Aggression and emotions: cultural and individual differences

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CHAPTER 2

AGGRESSION IN MALAYSIAN ADOLESCENTS: VALIDATION OF THE IRPA SELF-REPORT TO MEASURE REACTIVE AND PROACTIVE AGGRESSION

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ABSTRACT

Motives for aggression can be reactive or proactive. While research on these motives for aggression exists in Western societies, little is known about their prevalence in a non-Western society such as Malaysia. The first step to narrow this gap is to validate an instrument, which measures levels of reactive and proactive aggression. In the present study we translated the IRPA (instrument for reactive and proactive aggression) self-report, and examined its psychometric properties in 957 Malaysian adolescents. Participants completed the IRPA self-report along with instruments measuring victimization, delinquency, shame, and guilt. The outcomes confirmed the expected two-factor structure, good internal consistency and validity of the IRPA self-report in a Malaysian sample.

Aggressive behaviour can cause serious harm, including physical and emotional injuries, with long-term negative consequences for both the victim and the aggressor (Umukoro, Aladeokin, & Eduviere, 2013). Although aggressive adolescents are prevalent around the globe, some studies indicate that the prevalence of aggression among adolescents in developing countries is higher than in developed countries (e.g., Akiba, LeTendre, Baker, & Goesling, 2002).

Malaysia, an advanced developing country in Southeast Asia, is one of these countries where aggressive-related behaviours (e.g., bullying, physical fighting) is reported in 28% of adolescents (Mat Hussin, Abd Aziz, Hashim, & Shahril, 2014) compared to 13.3% of the Dutch adolescents for example (Jansen, Veenstra, Ormel, Verhulst, & Reijneveld, 2011). This has urged the Malaysian government to give a high priority to prevention. Although questionnaires in Malaysian national language (i.e. Malay) are available that measure various forms of aggression (i.e., physical/verbal aggression, anger and hostility; Ahmad & Mazlan, 2012), there is yet no questionnaire measuring the underlying motivation for this aggression. By understanding the motives behind the aggression, prevention and intervention efforts can be more focused, efficient and effective. The question is whether such a questionnaire that is developed and validated in Western samples can also be applied in other, non-Western samples such as Malaysia. Therefore, in the current study, we translated and validated a self-report questionnaire for motives underlying aggression in Malay.

REACTIVE AND PROACTIVE AGGRESSION AND THEIR BEHAVIOURAL CORRELATES

Albeit all acts of aggression by definition are related to norm-transgressing behaviours, the underlying motives can vary. These motives are broadly divided into two categories. First, reactive aggression reflects out of control, overheated reactions in response to something (potentially) harmful, thus aimed at protecting something important to the self. Second, proactive aggression reflects cold-blooded actions to achieve a certain goal, without consideration for the harm caused to other(s) (Card & Little, 2006; Crick & Dodge, 1996).

Consequently, the behavioural outcomes and correlates between two aggression motives vary. Reactive aggression as a reaction to provocation is related to intense negative emotions (e.g., anger and shame) (Crick & Dodge, 1996; Hubbard, McAuliffe, Morrow, & Romano, 2010). Furthermore, adolescents who score high on reactive aggression often feel threatened by others and report high levels of peer victimisation (Polman, Orobio de Castro, Thomaes, & Van Aken, 2009). In contrast, proactive aggression, being instrumental and aimed at self-gain, is related to lower levels of guilt and shame (Fite, Rubens, Preddy, Raine, & Pardini, 2014), making it possible to harm someone without feeling bad about it.

PRESENT STUDY

The aim of the present study was to translate and examine the Instrument for Reactive and Proactive Aggression (IRPA) self-report, that presents common forms

of aggression, and has proven strong psychometric properties in Western samples (Rieffe et al., 2016). We choose to study early adolescence (12-15 years olds), as this age-group represents an important social and psychological transition between childhood and adolescence (Gleason et al., 2004). Also, adolescents in this age-group are particularly prone to aggressive behaviors, which occur more often during this developmental period (Arnett, 1999; Fung, Raine, & Gao, 2009; Lahey et al., 2000).

