

# Exotic Enterprise No More? Adolescent Reports of Family and Parenting Processes From Youth in Four Countries

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The current investigation cross-nationally examined the relationship between adolescent reports of family or parenting processes and a series of developmental outcomes in a sample of adolescents ( $N = 8,417$ ) from Hungary, the Netherlands, Switzerland, and the United States. Based on confirmatory factor analyses and tests of scalar equivalence, results suggest that the Adolescent Family Process Measure (AFP), which assesses maternal and paternal closeness, support, monitoring, communication, conflict, and peer approval, was valid and reliable for males, females, middle adolescents, and late adolescents in all four national contexts. In addition, based on model-free LISREL analyses, findings suggested that the relationships between these family processes and measures of adolescent externalizing (alcohol use, drug use, school misconduct, and total deviance) and internalizing (anxiety, depression, low self-esteem, and low well-being) behaviors were similar cross-nationally. Findings are discussed in terms of their importance for the conceptualization and measurement of family and parenting processes.

In the current investigation, three important gaps in the literature were addressed. First, consistent with a recent call issued by Gray and Steinberg (1999; Steinberg, 2001) to “unpack” the most frequently studied parenting typologies (e.g., authoritative, authoritarian, and permissive; Baumrind,

1971) and their relationships to adolescent behavioral outcomes, the study employed a dimensional approach to the study of family and parenting processes and parent–adolescent relationship characteristics. More specifically, we were interested in examining maternal and paternal parenting dimensions, part of what Steinberg and Silk (2002) recently called the harmony (i.e., closeness and communication), autonomy (i.e., monitoring, peer approval, and support), and conflict (parent–adolescent disagreements and conflicts) domains of parenting dimensions. Second, the study tested the degree to which individual parenting dimensions, part of the harmony, autonomy, and conflict domains, replicated cross-nationally. Although recent evidence suggests that individual parenting styles, for example, replicate across different racial and ethnic groups in the United States (Gorman-Smith, Tolan, & Henry, 2000; Steinberg, 2001), few studies have examined the generality of parenting dimensions cross-nationally. Finally, we were interested in cross-nationally examining potential similarities or differences in the relationships between parenting dimensions and associated developmental outcomes. More specifically, we were interested in studying the patterns of associations, or developmental processes, between parenting dimensions and both externalizing (alcohol use, drug use, school misconduct, and total deviance) and internalizing behaviors (anxiety, depression, low self-esteem, and low well-being).

Given the ever-changing diversity in the United States as well as the ever-increasing permeability and globalization of knowledge in the social scientific enterprise, it seems that an important next step in this area of research is to attempt generalization of both constructs and measures of family and parenting processes as well as the relationships between these parenting constructs and associated developmental outcomes. Cross-cultural comparative work has previously been considered “a somewhat marginal, sometimes even exotic enterprise, criticized for the absence of strong theory and for its weak methodology” (Dasen & Mishra, 2000, p. 433). However, we believe that the time has come to use the cross-national comparative methodology in the social sciences, not as an eccentric or exotic specialty, but rather as a sound and rigorous methodological approach that can be used to establish the validity, reliability, and generalizability of developmental ideas, explanatory concepts and constructs, and assessment tools of human behavior. The following sections provide a brief review of relevant cross-national comparative work in this area, of the conceptualization of parenting processes in the current study, and of the previous work examining the associations between parenting dimensions and developmental outcomes.

### Cross-National Comparative Research on Family and Parenting Processes

In a series of investigations by Devereux, Bronfenbrenner, and Suci (1962), Devereux, Bronfenbrenner, and Rodgers (1969), Rodgers (1971), and Rodgers, Bronfenbrenner, and Devereux (1968), the authors employed the quasi-experimental method of cross-cultural comparative research both to establish a reliable parenting process measure across cultures and to complete cross-national comparisons that would allow a greater understanding of potential similarities or differences by country. They found that youth from different national contexts (U.S., British, German, Soviet, and Swiss adolescents) reported different levels of parenting and different levels of what they called behavioral standards (e.g., parenting, manners, and "masculinity"), supporting context specificity or relativity. Similar such efforts comparing socialization practices across cultural contexts have included studies by Thomas and colleagues (Buehler, Weigert, & Thomas, 1977; Ferreira & Thomas, 1984; Thomas & Weigert, 1971; Weigert & Thomas, 1970), although in Buehler et al.'s (1977) study, the authors were also interested in examining issues related to cross-contextual scalar equivalence. A common feature in most of these studies was the comparison of socialization similarities and differences that mostly focused on average parenting behaviors or ratings of parents as well as average outcomes (for recent studies, see Arnett & Arnett-Jensen, 1994; Berndt, Cheung, Lau, Hau, & Lew, 1993; Crystal, Chen, Fuligni, & Stevenson, 1994; Mujtaba & Furnham, 2001). Most comparisons yielded important insights into the nuanced differences in parenting as well as associated outcomes. We believe that this was in part due to the approach used in these investigations, namely, a primary focus on comparing means of constructs across contexts.

In an effort to trace historically comparative work by social scientific disciplines, Lonner and Adamopoulos (1997) differentiated between cultural psychology and cross-cultural psychology. Cultural psychology's intellectual heritage is most consistent with anthropological work (e.g., Benedict, Mead, or Malinowski) that can be best described as in-depth studies of local mores found in a particular cultural context or ecological niche, which, due to its uniqueness, is simply that—unique, specific, and relative. On the other hand, more recent cross-cultural psychological work can be characterized as an approach in which different cultures are used in a study to extend the range of variation (i.e., the variability across cultures may be greater than the variability on one culture) in behaviors of interest to examine potential generalization. Lonner and Adamopoulos suggested that this has contributed to the development of "a better understanding of

basic human processes, capacities, social interactions, and virtually all psychological topics" (p. 55); in addition, they suggested that "cross-cultural psychological research is normally not very different from so-called mainstream and essentially experimental and reductionistic research....[It] tries to establish what is universal and generalizable in the tremendous cultural diversity of human behavior patterns" (p. 55). Similarly, Van de Vijver and Leung (1997a) pointed out that early comparative work was more consistent with cultural psychology and associated methodology (observational work that used mean-level comparisons), whereas recent comparative work has been more consistent with the previous description of cross-cultural psychology (a focus on process or the relationships between variables). Furthermore, they noted how a comparative approach no longer signifies a disciplinary affiliation or change; rather, they suggested that the comparative approach per se "becomes part and parcel of the scientific enterprise in the social and behavioral sciences" (p. 146).

Recent work on family and parenting process and its relationship to developmental outcomes reflects this. A growing number of investigations have begun to include structure techniques analytically (correlations, factor analysis, and analysis of covariance structures) in contrast to level techniques (*t* tests, ANOVAs). "In generalizability studies, a theory, a correlational or causal relationship, or an instrument derived from a theory is tested in another cultural context. The goal of the study is to establish the generalizability of the theory, the relationship, or the instrument" (Van de Vijver & Leung, 1997b, p. 291). For example, in a series of articles by Feldman and Rosenthal (Feldman & Rosenthal, 1991, 1994; Feldman, Rosenthal, Monte-Rayaud, Leung, & Lau, 1991; Rosenthal & Feldman, 1991), the authors found strong evidence of highly similar patterns of association between dimensions of family process (accepting, demanding, autocratic, and monitoring) and adolescent values, distress, autonomy expectations, academic achievement, academic effort, and misconduct for U.S., Australian, and Chinese youth. They also documented some differences across levels of family dimensions, adolescent values, and outcomes.

