

Cross-cultural Gender Differences and Developmental Trends of Aggression-Victim-
Bystander Constructs: Brazil, Jamaica, and United States

BY

Brian Noland

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Dr. Eric Vernberg
Chairperson

Dr. Todd Little

Dr. Bridgett Biggs

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The Thesis Committee for Brian Noland certifies
that this is the approved Version of the following thesis:

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Abstract

We evaluated the measurement equivalence of the Peer Experiences Questionnaire (PEQ) across samples from Brazil, Jamaica, and the United States and compared latent means of aggressive and bystander behaviors, victimization experiences, and aggression-related attitudes for boys and girls in 3rd, 4th, and 5th grade from Brazil, Jamaica, and the United States. Results indicated developmental and gender differences and similarities in the aggression-victim-bystander constructs across countries. Jamaican participants reported significantly more frequent aggression toward others and victimization of self, with girls reporting equal amounts of aggression towards others as boys. Participants from Brazil and Jamaica reported more aggressive bystander behaviors than participants from the United States. Normative beliefs supporting the use of aggression were endorsed more frequently by U.S. participants than participants from Brazil and Jamaica. Discussion of the presentation of aggression-victim-bystander constructs across cultures is presented.

Cross-cultural Gender Differences and
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Evidence has shown that violence in schools occurs in many countries around the world (Nansel, Craig, Overpeck, Saluja, & Ruan, 2004). This research also generally finds negative effects of peer victimization on children's social and psychological adjustment (Nansel et al., 2004; Storch & Ledley, 2005; Van der Wal, Cees, & Hirasing, 2003). Storch and Ledley (2005) reviewed literature examining relations among peer victimization and psychological adjustment. In their review, cross-sectional, longitudinal, and retrospective studies converged to show that being repeatedly victimized is associated with the following psychological problems: depressed mood, low self-worth, interpersonal difficulties, social skills deficits, loneliness, and academic problems. Another good example of the negative effect that victimization on adjustment came from Van der Wal et al., (2003) who examined the relationship between peer victimization and psychological adjustment in 4,811 children aged 9-13. They collected data on peer victimization and psychological health (depression and suicidal ideation) using self-report questionnaires, and found that frequent, direct aggression increased depression and suicide ideation for participants. Depression was a characteristic of 22.4% of boys and 42.6% of girls who reported being victimized frequently (compared to 3.1% of boys and 6.4% of girls who reported being directly victimized almost never). Suicidal ideation was a characteristic of 13.4 % of boys and 24.8% of girls that reported being bullied

frequently (compared to 3.3% of boys and 4.1% of girls that reported being directly bullied almost never). Research clearly indicates that peer victimization negatively impacts social and psychological adjustment and some studies have examined this relationship across countries.

The negative impact of peer victimization on psychological adjustment appears to be universal across countries studied to date. Nansel and colleagues (2004) compared the relationship between peer victimization and psychosocial adjustment across 25 countries (mean sample size for each country was 4,528). Results showed peer victimization involvement ranging from 9% - 54%. Despite variations in the frequency of peer victimization, the authors noted a “remarkable consistency” across the 25 countries in the relationship between victimization and poorer psychological adjustment including: greater health problems, poorer emotional adjustment, and poorer social adjustment (Nansel et al., 2004). The poor psychological adjustment that can result from peer victimization, across cultures, indicates a need for violence prevention programs that can be applied in a variety of countries. However, to develop and evaluate the impact of violence prevention programs that create a school climate that changes social norms and reduces peer victimization, it is necessary to establish the cultural validity of measures of peer aggression and aggression related constructs.

Numerous school-based violence prevention programs have been developed to address environmental (e.g., discipline and supervision) and social cognitive (e.g., attitudes about aggression and victims of aggression) factors that influence aggressive

behavior (e.g., Farrell, Meyer, & Dahlberg, 1996; Frey, Hirschstein, Snell, Edstrom, MacKenzie, & Broderick, 2005; Olweus, 1993; Slaby, Wilson-Brewer, & Dash, 1994). Several of these have focused on a three dimensional approach to peer victimization and aggression, addressing the role of bystanders along with aggressors and victims (Slaby, Wilson-Brewer, & Dash, 1994; Twemlow, Fonagy, & Sacco, 2004; Twemlow, Fonagy, Sacco, Gies, & Hess, 2001). Bystanders may promote peer victimization by actively encouraging aggression or ignoring victims. Alternatively, bystanders who intervene through expressing disapproval or taking action to protect victims may reduce victimization. However, much of this work on bystanders thus far has been carried out in highly developed countries of North America, Europe, and Australia. Research examining aggression-victim-bystander constructs is sparse for less economically advantaged countries such as Brazil and Jamaica. Research available on urban Brazilian children's exposure to violence (UNICEF, 2004) and Jamaican children's exposure to corporal punishment (Smith & Mosby, 2003) suggests that the violent and aggressive environments to which many of these children are exposed may foster acceptance and incidence of aggressive behaviors. However, a culturally validated measure of aggression-victim-bystander constructs has not yet been established.

This study addresses issues of measurement and mean level differences of aggression-victim-bystander constructs (self victimization, victimization of others, bystander behavior, and normative beliefs about aggression) for samples of children from Brazil, Jamaica, and the United States (grades 3-5). This represents a

preliminary cultural validation of the Peer Experiences Questionnaire (PEQ), a measure of aggression-victim-bystander constructs, which was developed in the United States. Confirmatory factor analysis (CFA) was used to examine the research questions. CFA allows researchers to examine flexibly and powerfully the relationships between observed and latent variables as well as test cross-group similarities and differences among latent variables (Kline, 1998). First, strong factorial invariance of the loadings and intercept parameters was evaluated to determine whether the constructs are the same across cultural groups and therefore comparable (Little, 1997). Then, core constructs measured by the PEQ were examined for mean level age trends and gender differences across Brazilian, Jamaican, and U.S. children in order to view how aggression-related constructs may be presented differently in these countries. Identification of these cultural differences of aggression is the initial step to establishing culturally relevant interventions to reduce aggression.

Victimization of Self and Others

The current study focused on peer aggression (aggression from others as well as aggression towards others), which is sometimes thought to be synonymous with bullying. However, some have argued that being bullied is a special type of peer aggression that occurs in the context of an ongoing relationship in which there is an imbalance of power between the aggressor and victim (Hunter, Boyle, & Warden, 2007). Peer aggression is a more general term that involves similar types of hurtful acts, without necessarily requiring the presence of a power imbalance or an ongoing

relationship. The current study measured the frequency of relational and overt aggression carried out with the intent to cause harm, however it did not specify the presence of a power imbalance and ongoing relationship between the aggressor and the victim. Therefore, the terms “aggression” has been used instead of “bullying.”

In the current study, peer aggression includes confrontational acts involving physical and verbal aggression (e.g., hitting, pushing, grabbing, threatening, cruel teasing), as well as ostracism or defamation (e.g., intentionally excluding from activities, spreading rumors) (Crick, 1996; Crick & Bigbee, 1998; Prinstein, Boergers, & Vernberg, 2001; Vernberg, Jacobs, & Hershberger, 1999). To qualify as peer aggression, these aggressive acts must be purposeful with intent to be hurtful towards their target. This final qualification helps to distinguish the act of aggression from age appropriate and playful behavior (Olweus, 1993).

Boys at all ages report more physical aggression toward others (Nansel et al., 2001). However, gender differences in victimization and relational aggression are less prominent. On self-report measures, there also appears to be a trend for students in higher grades to report fewer experiences of victimization (Smith, Madsen, & Moody, 1999; Whitney & Smith, 1993; Vernberg, Nelson, Jacobs, Little, Twemlow, & Fonagy, in review).

Bystander Behaviors

When evaluating contextual features that shape the amount of aggression in schools, it is important to look beyond those directly involved as perpetrators or victims and examine peer and adult bystander behavior. Three important peer bystander responses

have been identified, two that may contribute to more frequent aggressive behaviors (aggressive bystanding & passive bystanding) and one that may reduce aggressive behaviors (helpful bystanding) (Olweus, 1993; Twemlow, 2000).

Aggressive bystanding occurs when individuals join in, cheer, or actively encourage the aggressor or aggressive behavior (Olweus, 1993; Twemlow, 2000). The active display of support for the aggression may reflect positive attitudes toward bullying in general. Passive bystanding occurs when individuals neither take action in defense of victims nor discourage aggression through words or actions. However, victims and perpetrators of bullying may view nonintervention as reflecting acceptance of the behavior. Both of these forms of bystanding (aggressive and passive) appear to support the use of aggressive behaviors, which may discourage victims from resistance while encouraging the aggressor. Helpful bystanding occurs when individuals attempt to assist the victim by directly intervening to stop the aggressive act or reporting the incident to an authority figure (Twemlow, 2000). Active intervention displays empathy for victims and communicates a shared responsibility to intervene when aggressive behaviors are witnessed.

Similar to peer responses, adult responses to aggression have been identified as important influences on peer social dynamics (Olweus, 1993; Twemlow, Fonagy, Sacco, O'Toole, & Vernberg, 2002). Adults who fail to set limits on aggressive behavior may empower the aggressor and sets an example of passive bystanding to students (Piliavin, Dovidio, Gaertner, & Clark, 1982). However, adults who actively intervene when peer aggression occurs take power away from aggressors, and set an example of empathy for

victims and prosocial (nonviolent) problem solving skills (Olweus, 1993; Twemlow et al., 2002). The proposed study examines both peer bystander behavior and adult sanctions to bullying in Brazil, Jamaica, and the U.S.

Research examining gender and developmental trends of bystander behavior is minimal. However, helpful bystander responses may decline with age (Endresen & Olweus, 2001; Vernberg et al., in review). A decrease of helpful bystander behavior as children get older is of great importance, because with increased size and strength, less intervention may lead to more serious injuries and the risk of intervening may increase (i.e., retaliation toward helpful bystander).

Normative Beliefs about Aggression

Normative beliefs about aggression appear to influence the development of aggressive behavior (Huesmann & Guerra, 1997; Vernberg et al., 1999; Dill et al., 2004). For example, Huesmann and Guerra (1997) defined normative beliefs as “an individual’s own cognition about the acceptability or unacceptability of a behavior.” Their studies with elementary school children, including more than 2500 participants, found that normative beliefs (e.g., general approval of aggression, approval of retaliation) supporting the use of aggression were significantly related to higher levels of aggressive behavior. Similar findings are reported by Vernberg et al. (in review).

