58). Log-linear analyses showed that shared activities was used more often by the younger than the older age group. Icelandic children and adolescents mentioned shared activities significantly less frequently than participants from any other culture

Duration of friendship. The expected model included the interaction of Duration × Age Group and all main effects and did not fit the data. The saturated hi-log-linear analysis revealed Duration × Age Group × Culture as the final model (χ^2 = 8.37, *df* = 16, *p* = .94). Adolescents used the category duration significantly less often that the children in the younger age group. Overall, Icelandic participants referred to duration significantly less often than Russian and GDR participants. The younger Icelandic participants used this category significantly less frequently than the Chinese, Russian, and GDR children, who did not differ from each other.

Specific friendship norms. We expected a significant interaction of Friendship Norms × Age Group × Culture. The model fit was $\chi^2 = 12.94$, $df = 16$, $p = .67$. The older participants mentioned friendship norms significantly more often than the younger ones. Overall, Icelandic children and adolescents used friendship norms significantly less frequently than participants from China, Russia, or the GDR, but this culture effect was moderated by age group: The differences between the Icelandic and the other participants existed particularly for the younger age group. The saturated model revealed no further statistically significant effects.

General moral norms. The hi-log-linear model included the factors general norms, age group, culture, and gender. A significant General Norms × Age Group × Culture interaction was predicted. This model revealed a significant fit of $\chi^2 = 15.35$, $df = 16$, $p = .50$. Adolescents referred to general norms more frequently than children. Independent of age, Chinese and Russian participants mentioned this category more frequently than Icelandic students, whereas there was no difference between Icelandic and children and adolescents. This cultural difference was especially pronounced in the older age group, where Chinese and Russian adolescents significantly differed from Icelandic adolescents.

Helping. The hi-log-linear model contained the expected interactions of Helping × Age Group × Culture. The model fit with $\chi^2 = 12.86$, $df = 16$, $p = .68$. Participants in the older age group used this category significantly more often than children. Icelandic children and adolescents used significantly less arguments concerned with helping behavior than participants from any other culture. In the older age group, Icelandic adolescents referred significantly less to helping than Chinese or Russian students, whereas Icelandic and GDR participants did not differ.

Trust. We predicted a significant three-way interaction of Trust × Age Group × Culture and a significant two-way interaction of Trust × Gender. A significant fit of χ^2 =

5.27, *df* = 16, *p* = .99 was obtained for this model. Adolescents in the older age group referred to trust significantly more often than children in the younger age group. Russian participants in the younger age group used trust significantly more frequently than the Icelandic children. No other culture or gender effects were obtained.

Feelings. We predicted a significant three-way interaction of Feelings × Age Group × Culture and a two-way interaction of Feelings × Gender. Feelings × Age Group × Culture was obtained as the final model in the hi-log-linear analysis (χ^2 = 18.60, *df* = 16, *p* = .29). Participants in the older age group referred to this category significantly more often than children in the younger age group. Independent of age, participants from China and Russia mentioned feelings significantly more frequently than participants from Iceland, whereas Icelandic and GDR participants did not differ. Icelandic children mentioned feelings significantly less often than children from China, Russia, and the GDR. Contrary to our assumptions, no significant gender effects were obtained. The saturated model revealed no further statistically significant effects.

Talking. The hi-log-linear model contained the expected interactions of Talking × Age Group × Culture, and Talking × Age Group × Gender. This model fit with χ^2 = 6.83, *df* = 14, *p* = .94. Log-linear analyses revealed that 12- and 15-year-olds used this category significantly more often than 7- and 9-year-olds and girls significantly more often than boys. Chinese participants referred to talking significantly less often than Icelandic participants, particularly in the older age group. Overall, there was no difference between Icelandic and Russian and GDR students' use of Talking, but the GDR adolescents used this category significantly more often than Icelandic students from the older age group.