Work by Greenberger, Chen, and colleagues (Chen, Greenberger, Lester, Don, & Guo, 1998; Greenberger, Chen, Beam, Whang, & Dong, 2000) has also provided some support for similarities in process between family and peer factors and adolescent misconduct for U.S., Chinese, and Korean youth, although they also found some process differences between U.S. and Chinese youth, both in the importance of peer, and to some extent family factors. Finally, in a series of investigations on the relationship between psychological control and depression as well as antisocial

behavior in Australia, India, Colombia, Gaza, South Africa, and the United States, Barber recently reported on strong preliminary evidence of great similarity in developmental process (Barber & Harmon, 2002; cf. Barber, Chadwick, & Oerter, 1992, for the impact of parenting behaviors on self esteem; for additional cross-national comparative efforts providing support for similarities, see Bush, 2000; Forehand, Miller, Dutra, & Chance, 1997; Herz & Gullone, 1999; Khaleque & Rohner, 2002; Rohner & Britner, 2002). Note that in most studies, the authors also found differences on mean levels of predictors and in the prevalence of outcomes, despite great similarities in developmental processes. The implication is that similarities in developmental process do not preclude differences or contextual uniqueness in levels of both parenting behaviors and outcomes. Therefore, based on the evidence presented from cross-national comparative work over the past decade, the principal goals of the current investigation were to examine the generalizability in the measurement of family and parenting processes and in the relationships between family processes and adolescent developmental outcomes.

### **Harmony, Autonomy, and Conflict Dimensions of Parenting Process**

In the current study, we were interested in testing measures of individual parenting dimensions. Recent evidence has suggested that family and parenting processes need to be conceptualized in a more comprehensive manner, one that moves beyond typological work (Gorman-Smith, Tolan, Henry, & Florsheim, 2000; Gray & Steinberg, 1999; Metzler, Biglan, Ary, & Li, 1998; Patterson & Fischer, 2002; Steinberg, 2001). Steinberg and Silk (2002) conceptually summarized work employing dimensional measures of parenting and their effects on outcomes by identifying three distinct domains of inquiry, namely, harmony, autonomy, and conflict. Harmony describes dimensions that assess the affective relationship between parents and adolescents (e.g., acceptance, closeness, warmth, responsiveness, or communication; see also Dix, 1991; Holden & Miller, 1999; Rothbaum & Weisz, 1994). These dimensions have been found to be positively associated with social competence and negatively associated with both internalizing and externalizing behaviors. Autonomy describes dimensions that are directed at encouraging a balance between growth and independence, while providing boundaries for youth to instill conformity and connectedness (e.g., psychological control, restrictiveness, monitoring, supervision, support, or peer approval; see also Holden & Miller, 1999; Rothbaum & Weisz, 1994). Empirical evidence suggests that adolescents who are excessively constrained psychologically are more

likely to develop internalizing problems; at the same time, behaviorally overcontrolled youth are also at greater risk for externalizing problems. Finally, conflict describes the common tension and bickering between adolescents and their parents. Some conflict seems inevitable during adolescence; however, the evidence also suggests that the impact of conflict on adolescent development is context dependent. In other words, conflict in a "harmonious" environment may be a functional or positive part of adolescent individuation, whereas excessive conflict in a controlling milieu, for example, will further contribute to negative developmental outcomes (Steinberg & Silk, 2002).

For the current study, we tested a multidimensional measure of family or parenting processes. More specifically, our final measure included six dimensions that reflected the three domains described by Steinberg and Silk (2002), namely, closeness and communication (harmony); support, monitoring, and peer approval (autonomy); and conflict (conflict). We were interested in cross-nationally replicating findings that indicated that individual parenting dimensions cumulatively add to our understanding of adolescent outcomes and in examining the independent effects of both maternal and paternal family processes (Rothbaum & Weisz, 1994; Steinberg & Silk, 2002). Furthermore, meta-analyses have documented the importance of studying differences in parenting behaviors and differences in the relationship between parenting behaviors and outcomes by age and by sex (Holden & Edwards, 1989; Holden & Miller, 1999; Lytton & Romney, 1991; Rothbaum & Weisz, 1994; cf. Steinberg & Silk, 2002).<sup>1</sup>

### Sampling and Analytic Issues

Two additional issues require some discussion. First, for this test of the multidimensional parenting measure, we selected four countries: Hungary, the Netherlands, Switzerland, and the United States. As an initial approach, we were interested in comparing family and parenting processes as well as the relationships between processes and outcomes in the United States, Western Europe, and Eastern Europe. Although this selection did not maximize cultural differences, such as potential

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<sup>1</sup> Additional background variables, such as family structure and socioeconomic status (SES), also have been found to account for additional variability in the relationship between parenting measures and adolescent outcomes in some studies. At the same time, other work has suggested no consistent effect by the variables (e.g., Steinberg & Silk, 2002). Preliminary analyses on the impact of family structure and SES on outcomes after controlling for age and sex indicated weak relationships (e.g., anxiety: .02% and .02%; school misconduct: .07% and .09%, for family structure and SES, respectively). Therefore, in the current investigation, we decided to limit our consideration to the impact of age and sex.

differences between an Asian country and the United States, for example, it did include national contexts more variable than a comparison between two Western European countries. In fact, all countries included in the current study differed on several social, educational, economic, and political dimensions (Georgas & Berry, 1995; United Nations Development Programme (UNDP), 1996).

A second methodological issue is that most previous work in this area has employed exploratory factor analyses (EFAs), and, subsequently, has used observed factors to compute scales and reliabilities (e.g., Barber et al., 1992; Cernkovich & Giordano, 1987; Kawash & Clewes, 1988; Margolies & Weintraub, 1977; Schludermann & Schludermann, 1970; Schwarz, Barton-Henry, & Pruzinsky, 1985). Because of recent methodological advances and improved statistical software packages, we now have available more rigorous methods for confirming new and existing measures. More specifically, confirmatory factor analyses (CFA) have become the preferred method for demonstrating construct validity of psychometric assessments. Good progress has been made in the area of establishing scalar equivalence across racial and ethnic groups in the United States through recent studies by Knight and colleagues (e.g., Knight, Tein, Shell, & Roosa, 1992; Knight, Virdin, & Roosa, 1994). However, in general, CFAs have been infrequently used to confirm parenting measures (cf. Bradley & Whiteside-Mansell, 1997; Kim & Ge, 2000; Metzler et al., 1998; Sato et al., 1999); furthermore, Van de Vijver and Leung (2001) have noted that CFAs have rarely been used in cross-national comparative work.

## METHOD

### Procedure

Data for this study were collected as part of the International Study of Adolescent Development (ISAD), a multinational, multisite investigation consisting of about 8,500 participants from four countries (Hungary, the Netherlands, Switzerland, and the United States). The purpose of ISAD was to examine adolescent development using large samples from different countries (Vazsonyi & Pickering, 2000; Vazsonyi, Pickering, Belliston, Hensing, & Junger, 2002; Vazsonyi, Pickering, Junger, & Hensing, 2001). A standard data-collection protocol was followed across all study locations. It was approved by a university International Review Board (IRB) and consisted of a self-report data-collection instrument that included instructions on how to complete the survey, a description of the ISAD project, and assurances of anonymity. The questionnaires were administered in classrooms by project staff or teachers who had received

extensive verbal and written instructions. This was done to maintain a standardized protocol across all study locations. Students had 1 to 2 hr to complete the survey. Much attention was given to the development of the survey instrument, particularly by developing new or employing existing behavioral measures that could be used cross-culturally without losing nuances or changing meanings. To illustrate with some examples from the deviance measure—although it may have been appropriate to ask European youth about the theft of mopeds, U.S. adolescents generally are unaware of this mode of transportation. On the other hand, although Americans use check writing as legal tender, most Europeans have never written a check. The survey was translated from English into the target languages (Dutch, German, and Hungarian) and back-translated by bilingual translators. Surveys were examined by additional bilingual translators, and when translation was difficult or ambiguous, consensus was used to produce the final translation.