Developmental trends and gender differences have been reported for normative beliefs about aggression. Attitudes supporting the use of aggression and beliefs that one should not intervene in conflicts between others strengthen and increase as children age (Rogers & Tisak, 1996; Tisak & Tisak, 1996, Vernberg et al.,

in review). Boys more strongly endorse the use of aggression as favorable compared to girls (Guerra, Huesmann, Tolan, Van Ecker, & Eron, 1995; Huesmann & Guerra, 1997; Vernberg et al., 1999). To my knowledge, work on children's normative beliefs about aggression has thus far been conducted primarily in highly developed countries. This study offers an opportunity to examine construct validity of these beliefs in children from less developed countries and to evaluate grade-, and gender-related mean level differences in these aggressive attitudes across cultures.

Aggression & Aggression-Related Constructs in Brazilian and Jamaican Children

The aggression-victim-bystander constructs discussed previously have not been studied in Brazil or Jamaica. However, the research available on Brazilian children's exposure to violence and Jamaican children's exposure to corporal punishment gives some suggestion of the ways that violent and aggressive environments might influence the aggressive thoughts and behaviors of these children.

In 2001, 81% of Brazil's population lived in urban areas (UNICEF, 2004). Pervasive poverty, coupled with the lack of economic opportunities has been linked to high levels of urban violence in Brazil (Balan, 2002). The rural population is attracted to large cities by the prospect of jobs. However, the majority end up working as street vendors and day laborers, residing in areas characterized by high levels of violence that surround the slums that are controlled by drug gangs. Such poverty generates pressure for families to have children earn money by working on the streets under violent conditions. Exposure to such violence in the home and community has

been related with the development of violent and aggressive behaviors in children (Weaver, Borkowski, & Whitman, 2008), suggesting that many poorer Brazilian children live in conditions that promote high levels of aggression toward others. Their exposure to violence may also influence positive beliefs in regards to the acceptance, support, and value of aggression, which may also increase aggressive bystander behaviors.

Only one English language study published on bullying in Brazil was found in the literature review process (DeSouza & Ribeiro, 2005). The participants included 400 high school students, 50% from free public school, and 50% from “expensive” private schools, in the city of Recife, located in the state of Pernambuco in the northeast corner of Brazil. Results were in the range found in Nansel et al’s., (2004) cross-national review; 60% reported bullying others once or twice during the past 30 days, and of these 14% reported having frequently bullied other students. These similar bullying trends in Brazil suggest that they may benefit from violence prevention programs, indicating the need to establish a culturally valid measure of aggression-victim-bystander constructs for Brazilian children.

Corporal punishment and other violent disciplinary measures used on children are pervasive in Jamaica. Parenting practices in Jamaica have been characterized as highly repressive, severe, and abusive (Arnold, 1982; Leo-Rhynie, 1997; Sharpe, 1997).

Flogging, a severe beating by the use of a hand, belt, shoe, board, ruler, or tamarind switch, is the most common disciplinary practice of adults to misconduct in Jamaican

children (Leo-Rhynie, 1997; Smith, 1989). Smith (1989) reported that 71% of parents from rural areas and 55% of parents from urban areas reported flogging as their disciplinary response used most often with their children, compared to 3% that reported spanking (a less violent punishment) as their disciplinary response used most often. Offenses that have been reported as punishable by flogging include lying, stealing, disobedience, impoliteness, and not completing chores, playing in the house, crying too much and not eating the meal provided. Corporal punishment is also widely used in Jamaican schools as a discipline technique and as part of the instructive strategies used by schools. Researchers have voiced concerns that Jamaican schools not only practice corporal punishment, but also support a retaliatory, aggressive, authoritarian approach to conflict resolution (Evans & Davis, 1997).

Similar to Brazil, Jamaican children's' exposure to such violence in the home and community may be related with the development of violent and aggressive behaviors, and influence positive beliefs in regards to the acceptance, support, and value of aggression.

Furthermore, the exposure to violence in the home and community coupled with Jamaican schools acceptance, support, and practice of violence may suggest an even greater acceptance, support, and practice of violence by Jamaican children than those reared in Brazil or the U.S.

Aims of Study

This study represents the first efforts to examine these aggression-victim-bystander constructs in students from Brazil and Jamaica. The technique of confirmatory factor analysis (CFA) was used because it allows examination of equivalence issues related to the measurement of each construct in students from Brazil, Jamaica, and the United States as well as potential cross-group differences in the latent means among the constructs. The following research questions were of interest:

1. Can strong metric invariance of the manifest indicators across the three countries be established in the measurement of victimization of self and aggression toward others; bystander beliefs (helpful bystander, helpless bystander, aggressive bystander, adult sanctions for aggression); and aggression-related attitudes (aggression is legitimate, aggression pays, intervene in a fight)? Specifically, does invariance of the loadings and intercepts hold (Little, 1997; Meredith, 1993), establishing that the same constructs are being reliably measured across countries?
2. Are there mean level differences in victimization of self and aggression toward others; bystander beliefs (helpful bystander, helpless bystander, aggressive bystander, adult sanctions for aggression); and aggression-related attitudes (aggression is legitimate, aggression pays, intervene in a fight) in students from Brazil, Jamaica, and the United States? Specifically, are there identifiable mean level differences related to gender or age in the aggression-victim-bystander constructs across the three countries. Based on

the literature review we hypothesized that Brazilian children would have higher reports of aggression towards others, victimization of self, aggressive bystander behavior, and beliefs supporting the use of aggression than children in the U.S. Jamaican children were expected to report the most frequent use of aggression towards others, victimization of self, aggressive bystander behavior, as well as greater endorsement of normative beliefs that support the use of aggression, compared to children from Brazil and the U.S.

Methods

Procedure

The survey was completed anonymously in a regular education setting to minimize the respondents' concerns about revealing potentially sensitive information for all three populations, Brazil, Jamaica, and U.S. Once surveys were completed, they were mailed to the research team for data entry and analysis.

Participants

Participants included 293 students from Brazil, 309 students from Jamaica, and 4545 students from the United States. The U.S. sample completed this survey as part of a pre-intervention assessment of a system-wide violence intervention program. The school system is located in a New England community with a population of 250,000. Children attending these public schools are predominantly lower income; over 73% qualified for the free or reduced fee lunch program at school. Participants

from Brazil and Jamaica were also attending predominantly lower income public schools. Additional demographic information is presented in Table 1.

Measures

The PEQ is a self-report measure of various aggression related constructs. The PEQ was developed to provide a pre-intervention assessment of a school system that received support for violence prevention through the Safe Schools-Healthy Students initiative funded by the United States Department of Education (Vernberg et al., in review). The PEQ was developed initially for a junior high school population (Vernberg et al., 1999) and was revised to include a version suitable for use with elementary school children. Language for each item was simplified to a third grade reading level or lower (based on Flesch-Kincaid Grade Level) for the elementary school version.

The PEQ was translated into Portuguese for participants from Brazil. The translation process included three steps. First, an advanced undergraduate whose native language is Brazilian Portuguese translated the items. Second, the translated PEQ was reviewed for clarity by three native Portuguese speakers. Third, a professor of Portuguese Language Studies conducted a final grammatical check and comparison of the translation to the original English language version.

Constructs included are important components of aggression-victim-bystander dynamics. Sections I and II of the PEQ each include 9 items on overt and relational *Victimization of Self* and *Aggression toward Others*, respectively. The 13 items in Section III tap three dimensions of the child's own bystanding behavior (*Helpful*

Bystander, Aggressive Bystander, Helpless Bystander) and one dimension of perceived responses to bullying by adults at school (*Adult Sanctions for Aggression*). Section IV contains 11 items on general attitudes toward bullying (*Aggression is Legitimate, Aggression Pays, Intervene in Fights*). Tables 2 list items verbatim from the elementary school version of the PEQ.

Missing Data

Within the data set, there was a small amount of missing data on a number of variables. The total percentage of missing data values was 1.72% for all students. Because of the potential deleterious effects of not including all available data in the analysis process, the EM imputation algorithm using the PROC MI procedure within the SAS program were used (Graham, Cumsille, & Elek-Fisk, 2003). In so doing, we used the totality of information within our data set to impute the missing data, and therefore maintained important characteristics of the data set, improving our ability to calculate unbiased and efficient parameter estimates (Graham et al., 2003).

Analytic Procedures

Confirmatory factor analysis (CFA) was used to examine the relations between observed and latent variables as well as test cross-group similarities and differences among latent variables (Kline, 1998). CFA procedures use of latent variables removes measurement error from each construct, leaving only reliable information. This allowed assessment of the measurement equivalence of the constructs across samples, and direct statistical comparisons of the similarities and differences in the means (Little, 1997). Hypothesized models were sequentially tested

in the following steps: (a) a test of the measurement model that specifies the relationship between manifest indicators (e.g., observed variables) and latent constructs (e.g., unobserved variables), (b) a test of the measurement equivalence in the measurement of these models across 3rd, 4th, and 5th grade boys and girls from Brazil, Jamaica, and the United States (e.g., the equating of the loadings and intercepts of the observed variables across groups), and (c) a test of the equivalence of the means of the latent constructs in 3rd, 4th, and 5th grade boys and girls from Brazil, Jamaica, and the United States (Kline, 1998; Little, 1997).

Results

As described in the *Methods* section, using the CFA framework, we sequentially tested the hypothesized measurement models based on our research questions. The first research question centered on whether the constructs we were attempting to measure were the same across the three countries. Specifically, we were interested in whether strong metric invariance (i.e., invariance of the loadings and intercepts of the manifest indicators) could be established across Brazil, Jamaica and the United States. To answer this question, we examined the measurement model using a nine-group country by grade model (3 countries x 3 grades) and a six-group country by gender model (3 countries x 2 gender).

