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The Differences in Normative Beliefs among Schoolchildren with Reactive, Proactive, Reactive-Proactive Aggression, and without Aggression

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***Abstract*—**This study is to fill up a research gap on examining the differences in normative beliefs (namely acceptance of weaknesses, acceptance of provoked aggression, and acceptance of unprovoked aggression) among different subtypes of aggressors and non-aggressors (reactive aggressors, proactive aggressors, reactive-proactive aggressors, and non-aggressors). 2,236 students (1,372 males and 864 females), aged from 11 to 18, completed a self-reported questionnaire. Results revealed that (a) schoolchildren with reactive-proactive aggression have the highest acceptance of provoked aggression, the highest acceptance of unprovoked aggression, and the lowest acceptance of weakness; (b) schoolchildren with proactive aggression have higher acceptance of unprovoked aggression and lower acceptance of weakness than reactive aggressors; and (c) schoolchildren without aggression have the lowest acceptance of provoked aggression, the lowest acceptance of unprovoked aggression, and the highest acceptance of weakness.

***Keywords*—**Normative belief, schoolchildren, reactive, proactive, aggression.

I. Introduction

AGGRESSIVE behaviors can be distinguished as two subtypes, according to its specific motives and functions. Dodge and Coie [1] advocated that there is a distinction between reactive aggression (i.e. hostile aggression) and proactive aggression (i.e. instrumental aggression). Although both involve causing harm to others, proactive aggression is a means to achieve certain goals (e.g. dominance and money), while reactive aggression is a reaction to a subjectively perceived threatening or provocative situation [2], [3]. Some previous studies were targeted on both subtypes [4]-[6]. Proactive aggressors are characterized by being callous-unemotional and goal oriented [7], [8]. They are related to psychopath, lack of remorse and guilty for the victims [9], [10]. They overestimate positive predicted outcomes and underestimate negative consequences of using aggression. On the other hand, reactive aggressors have hostile attributional bias, so they perceive the ambiguous situation as provocative or hostile [11]. Reactive aggressors have problem-solving deficit, they are unpopular and rejected by their peers [12]-[14]. In addition to the dichotomic classification, recent studies started to consider that reactive aggression and proactive aggression could co-occur within the same individual. For example, [15] found that reactive-proactive aggressors were more aggressive, more anxious and depressed, less attentive and had more delinquent behaviors than both reactive aggressors and proactive aggressors.

Previous studies suggested that children with aggressive behavior had difficulties in evaluation of strategies [2]. One of the key factors affecting the strategy evaluation is the child's normative beliefs in aggressive behaviors. Normative beliefs refer to the cognitions about the acceptability of behaviors [16]. While the term normative belief appears to mean behaviors that are socially justified and legitimate, it actually refers to personal and subjective perception of what constitutes socially acceptable behaviors. According to [17], normative beliefs acted as the knowledge bases which control behaviors by setting limits on the child's evaluation processes. These knowledge bases are formed during the developmental processes and are affected by early social experiences [18]. Once formed, normative beliefs would act as social scripts and set out the boundary for which behaviors are allowed or prohibited [19].

Beliefs directly affect and predict behaviors. McConville and Cornell [20] found that attitudes towards aggression measured at the beginning of school year predicted aggressive behaviors and adjustment problems (e.g. disciplinary problems, detention, school suspension) at the end of school year. Moreover, [21] discovered that positive attitudes towards aggression were associated with gang membership, and higher frequency of fighting, weapon carrying and drug and alcohol use in school. Furthermore, [16] argued that classmates' beliefs about the acceptability of aggression affected a child's normative beliefs and in turn influenced aggressive behaviors of the child.

Gottheil and Dubow [22] proposed that aggressive behaviors were associated with three types of normative beliefs, namely the acceptance of weaknesses (whether ones accept and respect people who are weak and more vulnerable), acceptance of provoked aggression (whether ones consider aggression as appropriate when being provoked) and acceptance of unprovoked aggression (whether one regard self-initiated aggression as appropriate).

Most studies on the differences between reactive and proactive aggression did not examined the role of normative beliefs. To the best of the author's knowledge, no studies thus far have examined the role of different types of normative beliefs in differentiating types of aggressors. Therefore, the present study aims to examine the differences in normative beliefs (namely acceptance of weaknesses, acceptance of provoked aggression, and acceptance of unprovoked

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aggression) among different subtypes of aggressors and non-aggressors (namely reactive aggressors, proactive aggressors, reactive-proactive aggressors, and non-aggressors). It is hypothesized that (i) schoolchildren with reactive-proactive aggression have the highest acceptance of provoked aggression, the highest acceptance of unprovoked aggression, and the lowest acceptance of weakness; (ii) schoolchildren with proactive aggression have higher acceptance of unprovoked aggression and lower acceptance of weakness than reactive aggressors; and (iii) schoolchildren without aggression have the lowest acceptance of provoked aggression, the lowest acceptance of unprovoked aggression, and the highest acceptance of weakness.

