

Assessing Forgiveness in Interpersonal Conflict among Thai Emerging Adults: The Peer Forgiveness Scale

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Forgiveness is one of the positive coping strategies for interpersonal conflict, rebuilding the quality of peer relationships. The Peer Forgiveness Scale (PFS), measuring forgiveness after an interpersonal offense, was developed and its psychometric properties evaluated. Participants were 436 emerging adults in Thailand with ages between 18-25 years. Confirmatory factor analysis indicated that a four-factor structure with 20 items was the better fit model. Multigroup analysis supported measurement invariance across genders. The reliability of the PFS was found to be satisfactory and strong evidence of construct validity was demonstrated. The psychometric properties of PFS support its feasibility as a research scale to measure forgiveness in peer relationships and as a scale to use in counseling.

Keywords: peer forgiveness, scale development, measurement invariance, construct validity

Life in university is the period in which an individual's life begins to change from being an older adolescent into emerging adult. Erikson (1968) stated that, during this period, individuals seek to build their own self-identity in order to create a solid foundation, ready for further challenges in adulthood. In Thailand, adolescents and emerging adults choose their academic major in accordance with their interests to prepare themselves for their future career. For most of them, despite receiving financial support, it is the beginning of a life that is more independent from their parents. Thai society is collectivist, as a result; dependency between friends, younger and senior family members is an important factor that helps the emerging adults to adjust. During this period, individuals have to develop their adult role and gain experience in adult peer relationships (Doumen et al., 2012). However, spending time with friends or getting involved with others increases the risk of interpersonal confrontation or of being offended by someone (McCullough, 2001).

Generally, when conflict or confrontation occurs among friends, those who feel offended would employ two strategies to seek justice for themselves. The first strategy is a destructive one, such as expressing anger or retaliation. These actions negatively affect peer relationships (Boonyarit, Chuawanlee, Macaskill, & Supparerkchaisakul, 2012) and can affect their mental health (McCullough, Bellah, Kilpatrick, & Johnson, 2001). The other strategy employed is a more constructive one. In solving interpersonal problems, forgiveness is an effective strategy to deal with the problem and help the relationship recover (Peterson & Seligman, 2004). The act of forgiving has a positive relationship with the mental health and well-being of transgressed individuals (Bono, McCullough, & Root, 2008; Macaskill, 2012).

Even though the study of forgiveness from a scientific perspective has been developing since the 1980s (McCullough, Pargament, & Thoresen, 2010) and more research has been conducted and published in international journals, it has received little interest

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among Thai academics (Boonyarit et al., 2012). McCullough et al. (2000) stated that the reason why only few studies have been produced in non-western cultures was because of the inability to conduct an empirical study on this psychological construct in the absence of a scale developed specifically for that specific population. In Thailand, this issue was first studied from the perspective of behavioral science in a qualitative study of the Thai conceptualization of forgiveness (Boonyarit et al., 2012). Subsequently, a Workplace Forgiveness Scale (Boonyarit, Chuawanlee, Macaskill, & Supparerkchaisakul, 2013), was developed derived from the Thai concept of forgiveness in Boonyarit et al. (2012). It was found that the scale had satisfactory psychometric properties.

Although researchers nowadays define forgiveness similarly in some aspects such as it involving changes in thoughts, emotions and motivations towards the transgressor, there were some differences as well. McCullough et al. (2000) suggested that the study of forgiveness required a conceptual definition and a measurement scale that were socio-culturally specific in order to understand the complex cognitions involved in each context. Existing western scales might not be able to accurately measure the phenomena involving forgiveness in the Thai context such as Thai people's belief that forgiveness is an ultimate act of merit and the belief about giving and karma related to Buddhism (Boonyarit et al., 2012)

It is important to develop the body of knowledge on forgiveness, as it is an important concept for maintaining interpersonal relationships and reducing conflict. The primary objective of this study was to create a Peer Forgiveness Scale (henceforth, PFS) based on the meaning and conceptualisation of forgiveness obtained from previous studies on Thai people (Boonyarit et al., 2012; 2013). The PFS was subsequently submitted to the group of Thai emerging adults by finding its psychometric properties.

Development of the Peer Forgiveness Scale (PFS)

To develop a psychometrically sound scale for measuring forgiveness in relationships among peers, the construct of forgiveness of an interpersonal offense must be both clear and concerned with a specific sociocultural context (McCullough et al., 2000). Therefore, the concept of interpersonal forgiveness within Thai culture is addressed and empirical evidence of its construct underpins the development of initial items in the PFS.