The initial, freely estimated model, demonstrated acceptable fit for the nine group, country by grade model ($\chi^2(7047, n = 5147) = 12417.21, p = <.001, RMSEA = .0365, NNFI = 0.953, CFI = 0.958$), and the six group model, country by gender ($\chi^2(4698, n = 5147) = 9340.487, p = <.001, RMSEA = .0340, NNFI = 0.965, CFI =$

0.968). Next, following standard procedures to evaluate measurement invariance, we equated the loadings and the intercepts (in sequential steps) and, as shown in Table 3, found no significant changes in fit in either model based on the CFI (i.e., changes in the CFI were less than .01, see Cheung & Rensvold, 2002). These tests indicate that the constructs included in the model (victimization of self, aggression toward others, helpful bystander, helpless bystander, aggressive bystander, adult sanctions for aggression, aggression is legitimate, aggression pays, intervene in a fight) are invariant when measured across the nine groups and six groups, meaning the same constructs are being assessed in 3rd, 4th, and 5th-grade male and female students from Brazil, Jamaica, and the United States. The loading, residual, and squared multiple correlation values for each indicator, along with the variance for each latent construct in the strong metric invariant model, are presented in Tables 4 and 5.

We then evaluated the relationships between the latent means across the nine groups and six groups. Specifically, we evaluated the latent means to determine if they were invariant across the grade and gender groups, and as shown in Table 1 they were not (9 group: $\Delta\chi^2(72, n = 5147) = 1209.23, p < .001$; 6 group: $\Delta\chi^2(45, n = 5147) = 826.55, p < .001$). Further evaluation demonstrated significant differences in the latent means for all of the constructs except for intervene in a fight, within the 6-group gender model, as shown in Table 6.

Latent mean level gender differences and developmental trends were then evaluated among the three countries, as shown in Table 7.

Victimization of Self

No gender differences were reported within any of the three countries; however there were differences for males and females across the three countries. Boys from the U.S. sample reported being targets of aggression significantly less often than Brazilian boys, who reported being targets of aggression significantly less often than Jamaican boys. Girls' reports of being targets of aggression in the Brazil and U.S. samples were equivalent, and girls from both countries reported being targets of aggression significantly less than girls from the Jamaican sample reported.

Significant differences in reports of being targets of aggression occurred between grades within all three countries. Brazilian 3rd and 4th graders reports of being targets of aggression were statistically equivalent, and both grades reported being targets of aggression significantly more than 5th graders from Brazil. Jamaican 3rd and 4th graders reports of being targets of aggression were statistically equivalent, and Jamaican 4th and 5th graders reports of being targets of aggression were statistically equivalent. However, Jamaican 3rd graders reported being targets of aggression significantly more than 5th graders from Jamaica. U.S. 4th and 5th graders reports of being targets of aggression were statistically equivalent, and both grades reported being targets of aggression significantly less than 3rd graders from the U.S.

There were significant differences reported for being targets of aggression among 3rd, 4th, and 5th graders across the three countries. Third graders from the U.S. sample reported being targets of aggression significantly less than Brazilian 3rd graders, who reported being targets of aggression significantly less than Jamaican 3rd graders. Fourth graders from the U.S. sample reported being targets of aggression

significantly less than Brazilian 4th graders, who reported being targets of aggression significantly less than Jamaican 4th graders. Brazilian and U.S. 5th graders reports of being targets of aggression were statistically equivalent, and 5th graders from both countries reported being targets of aggression significantly less than 5th graders from Jamaica.

Aggression Toward Others

No gender differences in aggression toward others were reported within the Jamaican sample, however there were significant gender differences within the Brazil and U.S. samples. Boys reported aggression toward others significantly more than girls reported in both Brazil and Jamaica. Brazilian and U.S. boys reported statistically equivalent levels of aggression toward others, and boys from both countries reported aggression toward others significantly less than boys from the Jamaican sample reported. Girls from the Brazil and U.S. samples reported statistically equivalent levels of aggression toward others, and girls from both countries reported aggression toward others significantly less than girls from the Jamaican sample.

There were significant differences in reports of aggression toward others between grades within the Jamaican and Brazilian sample, but not among grades in the U.S. sample. Brazilian 3rd and 5th graders reports of aggression toward others were statistically equivalent, and Brazilian 4th and 5th graders reports of aggression toward others were statistically equivalent. However, 3rd graders reported aggression toward others significantly more than 4th graders from the Brazilian sample. Jamaican

4th and 5th graders reports of aggression toward others were statistically equivalent, and both grades reported aggression toward others significantly less than 3rd graders from the Jamaican sample.

Significant differences were identified in reports of aggression toward others among 3rd, 4th, and 5th graders across the three countries. However, there were no significant differences between the Brazilian and U.S. samples for 3rd, 4th, or 5th graders. The Brazilian and U.S. samples reported significantly less aggression toward others than reported by the Jamaican sample for all three grades.

Helpful Bystander

No gender differences in helpful bystanding were reported within the Jamaican sample; however there were significant gender differences within the Brazil and U.S. samples. Boys reported helpful bystanding significantly less than reported by girls in both Brazil and Jamaica. There were no differences among the countries for boys or girls reports of helpful bystanding

Significant differences in helpful bystanding were reported among grades within the Jamaican and U.S. sample, but not among grades in the Brazilian sample. Jamaican 3rd and 4th graders reports of helpful bystanding were statistically equivalent, and Jamaican 4th and 5th graders reports of helpful bystanding were statistically equivalent. However, Jamaican 3rd graders reported helpful bystanding significantly more than 5th graders from Jamaica. Third graders from the U.S. sample reported helpful bystanding significantly more than 4th graders from the U.S. sample,

who reported helpful bystanding significantly more than 5th graders from the U.S. sample.

There were significant differences in reports of helpful bystanding among 3rd and 5th graders across the three countries, however there were no significant differences among 4th graders across the three countries. Third graders from the Jamaican and U.S. samples reports of helpful bystanding were statistically equivalent, and 3rd graders from both countries reported helpful bystanding significantly more than 3rd graders in the Brazilian sample. Fifth graders from the Brazilian and Jamaican samples reports of helpful bystanding were statistically equivalent, and 5th graders from both countries reported helpful bystanding significantly more than 5th graders in the US sample.

Helpless Bystander

No gender differences in helpless bystanding were reported within the Brazilian and Jamaican samples; however there was a significant gender difference within the U.S. sample. U.S. boys reported significantly less helpless bystanding than U.S. girls. Boys' reports of helpless bystanding were statistically equivalent for the Brazil and Jamaica samples, and boys from both countries reported helpless bystanding significantly less than boys from the U.S. sample reported. Girls' reports of helpless bystanding were significantly equivalent for the Brazil and Jamaica samples, and girls from both countries reported being bullied significantly less than girls from the U.S. sample reported.

There were significant differences between grades in reports of helpless bystanding within the Brazil and U.S. samples. Brazilian 4th and 5th graders reports of helpless bystanding were statistically equivalent, and both grades reported helpless bystanding significantly less than 3rd graders from the Brazil sample. Third graders from the U.S. sample reported helpless bystanding significantly more than 4th graders from the U.S. sample, who reported helpless bystanding significantly more than 5th graders from the U.S. sample.

Significant differences in helpless bystanding were reported among 3rd, 4th, and 5th graders across the three countries. For all three grades, the Brazilian and Jamaican samples reports of helpless bystanding were statistically equivalent, and reported helpless bystanding significantly less than the U.S. sample across all grades.

Aggressive Bystander

There were no gender differences in reports of aggressive bystanding within the Brazilian and Jamaican samples, however there was a significant gender difference within the U.S. sample. U.S. boys reported significantly more aggressive bystanding than U.S. girls. Boys from the Brazil and Jamaica samples reports of aggressive bystanding were statistically equivalent, and boys from both countries reported aggressive bystanding significantly less than boys from the U.S. sample reported. Girls from the Brazil and Jamaica samples reports of aggressive bystanding were significantly equivalent, and girls from both countries reported aggressive bystanding significantly less than girls from the U.S. sample reported.

Significant differences between grades in reports of aggressive bystanding within the Brazil and U.S. samples were reported. Brazilian 4th and 5th graders reports of aggressive bystanding were statistically equivalent, and both grades reported aggressive bystanding significantly less than 3rd graders from the Brazil sample. U.S. 4th and 5th graders reports of aggressive bystanding were statistically equivalent, and both grades reported aggressive bystanding significantly less than 3rd graders from the U.S. sample.

There were significant differences in reports of aggressive bystanding among 3rd, 4th, and 5th graders across the three countries. For 3rd and 4th graders, the Brazilian and Jamaican samples reports of aggressive bystanding were statistically equivalent, and reported aggressive bystanding significantly less than the U.S. sample across both grades. Fifth graders reports of aggressive bystanding were statistically equivalent between the Brazil and U.S. samples, and they both reported significantly less aggressive bystanding than 5th graders from Jamaica.

Adult Sanctions

There was no gender difference in reports of adult sanctions within the three countries. Boys from the Jamaica and U.S. samples reports of adult sanctions were statistically equivalent, and boys from both countries reported adult sanctions significantly more than boys from the Brazil sample reported. Girls from the Jamaica and U.S. samples reports of adult sanctions were significantly equivalent, and girls from both countries reported adult sanctions significantly more than girls from the Brazil sample reported.

There were significant differences between grades in reports of adult sanctions within all three countries. Brazilian 3rd and 4th graders reports of adult sanctions were statistically equivalent, and both grades reported adult sanctions significantly more than 5th graders from the Brazilian sample. Jamaican 3rd and 5th graders reports of adult sanctions were statistically equivalent, and both grades reported adult sanctions significantly less than 4th graders from the Jamaican sample. Third graders from the U.S. sample reported adult sanctions significantly more than 4th graders from the U.S. sample, who reported adult sanctions significantly more than 5th graders from the U.S. sample.

There were significant differences in reports of adult sanctions among 4th and 5th graders across the three countries. Jamaican and U.S. 4th and 5th graders' reports of adult sanctions were statistically equivalent, and they reported adult sanctions significantly more than the Brazil sample across both grades.

Aggression is Legitimate

There were no gender differences in reports of aggression is legitimate within the Brazilian and Jamaican samples, however there was a significant gender difference within the U.S. sample. U.S. boys reported believing aggression is legitimate significantly more than US girls. Boys in the Brazilian and Jamaican samples reported statistically equivalent beliefs that aggression is legitimate, and both reported believing the aggression was legitimate significantly less than U.S. boys. There were no significant differences between countries for girls.