II. Method

A. Participants

2,236 children (1,372 males and 864 females), aged from 11 to 18 (M = 13.35; SD = 1.20), completed a questionnaire survey. They were secondary 1 to 3 (7th - 9th grade) students from 5 secondary schools in Hong Kong. All participants were Chinese.

B. Procedure

All secondary schools in Hong Kong (approximately 800) were invited to participate in a study on school violence. Written invitation resulted in positive responses from 48 schools. Five schools were randomly selected for participation. All secondary 1 to 3 students with parent consent from the 5 schools completed the self-reported questionnaire online in school. During each school period, about 30 to 40 students did the questionnaire individually in a computer room.

C. Measures

The questionnaire consisted of the Reactive-Proactive Aggression Questionnaire (RPQ) [23], the Beliefs and Attitudes Scale (BAS) [22] and some demographic questions, such as age and sex.

TABLE I
PROPERTIES OF PARTICIPANTS AFTER CATEGORIZATION

	Male	Female	Age	General Aggression	Reactive Aggression	Proactive Aggression
	n	*n*	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
All Subjects	1372	864	13.35 (1.20)	6.37 (5.88)	5.05 (3.86)	1.33 (2.71)
NA	1087	686	13.39 (1.21)	4.07 (2.90)	3.59 (2.47)	.47 (.93)
RA	130	126	13.15 (1.12)	12.20 (2.55)	10.69 (2.01)	1.50 (1.37)
PA	47	17	13.20 (1.31)	12.30 (2.31)	6.11 (1.76)	6.19 (1.45)
RPA	108	35	13.20 (1.18)	21.91 (6.14)	12.50 (3.12)	9.41 (3.87)

1. RPQ

The RPQ [23] was a self-report measure of children's reactive aggression and proactive aggression. The measure consisted of 23 behavioral items rated on a 3-point Likert scale (0: never; 1: sometimes; 2: often), with 11 items for reactive aggression (e.g. "reacted angrily when provoked by others") and 12 items for proactive aggression (e.g. "hurt others to win a game"). Scores were summed to form measures of reactive aggression, proactive aggression, and general aggression (i.e. 23 items). The Chinese translation of the RPQ [24] was adopted in this study. The values of Cronbach's Alpha were .84 for reactive aggression, .88 for proactive aggression, and .90 for general aggression.

2. BAS

The BAS [22] was a self-report measure of children's normative beliefs towards aggression. It consisted of 18 items with 3 subscales (6 items each), namely acceptance of weaknesses (e.g. "It is not right to pick on kids who are weaker than you"), acceptance of provoked aggression (e.g. "If a kid hits you it is okay to hit him/her back"), and acceptance of unprovoked aggression (e.g. "It is okay to pick on certain kids, even if they don't do anything to deserve it"). Respondents rated the items on a 5-point Likert scale ranging from 0 (strongly disagree) to 4 (strongly agree). The original English scale was translated into Chinese through back-translation. Confirmatory Factor Analysis (CFA) would be used to evaluate the factor structure of the Chinese version of the BAS.

D. Design

The dependent variables were acceptance of weaknesses (AW), acceptance of provoked aggression (APA), and acceptance of unprovoked aggression (AUA).

The independent variable was the four subtypes of aggressors and non-aggressors, namely (i) Reactive aggressors (RA), (ii) Proactive aggressors (PA), (iii) Reactive-proactive aggressors (RPA), and (iv) Non-aggressors (NA). Participants were classified based on their scores in the RPQ: reactive-proactive aggressors scored $z \geq +1$ in both reactive aggression and proactive aggression; reactive aggressors scored $z \geq +1$ in reactive aggression only; proactive aggressors scored $z \geq +1$ in proactive aggression only; and non-aggressors scored $z \leq +1$ in both reactive aggression and proactive aggression, i.e. not meeting the criteria for any of the aggressor types.

Analysis of variance (ANOVA) would be used to determine whether there were differences in AW, APA and AUA among reactive aggressors, proactive aggressors, and reactive-proactive aggressors, and non-aggressors.