Within-China Comparison

Since we did not have any specific hypotheses concerning the content aspects of friendship understanding for the within-China comparison, a saturated hi-log-linear model for

each set of variables per content category was computed. The model fit (χ^2) of the hi-log-linear procedure and the z values for significant effects from the log-linear analyses are presented in the text. Variables included in the hi-log-linear and log-linear analyses were content category [not chosen (*r*), chosen], age group [younger (*r*), older], school [key, general (*r*), rural], and gender [male (*r*), female]. The reference category of each factor for the *z* value is indicated by *r*. As for the cross-cultural comparison, only main and interaction effects that included the content category variables are reported.

Shared activities. The hi-log-linear procedure revealed the final model of Shared Activities × Age Group (χ^2 = 10.65, *df* = 20, *p* = .96). The 12- and 15-year-old adolescents used shared activities significantly less frequently than 7- and 9-year-old children (*z* = -3.21)

Duration. The final hi-log-linear model contained the interaction of Duration × Age Group. This model produced a fit of χ^2 = 5.23, *df* = 20, *p* = .99. Adolescents referred to duration significantly less often than the participants from the younger age group (*z* = -4.00).

Specific friendship norms. The hi-log-linear procedure produced a final model consisting of the interaction of Specific Friendship Norms × Age Group (χ^2 = 10.09, *df* = 20, *p* = .97). Participants in the older age group referred to this category significantly more often than participants from the younger age group (*z* = 2.99).

General norms. The final model contained the three-way interaction of General Norms × School × Age Group. This model produced a fit of χ^2 = 5.98, *df* = 12, *p* = .92. Participants from the older age group referred to general norms significantly more often than participants from the younger age group (*z* = 6.43). The 7- and 9-year-old children from the general school used general norms significantly more often than children from the rural school (*z* = 3.92), whereas this was reversed for the older participants.

Helping. The final hi-log-linear model consisted of the interaction of Helping × Age Group (χ^2 = 9.06, *df* = 20, *p* = .98). Helping was significantly more common in the older compared to the younger age group (*z* = 6.99).

Trust. The final model contained the interaction effect of Trust × Age Group. This model fit the data with χ^2 = 15.68, *df* = 20, *p* = .74. Participants from the older age group used trust significantly more often than participants from the younger age group (*z* = 5.11).

Feelings. The hi-log-linear procedure revealed the final model of Feelings × Age Group × Gender. The fit of this model was χ^2 = 13.46, *df* = 16, *p* = .64. The log-linear analyses produced a significant two-way interaction of Feelings × Age Group and a significant three-way interaction of Feelings × Age Group × Gender. Participants from the older age group mentioned feelings significantly more often than participants from the younger age group (*z* = 3.62). In the younger age group, boys mentioned feelings significantly more often than girls, whereas girls mentioned feelings more often than boys in the older age group (*z* = 2.20).

Talking. The final model contained the effect of Talking × Age Group. This model fit the data with χ^2 = 12.34, *df* = 20, *p* = .90. The 12- and 15-year-olds used talking significantly more often than the 7- and 9-year-olds (*z* = 4.55).

Discussion

In this study, we explored the development of structural and content aspects in children's and adolescents' reasoning about friendship closeness and intimacy in a cross-cultural context. This comparison included three cross-sectional samples of four age groups from China, Russia, and former East Germany and a longitudinal sample from Iceland. Our goal was first to investigate whether results on the development of friendship reasoning that were obtained in Western, capitalist societies can also be found in other cultures. Second, we

compared the development of friendship reasoning in three Chinese ecologies that were differentially affected by modernization and the political and economic reforms of the 1980s.

The Development of Structural Aspects of Friendship Reasoning

In general, our results from the cross-sectional studies support the assumption of a universal developmental sequence of friendship reasoning in children and adolescents from different societies. The answers of all participants could be scored according to a manual that had been developed for U.S. and Icelandic samples (Keller et al, 1987; Keller 1996). Friendship reasoning differed significantly across the four age groups in all samples, with each of the older age groups showing a developmentally more advanced friendship understanding than the younger ones, respectively. Although the results for the cross-sectional samples studied here indicate that the cognitive-developmental component of children's and adolescents' friendship reasoning can be captured by stages, a longitudinal study in a non-Western society would offer a stronger test for this universality. We are presently analyzing a longitudinal Chinese sample which seems to support these assumptions.