There were significant differences among grades, in reports of aggression is legitimate within the Brazil and U.S. samples. Brazilian 3rd and 5th graders reports of aggression is legitimate were statistically equivalent, and both grades reported aggression is legitimate significantly more than 4th graders from the Brazilian sample. U.S. 3rd and 4th graders reports of aggression is legitimate were statistically equivalent, and both grades reported aggression is legitimate significantly less than 5th graders from the U.S. sample.

There were significant differences in reports of aggression is legitimate among 4th and 5th graders across the three countries. Fourth graders in the Brazil and Jamaica samples reported levels of aggression is legitimate that were statistically equivalent, and 4th graders in the Jamaica and U.S. samples reported levels of aggression is legitimate that were statistically equivalent. However, Brazilian 4th graders reported aggression is legitimate significantly less than 4th graders from the U.S. sample. Fifth graders in the Brazil and U.S. samples reported levels of aggression is legitimate that were statistically equivalent, and reported significantly more than 5th graders in the Jamaica sample.

Aggression Pays

There was no gender differences within any of the three countries, however there were differences for males and females across the three countries. Boys in the Brazil and Jamaica samples reported levels of aggression pays that were statistically equivalent, and boys in the Jamaica and U.S. samples reported levels of aggression pays that were statistically equivalent. However, boys from the Brazil sample

reported aggression pays significantly less than boys from the U.S. sample. The same trend was seen in girls. Girls in the Brazil and Jamaica samples reported levels of aggression pays that were statistically equivalent, and girls in the Jamaica and U.S. samples reported levels of aggression pays that were statistically equivalent. However, girls from the Brazil sample reported aggression pays significantly less than girls from the U.S. sample.

There were no significant differences among grades in reports of aggression pays within the Brazilian and Jamaican samples. Significant differences among grades were found in reports of aggression pays within the U.S. sample. U.S. 3rd and 4th graders reports of bullying pays were statistically equivalent and both grades reported aggression pays significantly more than 5th graders from the U.S. sample.

There were significant differences in reports of aggression pays among 4th and 5th graders across the three countries. Fourth graders in the Brazil and Jamaica samples reported levels of aggression pays that were statistically equivalent, and fourth graders in the Jamaica and U.S. samples reported levels of aggression pays that were statistically equivalent. However, 4th graders from the Brazil sample reported aggression pays significantly less than 4th graders from the U.S. sample. The same trend was seen in 5th graders. Fifth graders in the Brazil and Jamaica samples reported levels of aggression pays that were statistically equivalent, and fifth graders in the Jamaica and U.S. samples reported levels of aggression pays that were statistically equivalent. However, 5th graders from the Brazil sample reported aggression pays significantly less than 5th graders from the U.S. sample.

Intervene in Aggression

No gender differences in attitudes towards intervening in aggression within the three countries, or across the three countries, were reported.

There were significant differences among grades, in attitudes towards intervening in aggression within the three countries. Brazilian 4th and 5th graders attitudes towards intervening in aggression were statistically equivalent, and both grades reported beliefs that others should intervene in aggression significantly more than 3rd graders from Brazil. Jamaican 3rd and 5th graders attitudes towards intervening in aggression were statistically equivalent, and both grades reported beliefs that others should intervene in aggression significantly less than 4th graders from the Jamaica sample. U.S. 3rd and 4th graders attitudes towards intervening in aggression were statistically equivalent, and U.S. 4th and 5th graders attitudes towards intervening in aggression were statistically equivalent. However, U.S. 3rd graders reported beliefs that others should intervene in aggression significantly more than 5th graders from the U.S. sample.

There were significant differences attitudes towards intervening in aggression among 3rd, 4th, and 5th graders across the three countries. Third graders in the Jamaica and U.S. samples reported attitudes towards intervening in aggression that were statistically equivalent, and both reported beliefs that others should intervene in aggression significantly less than Brazilian 3rd graders. Fourth graders in the Brazil and U.S. samples reported levels of intervening in aggression that were statistically equivalent, and both reported beliefs that others should intervene in aggression

significantly more than Jamaican 4th graders. Fifth graders in the Brazil and Jamaica samples reported levels of intervening in aggression that were statistically equivalent, and fifth graders in the Jamaica and U.S. samples reported levels of intervening in aggression that were statistically equivalent. However, 5th graders from the Brazil sample reported beliefs that others should intervene in aggression significantly more than 5th graders from the U.S. sample.

Discussion

The purpose of this study was to examine the cross-cultural validity of the PEQ and to identify gender differences and developmental trends in the nine PEQ constructs in the United States, Brazil, and Jamaica. Our first step was to evaluate the construct measurement equivalence of the nine latent constructs we measured (victimization of self, aggression toward of others, helpful bystander, helpless bystander, aggressive bystander, adult sanctions for aggression, aggression is legitimate, aggression pays, and intervene in a fight) in 3rd, 4th, and 5th grade students from Brazil, Jamaica, and the United States. For many of these constructs, this represented their first evaluation using students from Brazil and Jamaica. Ensuring that the loadings and intercepts of each of the latent constructs were equivalent provided a basis to assume that, because the constructs are defined in the same operational manner in each group, the construct's mean-level differences can be compared meaningfully and with quantitative precision (Little, 1997). The CFA analyses indicate that participant's responses on the PEQ reflect similar underlying constructs despite differences in language and culture, supporting the use of the PEQ

for both boys and girls in 3rd-5th grade, from Brazil, Jamaica, and the U.S.

Examination of latent means for the 9 constructs measured by the PEQ from elementary through high school reveal several potentially important differences across countries and gender, as well as developmental trends.

As hypothesized, across gender and grade level, Jamaican participants reported being victimized and behaving aggressively toward others more than Brazilian and U.S. participants. Jamaican children's elevated reports of aggression and victimization may have ties to the use of corporal punishment in Jamaica. These elevations in aggression and victimization may reflect learned behavior from exposure to aggressive behavior and support for aggressive behavior in the home, school, and/or community (Weaver, Borkowski, & Whitman, 2008).

Brazilian children did not report higher levels of aggression toward others than U.S. children in any of the groups. However, for boys, 3rd-graders and 4th-graders, Brazilian children reported higher levels of victimization of self than U.S. children. This suggests a similar amount of self-reported aggressive actions by children for both samples, however, boys in the Brazilian sample tended to see themselves as frequently victimized by other students.

As hypothesized, Brazilian and U.S. boys reported aggression toward others more often than did girls from their respective country. In contrast, there were no gender differences for any of the three countries for victimization of self. This suggests that boys and girls are equally likely to be the targets of aggression in each country, although boys are more often the perpetrators in Brazil and the U.S.

Jamaican girls did not differ from Jamaican boys on frequency of active aggression toward peers. In regards to Brazil and the U.S., this follows prior research findings that boys are more physically aggressive toward others, while gender differences in victimization are less pronounced (Nansel et al., 2001). However, this is not the case for girls in the Jamaican sample, who were more aggressive than girls from Brazil and the United States. In fact girls from the Jamaican sample are just as aggressive towards others as Jamaican boys. Future research should examine why Jamaican children do not show the same gender differences in aggression as has been found in the majority of other research. Such research may lead to aggression in girls being a focus of violence reduction in Jamaican schools.

Consistent with previous research findings (Smith, Madsen, & Moody, 1999; Whitney & Smith, 1993), reports from all three counties suggest a developmental trend of fewer experiences being victimized as grade level increased. The same trend, a decrease as grade level increases, was found for aggression towards others in Brazilian and Jamaican participants.

Consistent with the limited previous research available, helpful bystanding had a tendency to decline with age across the three countries. However, aggressive bystanding and helpless bystanding also declined with age for Brazilian and U.S. participants, but not for the Jamaican children. This suggests that as Brazilian and U.S. children get older they are less encouraging of the victimization of others. In regards to Jamaica, where helpful bystanding declined with age and aggressive and

helpless bystanding did not; the absence of this trend toward decreased aggressive bystanding may reflect an environment that fosters violence and aggression.

Contrary to what was hypothesized, variability found across countries for normative attitudes toward aggression can be mostly attributed to higher reports from the U.S. sample in aggression is legitimate and aggression pays. Specifically, boys from the U.S. reported aggression is legitimate more than their respective female counterparts and more than boys from Brazil and Jamaica. Stress from pervasive poverty may possibly explain this discrepancy. Even though Brazilian and Jamaican children may be exposed to greater violence and learn to behave aggressively through observation and imitation, stress from pervasive poverty may cause little value to be seen in these behaviors because of their inability to ease stresses.

Limitations of this study include the use of self-reports, which limits the results to perceptions of the reporters' experiences. Ideally, these constructs would have been measured along with an additional reporter's perception, such as peers or teachers. Another limitation relates to the restricted SES levels in all three of the present samples and the use of schools in a single community for all three samples. The public schools from which the samples were drawn represented primarily lower income families. The developmental trends reported here may not generalize to children in wealthier districts.

This study demonstrated measurement equivalence for the PEQ constructs for Brazil and Jamaica. Finding measurement equivalence is essential to further

evaluating the interrelations among these constructs, and provides a basis for future research comparing and assessing these constructs in Brazilian and Jamaican students. Specifically, interrelations among the variances and correlations of these constructs can be evaluated to examine how the constructs work together to increase/decrease bullying behavior, and guide researchers toward identifying structural models to further evaluate the constructs in Jamaica and Brazil. The identification and evaluation of structural models can be used to adapt, enhance, and apply bullying prevention program that address the constructs that most influence bullying behaviors.

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Table 1: Gender and Grade Breakdown by Country

Brazil	3 rd Grade	4 th Grade	5 th Grade	Total
Males	36	58	56	150
Females	36	52	55	143
Total	72	110	111	293

Jamaica	3 rd Grade	4 th Grade	5 th Grade	Total
Males	54	49	61	164
Females	41	47	57	145
Total	95	96	118	309

US	3 rd Grade	4 th Grade	5 th Grade	Total
Males	780	806	738	2324
Females	745	749	727	2221
Total	1525	1555	1465	4545

Table 2

Items for Scales Measuring Victimization of Self and Aggression Toward Others

Victimization of Self

A kid teased or made fun of me in a mean way.