## Sample

Data were collected from 8,417 adolescents in four countries (Hungary,  $n = 871$ ; Netherlands,  $n = 1,315$ ; Switzerland,  $n = 4,018$ ; United States,  $n = 2,213$ ). In all locations, medium-sized cities of similar size were selected for participation. Cities and schools were sampled in each country based on established relationships. For each European country, different schools (college-bound vs. non-college-bound, technical schools) were selected to obtain representative samples of the local population. The entire student population was invited to participate at each school; response rates ranged from 73% to 95% at individual schools. In the United States, the samples included high school students, community college students, and freshmen and sophomore university students (response rates: 67% to 77%).

Because these schools represented an age range of approximately 14 to 22 years, we selected a group of students within a specific “age band” for cross-national comparisons of middle and late adolescents, namely, between the ages of 15.00 and 19.99 years. In addition, we addressed the problem of missing data. Because of analytical problems associated with missing data, we conservatively decided to use listwise deletion on the key variables part of the family process measure, which resulted in a final study sample of 5,810 (85% of the total 15- to 20-year-old sample; mean age = 17.5 years,  $SD = 1.3$ ). After this age band selection, some slight differences in mean age by country remained; specifically, the Hungarian and Dutch samples were slightly younger than the other two samples. The



final study sample and descriptive information on each country sample is presented in Table 1. It included 3,236 males (age:  $M = 17.55$ ,  $SD = 1.31$ ) and 2,524 females (age:  $M = 17.57$ ,  $SD = 1.57$ ); .009% did not indicate their sex (for additional sample details, see Vazsonyi et al., 2001).

## Measures

Participants in all countries were asked to fill out the same questionnaire including demographic variables, age, sex, school grades, family process variables, and measures of externalizing and internalizing behaviors.

**Age.** Adolescents were asked to indicate the month and year in which they were born. To maintain anonymity of participants, we did not ask for the day. The 15th day of the respective month was used to calculate participants' ages.

**Sex.** Participants were asked to indicate their sex on a single item: "What is your gender?" Responses were given as "1 = male" and "2 = female."

**Home situation.** An adolescent's home situation was assessed with a single item: "Which of the following home situations best applies to you?" Responses included "1 = biological parents," "2 = biological mother only," "3 = biological father only," "4 = biological mother and stepfather," "5 = biological father and stepmother," "6 = biological parent and significant other," and "7 = other."

**Socioeconomic status (SES).** Participants rated a single item for family income: "From the following options, please select an estimated annual income of your family." There were five responses to choose from; these were different for each country and adjusted to reflect local currency as well as common income range. For the U.S. sample, the following response options were provided: "1 = 20,000 or less," "2 = \$20,000 to \$35,000," "3 = \$35,000 to \$60,000," "4 = \$60,000 to 100,000," and "5 = \$100,000+." Equivalent response options were provided in each country in local currency (Dutch guilder, Hungarian forint, or Swiss franc). Participants were also asked to rate years of parental education of both parents. These responses were adjusted for each national context to capture country-specific educational structure, yet to maintain a consistent quasi-scalar measure of years of parental education. U.S. respondents selected one of the following categories: "1 = does not apply," "2 = he finished elementary or junior high school (through 9th

TABLE 1  
Descriptive Statistics of Demographic Variables by Country

	Country			
	Demographic Variables			
	Dutch n = 822	Hungarian n = 647	Swiss n = 3043	USA n = 1243
Sex				
	Males	68.9	62.2	40.7
	Females	31.1	37.8	59.3
Age	Mean age (years)	16.5	17.9	18.0
Home situation	Two biological parents	89.4	84.3	73.4
	One biological parent (only)	4.2	6.4	11.9
	One stepparent and one biological parent	3.7	7.2	10.9
	Other (e.g., biological parent & significant other, etc.)	2.7	3.7	3.8
Parental education	Mother	9.0	9.5	2.3
	She finished elementary or junior high school	40.9	35.4	17.6
	She finished some college or technical school	17.2	35.0	23.0
	She has a college degree	25.1	17.6	29.7
	She has a graduate degree	6.2	1.7	26.6
	Father	7.7	7.8	2.3
	He finished elementary or junior high school	25.6	31.9	12.5
	He finished high school	12.5	36.6	15.9
	He finished some college or technical school	35.6	18.8	29.7
	He has a college degree	17.3	2.9	16.3
	He has a graduate degree	7.1	7.2	4.4
Family income <sup>a</sup>	\$20,000 or less	23.4	22.8	9.5
	\$20,000 to \$35,000	36.1	31.8	25.1
	\$35,000 to \$60,000	23.5	26.1	33.4
	\$60,000 to \$100,000	9.9	10.7	27.6
	\$100,000 or more		15.1	

Note. Participants were given the option to answer "Does not apply" for parental education and employment; these figures are not included in the table (they are treated as missing data) and make up the difference between the sum of all categories and 100%. <sup>a</sup>Currency categories were: (a) Dutch: 40K or less NLG, Hungarian: 300K HUF or less, Swiss: 30K CHF or less; (b) Dutch: 40K-70K NLG; Hungarian: 300K-500K HUF, Swiss: 30K-60K CHF; (c) Dutch: 70K-120K NLG, Hungarian: 500K-900K HUF, Swiss: 60K-90K CHF; (d) Dutch: 120K-300K NLG, Hungarian: 900K-1500K HUF, Swiss: 90K-120K CHF; (e) Dutch: 300K NLG or more, Hungarian: 1500K HUF or more, Swiss: 120K CHF or more.

grade)," "3 = he finished high school (through 12th grade)," "4 = he finished some college or technical school," "5 = he has a college degree (4 years)," and "6 = he finished a graduate degree (advanced degree, e.g., masters or doctorate). For subsequent analyses, we used the first socioeconomic status measure. Table 1 includes descriptive information on background variables across the four countries.

*Family and parenting process.* The Adolescent Family Process (AFP) measure, a measure of self-reported family and parenting processes, was developed for the ISAD project based on previous work by Cernkovich and Giordano (1987). The items, which originally asked about parents in general, were reworded to include separate questions and scales for both mothers (mother, stepmother, or female caretaker) and fathers (father, stepfather, or male caretaker). Second, six content-valid items were added to strengthen some of the original subscales (14, 15, 18, 20, 23, 30; see Table 2) to ensure there would be a sufficient number of items assessing each construct. Third, some items were also reworded and simplified from the original work (4, 6, 11; see Table 2) to provide clear, unambiguous, and readable statements for middle and late adolescents in different countries. Fourth, for consistency, the response categories were reduced to two sets instead of the original four. Finally, the direction of some of the subscales were reversed. In the current investigation, the initial family process measurement tool included 30 maternal and 30 paternal items in seven subscales: closeness, support, monitoring, intimate communication, instrumental communication, conflict, and peer approval. Table 2 includes the maternal items; the same items were also rated by respondents for the father. The first three subscales were rated on the following 5-point Likert-type response scale: 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, 5 = strongly agree. The other four were rated on the following 5-point Likert-type scale: 1 = never, 2 = occasionally, 3 = sometimes, 4 = often, 5 = very often. Responses were reverse scored for the support subscale, so that a high score indicted a large amount of support. Reliability estimates for this measure are presented in Table 3. Because a large part of this study was to validate a cross-national measure of family and parenting process, reliabilities in the table are based on the final model from confirmatory factor analyses presented later. Previous studies attempting to validate family and parenting process measures have included measures of adolescent developmental outcomes similar to used in the current investigation (e.g., delinquency: Cernkovich & Giordano, 1987; Fletcher, Steinberg, & Sellers, 1999; Krohn, Stern, Thornberry, & Jang, 1992; Rodick et al., 1986; Schaefer, 1965; association with deviant peers, antisocial