Concerning the effects of culture on stage development, a more complex picture emerges. The youngest Russian participants were the most advanced group compared to any other national sample across all age groups. From age 9 onward, one can observe a bifurcation, with the Russian and Chinese participants forming the developmentally more advanced groups compared to the GDR and Iceland samples. Although these differences may also depend on the characteristics of the samples, we can still speculate about their cultural meaning. Russia has an educational tradition emphasizing learning and responsibility in the peer group (Bronfenbrenner, 1970; Makarenko, 1961). On the other hand, the developmental delay of the Chinese children in the youngest age groups may be caused by their having fewer peer experiences before they start school because of the single-child policy**.** Their advancement in the later age groups could be connected to the Chinese language having a

concept available for intimate friendship (heart-to-heart friendship) that makes it easier for children to progress into higher stages.

Overall, however, the variance in the friendship reasoning stages employed by our participants across the four cultures decreased with increasing age. This might be because friendships become equally important for adolescents independent of their cultural background (see Berndt & Savin-Williams, 1993). This finding is consistent with our expectations and with results reported by Keller and colleagues (1998), who compared the reasoning about a morally relevant friendship conflict of Icelandic and Chinese participants. They showed that differences in socio-moral decision making and reasoning between these two cultural groups were more pronounced for the younger age groups. Whereas the younger Icelandic children gave priority to a hedonistic offer from a third child over close friendship, the Chinese children were predominantly motivated by empathic-altruistic concerns for this newcomer. In adolescence, however, close friendship was an equally important value for all participants. This was especially impressive for the Chinese adolescents as their dilemma decisions ran contrary to a school rule demanding that one should help new classmates.

It is questionable whether the cultural differences concerning friendship reasoning are only typical for Stages 1 to 3 or whether they also hold for the friendship concept at Stage 4. Selman (1980) defined friendship understanding at Stage 4 as "autonomous interdependence": Individuals at Stage 4 conceptualize friendship as necessary for defining one's personal identity but friends are allowed to form meaningful relationships with other people. This Stage 4 conception of close friendship is similar to the path of *generative tension* identified by Rothbaum, Pott, Azuma, Miyake, & Weisz (2000) as being typical of the North American (i.e., Western) understanding of relatedness, whereas, for example, the Japanese (i.e., Asian) culture focuses on the path of *symbiotic harmony.* Therefore it is very likely that the notion of friendship understanding at Stage 4 as it has been formulated by Selman is more

typical for Western societies, and that a different cultural pattern may be found for young adults in non-Western cultures. A comparison between 15 and 18- to 19-year-old Icelandic and Chinese young adults' reasoning about close friendship and a friendship conflict (Keller, 2003) documented the transition into Stage 4 reasoning in both societies. However, the Chinese participants emphasized close friendship as a means to integrate into the wider societal system while the Icelandic participants emphasized the personal side of close friendship and in particular the role of friends as therapeutic counselors.

Given the findings of Selman (1980) and Keller and Wood (1989) we had not expected gender differences. In this study, however, the overall gender effect indicates that girls' friendship reasoning is generally more advanced than that of boys. However, these gender differences were not significant in the respective age groups and the effect sizes for the main effect and all the other interactions including gender were rather small (Cohen, 1988), especially compared to the effects of age and culture.

Within-China comparison. Like for the cross-cultural comparison, we found significant age effects, and the friendship reasoning of the participants from the three types of schools became more similar with increasing age: There was no difference in stage of friendship reasoning for the 15-year-old participants from the three ecologies. For the younger age groups, however, significant differences between ecologies emerged, particularly between, on the one hand, participants of the two urban schools, whose friendship reasoning could be coded at higher developmental stages, and on the other the participants from the rural school. These results are consistent with earlier findings from educational research that revealed differences in the basic education of rural versus urban pupils in China (see Hannum, 1999). It is interesting to see that this "urban–rural" gap is not restricted to measures of basic education, which are of course the direct output of the educational goals and efforts of instructors, but also applies to children's understanding of

social relationships, which are arguably much less directly influenced by the educational curriculum. We see, however, that this gap closes for adolescents. Thus, at a time when friendship becomes important for adolescents and when most of them have increasing experiences with friends, their reasoning about this relationship becomes very similar, independent of their background. This speaks for a universal importance of close friendship in adolescence.