A kid said he or she was going to hurt me or beat me up.

A kid ignored me just to hurt my feelings.

A kid told lies about me so other kids wouldn't like me.

A kid hit, kicked, or pushed me in a mean way.

A kid grabbed, held, or touched me in a way I didn't like.

Some kids left me out of things just to be mean to me.

A kid chased me like he or she was really trying to hurt me.

Some kids "ganged up" against me and were mean to me.

Aggression Toward Others

I teased or made fun of a kid in a mean way.

I threatened to hurt or beat up another kid.

I ignored a kid just to hurt his or her feelings.

I told lies about a kid so other kids would not like him or her.

I hit, kicked, or pushed another kid in a mean way.

I grabbed, held, or touched a kid in a way he or she didn't like.

I helped leave a kid out of things just to be mean to him or her.

I chased a kid to try to hurt him or her.

Some kids and I "ganged up" and were mean to another kid.

Table 2 continued

Items for Scales Measuring Bystander Beliefs

Helpful Bystander

I feel upset when I see a kid left out of things on purpose.

I try to stop it when I see a kid get bullied or picked on.

I feel bad when I see a kid get bullied or picked on.

I try to help when I see a kid get left out of things on purpose.

It bothers me a lot to see a kid get bullied or picked on.

I tell a teacher when I see a kid get bullied or picked on.

Helpless Bystander

I feel too afraid to help when I see a kid get bullied or picked on.

I don't know what to do to help when I see a kid bullied or picked on.

Aggressive Bystander

I join in or cheer when I see a kid get bullied or picked on.

I get a thrill when I see a kid get bullied or picked on.

Adult Sanctions for Aggression

Adults stop kids who pick on other kids.

Kids get in a lot of trouble if they pick on someone.

Adults try to stop bullying at school.

Table 2 continued

Items for Scales Measuring Normative Beliefs about Attitudes

Aggression is Legitimate

It's okay for kids to fight each other.

Kids should be ready to fight anyone who picks on them.

Kids sometimes deserve to get pushed around by other kids.

When two kids are fighting, it's okay to cheer for them.

When two kids are fighting, it's all right to stand there and watch.

Aggression Pays

Bullies get what they want from other kids.

Kids get respect when they boss other kids around.

It makes a kid feel big and tough to be a bully.

Kids can make other kids do what they want by yelling at them.

Intervene in a Fight

When two kids are fighting, other kids should stop them.

When a kid is getting picked on, other kids should try to stop it.

Table 3
Fit Indices for the Nested Sequence in the 9 Group (grade) Confirmatory Factor Analysis

Model	χ^2	df	p	$\Delta\chi^2$	Δdf	p	RMSEA	RMSEA 90% CI	NNFI	CFI	Constraint Tenable
Configural Invariance	12417.21	7047	<.001	---	---	---	.0365	.0355-.0376	0.953	0.958	---
Loading Invariance ¹	13005.26	7311	<.001	---	---	---	.0369	.0359-.0380	0.952	0.955	Yes
Intercept Invariance ¹	14963.24	7575	<.001	---	---	---	.0413	.0404-.0423	0.945	0.946	Yes
Latent Mean Invariance	16172.47	7647	<.001	1209.23	72	<.001	.0442	.0432-.0451	0.940	0.941	No

¹ Evaluated with CFI change

² Evaluated with the χ^2 Difference Test

Note. Each nested model contains its constraints, plus the constraints of all previous, tenable models.

Table 3 continued
Fit Indices for the Nested Sequence in the 6 Group (gender) Confirmatory Factor Analysis

Model	χ^2	df	p	$\Delta\chi^2$	Δdf	p	RMSEA	RMSEA 90% CI	NNFI	CFI	Constraint Tenable
Configural Invariance	9340.49	4698	<.001	---	---	---	.0340	.0330-.0350	0.965	0.968	---
Loading Invariance ¹	9790.80	4863	<.001	---	---	---	.0344	.0334-.0354	0.964	0.966	Yes
Intercept Invariance ¹	11874.51	5028	<.001	---	---	---	.0399	.0389-.0408	0.955	0.956	Yes
Latent Mean Invariance	12803.57	5073	<.001	929.06	45	<.001	.0422	.0413-.0431	0.952	0.953	No

¹ Evaluated with CFI change (<.01)

² Evaluated with the χ^2 Difference Test

Note. Each nested model contains its constraints, plus the constraints of all previous, tenable models.

Table 4
9-Group Loading Values, Residuals, and R² Values for Each Indicator from the Strong Metric Invariance Model

	Standardized	B3	B4	B5	J3	J4	J5	US3	US4	US5									
Indicator	Loading ^a	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²									
Victimization of Self: Estimated Latent Variance (B3 =.19; B4 =.33; B5 =.23; J3 =.24; J4 =.21; J5 =.25; US3 =.54; US4 =.48; US5 =.38)																			
vicslf1	0.38	0.86	0.14	0.81	0.19	0.85	0.15	0.88	0.12	0.83	0.17	0.79	0.21	0.65	0.35	0.67	0.34	0.71	0.29
vicslf2	0.38	0.86	0.14	0.71	0.29	0.73	0.27	0.78	0.22	0.81	0.19	0.84	0.16	0.60	0.40	0.60	0.40	0.62	0.38
vicslf3	0.25	0.94	0.06	0.88	0.12	0.90	0.10	0.90	0.10	0.90	0.10	0.91	0.09	0.74	0.26	0.70	0.30	0.75	0.25
vicslf4	0.37	0.86	0.14	0.79	0.21	0.77	0.23	0.82	0.18	0.86	0.14	0.81	0.19	0.57	0.43	0.59	0.41	0.64	0.36
vicslf5	0.34	0.88	0.12	0.71	0.36	0.74	0.26	0.84	0.16	0.84	0.16	0.78	0.22	0.52	0.48	0.51	0.49	0.55	0.45
vicslf6	0.31	0.90	0.10	0.88	0.12	0.91	0.09	0.91	0.09	0.92	0.08	0.87	0.13	0.73	0.27	0.65	0.35	0.70	0.30
vicslf7	0.36	0.87	0.13	0.77	0.24	0.81	0.19	0.83	0.17	0.85	0.16	0.78	0.22	0.62	0.38	0.61	0.39	0.63	0.37
vicslf8	0.33	0.89	0.11	0.76	0.24	0.66	0.34	0.90	0.10	0.91	0.10	0.88	0.12	0.62	0.39	0.56	0.44	0.58	0.43
vicslf9	0.38	0.86	0.14	0.74	0.26	0.62	0.38	0.83	0.17	0.87	0.13	0.83	0.17	0.57	0.44	0.53	0.47	0.52	0.48
Aggression Toward Others: Estimated Latent Variance (B3 =.34; B4 =.10; B5 =.17; J3 =.45; J4 =.36; J5 =.36; US3 =.42; US4 =.34; US5 = 0.32)																			
aggoth1	0.62	0.62	0.38	0.81	0.20	0.77	0.23	0.76	0.30	0.67	0.33	0.68	0.32	0.59	0.41	0.62	0.38	0.68	0.32
aggoth2	0.70	0.52	0.48	0.90	0.10	0.74	0.26	0.66	0.34	0.64	0.36	0.68	0.32	0.44	0.56	0.47	0.54	0.53	0.47
aggoth3	0.42	0.83	0.17	0.89	0.11	0.80	0.20	0.77	0.23	0.79	0.21	0.74	0.26	0.67	0.33	0.68	0.32	0.73	0.27
aggoth4	0.55	0.70	0.30	0.89	0.11	0.77	0.23	0.75	0.25	0.78	0.22	0.74	0.26	0.57	0.43	0.60	0.40	0.65	0.35
aggoth5	0.67	0.55	0.45	0.79	0.21	0.64	0.36	0.56	0.44	0.59	0.41	0.59	0.42	0.43	0.57	0.46	0.54	0.53	0.47
aggoth6	0.49	0.76	0.24	0.93	0.07	0.85	0.15	0.80	0.20	0.87	0.13	0.79	0.21	0.66	0.34	0.61	0.39	0.67	0.34
aggoth7	0.50	0.75	0.25	0.90	0.16	0.77	0.23	0.76	0.25	0.73	0.27	0.73	0.27	0.57	0.43	0.60	0.40	0.63	0.37
aggoth8	0.71	0.50	0.50	0.68	0.32	0.66	0.34	0.71	0.30	0.57	0.44	0.67	0.33	0.43	0.57	0.46	0.54	0.49	0.51
aggoth9	0.52	0.73	0.27	0.75	0.26	0.68	0.32	0.71	0.29	0.71	0.29	0.67	0.33	0.51	0.49	0.51	0.49	0.51	0.49
Helpful Bystanding: Estimated Latent Variance (B3 =.33; B4 =.43; B5 =.35; J3 =.30; J4 =.31; J5 =.30; US3 =.49; US4 =.49; US5 =.45)																			
hlpby1	0.46	0.79	0.21	0.79	0.21	0.82	0.18	0.81	0.19	0.74	0.26	0.75	0.25	0.59	0.41	0.57	0.43	0.55	0.45
hlpby2	0.39	0.84	0.16	0.80	0.20	0.81	0.19	0.77	0.24	0.80	0.20	0.76	0.24	0.71	0.30	0.66	0.34	0.68	0.32
hlpby3	0.50	0.75	0.25	0.65	0.36	0.61	0.39	0.74	0.26	0.62	0.38	0.67	0.33	0.56	0.44	0.51	0.49	0.52	0.48
hlpby4	0.49	0.76	0.24	0.76	0.24	0.77	0.23	0.79	0.21	0.70	0.30	0.76	0.24	0.63	0.37	0.59	0.41	0.58	0.42
hlpby5	0.55	0.70	0.30	0.56	0.44	0.63	0.37	0.60	0.40	0.67	0.33	0.58	0.42	0.47	0.53	0.43	0.58	0.44	0.56
hlpby6	0.49	0.77	0.24	0.74	0.26	0.79	0.21	0.75	0.25	0.76	0.24	0.78	0.23	0.67	0.33	0.65	0.35	0.66	0.34