First, we tested the two-factor structure. Second, we examined the internal consistency of the scales for reactive and proactive aggression. Third, we examined the associations of these two scales with related variables. Based on the literature, we expected that reactive aggression would be related to higher levels of victimization, shame and anger, whereas proactive aggression would be related to lower levels of guilt. Moreover, we expected higher levels of both reactive and proactive aggression in boys than girls, in line with the original study (Rieffe et al., 2016) and other prior studies (e.g., Salmivalli & Helteenvuori, 2007).

METHOD

Participants and Procedure

We collected data from two samples of Malaysian adolescents (Table 1). Sample 1 consisted of 168 adolescents (56% boys, aged 13 to 15) from one school in an urban area and Sample 2 consisted of 789 adolescents (39.6% boys; aged 12 to 14) from four schools in mixed urban/rural areas. Schools for participation were randomly selected from three different areas in Peninsular Malaysia (i.e. Selangor, Johor and Kelantan) in order to better understand the Malaysian adolescent population. A selection criterion for schools was that the Malay language was the principal language.

The study duration was approximately one hour, which was conducted during regular school hours. Participants were asked to respond to a set of self-report questionnaires, as detailed below. Prior to the data collection, approval was obtained by the psychology ethical board of Leiden University, and consent was obtained from the Economic Planning Units under the Malaysia Prime Minister Department, the Ministry of Education, the school principals, and all of the participants.[1] After the school agreed to participate, the school principal and teachers decided which classes would participate. All students in the selected classes participated unless they were absent on the day of the data collection. The students were given a multi-colour ink pen as compensation for their participation.

Self-report Measures

The IRPA self-report (Rieffe et al., 2016) consists of 36 items, measuring children's and adolescents' reactive and proactive aggression using six types of aggressive behaviours: kicking, pushing, hitting, name-calling, arguing, and lying or saying bad things about someone. For example, "In the last four weeks, I kicked someone

[1] Given that Malaysia has actively applied the *in loco parentis* doctrine in its educational system, no active parental consent was needed.

Table 1. Demographic Characteristics of the Participants

	n (%)	
	Sample 1	Sample 2
Gender		
Male	94 (56.0)	303 (39.5)
Female	74 (44.0)	465 (60.5)
Ethnicity		
Malay	87 (51.8)	676 (88.1)
Chinese	60 (35.7)	84 (11.0)
Indian	20 (11.9)	2 (.03)
Others	1 (0.6)	5 (.07)
Living Status		
Urban	168 (100.0)	382 (48.4)
Suburban	-	233 (29.5)
Rural	-	174 (22.1)

Note: n (%) = number of cases and its percentage.

because…"[2]. Participants are asked to rate how often they performed this behaviour using a five-point scale ranging from 1 (*never*) to 5 (*always*) for three reasons which indicated their reactive aggression (I was mad, I was bullied, I was kicked) and three reasons which indicated their proactive aggression (I wanted to be mean, I took pleasure in it, I wanted to be the boss). See Appendix for the Malay version of the IRPA self-report.

The Victim Questionnaire (Rieffe, Camodeca, Pouw, Lange, & Stockmann, 2012) assesses victimization in children by asking if they had been bullied in the previous two months. Ten items featuring victimization behaviours were presented (e.g., call names, take things away), in which each of them was rated by using a three-point scale (1 = *(Almost) never*, 2 = *Sometimes*, 3 = *Often*). One item ('Are you invited to birthday parties?') needed to be coded reversely.

The Brief Shame and Guilt Questionnaire for Children (Novin & Rieffe, 2015) consists of 12 vignettes to measure shame- and guilt-proneness in children and adolescents. After reading each vignette, participants were asked how guilty and ashamed they would feel on a three-point scale (1= *Not at all*, 2= *A little*, 3= *A lot*).