Differences in Content Aspects of Friendship Reasoning

Cross-cultural comparison. Our results reveal rather complex relationships between age and culture effects for the content categories used in this study. We considered the content categories of shared activities and duration as representing the situational and more self-centered stage of friendship reasoning according to Bigelow (1977) and Bigelow and La Gaipa (1975) and thus expected that they would be used more often by younger than by older participants. The results confirm this expected age effect. However, even among the older age group, shared activities and duration were among the most commonly used content categories. Hence, in line with Bigelow and La Gaipa (1975) we can conclude that in older age groups these concrete aspects of friendship interaction are supplemented by other concepts, and this is true for each of the cultures studied. Therefore, shared activities and duration might be argued to play a basic role in children's and adolescents' conceptions of friendship.

Concerning cultural effects, both categories seemed to be used more often in the socialist societies—China, Russia, and the GDR—than in Iceland, an effect that we did not predict. This might be due to differences in the educational philosophies of the (formerly) communist states on the one hand and those of "capitalist" Iceland on the other. The educational system in each of the three socialist societies was strongly influenced by the writings of the Russian pedagogue Makarenko (1961). Even after school hours students are

supposed to work together and do good for the collective (e.g. helping the elderly, cleaning community places; Bronfenbrenner, 1970; Halstead, 1994; Laabs, 1991). It might be that this "prescribed" shared activity among peers is also reflected in the friendship reasoning of the participants from communist societies. Adams and Plaut (2003) have speculated that practical assistance is a characteristic of friendship for people living in difficult economic conditions. Thus, the importance of shared activities in the Russian and Chinese sample might reflect the social and economic difficulties in these countries at the time of data collection.

For the content categories of the contractual and sociocentric level—friendship norms, general moral norms, and helping—both clear-cut developmental and cultural effects were obtained. This supports previous findings (Bigelow, 1977; Bigelow and La Gaipa, 1975) that normative concerns become important for friendship between middle and late childhood (Youniss, 1980). Also, as children and young adolescents feel embedded in intimate relationships, norms guiding these friendship relations become a part of their moral self (Keller & Edelstein, 1993). Our analyses show that normative friendship concerns are far more common in the socialist societies of Russia and China, than in "capitalist" Iceland. Even participants in the youngest age group referred to normative categories almost as often as to categories dealing with situational aspects of friendship, and this difference remains stable also in the older age group. This is consistent with our predictions and with earlier research, which showed that close friendship in China and Russia comes with strong obligations to support and help one's friends and even criticize them if they are in the wrong (Goodwin & Tang, 1996; Richmond, 1996).

We found a clear developmental trend for content categories dealing with the internal-psychological functions of friendship, such as positive feelings, communication, and trust. We also observed distinct cross-cultural differences for these content categories, which is in tune with previous cross-cultural research on how friendships, and relationships in general,

are conceptualized in Asian and Western societies (Goodwin & Lee, 1994; Kon & Losenkov, 1978; Schneider et al., 1997; Triandis, 1995). In China and Russia, a strong emphasis is put on mutual responsibility, and emotional dependence, especially between members of one's ingroup, of which friends are a part. Children in China and Russia might be provided with cultural concepts that emphasize the psychological functions of friendship (e.g. the concept of heart-to-heart friendship in China) and help children understand what a close, intimate friendship should be like, whereas Western children may predominantly derive the criteria of good friendships from their social experience in peer interaction and from reading. Therefore they may co-construct the concept of friendship rather than learn it directly as a cultural concept (Keller, 2004; Krappmann et al., 1999; Youniss, 1980).