III. Results

A. BAS Factor Structure

The 18 items of the BAS were subjected to CFA. Three indexes were used to evaluate the model fit: the Comparative Fit Index (CFI) [25], the Goodness-of-Fit Index (GFI) [26], and the Root Mean Square Error of Approximation (RMSEA) [27]. Regarding CFI and GFI, values larger than .90 are generally considered acceptable [28]. RMSEA with a value smaller than .08 indicates a good fit [29].

Results suggested that the original 3-factor model did not provide a satisfactory fit to the data (CFI = .786, GFI = .829, RMSEA = .104). Since 5 items had loadings smaller than 0.5 (2 on AW, 2 on APA, and 1 on AUA), they were dropped and CFA was conducted with the remaining 13 items (4 for AW, 4

for APA and 5 for AUA). Results revealed that the new 3-factor model produced a good fit to the data (CFI = .932, GFI = .936, RMSEA = .077). The new scale also had satisfactory internal consistency. The values of Cronbach's Alpha were .74 for AW, .76 for APA, and .84 for AUA. The new 13-item BAS would be used for the following analysis.

B. Classification of Aggressors

Based on the classification criteria, 1,773 were non-aggressors, 256 were reactive aggressors, 64 were proactive aggressors and, 143 were reactive-proactive aggressors. The details were presented in Table I.

C. Normative Beliefs and Aggression

Results of Spearman's rank order correlation revealed that general aggression, reactive aggression and proactive aggression were all significantly and positively correlated with APA and AUA. AW was significantly and negatively correlated with general aggression, reactive aggression and proactive aggression. The correlation matrix was presented in Table II.

TABLE II
CORRELATION MATRIX OF STUDIED VARIABLES

	1	2	3	4	5
1. General Aggression	-	-	-	-	-
2. Reactive Aggression	.968[a]	-	-	-	-
3. Proactive Aggression	.698[a]	.534[a]	-	-	-
4. APA	.464[a]	.447[a]	.371[a]	-	-
5. AUA	.340[a]	.283[a]	.412[a]	.633[a]	-
6. AW	-.353[a]	-.304[a]	-.386[a]	-.625[a]	-.755[a]

[a] $p < .001$.

Results from ANOVA suggested that normative beliefs were different for different subtypes of aggressors and non-aggressors. The details were presented in Table III.

TABLE III
MEANS AND STANDARD DEVIATIONS OF NORMATIVE BELIEFS BY TYPES OF AGGRESSOR

		AW	APA	AUA
	n	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
All Subjects	2236	12.69 (3.01)	5.73 (3.66)	3.24 (3.61)
NA	1773	13.11 (2.76)	5.13 (3.41)	2.68 (3.17)
RA	256	12.31 (2.88)	7.71 (3.52)	3.64 (3.36)
PA	64	10.61 (3.08)	6.66 (3.39)	6.06 (3.56)
RPA	143	9.06 (3.34)	9.29 (3.65)	8.21 (4.55)
Group Difference[a]	-	NA > RA > PA > RPA[b]	NA < RA = PA < RPA[b]	NA < RA < PA < RPA[c]

[a]Differences were significant at .05 level. [b]Tukey's HSD post-hoc test. [c]Games-Howell post-hoc test.

1. Acceptance of Weakness

Four subtypes of aggressors and non-aggressors had significantly different AW, $F(3, 2332) = 104.96$, $p < .001$. Results from the Tukey's HSD post-hoc test suggested that reactive-proactive aggressors had the lowest AW compared to proactive aggressors, reactive aggressors and non-aggressors. Also, proactive aggressors had significantly lower AW than reactive aggressors. Non-aggressors had the highest AW compared to other types of aggressors.

2. Acceptance of Provoked Aggression

There were significant differences in APA among four subtypes of aggressors and non-aggressors, $F(3, 2332) = 99.13$, $p < .001$. Results from the Tukey's HSD post-hoc test suggested that reactive-proactive aggressors had the highest APA. Reactive aggressors and proactive aggressors did not significantly differ in terms of APA. Compared to other subtypes of aggressors, non-aggressors had the lowest APA.

3. Acceptance of Unprovoked Aggression

Four subtypes of aggressors and non-aggressors had significantly different AUA, Welch's $F(3, 201.23) = 86.85$, $p < .001$. Results from the Games-Howell post-hoc test suggested that reactive-proactive aggressors had the highest AUA compared to proactive aggressors, reactive aggressors and non-aggressors. Moreover, proactive aggressors had significantly higher AUA than reactive aggressors. Non-aggressors had the lowest AUA compared to other types of aggressors.

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