The Mood Questionnaire (Jellesma, Rieffe, Terwogt, & Kneepkens, 2006) is a 20-item self-report that features four basic emotions (i.e., fear, anger, sadness, happiness). This questionnaire asks adolescents to rate how frequently they felt these emotions in the past four weeks using a three-point scale (1= (*Almost*) *never*, 2 = *Sometimes*, 3 = *Often*). For the purpose of this study, the four anger items were used for analyses.

[2] If participants did not behave this way in the last four weeks, they would report "never" on all reasons.

Translation Procedure

Prior to instrument translation, we first obtained the permission from the first author to translate the English versions of the instruments into Malay. The Malay-translated instruments then were back-translated, performed by a bilingual translator. The original and back-translated English versions were compared and checked for language consistency.

Statistical Analyses

First, we tested the construct validity of the reactive and proactive subscales by fitting a two-factor model using a principal factor analysis (PCA) with Oblique rotation technique on Sample 1, and a confirmatory factor analysis (CFA) with Robust Maximum Likelihood Estimation with Satorra – Bentler (SB) correction on Sample 2 due to the presence of multivariate kurtosis in our data (Mardia's normalized estimate =144.72).

We evaluated the goodness of fit of CFA using $\chi^2/df < 5.0$, Goodness of Fit Index (GFI) > .90, Comparative Fit Indices (CFI) > .95, the Standardized Root Mean Square Residual (SRMR) ≤ .05, and the Root Mean Square Error of Approximation (RMSEA) < .08 (Hooper, Coughlan, & Mullen, 2008). Second, we used Cronbach's alpha to assess the internal consistencies of the scales. Third, we used partial correlations to test the convergent validity of the reactive and proactive subscales with bullying, victimization, shame, and guilt.

In this study, the CFA was conducted using EQS version 6.1 (Bentler & Wu, 2002) and other statistical analyses were conducted with two-sided test (significance level of .05) performed by the IBM SPSS version 22 (IBM Corp, 2013).

Missing Data Analysis

Sample 2 had few missing values (0.7%). Given that the Little's MCAR test ($p > .05$) indicates that these missing values were random, we included all participants and used listwise deletion for the cases with missing values.

RESULTS

Descriptives

Overall, participants in both samples reported higher levels of reactive than proactive aggression. In Sample 2, boys scored higher on reactive and proactive aggression than girls (Table 2).

Construct validity of the Reactive-Proactive Aggression Questionnaire

The PCA revealed the two expected factors with eigenvalues above 1 (Table 3). The first factor, explaining 59.16% of the variance (eigenvalues = 3.55), consists of three proactive aggression motives. The second factor, explaining 18.53% of the variance (eigenvalues = 1.11), consists of three reactive aggression motives.

Table 2. Means, Standard Deviation of the Malaysian IRPA and Gender Differences

	Score range	*M (SD)*			*t*
		Total	Boys	Girls	
1. Reactive Aggression					
Sample 1	1 – 4.50	1.97 (.75)	2.04 (.74)	1.87 (.76)	1.50
Sample 2	1 – 4.75	1.75 (.67)	1.92 (.72)	1.63 (.60)	5.88**
2. Proactive Aggression					
Sample 1	1 – 4.72	1.53 (.71)	1.58 (.71)	1.46 (.71)	1.16
Sample 2	1 – 4.75	1.27 (.50)	1.39 (.63)	1.20 (.39)	4.59**

*p<0.05; **p < .01; ***p < .001
Note: M = mean; SD = Standard Deviation; t = Student's t test.

In Sample 2, we identified 40 cases with univariate and/or multivariate outliers in the aggression questionnaire. The results did not differ when excluding these cases. Therefore, we decided to keep all cases in our analyses.