Surprisingly, for the Chinese participants, positive feelings in friendships might not be established by mutual self-disclosure and talking about secrets, as the analysis of the category Talking implies. Previous research has pointed to the fact that in traditional Chinese relationships a direct expression of feelings (and problems) is regarded as being incompatible with the value of keeping harmony (Schneider et al., 1997). Instead, the interaction partner is expected to empathically anticipate the feelings of the other and act accordingly.

Only one gender effect emerged in the analyses of content aspects of friendship reasoning: Girls more often than boys mentioned communicative aspects as important and typical for friendships. Previous research on intimate friendships in girls and boys demonstrated that girls achieve intimacy mainly by conversations and self-disclosure, whereas boys establish intimacy by common activities (Berndt, 1982; La Gaipa, 1979; Sharabany et al., 1981). The small gender differences found in our study are particularly striking for the Chinese participants, as different gender expectations are still prevalent in China (see Chen, Kaspar, Zhang, Wang, & Zheng, 2004). However, the emancipation of women was strongly promoted by the Communist party, and according to Hesse (1986) this

policy succeeded to a large part. This corresponds to the educational system in each of the socialist societies studied where efforts were made to diminish gender-differentiated experiences or the establishment of different value systems for girls and boys (see Goodwin & Emelyanova, 1995; Kolbe, 1998). In Iceland gender equality also has traditionally been very strong. The small gender effects in both the structural and content aspects of friendship reasoning support Miller and Bersoff's (1995) proposal that concepts of self are more similar among individuals of different gender from the same cultural context than for individuals of the same gender with different cultural backgrounds.

Within-China comparison. Although our analyses of the structural aspects of friendship reasoning demonstrate clear differences between the speed of this development in the three Chinese ecologies, much less variation was obtained concerning the content aspects of friendship reasoning. In only two of the content categories, general norms and feelings, did we obtain differences in use between participants from the three ecologies. Children from the rural school used both of these categories less frequently than participants from the urban schools. This lack of differences between the three ecologies concerning the content of participants' friendship reasoning is surprising, since we at the same time found distinct differences concerning the structural aspects of their friendship concept. Obviously, differences in educational background matter more for these structural aspects, whereas the content categories people use to describe intimacy and closeness in friendship seem to be largely unaffected by such variations.

Friendship Development and Culture

In this study we investigated whether models of friendship reasoning developed in North American and Western European societies can capture changes in children's and adolescents' friendship concept in three formerly socialist societies, two of them European and one Asian. We hypothesized that if the socialist socialization exerts a stronger influence

on the development of friendship understanding than the traditional value systems concerning social relationships, then the friendship reasoning of participants from China, the GDR, and Russia should be more similar to each other than to the friendship reasoning of Icelandic participants. On the other hand, cross-cultural differences should be observed also between participants from the three socialist states, if friendship understanding is influenced more by "traditional" cultural values than by the political system. Our results point to the latter of these two hypotheses: In both structural and content aspects of friendship reasoning we observed marked differences between participants of the three formerly socialist states. Children and participants from the GDR, which probably constituted the most "Western" of the three socialist societies in this sample, were in many respects more similar to the Icelandic than to the Russian and Chinese children and adolescents. These findings, therefore, lend further support to Triandis' (1995) claim, that cultural values and norms particularly concerning social relationships are often resistant to political and economic changes in a society.

In the present study, we drew on research on the structural and content aspects of friendship reasoning. Although participants' reasoning about friendship closeness and intimacy was captured well by Selman's (1980) developmental stages in this study, more recent research on conceptual development have used a naïve theory approach to study children's (social) cognition. This research emphasizes the domain-specific nature of children's cognition instead of domain-general developmental stages (e.g. Wellman & Gelman, 1998). Studies have found evidence for early naïve theories in domains, such as physics, biology, and psychology (theory of mind), but much less research has investigated children's social concepts and whether naïve sociology constitutes another core domain of human knowledge (see Barrett & Buchanan-Barrow, 2004). Whereas some assume that even very young children exhibit sophisticated understanding of certain social concepts (e.g. race,

Hirschfeld, 2001) others (e.g. Cameron, Alvarez, Ruble, & Fuligni, 2001) have argued that the development of (social-) cognitive abilities are important for children's knowledge of social groups. As Hatano and Takahashi (2004) point out, children may acquire an understanding social aggregates and relations, such as friendship, earlier than they have been given credit for by stage theories of conceptual development, but mature social cognition may be acquired through domain-general mechanisms as well as participation in the respective relationships.