Conceptual Framework for the PFS

Concept of forgiveness in western context

Interpersonal forgiveness refers to the likelihood of an individual abandoning the right to revenge and instead offering mercy to the specific offender (Enright & Coyle, 1998). It is an individual's change in motivation or behavioral intention to diminish avoidance of the transgressor, along with eliminating negative emotion and intention such as anger, grudge holding, or vengeance towards the wrongdoer (Worthington, 1998). A conceptual definition identifying the core meaning of forgiveness was written by McCullough et al. (2000), in which forgiveness is seen as an intrapersonal, prosocial change towards the transgressor occurring within the specific transgression.

Previous studies of forgiveness scale development in western countries

McCullough et al. (1998) conducted research on interpersonal forgiving in close relationships among US undergraduate students aiming to develop a psychometrically sound scale measuring offense-specific forgiveness (named Transgression-Related Interpersonal Motivations Inventory or TRIM). The results from structural equation modeling showed two factors of forgiveness in peer or close friend relationship were retained: avoidance and revenge motivation. Having a high score on TRIM represents higher levels of forgiveness of the specific offender. Furthermore, other research focused on measuring forgiveness in college students with age ranges from late adolescence and emerging adulthood had been conducted by Subkoviak et al. (1995). They developed the offense-specific forgiveness scale, called the Enright Forgiveness Inventory (EFI), and subjected it to psychometric analysis showing that the construct of interpersonal forgiveness towards the transgressor comprises six dimensions: positive affect, negative affect, positive behavior, negative behavior, positive cognition, and negative cognition.

The concept of forgiveness in Thai context

The concept of forgiveness is highly influenced by Buddhism, which believes that forgiveness or *Abhayadana* is one of the higher merits of giving. It is difficult for people in general to forgive transgressors easily. It requires practice in managing anger and vengeance, and giving loving-kindness and amicability. Thai people are persuaded by the belief that forgiveness is a way to suppress bad karma to others and that it is an ultimate merit that one can make for oneself (H. H. Somdet Phra Nyanasamvara, 2008).

Previous studies of forgiveness in Thais

There have been only a few empirical studies focusing on conceptualization of forgiveness in peer relationships. The first investigation, published by Boonyarit et al. (2012), aimed to understand the nature of interpersonal forgiveness among work-related peers and colleagues within a sample of Thai nurses. By using a qualitative method, the Thai conceptual definition of forgiveness emerged from the participants comprising five dimensions of forgiveness meaning: (a) diminishing negative approaches towards the transgressor, (b) relinquishment of negative judgment, (c) enhancing positive approaches and kindness towards the transgressor, (d) awareness of the advantages of forgiveness, and (e) forgiveness according to Buddhist beliefs. These findings initially highlighted the layperson's construct of forgiveness within the Thai context. Another empirical paper was from Boonyarit et al. (2013), which subsequently incorporated the definition of forgiveness from Boonyarit et al. (2012) to produce an offense-specific forgiveness scale in work-related peer relationships and to examine its psychometric properties. By using exploratory factor analysis, four underlying factor structures of forgiveness were retained and were found to be consistent with the definition of forgiveness from Boonyarit et al. (2012), where forgiveness was seen as an individual's attempt to overcome a negative approach and judgment, and granting a more positive approach and kindness towards the transgressor instead. The underlying factors were:

(1) Overcoming negative thoughts and affect towards the transgressor, where the offende attempts to eliminate or control their potential oppositional responses, both negative thinking and affect, towards the transgressor. It refers to an intraindividual process of overcoming the urge for retaliation.

(2) Seeking to understand the transgressor's reasons, where the offender seeks to understand the transgressor's reason in relation to what constitutes the offense, accepts the transgressor's mistake, takes the transgressor's perspective, and abandons negative judgment.

(3) Fostering positive acts towards the transgressor, where the offender is motivated and attempts to promote a positive approach to the transgressor by enhancing positive thought and positive emotions, such as empathy, kindness, and good feeling, and subsequently remains able to act in a friendly manner with the transgressor.

(4) Belief in the benefits of forgiveness, where the offender is aware that forgiving others is the way to lead him/her to happiness and that forgiveness would possibly contribute to forgiveness in return from the transgressor. It refers to the individual's belief that forgiveness is a higher-order merit earned for him/her self.