TABLE 2  
The Adolescent Family Process (AFP) Measure<sup>a</sup>

<b>Closeness</b>	
Item 1	My mother often asks about what I am doing in school.
Item 2	My mother gives me the right amount of affection.
Item 3	One of the worst things that could happen to me would be to find out that I let my mother down.
Item 4	My mother is usually proud of me when I finish something at which I've worked hard.
Item 5	My mother trusts me.
Item 6	I am closer to my mother than are a lot of kids my age.
<b>Support</b>	
Item 7 <sup>b</sup>	My mother sometimes puts me down in front of other people.
Item 8 <sup>b</sup>	Sometimes my mother won't listen to me or my opinions.
Item 9 <sup>b</sup>	My mother sometimes gives me the feeling that I'm not living up to her expectations.
Item 10 <sup>b</sup>	My mother seems to wish I were a different type of person.
<b>Monitoring</b>	
Item 11	My mother wants to know who I am with when I go out with friends or on a date.
Item 12	In my free time away from home, my mother knows who I'm with and where I am.
Item 13	My mother wants me to tell her where I am if I don't come home right after school.
Item 14	When I am not at home, my mother knows my whereabouts.
Item 15 <sup>c</sup>	<i>In general, my mother does not care much with whom I spend my free time or where I go.</i>
<b>Intimate communication</b>	
Item 16	<i>How often do you talk to your mother about the boy/girl whom you like very much?</i>

Item 17	<i>How often do you talk to your mother about questions or problems about sex?</i>
Item 18	How often do you talk to your mother about other things that are important to you?
Item 19	<i>How often do you talk to your mother about things you have done about which make you feel guilty?</i>
Item 20	How often do you talk to your mother about major personal decisions?
<b>Conflict</b>	
Item 21	How often do you have disagreements or arguments with your mother?
Item 22	How often do you purposely not talk to your mother because you are mad at her?
Item 23	How often do you get angry at your mother?
<b>Instrumental Communication</b>	
Item 24	How often do you talk with your mother about problems you have at school?
Item 25	How often do you talk with your mother about your job plans for the future?
Item 26	<i>How often do you talk with your mother about problems with your friends?</i>
Item 27	How often do you talk with your mother about how well you get along with your teachers?
<b>Peer Approval</b>	
Item 28	How often does your mother approve of your friends?
Item 29	How often does your mother approve of your boyfriend/girlfriend?
Item 30	How often does your mother like when you go out with your friends?

<sup>a</sup>The same set of questions was also rated by respondents for fathers.

<sup>b</sup>Scoring was reversed for scalar analyses.

<sup>c</sup>Italicized items were omitted from the final model.

TABLE 3  
Reliability Estimates of Family Process and Outcome Measures (Total Sample and by Country)

	<i>Total Sample</i>	<i>Dutch</i>	<i>Hungarian</i>	<i>Swiss</i>	<i>United States</i>
Closeness	0.77/0.82 <sup>a</sup>	0.72/0.75	0.78/0.84	0.74/0.80	0.85/0.89
Support	0.77/0.79	0.73/0.76	0.71/0.73	0.75/0.78	0.83/0.82
Monitoring	0.78/0.86	0.73/0.82	0.74/0.84	0.79/0.86	0.78/0.89
Communication	0.83/0.86	0.81/0.83	0.77/0.85	0.81/0.85	0.88/0.91
Conflict	0.78/0.83	0.79/0.86	0.73/0.78	0.77/0.82	0.83/0.86
Peer approval	0.78/0.85	0.68/0.80	0.76/0.79	0.75/0.84	0.83/0.87
Alcohol use	0.84	0.76	0.83	0.81	0.90
Drug use	0.89	0.87	0.83	0.90	0.90
School misconduct	0.76	0.74	0.76	0.76	0.82
Total deviance	0.95	0.95	0.96	0.96	0.96
Anxiety	0.73	0.73	0.67	0.72	0.77
Depression	0.80	0.78	0.77	0.78	0.84
Low self-esteem	0.80	0.78	0.77	0.78	0.84
Low well-being	0.80	0.80	0.74	0.79	0.85

<sup>a</sup>On family process scales, the first alpha is for maternal measures and the second is for paternal measures.

behavior, and substance use: Metzler et al., 1998; school misconduct, academic achievement, and psychological symptoms: Fletcher et al., 1999; Gray & Steinberg, 1999; internalizing and externalizing behavior problems: Gerard & Buehler, 1999; Phares & Renk, 1998; Rohner & Britner, 2002).

**Deviance.** Lifetime deviance was measured by the 55-item Normative Deviance Scale (NDS) developed for the ISAD project (Vazsonyi et al., 2002; Vazsonyi et al., 2001). The purpose of this scale was to measure adolescent deviance in a way to capture norm-violating conduct in all cultures in the present investigation (norm-violating conduct that is independent of cultural definitions of crime and deviance) as well as in general adolescent populations and to provide etiological data. In a sense, we wanted to develop and employ a serviceable cross-national measure. Therefore, this measure examined a broader spectrum of deviant activities rather than status and index offenses. The current investigation examined three subscales of the NDS (alcohol use, drug use, and school misconduct) as well as a measure of total deviance that included vandalism (8 items: e.g., "smashed bottles on the street, school grounds, or other areas"), alcohol (7 items: e.g., "consumed alcoholic beverage [e.g., beer, wine, or

wine coolers] before you were 21 [16 in other countries]”), drugs (9 items: e.g., “used ‘soft’ drugs such as marijuana [grass, pot]”), school misconduct (7 items: e.g., “been sent out of a classroom because of ‘bad’ behavior [e.g., inappropriate behaviors, cheating, etc.]”), general deviance (11 items: e.g., “avoided paying for something [e.g., movies, bus or subway rides, food, etc.]”), theft (7 items: e.g., “stolen, taken, or tried to take something worth between \$10 and \$100” [or local currency; e.g., shirt, watch, cologne, video game cartridge, shoes, money]), and assault (6 items: e.g., “hit or threatened to hit a person”). Responses were given on a 5-point Likert-type scale and identified lifetime frequency of behaviors (1 = never, 2 = one time, 3 = 2–3 times, 4 = 4–6 times, and 5 = more than 6 times). CFAs of individual subscales indicated good model fit (e.g., for school misconduct:  $\chi^2 = 19.64$ ,  $df = 7$ , CFI = .99, RMSEA = .02). This was also true of total deviance. For example, using mean subscale scores as indicators of a higher order latent total deviance construct, we found the following fit:  $\chi^2 = 13.5$ ,  $df = 5$ , CFI = .99, RMSEA = .02. Reliability estimates are presented in Table 3.