Domain-specific theories of conceptual development point out that verbal interviewing likely underestimates children's understanding and reasoning, since their naïve theories are thought to be implicit and therefore not accessible to conscious reflection. Instead, in this research children make judgments and predictions in stories and vignettes for which certain factors are systematically manipulated. Future studies should apply these and other methods (e.g. observations, questionnaires, peer and teacher reports) to the study of children's friendship, since they do not rely as heavily on verbal competencies as interviews.

The present study implies that cultural factors influence children's and adolescents' reasoning about friendship, and this is in line with recent research investigating peer relationships in a (cross-) cultural context (see Chen et al., 2006). However, we have only partially addressed by which kind of mechanisms those macrossystem factors are translated into children's and adolescents' individual friendship reasoning. For example, with the notion of heart-to-heart friendship, the Chinese culture offers children a concept that emphasizes the psychological and intimate aspects of friendship. Different school and educational arrangements (e.g. after-school activities in the community) create social settings and opportunities that make particular forms of friendship interaction more or less likely. Dissecting these and other mechanisms for cultural differences in friendship reasoning remains a long term objective and should be addressed in more detail in future studies.

Similarly, it will be interesting to further investigate how macro-system factors, such as cultural beliefs about friendship, are constructed and interact with other systems of the child's ecology as well as how they are replicated in the practical activity between children (see Rizzo & Corsaro, 1988). Given that so few studies on the development of friendship reasoning in a cross-cultural context are available, this study is a first attempt to increase our knowledge about this so important developmental domain.

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Footnotes

[1] The cognitive-structural stages Selman (1980) proposed for the development of the friendship concept are not equivalent to Kohlberg's (1984) stages of moral reasoning development. According to Selman's theoretical assumptions, moral judgment stages refer to children's developing theories about how individuals *should* act (i.e. are normative), whereas social perspective taking refers to children's descriptive knowledge about individuals and how they *do* think and act in relation to each other. Thus, moral reasoning depends only in part on a child's social perspective taking ability. Consequently, research that has challenged Kohlberg's theory of moral development (e.g. the cultural appropriateness of moral reasoning stages, Snarey, 1985) cannot necessarily be applied to Selman's theory of social perspective-taking. Whether some of this criticism also applies for the cognitive-structural development of friendship reasoning has not been thoroughly investigated so far, and indeed this paper tests some of these concerns for example regarding the universality of cognitive-structural aspects of friendship reasoning in a cross-cultural context. Moreover, in contrast to Kohlberg's theory of moral development, which has been critiqued for neglecting communitarian, caring, or empathic characteristics of morality at least for some stages (see Keller, Eckensberger, & von Rosen 1989), issues such as closeness, intimacy, and trust appear on every stage in Selman's theory of the development of friendship reasoning.

[2] This procedure does not take into account the repeated observations of the Icelandic participants. We additionally conducted hi-log-linear and log-linear analyses for the three cross-cultural samples [China, Russia, GDR (*r*)] as well as separate log-linear models for repeated observations for the Icelandic sample (von Eye & Niedermeier, 1999). The statistical results were only marginally different.