The reasons for using this concept of forgiveness were because it was derived from the Thai sociocultural context and the author would like to examine whether the four-factor structure of forgiveness found in the previous study (Boonyarit et al., 2013) could be generalized to the context of peer relationships among Thai emerging adults.

Construct validation of the PFS

To investigate the psychometric properties of the PFS, three types of construct validity would be examined (Cronbach & Meehl, 1955) including convergent validity, discriminant validity, and nomological validity. The literature review of peer forgiveness and related variables are as follows.

Convergent validity of the PFS

The author would like to explore whether the PFS positively associates or converges with previous standard measures of interpersonal forgiveness. To assess the validity, the overall PFS score and PFS subscale scores were computed by creating the mean composite score. Subsequently, these were expected to be positively related with three standard interpersonal forgiveness measures: offense-specific forgiveness (Rye et al., 2001), dispositional forgiveness (Yamhure-Thompson & Snyder, 2003), and state forgiveness (Boonyarit et al., 2013).

Discriminant validity of the PFS

The author expected that the score on the PFS would not be moderately or highly correlated with the unrelated construct (Churchill & Iacobucci, 2002; Hair et al., 2006). Previous studies showed trait extraversion was not related to interpersonal forgiveness (McCullough & Hoyt, 2002; Kamat, Jones, & Row, 2006; Wang, 2008). Hence, the author expected that the PFS score would be able to diverge from the extraversion score.

Nomological network of the PFS

Nomological network or nomological validity is one of the evidence that the author would like to investigate the question whether peer forgiveness, as measured by the PFS, behaves in a theoretically expected way. The path model of peer forgiveness was hypothesized from literature review showing linkages between peer forgiveness and other related variables as shown in figure 1. Dispositional forgiveness would be positively related to

peer forgiveness (Wade & Worthington, 2003; Koutsos, Wertheim, & Kornblum, 2008; Boonyarit et al., 2013). Peer forgiveness would be positively associated with relations with others (McCullough, Sandage, & Worthington, 2002; Exline & Baumeister, 2000; Karremans & Van Lange, 2004). Peer forgiveness would be positively associated with satisfaction with life (McCullough, Bellah, Kilpatrick, & Johnson, 2001; Toussaint & Freedman, 2008). Moreover, relations with others would be positively related to satisfaction with life (Diener & Diener, 1995; Kang, Shaver, Sue, Min, & Jing, 2003).

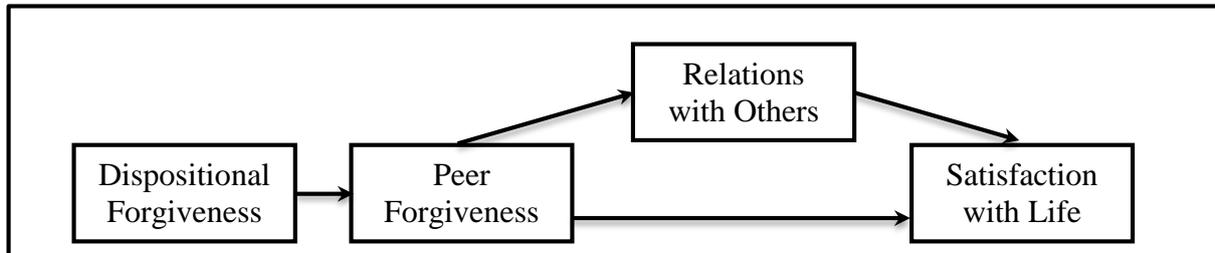


Figure 1. Nomological network of peer forgiveness and its related variables

Hypotheses

From the literature review mentioned above, the author expected that the PFS would yield the evidence of satisfactory psychometric properties, as follows:

1. The data will show that a four-factor structure of the PFS will have adequate fit.
2. The PFS will have measurement invariance which a four-factor structure will be the same across genders.
3. For convergent validity, the PFS will positively associates with the standard measures of interpersonal forgiveness (i.e., offense-specific forgiveness, dispositional forgiveness, and state forgiveness).
4. For discriminant validity, the PFS will be able to diverge from the extraversion.
5. For nomological validity of the PFS, the hypothesized nomological network model will have adequate fit with the data. There are (a) dispositional forgiveness will be positively related to peer forgiveness, (b) peer forgiveness will be positively associated with relations with others, (c) peer forgiveness will be positively associated with satisfaction with life, and (d) relations with others would be positively related to satisfaction with life.