Prior to the CFA, item parcelling was applied to reduce the effect of non-normality (Hau & Marsh, 2004). The 36 items were grouped into six parcels or subscales based on the reactive/proactive aggression motives. The factor score of each parcel was used as an indicator for one of the two latent constructs. As shown in Figure 1, the fit measures of the two-factor model were satisfactory and the factor loadings ranged from .68 to .84.

Also, we considered an alternative one-factor model (supplementary Figure S1). Unfortunately, the fit measures of the one-factor model were not adequate and the higher values of Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) of one-factor model against the two-factor model explained the inadequacy of the one-factor model.

Table 3. Principal Component Analyses for Malaysian IRPA (Sample 1; n = 168)

	Factor Loadings*		
	Mean (SD)	Component 1	Component 2
1. I was angry	2.05 (.89)		.67
2. I was bullied	1.69 (.83)		.80
3. I was kicked	2.16 (.89)		.98
4. I wanted to be mean	1.46 (.71)	.90	
5. I took pleasure out of it	1.72 (.92)	.82	
6. I wanted to be the boss	1.40 (.77)	.93	

* Only factor loadings above .40 are presented in the Table.
Note: M = mean; SD = Standard Deviation.

Additionally, all measures showed an adequate internal consistency with Cronbach's alpha values from .67 to .95 in both samples (supplementary Table S1). Also, we calculated the composite reliabilities of both reactive and proactive aggression constructs based on the factor loadings and the results showed high