Table 1

Means(and Standard Deviations) of Friendship Reasoning Stage at 7, 9, 12, and 15 Years in China, Iceland, Russia, GDR, and Three Different Chinese Ecologies

Cross-cultural Comparison					
Culture	Age				
	7 years	9 years	12 years	15 years	Overall
Overall	1.46 (0.43)	1.94 (0.44)	2.26 (0.41)	2.77 (0.36)	2.12 (0.62)
Iceland	1.47 (0.35)	1.85[b] (0.35)	2.16[c] (0.34)	2.66[b] (0.38)	2.06 (0.55)
Russia	2.03 (0.41)	2.26[a] (0.38)	2.55[a] (0.48)	2.97[a] (0.35)	2.44 (0.53)
GDR	1.27[a] (0.35)	1.73[b] (0.36)	2.20[b,c] (0.44)	2.72[a,b] (0.31)	1.89 (0.63)
China	1.29[a] (0.41)	2.08[a] (0.55)	2.38[a,b] (0.42)	2.91[a] (0.24)	2.19 (0.19)
Within-China Comparison					
Ecology					
Key	1.58 (0.41)	2.32[d] (0.57)	2.40[d] (0.40)	2.93[d, e] (0.25)	2.35 (0.63)
General	1.15[d] (0.35)	2.18[d] (0.48)	2.60[d] (0.36)	2.97[d] (0.13)	2.27 (0.74)
Rural	1.17[d] (0.35)	1.73 (0.39)	2.13 (0.37)	2.82[e] (0.27)	1.94 (0.70)

Note. For multiple effects, classes sharing a letter are not significantly different (Games–Howell tests within age groups).

Table 2

Results of Log-Linear Analyses for Cross-Cultural Comparison

Effects and interactions	*df*	Partial χ^2	*p*	*z* value
Shared Activities				
Category × Age Group	1	37.71	0.0001	-4.43
Category × Culture	3	60.91	0.0001	5.00
				5.42
				4.63
Duration of Friendship				
Category × Age Group	1	4.18	0.04	-2.36
Category × Culture	3	16.43	0.001	n.s.
				3.37
				2.21
Category × Age Group × Culture	3	45.07	0.0001	-5.73
				-2.50
				-2.41
Specific Friendship Norms				
Category × Age Group	1	82.83	0.0001	3.22
Category × Culture	3	387.76	0.0001	15.50
				11.27
				5.30
Category × Age Group x Culture	3	30.67	0.0001	-3.44
				-3.35
				-3.18

General Norms				
Category × Age Group	1	52.82	0.0001	4.80
Category × Culture	3	171.92	0.0001	11.41
				5.34
				n.s.
Category × Age Group × Culture	3	15.56	0.001	2.46
				3.13
				n.s.
Helping				
Category × Age group	1	97.41	0.0001	6.25
Category × Culture	3	549.68	0.0001	18.89
				10.97
				4.82
Category × Age Group × Culture	3	14.08	0.003	3.30
				1.99
				n.s.
Trust				
Category × Age Group	1	160.52	0.0001	9.12
Category × Age Group × Culture	3	13.11	0.01	n.s.
				-2.13
				n.s.
Feelings				
Category × Age Group	1	104.59	0.0001	8.28
Category × Culture	3	134.26	0.0001	10.26
				7.14

				n.s.
Category × Age Group × Culture	3	27.39	0.0001	-2.26
				-2.68
				-4.15
Talking				
Category × Age Group	1	274.48	0.0001	12.01
Category × Gender	1	8.95	0.01	2.23
Category × Culture	3	25.34	0.0001	-2.38
				n.s.
				n.s.
Category × Age Group × Culture	3	13.81	0.01	-3.17
				n.s.
				2.78

Note: For parameter estimation, the content category "not used," age group "younger," gender "male", and culture "Iceland" were set as reference categories. Order of cultures is China, Iceland, Russia, and GDR. Note that the number of *z* values corresponds to the degrees of freedom of the tested effects; *z* values with absolute values greater that 1.96 are significant ($p < 0.05$). The notation n.s. denotes non-significant effects.

Figure Captions

Figure 1. Mean stages of friendship reasoning across ages and cultures.

Figure 2. Mean stages of friendship reasoning across ages in three Chinese ecologies.