**Internalizing behaviors.** A shortened 62-item form of the Weinberger Adjustment Inventory (WAI; Weinberger, 1998; Weinberger & Schwartz, 1990) was used to assess four internalizing behaviors in adolescents; these subscales are all part of the distress dimension as originally conceptualized. Each item was rated by participants on a 5-point scale ranging from 1 = not at all true of me to 5 = very true of me to assess anxiety (6 items), depression (7 items), low self-esteem (7 items), and low well-being (7 items). Because of initial poor reliability estimates, two items originally part of the anxiety subscale in the WAI were dropped. Reliability estimates of the averaged items for each subscale are presented in Table 3.

## RESULTS

### Plan of Analysis

One of the main goals of the current investigation was to examine a cross-national measure of family and parenting process. Therefore, a series of CFAs employing AMOS 4.0 were completed on the total sample. We decided to complete the analyses initially on the total sample because of an a priori conceptualization of the multiple dimensions of family and parenting processes and because we expected similarities across the different groups based on the previous cross-national comparative work we reviewed. This was followed

up by a rigorous confirmation–disconfirmation analytic strategy for the samples and groups part of the study. Based on initial findings, a final model was determined and tested again for both maternal family process items and paternal family process items. These CFAs were completed by country (total sample), by age group (younger and older adolescents), and by sex (for males and females). CFAs for each group were evaluated employing the standard chi-square fit statistic as well as a series of other fit indices because the chi-square statistic is overly sensitive to sample size and the total number of parameters and therefore is almost always statistically significant in large samples (CFI, Bentler, 1992; Bentler & Dudgeon 1996; Byrne, 1994; RMSEA, Browne & Cudeck, 1993; Loehlin, 1992;  $\chi^2$  to  $n$  ratio, Rowe, Vazsonyi, & Flannery, 1994; and  $\chi^2$  to  $df$  ratios, Hayduk, 1987; Loehlin, 1992; Wheaton, Muthen, Alwen, & Summers, 1977).

The AFP measure was also tested for scalar equivalence employing the more traditional multigroup analyses, where the factor structure was held invariant and fit indices comparing the unconstrained and constrained models were computed. For this purpose, item loadings for all four countries were simultaneously compared in both the unconstrained and constrained conditions for the total samples, younger adolescents, older adolescents, males, and females. In addition, we used the same test to compare middle versus late adolescents and males versus females. The multigroup models produced a single chi-square for the unconstrained model regardless of the number of groups compared in the analysis. Significant differences in the factor structure across groups were tested by holding the factor structure invariant. The resulting chi-square was then compared with the unconstrained chi-square, with the difference between the two also being distributed as a chi-square. A statistically significant difference between constrained and unconstrained chi-squares would indicate that holding the factor structure invariant across groups worsened model fit (Arbuckle & Wothke, 1995; Schumacker & Lomax, 1996). However, because the chi-square statistic is overly sensitive to sample size and number of parameters, a comparison of other fit indices (e.g., AGFI, NFI, CFI, or RMSEA) was also necessary.

Last, to compare similarities and differences between family process and outcomes, we employed a model-free LISREL approach described by Rowe et al. (1994). This efficient analytical method evaluates similarities and differences in developmental process across groups by comparing entire correlation or covariance matrices from each group that in this case include parenting process measures and outcomes (i.e., measures of internalizing and externalizing behaviors). This approach is more efficient



than comparing individual slopes and intercepts between pairs of countries and lowers associated Type I error (1,092 comparisons for both maternal and paternal measures). In the current analyses, we employed standardized measures (correlations) for model fitting separately by sex. In other words, for males four  $14 \times 14$  matrices including maternal parenting processes and four  $14 \times 14$  matrices including paternal family processes were generated and then separately compared; similarly, for females two sets of four  $14 \times 14$  matrices (for both maternal and paternal family processes) were computed and separately compared. Model fit for developmental process analyses was evaluated similarly as in CFAs; in addition, we examined the GFI and the RMR (Loehlin, 1992) commonly reported by LISREL.

## CFA

**Initial model.** The initial solution of the CFA of the family process items included 30 original items in seven factors (see Table 2). None of the observed items were allowed to cross-load on other factors, and none of the errors were correlated. The initial solution of the CFA was completed on the combined data for the four countries used in this study. Separate CFAs were completed for both maternal and paternal family process items. Findings generally indicated poor fit for this solution (maternal items,  $\chi^2 = 6985.63$ ,  $df = 384$ ;  $\chi^2/df = 18.192$ ;  $\chi^2/n = 1.202$ ; CFI = .900; RMSEA = .054). All factors loaded at .487 or higher except for Item 15 (.361). The data fit the model similarly for paternal items ( $\chi^2 = 8817.609$ ;  $df = 384$ ;  $\chi^2/df = 22.963$ ;  $\chi^2/n = 1.518$ ; CFI = .898; RMSEA = .061). Here again, all factor loadings were of .425 or higher on their respective factors except for Item 15 (.256). Interfactor correlations in these initial solutions indicated moderate correlations. For mothers, the average correlation was  $r = |.420|$ ; the smallest correlation was found between monitoring and conflict ( $r = -.096$ ;  $p < .05$ ). The largest correlation was observed between intimate and instrumental communication ( $r = .876$ ). The solution for paternal items also indicated moderate associations (average correlation:  $r = |.423|$ ); again, a weak relationship was found for monitoring and conflict ( $r = -.074$ ;  $p < .05$ ), and the largest correlation was observed between intimate and instrumental communication ( $r = .908$ ).

Based on the results of initial CFAs on maternal and paternal family process items, the original model was revised and subsequently tested on data from all four countries and each country individually. The items from intimate and instrumental communication were combined to form a

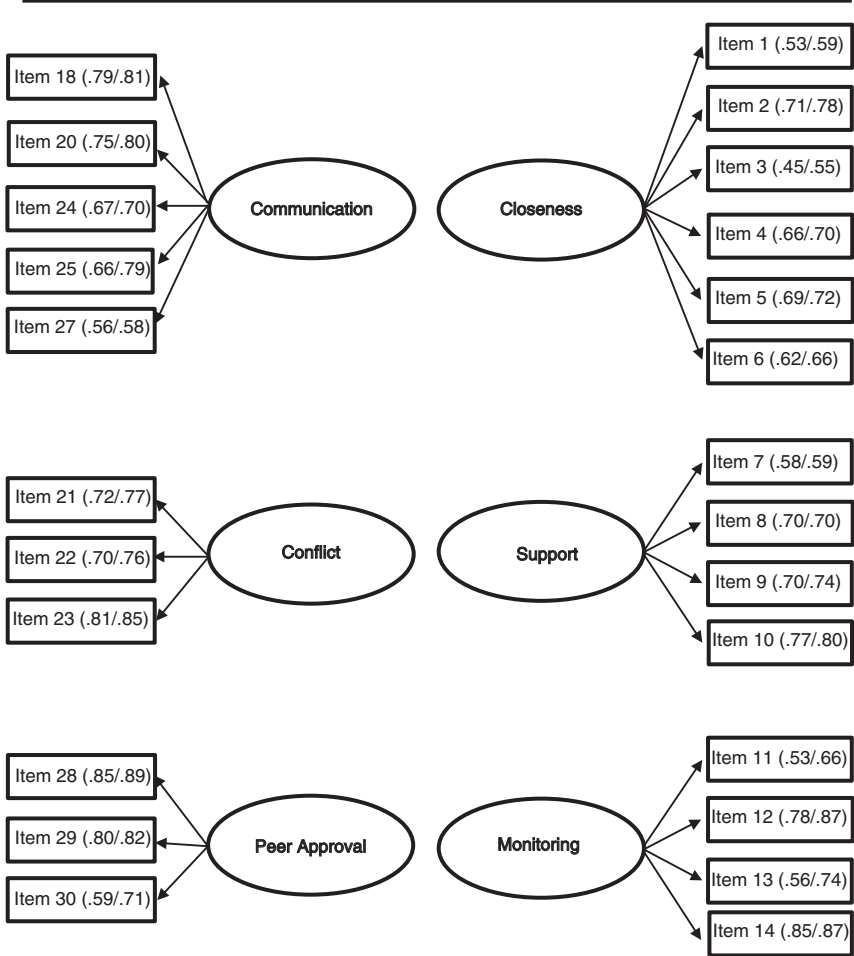
communication construct consisting of five of the original nine items (Items 18, 20, 24, 25, 27; see Table 2).<sup>2</sup> In addition, Item 15 was omitted from further analyses because of its comparatively low factor loading. We also inspected modification indices that suggested some error term correlations. For both parsimony and conceptual clarity, only the error terms with modification indices of 20 or greater within each factor were allowed to correlate (for a description, see note in Figure 1). This strategy resulted in nine error terms being correlated for fathers and eight for mothers. Figure 1 graphically displays the final model; it also includes the standardized factor loadings for the total sample. This model was employed in subsequent confirmatory tests by country, sex, and age groups.