Method

Participants

Participants were 436 adults recruited from students in a university located in the north of Thailand within the age range of emerging adult (18 – 25 years old; Arnett, 2000). They consisted of 273 (62.6%) female and 163 (37.4%) male. At the time of data collection, the mean age of the total participants was 20.44 years old ($SD = 1.82$). They were studying in first year (37.2%), second year (29.8%), third year (8.3%), fourth year (24.2%), and no response (.5%). The breakdown of participants by faculty groups was 203 (46.6%) social science and

humanities, 189 (43.3%) health science, and 42 (9.6%) natural science and technology. Participants were asked for their consent and were informed that participation in this study was voluntary. The confidentiality of the data was protected. The data was collected over a period of one month in August, 2014.

Measures

The Peer Forgiveness Scale (PFS). The author presumed that the empirical approach to measure forgiveness within peer relationships was to design a scale which captures the offense-specific situation by getting the respondent, as offender, to report his/her thoughts, feelings, and actions towards the specific transgressor. These would precisely represent the circumscribed forgiveness process of an individual toward the specific offender after being threatened in peer conflict as mentioned in McCullough, Pargament, and Thoresen (2000). In this vein, the pool of initial items of the PFS was constructed in Thai to measure forgiveness towards a specific offender within a peer-related conflict. The pool consisted of thirty-two-items and was developed based on the four-factor structure of interpersonal forgiveness (Boonyarit et al., 2013), which identified forgiveness as an individual's cognitive, affective, and behavioral response towards the transgressor. The items were submitted to three content experts, including two scholars in behavioral science and an expert in positive psychology, aiming to examine the content validity. The experts agreed that the content of the PFS's items reflects the content domains of the PFS. The initial items of the PFS assessing the four factors of forgiveness towards a specific interpersonal offense within a peer context: Overcoming negative thought and affects towards the transgressor (ON: 8 items), Seekinging to understand the transgressor's reasons (SR: 8 items), Fostering positive acts towards the transgressor (FP: 8 items), and Belief in the benefits of forgiveness (BB: 8 items). These were first introduced to the participants. The scale instructed participants to select the answer which best described their thoughts, feelings, and behaviors regarding the specific person who had offended or hurt them in the past. The scale has Likert-type responses ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). A higher score on the PFS indicated greater forgiveness towards the offender.

Measures for convergent validity. To examine whether the PFS measures the related forgiveness construct, the following widely used standard measures of forgiveness were included in the study. First, the Forgiveness Scale (Rye et al., 2001) was used to assess the offense-specific forgiveness. The scale consisted of 15 items assessing the absence of negative response and the presence of positive response to the offender. Items were rated on a 5-points Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale has been shown to have a good internal consistency in Thai sample (Boonyarit et al., 2013; $\alpha = .83$). The Alpha coefficient for this scale in the present study was .85. Second, dispositional forgiveness was measured by 6 items of the dispositional forgiveness subscale from the Heartland Forgiveness Scale (Yamhure-Thompson & Snyder, 2003). The scale was rated on a 7-points Likert scale ranging from 1 (*almost always false*) to 7 (*almost always true*). A higher score on this scale indicated the likelihood of forgiving the wrongdoer in general. This scale showed acceptable reliability in a Thai sample (Boonyarit et al., 2013; $\alpha = .67$). The Alpha coefficient for this scale in the present study was .73. Third, state forgiveness was assessed with a single item (Boonyarit et al., 2013) asking the participants to respond to “*Currently, how much have you forgiven the specific wrongdoer on what he/she has done to you?*” The item was rated from 1 (*I haven't forgiven at all*) to 5 (*I have completely forgiven*). A higher score on this item showed the current decision of the participant in relation to forgiving the wrongdoer.

Measure for discriminant validity. To examine the discriminant validity of the PFS, eight items of the extraversion subscale of the Big Five Inventory (BFI; John, Naumann, & Soto 2008) was used to assess trait-domain of extraversion (i.e., activity, energy, dominance, sociability, expressiveness, and positive emotions). BFI is a short-phrase established from trait adjectives. Participants were asked to rate on a 5-point Likert scale from 1 (*disagree strongly*) to 5 (*agree strongly*). The Alpha coefficient for this scale in the present study was .78.