Table 4 Continued

Indicator	Standardized	B3		B4		B5		J3		J4		J5		US3		US4		US5	
	Loading ^a	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²
<u>Helpless Bystanding:</u> Estimated Latent Variance (B3 =.01; B4 =.17; B5 =.20; J3 =.26; J4 =.08; J5 =.08; US3 =.27; US4 =.27; US5 =.25)																			
hlesby1	0.11	0.99	0.01	0.84	0.17	0.78	0.22	0.75	0.25	0.89	0.11	0.89	0.11	0.73	0.28	0.68	0.32	0.64	0.36
hlesby2	0.08	0.99	0.01	0.87	0.13	0.84	0.16	0.83	0.17	0.93	0.07	0.93	0.07	0.82	0.18	0.79	0.21	0.79	0.21
<u>Aggressive Bystanding:</u> Estimated Latent Variance (B3 =.27; B4 =.24; B5 =.21; J3 =.23; J4 =.07; J5 =.09; US3 =.28; US4 =.27; US5 =.21)																			
aggby1	0.47	0.78	0.22	0.78	0.22	0.80	0.20	0.69	0.31	0.92	0.08	0.90	0.10	0.68	0.32	0.62	0.39	0.66	0.34
aggby2	0.42	0.83	0.17	0.80	0.20	0.78	0.22	0.81	0.19	0.93	0.07	0.91	0.09	0.76	0.24	0.71	0.29	0.75	0.25
<u>Adult Sanctions:</u> Estimated Latent Variance (B3 =.38; B4 =.35; B5 =.37; J3 =.23; J4 =.09; J5 =.09; US3 =.35; US4 =.39; US5 =.39)																			
adsan1	0.47	0.78	0.22	0.76	0.24	0.73	0.28	0.83	0.17	0.89	0.11	0.91	0.09	0.65	0.35	0.60	0.40	0.61	0.39
adsan2	0.47	0.78	0.22	0.82	0.18	0.77	0.24	0.81	0.19	0.91	0.09	0.93	0.07	0.71	0.29	0.70	0.30	0.69	0.31
adsan3	0.59	0.66	0.35	0.66	0.34	0.71	0.29	0.78	0.22	0.89	0.11	0.92	0.08	0.63	0.37	0.58	0.42	0.61	0.39
Indicator	Standardized	B3		B4		B5		J3		J4		J5		US3		US4		US5	
	Loading ^a	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²
<u>Aggression is Legitimate:</u> Estimated Latent Variance (B3 =.05; B4 =.02; B5 =.25; J3 =.20; J4 =.23; J5 =.11; US3 =.32; US4 =.31; US5 =.39)																			
aggleg1	0.32	0.90	0.10	0.99	0.01	0.89	0.11	0.67	0.33	0.67	0.33	0.81	0.19	0.58	0.42	0.60	0.40	0.64	0.36
aggleg2	0.21	0.96	0.04	0.98	0.02	0.77	0.23	0.65	0.35	0.74	0.26	0.89	0.11	0.70	0.30	0.72	0.28	0.67	0.33
aggleg3	0.25	0.94	0.06	0.96	0.04	0.74	0.26	0.73	0.27	0.78	0.22	0.90	0.10	0.72	0.28	0.70	0.30	0.66	0.34
aggleg4	0.20	0.96	0.04	0.98	0.02	0.63	0.37	0.68	0.32	0.62	0.38	0.88	0.12	0.52	0.49	0.53	0.47	0.49	0.51
aggleg5	0.28	0.92	0.08	0.93	0.07	0.67	0.33	0.68	0.32	0.56	0.44	0.77	0.23	0.55	0.45	0.52	0.48	0.50	0.50
<u>Aggression Pays:</u> Estimated Latent Variance (B3 =.20; B4 =.22; B5 =.25; J3 =.18; J4 =.30; J5 =.27; US3 =.31; US4 =.37; US5 =.36)																			
aggpay1	0.40	0.84	0.16	0.77	0.23	0.75	0.25	0.86	0.15	0.78	0.22	0.82	0.18	0.76	0.24	0.69	0.31	0.72	0.28
aggpay2	0.40	0.84	0.16	0.68	0.32	0.75	0.25	0.78	0.22	0.67	0.33	0.74	0.26	0.68	0.32	0.62	0.38	0.66	0.34
aggpay3	0.41	0.83	0.17	0.81	0.19	0.78	0.22	0.86	0.14	0.74	0.27	0.78	0.22	0.83	0.18	0.79	0.21	0.79	0.21
aggpay4	0.52	0.73	0.27	0.70	0.30	0.59	0.41	0.81	0.19	0.68	0.32	0.71	0.29	0.66	0.35	0.58	0.42	0.62	0.38
<u>Intervene in a Fight:</u> Estimated Latent Variance (B3 =.33; B4 =.41; B5 =.87; J3 =.19; J4 =.42; J5 =.50; US3 =.59; US4 =.65; US5 =.58)																			
intrvn1	0.50	0.75	0.25	0.59	0.41	0.94	0.06	0.85	0.15	0.65	0.35	0.62	0.38	0.36	0.44	0.50	0.50	0.57	0.43
intrvn2	0.49	0.76	0.24	0.62	0.38	-0.05	1.05	0.84	0.16	0.57	0.43	0.69	0.31	0.58	0.42	0.52	0.48	0.56	0.44

Table 5
6-Group Loading Values, Residuals, and R² Values for Each Indicator from the Strong Metric Invariance Model

	Standardized	BM		BF		JM		JF		USM		USF	
Indicator	Loading ^a	Theta R ²		Theta R ²		Theta R ²		Theta R ²		Theta R ²		Theta R ²	
<u>Victimization of Self:</u> Estimated Latent Variance (BM = .30; BF = .22; JM = .25; JF = .22; USM = .51; USF = .43)													
vicslf1	0.46	0.79	0.21	0.87	0.13	0.85	0.16	0.84	0.16	0.65	0.35	0.70	0.30
vicslf2	0.50	0.75	0.25	0.75	0.25	0.80	0.20	0.84	0.16	0.60	0.40	0.61	0.40
vicslf3	0.34	0.88	0.12	0.92	0.08	0.88	0.12	0.92	0.08	0.70	0.30	0.76	0.24
vicslf4	0.52	0.73	0.27	0.86	0.14	0.82	0.18	0.84	0.17	0.58	0.42	0.61	0.39
vicslf5	0.50	0.75	0.25	0.82	0.18	0.82	0.18	0.81	0.19	0.53	0.47	0.51	0.49
vicslf6	0.34	0.89	0.11	0.90	0.11	0.89	0.11	0.90	0.10	0.69	0.31	0.69	0.31
vicslf7	0.49	0.76	0.24	0.86	0.14	0.82	0.18	0.82	0.18	0.59	0.41	0.65	0.38
vicslf8	0.46	0.79	0.21	0.78	0.22	0.89	0.11	0.91	0.09	0.60	0.40	0.56	0.44
vicslf9	0.51	0.74	0.26	0.76	0.24	0.81	0.19	0.87	0.13	0.53	0.47	0.54	0.46
<hr/>													
	Standardized	BM		BF		JM		JF		USM		USF	
Indicator	Loading ^a	Theta R ²		Theta R ²		Theta R ²		Theta R ²		Theta R ²		Theta R ²	
<u>Aggression Toward Others:</u> Estimated Latent Variance (BM = .28; BF = .11; JM = .43; JF = .38; USM = .42; USF = .29)													
aggoth1	0.53	0.72	0.28	0.78	0.22	0.68	0.32	0.66	0.34	0.61	0.39	0.65	0.35
aggoth2	0.52	0.73	0.27	0.83	0.18	0.65	0.35	0.67	0.33	0.50	0.51	0.47	0.53
aggoth3	0.45	0.80	0.20	0.89	0.11	0.74	0.27	0.78	0.22	0.68	0.32	0.71	0.29
aggoth4	0.51	0.74	0.26	0.87	0.13	0.74	0.26	0.74	0.26	0.60	0.40	0.63	0.37
aggoth5	0.61	0.63	0.37	0.67	0.33	0.53	0.47	0.61	0.39	0.46	0.54	0.49	0.51
aggoth6	0.39	0.85	0.15	0.88	0.12	0.82	0.18	0.82	0.18	0.66	0.34	0.65	0.35
aggoth7	0.47	0.78	0.22	0.87	0.13	0.71	0.29	0.74	0.26	0.59	0.42	0.62	0.38
aggoth8	0.63	0.61	0.39	0.61	0.39	0.62	0.38	0.69	0.32	0.47	0.53	0.47	0.53
aggoth9	0.56	0.69	0.31	0.79	0.22	0.68	0.32	0.70	0.30	0.51	0.50	0.52	0.48