*Final model.* The final model was tested on the combined data from all four countries in addition to separate CFAs by country; within each country, this included tests for younger adolescents, older adolescents, males, and females.<sup>3</sup> For maternal items on the combined data from all countries, the final model had a chi-square of 3254.359 ( $df = 252$ ) and a  $\chi^2$ -to- $df$  ratio of 12.914. The  $\chi^2$ -to- $n$  ratio was .560. Fit indices for this solution based on the combined sample were CFI = .944; the RMSEA was .045. Standardized factor loadings for the final solutions tested on the combined data for both maternal and paternal items are presented in Figure 1. The lowest factor loading for maternal items was .449 for Item 3 (“One of the worst things that could happen to me would be to find out that I let my mother down”). The remaining 24 items loaded at .532 or higher on their respective factors (Figure 1). For the paternal items, the final model had a chi-square of 3574.307 ( $df = 252$ ), a  $\chi^2$ -to- $df$  ratio of 14.240, and a  $\chi^2$ -to- $n$  ratio of .615. Fit indices for this

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<sup>2</sup>We anticipated the combination of these two original subscales from Cernkovich and Giordano’s (1987) work based on the very high conceptual overlap. However, we wanted to remain “purists” in model testing and therefore examined the full complement of items included in our revised scale. Conceptually, both sets of communication questions address the same aspect of family process, namely, whether adolescents perceive that parents openly and freely communicate with their children.

<sup>3</sup>Two criteria were used to determine age ranges for the age group comparisons. First, we were interested in comparing middle (15–17) versus late (18+) adolescents, and second, we had to consider sample size issues in developing these two age groups for comparisons. Therefore, in separate analyses by country and within each country for Swiss and U.S. samples, 15- to 17.50-year-olds were categorized as younger, whereas 17.51- to 19.99-year-olds were categorized as older. However, because of smaller sample sizes in the Dutch and Hungarian samples, we decided to make 15- to 17.00-year-olds part of the younger group and 17.01- to 19.99-year-olds part of the older adolescent age group.



\*Note: All inter-factor correlations correlated in revised solution but not displayed in this figure. Also not displayed in this figure are error terms that were allowed to correlate. These included the error terms for items: 1 & 5, 3 & 6, 4 & 5, 8 & 10, 11 & 13, 11 & 14, 18 & 25 (paternal only), 24 & 25, 24 & 27. The numbers in parentheses represent the factor loadings for each item. The number on the left represents the factor loading for the maternal scale and the number on the right is for the paternal scale.

FIGURE 1 Adolescent Family Process measure: final model.

solution based on the combined sample were CFI = .953; the RMSEA was .048. The lowest factor loading for paternal items was again Item 3, which loaded at .552. The remaining 24 items loaded at .582 or higher on their respective factors.

Interfactor correlations for the final solutions indicated moderate associations (see Table 4). For the mothers, the highest correlation was

TABLE 4  
Correlations Among Six Factors for the Final Model and Outcome Variables (Maternal and Paternal)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Closeness		0.57	0.52	0.77	-0.39	0.57	0.00	-0.19	-0.23	-0.29	-0.05	-0.14	-0.17	-0.19
2. Support	0.63		0.12	0.39	-0.60	0.48	-0.19	-0.33	-0.26	-0.24	-0.11	-0.12	-0.16	-0.19
3. Monitoring	0.47	0.17		0.46	-0.07	0.19	0.05	-0.07	-0.08	-0.12	-0.13	-0.19	-0.19	-0.21
4. Communication	0.72	0.41	0.44		-0.23	0.45	0.01	-0.15	-0.20	-0.21	-0.02	-0.10	-0.11	-0.12
5. Conflict	-0.46	-0.62	-0.11	-0.29		-0.24	0.18	0.25	0.17	0.16	0.08	0.12	0.16	0.16
6. Peer approval	0.51	0.50	0.23	0.40	-0.25		-0.09	-0.24	-0.19	-0.26	-0.08	-0.06	-0.09	-0.12
7. Anxiety	0.06	-0.20	0.16	0.10	0.19	-0.05		0.57	0.38	0.19	0.04	-0.01	-0.02	-0.02
8. Depression	-0.17	-0.37	-0.04	-0.10	0.30	-0.22	0.57		0.54	0.50	0.10	0.08	0.10	0.11
9. Low self-esteem	-0.23	-0.29	-0.04	-0.16	0.20	-0.19	0.38	0.54		0.49	-0.06	-0.04	0.02	-0.02
10. Low well-being	-0.33	-0.25	-0.16	-0.23	0.15	-0.29	0.19	0.50	0.49		-0.01	0.05	0.07	0.08
11. Alcohol use	-0.08	-0.10	-0.20	-0.08	0.14	-0.07	0.04	0.10	-0.06	-0.01		0.67	0.50	0.75
12. Drug use	-0.15	-0.08	-0.25	-0.16	0.15	-0.03	-0.01	0.08	-0.04	0.05	0.67		0.59	0.85
13. School misconduct	-0.19	-0.15	-0.21	-0.15	0.19	-0.10	-0.02	0.10	0.02	0.07	0.50	0.59		0.77
14. Total deviance	-0.22	-0.17	-0.30	-0.20	0.20	-0.12	-0.02	0.11	-0.02	0.08	0.75	0.85	0.77	

Note. Maternal scores are in the lower half of the matrix and paternal scores are in the upper half; all correlations were statistically significant at  $p < .01$  except italicized numbers, which are not statistically significant. AFP subscale correlations are based on AMOS confirmatory factor analyses.

between the combined communication factor and affect ( $r = .723$ ).<sup>4</sup> As found in the initial solution, the lowest correlation was between conflict and monitoring at  $r = -.107$ ; the average correlation was  $r = |.415|$ . The solution for paternal items also indicated that the weakest relationship was between monitoring and conflict at  $r = -.073$ . Similar to the maternal items, the highest correlation was between affect and communication at  $r = .770$ . The average correlation for the paternal factors was  $r = |.402|$ .

Table 4 also includes the relationships between individual AFP subscales and the eight outcome measures. Consistent with previous work, most associations were modest in size, and all correlations were in the conceptually expected directions. For example, closeness, support, monitoring, communication, and peer approval were negatively associated with measures of internalizing and externalizing behaviors, whereas conflict was positively associated. However, monitoring was largely unrelated to measures of internalizing behaviors, whereas peer approval was unrelated to measures of externalizing behaviors. These findings were identical for both maternal and paternal measures.