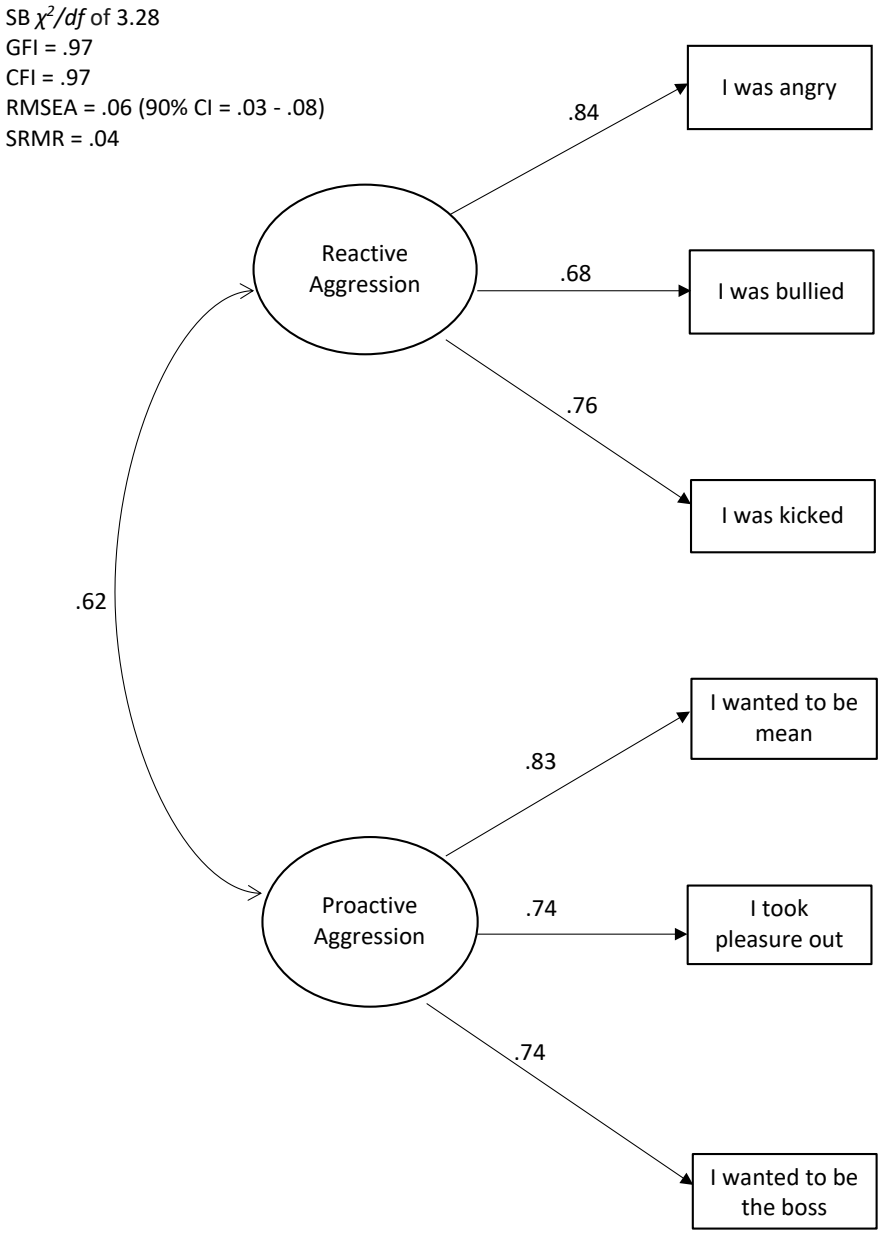

Figure 1. Confirmatory Factor Analysis of the Malay self-report IRPA (Sample 2; n = 789)

measurement reliability of the self-report IRPA (reactive aggression = .81, proactive aggression = .82).

Relations of self-reported aggression with victimization, anger, shame- and guilt-proneness

Given that reactive and proactive aggression were closely related (r = .51, p < .001), we conducted partial correlations to analyse the relationships between reactive aggression and the other variables, while controlling for proactive aggression, and vice versa. Table 4 shows the results of partial correlation analyses with bootstrapping between the independent variables (victimization, anger, shame- and guilt-proneness) and the reactive and proactive aggression scales of the Malaysian self-report. As shown, reactive aggression was positively related to victimization and anger, while proactive aggression was negatively related to shame- and guilt-proneness. However, reactive aggression was not related to shame after we adjusted for multiple comparisons.

DISCUSSION

We translated and tested the self-report IRPA in a non-Western country, Malaysia. Along with good and satisfactory internal consistencies, questionnaire successfully fitted the expected two-factor structure. With respect to the convergent validity, proactive and reactive aggression showed distinct associations with victimization, anger, shame-proneness, and guilt-proneness. In line with existing literature, reactive aggression was related to higher levels of victimization and anger, whereas proactive aggression was related to lower levels of guilt- and shame-proneness (Fite et al., 2014; Hubbard et al., 2010; Polman et al., 2009).

Based on these outcomes we conclude that the motives of aggression (i.e. proactive and reactive aggression) in Malaysian adolescents can be differentiated using the Malay version of the IRPA self-report. Yet, we recommend future studies to replicate our study by performing multi-group analyses in different (non-Western) populations, as well as in clinical samples, for example juvenile or other high-risk adolescents. Furthermore, given that this study was correlational, longitudinal studies could further explore the predictive power of reactive and proactive aggression in a variety of Western and non-Western adolescent populations. Also, considering that the nature of our samples might be different (urban versus urban-rural mix), this may

Table 4. Partial Correlations for Victimization, Shame, Guilt and Anger measures on Reactive and Proactive Aggression (Sample 2; n = 789)

	Victimization	Shame	Guilt	Anger
IRPA (Reactive)	.45***	.07	-.04	.23***
IRPA (Proactive)	-.06	-.14***	-.14***	.01

Note: *p<0.05; **p < .01; ***p < .001

as well influence the outcomes of our study. For example, our preliminary analysis suggests that levels of aggression in adolescents from rural areas are lower than adolescents from urban areas. Therefore, future studies should consider examining how socio-economic factors (e.g., urbanization) and geographic factors (e.g. different states in a country) can influence the levels of aggression, and the underlying factors of the behaviour.

In conclusion, the IRPA self-report is suitable for a Malaysian population, allowing future studies to obtain important insights into the antecedents and consequences of the different motives underlying adolescent aggression in Malaysia.

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