Table 5 Continued

Standardized	BM	BF		JM		JF		USM		USF			
Indicator	Loading ^a	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²	Theta	R ²		
<u>Helpful Bystanding:</u> Estimated Latent Variance (BM = .40; BF = .34; JM = .31; JF = .28; USM = .51; USF = .48)													
hlpby1	0.46	0.79	0.21	0.81	0.19	0.75	0.25	0.79	0.21	0.55	0.45	0.57	0.43
hlpby2	0.48	0.77	0.23	0.85	0.15	0.78	0.22	0.79	0.21	0.68	0.33	0.67	0.33
hlpby3	0.58	0.66	0.34	0.68	0.32	0.67	0.33	0.69	0.31	0.52	0.48	0.52	0.48
hlpby4	0.52	0.73	0.27	0.80	0.20	0.75	0.25	0.76	0.24	0.59	0.41	0.59	0.41
hlpby5	0.63	0.60	0.40	0.65	0.35	0.62	0.38	0.64	0.36	0.43	0.57	0.43	0.57
hlpby6	0.51	0.74	0.26	0.78	0.22	0.77	0.23	0.77	0.23	0.66	0.35	0.65	0.35
<u>Helpless Bystanding:</u> Estimated Latent Variance (BM = .03; BF = .27; JM = .11; JF = .18; USM = .25; USF = .28)													
hlesby1	0.17	0.97	0.03	0.76	0.24	0.87	0.14	0.80	0.20	0.70	0.31	0.68	0.32
hlesby2	0.13	0.98	0.02	0.79	0.21	0.91	0.09	0.85	0.15	0.82	0.18	0.79	0.21
<u>Aggressive Bystanding:</u> Estimated Latent Variance (BM = .25; BF = .25; JM = .14; JF = .11; USM = .29; USF = .22)													
aggby1	0.45	0.78	0.20	0.75	0.25	0.85	0.15	0.86	0.14	0.63	0.37	0.68	0.32
aggby2	0.46	0.79	0.21	0.81	0.19	0.88	0.12	0.89	0.11	0.72	0.28	0.77	0.23
<u>Adult Sanctions:</u> Estimated Latent Variance (BM = .31; BF = .47; JM = .22; JF = .07; USM = .39; USF = .41)													
adsan1	0.47	0.78	0.22	0.70	0.30	0.81	0.19	0.93	0.07	0.63	0.37	0.59	0.41
adsan2	0.45	0.80	0.20	0.76	0.24	0.79	0.21	0.94	0.06	0.70	0.30	0.68	0.32
adsan3	0.52	0.73	0.27	0.63	0.37	0.80	0.21	0.93	0.07	0.61	0.39	0.57	0.43
<u>Aggression is Legitimate:</u> Estimated Latent Variance (BM = .13; BF = .12; JM = .12; JF = .23; USM = .40; USF = .27)													
aggleg1	0.29	0.92	0.08	0.92	0.08	0.81	0.19	0.63	0.37	0.61	0.40	0.62	0.38
aggleg2	0.35	0.88	0.12	0.86	0.14	0.84	0.16	0.75	0.26	0.68	0.32	0.72	0.29
aggleg3	0.38	0.86	0.14	0.80	0.20	0.89	0.11	0.74	0.26	0.68	0.32	0.72	0.28
aggleg4	0.36	0.87	0.13	0.80	0.21	0.82	0.18	0.70	0.30	0.49	0.51	0.55	0.45
aggleg5	0.51	0.74	0.26	0.80	0.20	0.75	0.26	0.61	0.39	0.49	0.51	0.57	0.43

Table 5 Continued

Standardized	BM	BF		JM		JF		USM		USF			
Indicator	Loading ^a	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²	Theta R ²		
<u>Aggression is Pays:</u> Estimated Latent Variance (BM = .22; BF = .23; JM = .25; JF = .25; USM = .37; USF = .32)													
aggpay1	0.44	0.80	0.20	0.78	0.22	0.80	0.20	0.83	0.17	0.71	0.29	0.74	0.26
aggpay2	0.46	0.79	0.21	0.68	0.32	0.74	0.26	0.69	0.31	0.65	0.35	0.65	0.35
aggpay3	0.43	0.82	0.18	0.80	0.20	0.78	0.22	0.80	0.20	0.79	0.21	0.81	0.19
aggpay4	0.55	0.70	0.30	0.66	0.34	0.76	0.24	0.71	0.29	0.60	0.40	0.63	0.37
<u>Intervene in a Fight:</u> Estimated Latent Variance (BM = .68; BF = .45; JM = .19; JF = .61; USM = .59; USF = .63)													
intrvn1	0.25	0.94	0.06	0.66	0.34	0.84	0.16	0.50	0.50	0.55	0.45	0.52	0.48
intrvn2	0.81	0.34	0.66	0.60	0.40	0.86	0.14	0.53	0.47	0.58	0.42	0.55	0.46

Table 6

Results for 9-group Latent Mean Level Differences

Constructs	χ^2	df	p	$\Delta\chi^2$	Δdf	p	Groups Differences
Intercept Invariance (Baseline Model)	14963.24	7575	<.001	---	---	---	-----
Victimization of Self	15388.89	7583	<.001	425.65	8	<.001	Yes
Aggression Toward others	15247.66	7583	<.001	284.42	8	<.001	Yes
Helpful Bystanding	15246.58	7583	<.001	283.34	8	<.001	Yes
Helpless Bystanding	15201.90	7583	<.001	238.66	8	<.001	Yes
Aggressive Bystanding	15138.43	7583	<.001	175.19	8	<.001	Yes
Adult Sanctions	15261.11	7583	<.001	297.87	8	<.001	Yes
Aggression Legitimate	15119.81	7583	<.001	156.57	8	<.001	Yes
Aggression Pays	15048.32	7583	<.001	85.08	8	<.001	Yes
Intervene in Fight	15027.51	7583	<.001	64.27	8	<.001	Yes

Table 6 Continued
Results for 6-group Latent Mean Level Differences

Constructs	χ^2	<i>df</i>	<i>p</i>	$\Delta \chi^2$	Δdf	<i>p</i>	Groups Differences
Intercept Invariance (Baseline Model)	11874.51	5028	<.001	---	---	---	-----
Victimization of Self	12174.22	5033	<.001	299.72	5	<.001	Yes
Aggression toward Others	12285.86	5033	<.001	411.35	5	<.001	Yes
Helpful Bystanding	11957.86	5033	<.001	83.35	5	<.001	Yes
Helpless Bystanding	12122.23	5033	<.001	247.72	5	<.001	Yes
Aggressive Bystanding	12040.89	5033	<.001	166.38	5	<.001	Yes
Adult Sanctions	11954.43	5033	<.001	79.92	5	<.001	Yes
Aggression is Legitimate	12048.59	5033	<.001	174.09	5	<.001	Yes
Aggression Pays	11933.93	5033	<.001	59.42	5	<.001	Yes
Intervene in Fight	11879.978	5033	<.001	5.47	5	.361	No

Table 7: Results for Latent Means and Group differences

Victimization of Self

	Brazil	Jamaica	US	Sig. diff x Country
Male	1.91	2.36	1.83	US < B < J
Female	1.78	2.25	1.76	B = US < J
Sig. diff. x Gender	M = F	M = F	M = F	

	Brazil	Jamaica	US	Sig. diff x Country
3 rd Grade	2.02	2.38	1.89	US < B < J
4 th Grade	1.93	2.34	1.78	US < B < J
5 th Grade	1.65	2.22	1.72	B = US < J
Sig. diff. x Grade	3 = 4 > 5	3 = 4; 4 = 5; 3 > 5	3 > 4 = 5	

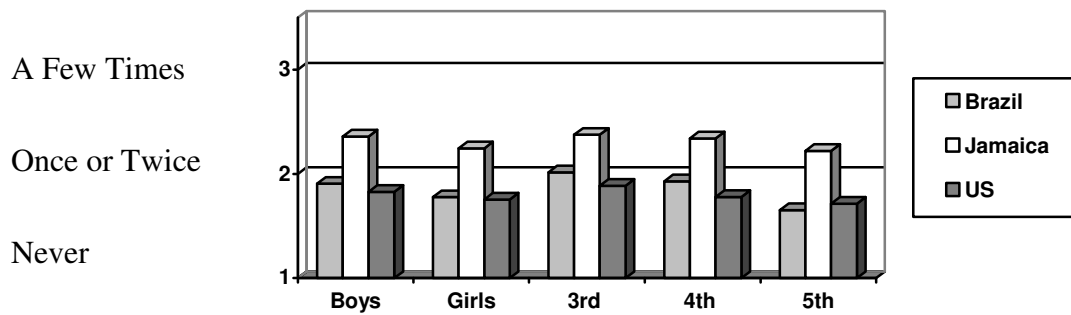


Table7 Continued

Aggression Toward Others

	Brazil	Jamaica	US	Sig. diff x Country
Male	1.52	2.02	1.56	B = US < J
Female	1.28	1.89	1.40	B = US < J
Sig. diff. x Gender	M > F	M = F	M > F	

	Brazil	Jamaica	US	Sig. diff x Country
3 rd Grade	1.54	2.19	1.47	B = US < J
4 th Grade	1.32	1.84	1.46	B = US < J
5 th Grade	1.38	1.85	1.50	B = US < J
Sig. diff. x Grade	3 > 4; 3 = 5; 4 = 5	3 > 4 = 5	3 = 4 = 5	

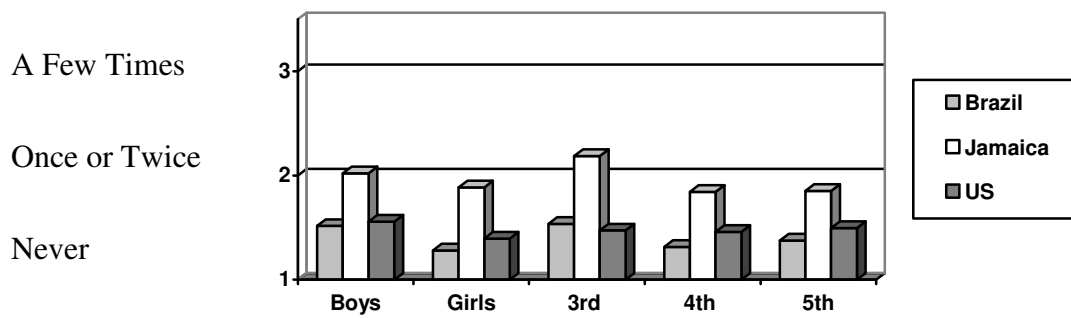


Table7 Continued

Helpful Bystanding

	Brazil	Jamaica	US	Sig. diff x Country
Male	2.55	2.69	2.57	B = J = US
Female	2.70	2.75	2.72	B = J = US
Sig. diff. x Gender	M < F	M = F	M < F	

	Brazil	Jamaica	US	Sig. diff x Country
3 rd Grade	2.52	2.81	2.84	B < J = US
4 th Grade	2.61	2.70	2.65	B = J = US
5 th Grade	2.71	2.68	2.43	B = J > US
Sig. diff. x Grade	3 = 4 = 5	3 = 4; 4 = 5; 3 > 5	3 > 4 > 5	