For both maternal and paternal items, the results of the CFAs completed on Dutch, Hungarian, Swiss, and U.S. samples are presented in Table 5. Findings indicate good fit for these analyses as well as model tests by age group (younger and older adolescents) and by sex (males and females). For some groups, the data fit more poorly, especially for small sample groups such as Hungarian older adolescents and females. With two exceptions (the maternal items in Dutch males and older Hungarian adolescents), the CFIs were all above .90 and the RMSEA did not exceed .061;  $\chi^2$ -to-*df* ratios were also less than 2 in almost all groups except very large sample groups (e.g., Swiss). However, further inspection of the  $\chi^2$ -to-*n* ratios indicated both similar and good fit across all groups. An inspection of the factor loadings in all CFAs also indicated good fit of the data to the model. Items in all models loaded at least .400 or higher except for Item 11, which loaded at .321 for Dutch females and .367 for younger Dutch adolescents; Item 1, which loaded at .381 for Hungarian females; and Item 3, which loaded at between .318 and .370 for all of the Swiss analyses on the maternal items. Based on this final

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<sup>4</sup> Although we acknowledge that this is a strong relationship between the two variables (still only 50% shared variance, however), we believed that it was conceptually important to distinguish between closeness and communication. These two aspects of family and parenting processes can be unique in the sense that adolescents can perceive closeness by a parent (mother or father knows a lot about me, believes in me, cares about me), but not necessarily have a parent who frequently asks and inquires about "issues" the adolescents experiences as assessed by the communications subscale. Subsequently, this decision was supported by our findings from CFA models that support two distinct dimensions.

TABLE 5  
Fit Indices for the Final Model by Country

Indices	Dutch			Hungarian			Swiss			United States					
	Total	Younger	Older	Males	Females	Total	Younger	Older	Males	Females	Total	Younger	Older	Males	Females
<i>Maternal Items</i>															
N	825	573	252	388	434	656	422	234	446	201	3,072	1,233	1,839	1,894	1,149
$\chi^2$	801.19	653.24	476.12	587.61	551.29	619.78	504.61	481.43	510.24	378.08	1819.99	876.47	1246.91	1217.74	929.45
$\chi^2/df$	3.179	2.592	1.889	2.332	2.188	2.459	2.002	1.91	2.025	1.500	7.222	3.478	4.948	4.832	3.688
$\chi^2/n$	.971	1.140	1.889	1.514	1.270	.945	1.196	2.057	1.144	1.881	.592	.711	.678	.643	.809
CFI	.916	.909	.900	.882	.920	.930	.924	.889	.918	.937	.940	.940	.936	.933	.940
RMSEA	.051	.053	.060	.059	.052	.047	.049	.063	.048	.050	.045	.045	.045	.045	.048
<i>Paternal Items</i>															
N	825	573	252	388	434	656	422	234	446	201	3,072	1,233	1,839	1,894	1,149
$\chi^2$	703.58	560.00	467.17	509.98	505.46	653.12	578.49	461.88	555.38	434.83	2089.93	890.69	1430.22	1390.69	1025.85
$\chi^2/df$	2.803	2.231	1.861	2.032	2.014	2.602	2.305	1.84	2.213	1.732	8.326	3.549	5.698	5.541	4.087
$\chi^2/n$	.853	.977	1.854	1.314	1.165	.996	1.371	1.974	1.245	2.163	.680	.722	.778	.734	.893
CFI	.946	.944	.926	.928	.948	.944	.926	.927	.937	.928	.948	.953	.946	.944	.949
RMSEA	.047	.046	.059	.052	.048	.049	.056	.060	.052	.061	.049	.045	.051	.049	.052

model, scale scores were computed for closeness, support, monitoring, communication, conflict, and peer approval by averaging the items part of the final model (see Figure 1). Subsequently, reliability estimates were computed for all family and parenting process subscales (see Table 3; six maternal and six paternal scales). All scales were internally consistent and exceeded  $\alpha = .70$ .

The final model was also examined employing more traditional tests of scalar equivalence or invariance by comparing unconstrained and constrained models by country. We did so for the total samples from each country (i.e., constrained models tested whether fit changed as a function of constraining the parameters from all four countries to equality), for younger and older adolescents, and for males from each country and for females. In addition, we decided to compare unconstrained and constrained models for all males with those for all females and those for all younger adolescents with those for all older adolescents (far right columns in Table 6). Chi-square difference tests ( $\chi^2$  in Table 6) in these multigroup analyses were statistically significant. However, a comparison of additional deltas or difference fit indices indicated great similarity and possible inflated chi-square differences due to sample sizes. Table 6 includes the results of these analyses. For paternal measures, the greatest differences in indices between unconstrained and constrained models were: AGFI = .002, CFI = .005, and NFI = .006. For maternal measures, differences in indices were slightly greater: AGFI = .005, CFI = .01, and NFI = .011. In all cases, RMSEA values were either zero or 1/1000th different between the models. To our knowledge, there exists neither a statistical test to add perspective to the magnitude of these differences nor previous studies that have established acceptable limits of the differences in these indices. However, the evidence clearly suggests that the observed differences were very small and that fit between the models was good; therefore, we concluded that there existed great similarity between the groups compared.

### **Model-Free LISREL Analyses**

Finally, in a series of model-free LISREL comparisons completed separately for males and females, two sets of  $14 \times 14$  correlation matrices (six AFP subscales and eight outcome measures, maternal and paternal items separately) were compared by country (four matrices) to test for similarities and differences in development process cross-nationally. This procedure tested whether the associations between individual subscales of the AFP and the eight outcome measures were similar or different by

TABLE 6  
 Scalar Equivalence Difference Fit Indices for Both Maternal and Paternal AFP Subscales by  
 Country, by Age Group, and by Sex

	<i>Maternal Scales</i>						
	<i>By Country Comparisons</i>					<i>Total Sample Comparisons</i>	
	<i>Total</i>	<i>Younger</i>	<i>Older</i>	<i>Males</i>	<i>Females</i>	<i>Younger/Older</i>	<i>Males/Females</i>
$\chi^2$	456.33	237.67	275.77	279.27	298.18	85.42	118.56
AGFI	0.003	0.003	0.002	0.002	0.005	0.001	0.000
CFI	0.008	0.007	0.007	0.008	0.010	0.000	0.000
NFI	0.009	0.009	0.009	0.010	0.011	0.002	0.002
RMSEA	0.001	0.001	0.000	0.001	0.001	0.000	0.000
	<i>Paternal Scales</i>						
$\chi^2$	374.31	185.02	257.25	209.78	225.47	74.42	108.43
AGFI	0.002	0.001	0.002	0.002	0.002	0.002	0.001
CFI	0.005	0.004	0.004	0.004	0.004	0.000	0.000
NFI	0.005	0.006	0.006	0.006	0.006	0.001	0.001
RMSEA	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note.  $df = 57$ .

national context (see Table 4 for the associations between AFP subscales and outcomes).<sup>5</sup> For this purpose, random samples were selected from each group of the same size (four male samples of  $n = 381$ ; four female samples of  $n = 205$ ) because differences in sample size affect such comparisons. Furthermore, to reduce the possibility of observing differences due to age or SES, partial correlations were computed for each group controlling for these two variables. All comparisons indicated great similarity in developmental process. The following fit indices were found for maternal scales as rated by males:  $\chi^2 = 552.54$  ( $df = 315$ ), CFI = .97, GFI = .96, RMSEA = .022. Similar findings were made for paternal scales as rated by males:  $\chi^2 = 599.26$  ( $df = 315$ ), CFI = .97, GFI = .95, RMSEA = .024. Fit was also excellent for comparisons based on female ratings:  $\chi^2 = 412.70$  ( $df = 315$ ), CFI = .98, GFI = .92, RMSEA = .019, and  $\chi^2 = 459.57$  ( $df = 315$ ), CFI = .97, GFI = .92, RMSEA = .025, respectively. Together, these findings indicated great similarity in developmental processes for both males and females across the four countries.