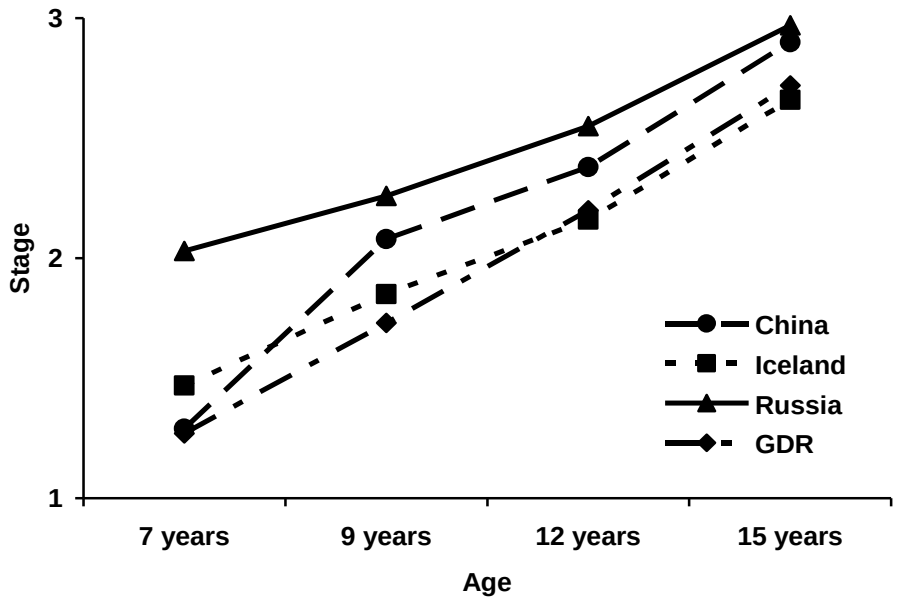
3
2
1
Stage
7 years
9 years
12 years
15 years
Age
China
Iceland
Russia
GDR

Figure 1

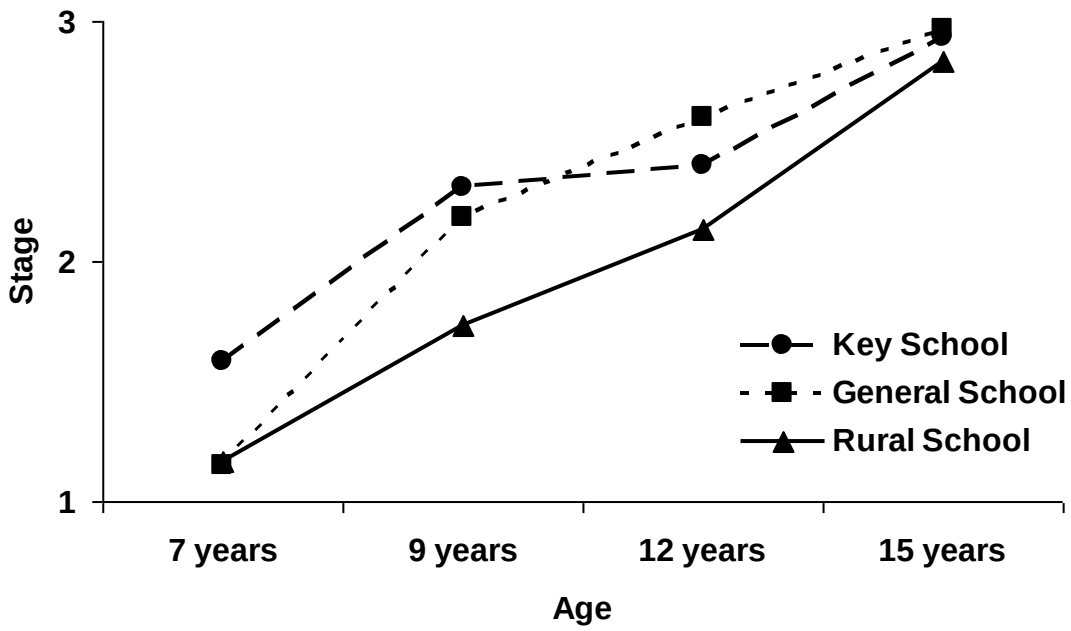
3
2
1
Stage
7 years
9 years
12 years
15 years
Age
Key School
General School
Rural School

Figure 2