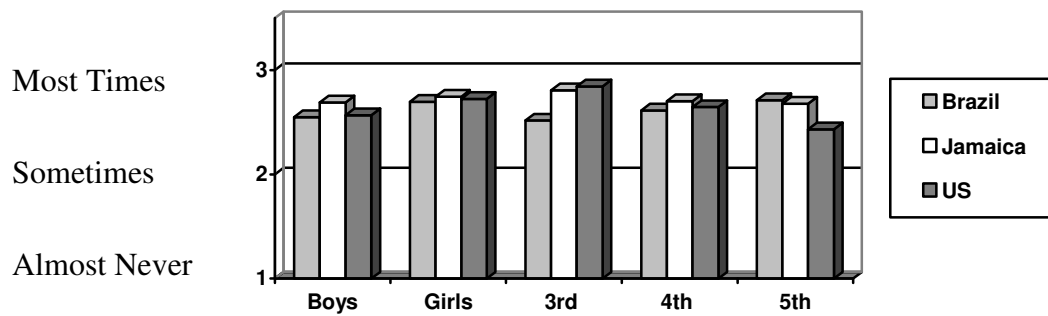


Table7 Continued

Helpless Bystanding

	Brazil	Jamaica	US	Sig. diff x Country
Male	2.13	2.12	1.80	B = J > US
Female	2.22	2.25	1.95	B = J > US
Sig. diff. x Gender	M = F	M = F	M < F	

	Brazil	Jamaica	US	Sig. diff x Country
3 rd Grade	2.36	2.36	1.95	B = J > US
4 th Grade	2.11	2.12	1.89	B = J > US
5 th Grade	2.11	2.10	1.77	B = J > US
Sig. diff. x Grade	3 > 4 = 5	3 = 4 = 5	3 > 4 > 5	

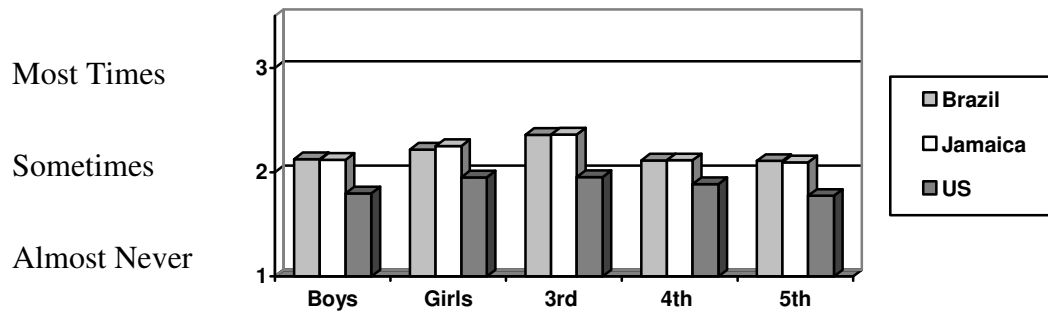


Table7 Continued

Aggressive Bystanding

	Brazil	Jamaica	US	Sig. diff x Country
Male	1.85	1.84	1.58	B = J > US
Female	1.71	1.83	1.51	B = J > US
Sig. diff. x Gender	M = F	M = F	M > F	

	Brazil	Jamaica	US	Sig. diff x Country
3 rd Grade	2.00	1.87	1.60	B = J > US
4 th Grade	1.79	1.80	1.52	B = J > US
5 th Grade	1.62	1.81	1.51	B = US < J
Sig. diff. x Grade	3 > 4 = 5	3 = 4 = 5	3 > 4 = 5	

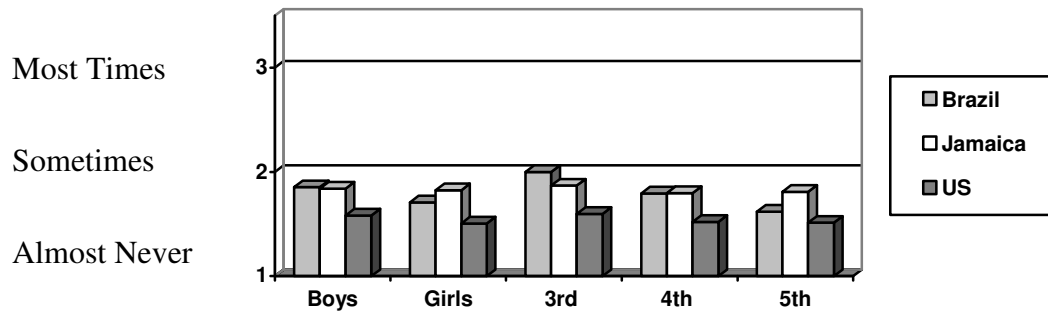


Table7 Continued

Adult Sanctions

	Brazil	Jamaica	US	Sig. diff x Country
Male	2.59	2.89	2.97	B < J = US
Female	2.68	2.92	3.02	B < J = US
Sig. diff. x Gender	M = F	M = F	M = F	

	Brazil	Jamaica	US	Sig. diff x Country
3 rd Grade	2.73	2.88	3.16	B = J = US
4 th Grade	2.79	3.07	3.00	B < J = US
5 th Grade	2.40	2.79	2.81	B < J = US
Sig. diff. x Grade	3 = 4 > 5	3 = 5 < 4	3 > 4 > 5	

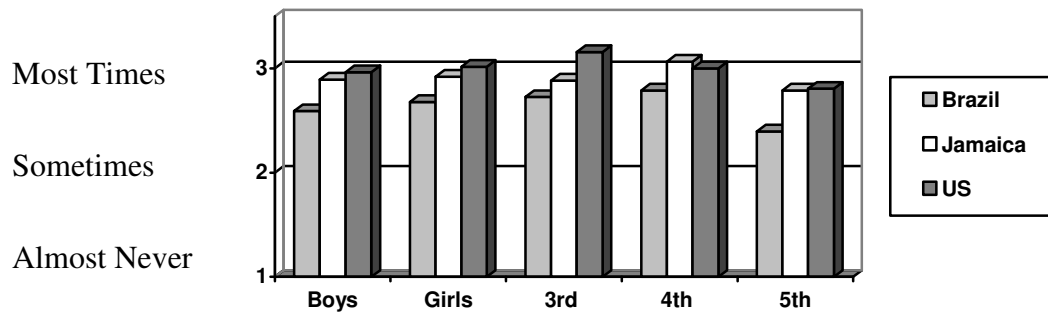


Table7 Continued

Aggression is Legitimate

	Brazil	Jamaica	US	Sig. diff x Country
Male	1.53	1.49	1.68	B = J < US
Female	1.44	1.49	1.50	B = J = US
Sig. diff. x Gender	M = F	M = F	M > F	

	Brazil	Jamaica	US	Sig. diff x Country
3 rd Grade	1.50	1.45	1.52	B = J = US
4 th Grade	1.30	1.50	1.56	B = J; B < US; J = US
5 th Grade	1.59	1.50	1.71	B = US > J
Sig. diff. x Grade	3 = 5 > 4	3 = 4 = 5	3 = 4 < 5	

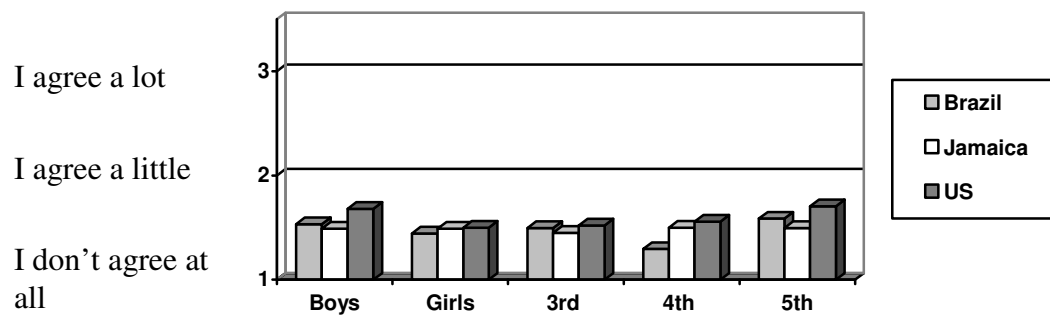


Table7 Continued

Aggression Pays

	Brazil	Jamaica	US	Sig. diff x Country
Male	1.70	1.81	1.87	B = J; B < US; J = US
Female	1.59	1.75	1.81	B = J; B < US; J = US
Sig. diff. x Gender	M = F	M = F	M = F	

	Brazil	Jamaica	US	Sig. diff x Country
3 rd Grade	1.70	1.86	1.77	B = J = US
4 th Grade	1.58	1.69	1.83	B = J; B < US; J = US
5 th Grade	1.66	1.79	1.92	B = J; B < US; J = US
Sig. diff. x Grade	3 = 4 = 5	3 = 4 = 5	3 = 4 > 5	

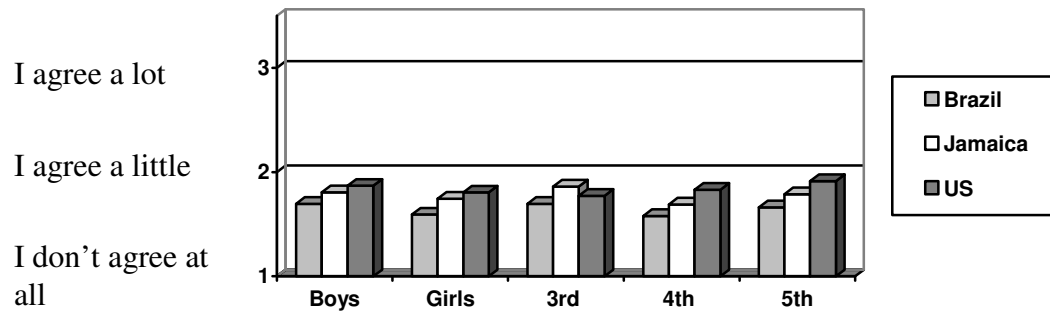


Table7 Continued

Intervene in Fight

	Brazil	Jamaica	US	Sig. diff x Country
Male	2.99	3.10	3.03	B = J = US
Female	3.03	3.15	3.03	B = J = US
Sig. diff. x Gender	M = F	M = F	M = F	

	Brazil	Jamaica	US	Sig. diff x Country
3 rd Grade	2.73	2.97	3.10	B < J = US
4 th Grade	3.15	3.33	3.02	B = US < J
5 th Grade	3.10	3.08	2.96	B = J; B > US; J = US
Sig. diff. x Grade	3 < 4 = 5	3 = 5 < 4	3 = 4; 3 > 5; 4 = 5	