<sup>5</sup> Correlation matrices by country and by sex (maternal and paternal measures) were not included for space considerations. Please contact the first author for more information.



## DISCUSSION

Based on rigorous CFAs to validate an adolescent family and parenting process measure, the current investigation established a valid and reliable instrument in a large cross-national sample. The study demonstrated conceptually that six distinct dimensions of family and parenting processes were supported, namely, closeness, monitoring, support, communication, conflict, and peer approval; these separate dimensions of parenting were also measured reliably across all four countries. Methodologically, few previous studies have used this procedure to validate conceptually and analytically a multidimensional family and parenting process measure. The study provides evidence that family and parenting processes can be measured consistently and reliably in adolescents across different national contexts, in middle and late adolescents, and in males and females. Furthermore, it demonstrated that the six dimensions of family process can be measured consistently and reliably for both maternal and paternal family processes. In fact, the study found that maternal and paternal family processes were associated similarly with measures of both internalizing and externalizing behaviors across all national contexts. Although we did not directly compare maternal and paternal family processes to examine the importance of each in adolescent adjustment, the findings suggest that both maternal and paternal family processes are important in our understanding of developmental outcomes. From this, we can conclude that perhaps family process should not be operationalized as a single construct or averaged to obtain a single parenting dimension (cf. Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). Our findings in this regard are also consistent with recent work by Fletcher et al. (1999).

In their important review, Darling and Steinberg (1993) concluded that future investigations on parenting style and practices needed to consider carefully developmental context and how it affected variability in both parenting practices and developmental outcomes in children and adolescents. In fact they noted that "we believe that a focus on processes that link parenting style and parenting practices to child outcomes would also facilitate a more developmental approach to the study of socialization" (p. 495). Although we have not explicitly tested their proposed model, and although we do not differentiate between style and practices, we believe that the findings in the current study substantially contribute to our understanding about parental socialization practices and developmental outcomes across national contexts (see also Steinberg, 2001). The dimensional approach of family process used in the current investigation lends itself to ask the question whether adolescents perceive their

parent(s) in a similar fashion across national contexts, for younger and older adolescents, and for males and for females. In effect, this approach is analogous to what Gray and Steinberg (1999) called unpacking of parenting types. It appears that the way we measured family and parenting processes captures common components in parenting behaviors found in these Western European, Eastern European, and North American countries. It also appears that these socialization efforts represent common elements across all groups. Furthermore, it seems these elements give us insights and some explanatory power when we consider a number of internalizing and externalizing behaviors globally speaking. In conclusion, we therefore found that the way family and parenting processes were conceptualized and the way we measured them seemed to be generalizable across all groups and samples tested. Furthermore, we also found strong evidence that the relationships between individual AFP parenting processes (maternal and paternal, separately) and various adolescent developmental outcomes are highly similar cross-nationally. These findings add to our knowledge about the generalizability of parenting behaviors and their relationships to adolescent adjustment based on similar ethnic and racial group comparisons within the United States (e.g., Knight et al, 1992; Rowe et al., 1994).

We need to address some potential shortcomings and limitations of the current study. For example, we did not address potential mean level differences in either the family process measures or outcome variables; this remains an important next step in this and other lines of work. One of the main reasons we did not address this question further is because, as previously shown by Rowe et al. (1994), mean-level differences and developmental processes are distinct and independent phenomena. Furthermore, our conceptual basis let us expect similarities as previously described. Another way of thinking about this is that other more distal processes may explain potential differences in mean levels of family processes, for instance. Consider the following example: Assume for a moment that Hungarian youth are monitored much less than U.S. youth and that adolescents from both countries are deviant to the same extent. Next, also assume that we find that monitoring accounts for 6% of the variance in deviance for youth from both cultural contexts. This suggests that the difference in monitoring does not change the degree of association between monitoring and deviance. This may also imply that U.S. parents monitor their children much more closely than do Hungarian parents, perhaps because of different cultural or societal ideals about monitoring children. Note that we believe that most societies, at least those we examined in this study, have consistent end goals concerning the socialization of their children. For example, parents in all countries want

to make their children conforming, autonomous, and empathetic. However, what is considered an acceptable level of monitoring in one country may be less than adequate in another. Therefore, what we find in the example are mean-level differences in assessments of monitoring, but no differences in the relationship between monitoring and deviance. This means that despite potential differences in levels of socialization between countries, we find similar associations between family processes and developmental outcomes.

Another inherent weakness of our investigation is the lack of additional informants about parenting and family processes as well as the cross-sectional nature of our data. We recognize that adolescent reports of parenting behaviors are biased by their own perceptions. At the same time, several studies over the past two decades have been supportive of employing self-report measures; in some cases, researchers have suggested that adolescent reports may be more desirable to assess family processes (e.g., Schwarz et al., 1985; Steinberg et al., 1994), especially if a study is interested in the relationships between family processes and adolescent behavioral outcomes. Studies examining this issue further by looking at rates of concordance between parent reports and adolescent reports have generally indicated low levels of agreement between different informants of parenting constructs (e.g., Jessop, 1981; Krohn et al., 1992). Findings from these studies suggest that although concordances between adolescent and parental self-reports may be low on a number of measures, adolescent self-reports contribute meaningfully to our understanding of family process. This may be so independent of what could be learned from parental reports of family process.

An additional shortcoming of the current investigation is that all data were collected from students attending a school. This eliminates youth who dropped out of school or who were unable to attend school. Furthermore, for U.S. youth, we sampled community college and university students to gather data on late adolescents; this omits a substantial portion of adolescents who do not complete high school or who simply do not continue their education beyond high school. This sampling issue may have affected our findings, and therefore, the results from this investigation need to be interpreted with this shortcoming in mind. In other words, the findings based on U.S. data do not generalize to non-college-bound late adolescents. A further sampling limitation is the countries we selected for the current investigation. As pointed out previously, this study is perhaps a first modest attempt to document similarities in developmental processes across four national contexts—national contexts that differ, yet share several similarities. Important next steps will include replicating this measure in the same countries as well as

on other samples from cultures that are more dissimilar, such as an Asian society. Finally, we recognize that longitudinal data would have made additional analyses possible. They would have also allowed us to make stronger inferences regarding causality, for example. At the same time, a longitudinal study of the current magnitude across four countries would appear challenging to say the least. We believe that having the large and locally representative data from four countries is one of the strengths of this investigation.

In conclusion, consistent with what Darling and Steinberg (1993) called for a few years ago, we also believe that we have improved our understanding about the importance of context on the relationship between parenting practices and family processes and adolescent developmental outcomes, and we look forward to future work that will further elucidate observed differences in family process cross-nationally. We suggest that perhaps cross-national comparative research is no longer an exotic enterprise after all. In fact, we believe that this work may be approximating what Dasen and Mishra (2000) advocate—"a return to overarching theories .... fitting the pieces of the puzzle so as to create a truly 'global' picture" (p. 433).

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