Measures for nomological validity. To examine whether the PFS behaves as theoretically expected, as evidence of nomological network (Cronbach & Meehl, 1955), three scales were included in the study to examine the structural relationships within the PFS. First, a subscale of the positive relations with others from the Ryff's Psychological Well-Being Scale (Abbott, Ploubidis, Huppert, Kuh, & Croudace, 2010) was a seven-item scale rated on a 6-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The Alpha coefficient for this scale in the present study was .74. Second, the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) comprised of five items was used to assess the global life satisfaction among participants. The scale was rated on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The Alpha coefficient for this scale in the present study was .83. Moreover, a scale from the analysis of convergent validity, dispositional forgiveness (Yamhure-Thompson & Snyder, 2003) was also included in the structural model to examine the nomological network of the PFS and its related variables.

Statistical Analyses

Several analyses were conducted to evaluate the psychometric properties of the PFS. Firstly, CFA was performed to examine the factor structure of the initial items of the PFS. The application of item-level analysis of CFA in scaling procedure as suggested by Netemeyer, Bearden, and Sharma (2003) was also used to determine the quality of each item belonging to its factor by using the LISREL program (Joreskog & Sorbom, 1993). Next, the scale was aimed to test the measurement invariance across genders by using multi-group CFA (Meredith, 1993; Wu, Li, & Zumbo, 2007) to provide the sequential steps in the assessment of configural, weak, strong, and strict invariance. Three aspects of construct validity, consisting of convergent validity, discriminant validity, and nomological validity, were provided as suggested by Cronbach and Meehl (1955) to examine the theoretical-related properties of the PFS.

Compliance with Ethical Standards and Conflict of Interest

All procedures performed involving human participants were in accordance with the ethical standards of the institutional research committee. The data collection was approved by the research committee of the corresponding institute. The author declares that there are no conflicts of interest.

Results

Factor Structure of the PFS

Before conducting CFA on the PFS, normality testing of the data was required. The results of the LISREL showed that the skewness and kurtosis combined of the measured items

were mostly significant ($p < .01$), revealing that non-normality existed among the items. Hence, the transformation of the measured items was necessary (Tabachnick & Fidell, 2007). The normal scores (*NS*) method was conducted by applying LISREL to the multivariate dataset (Joreskog & Sorbom, 1999). After transforming the data to normal scores, the skewness, the kurtosis, and the skewness and kurtosis combined of the measured items were satisfactory.

CFA was performed to examine the 32-item, 4 factors of the PFS. Results from the first CFA of the initial measurement model of the PFS converged, however it gave an unacceptable overall fit ($\chi^2 = 2254.90$, $df = 458$, $p < .01$; $NC = 4.92$; $CFI = .94$; $NNFI = .94$; $RMSEA = .09$). These goodness of fit indices suggested a necessary respecification of the items belonging to the factors of the PFS according to the item-level analysis of the CFA (Netemeyer et al., 2003). Several criteria on model respecification with a trimming procedure for problematic items were applied as suggested by Hair et al. (2009). These are (a) factor loading which is nonsignificant, (b) factor loading linked to its dimension with a value less than .50, and (c) modification index (MI) considered by the researcher to represent the problem of consistent correlated measurement errors or a large value of standardized residual. A high level of association between error terms of the items can result from item wording redundancy or common wording of the items (Netemeyer et al., 2003). By deliberating on the high value of MI coupled with conceptual and theoretical considerations, several items had the potential to be deleted.

Table 1

Items and Factor Loadings of 20-Item Peer Forgiveness Scale

Factors and Its items	Factor loadings
<i>Factor 1: Overcoming negative thought and affect towards the transgressor (ON subscale) (CR = .77; AVE = .41)</i>	
1) I try not to think about him/her negatively.	.66
2) I no longer hold any grudge against him/her.	.73
3) I do not feel resentful when I meet him/her.	.60
4) I can let go of my anger towards him/her.	.66
5) I feel angry every time I think about how he/she had wronged me.	.53
(-)	
<i>Factor 2: Seeking to understand the transgressor's reasons (SR subscale) (CR = .83; AVE = .49)</i>	
6) I do not think that he/she intended to hurt me.	.73
7) I think he/she is just an ordinary person who is likely to commit a mistake.	.70
8) I try to rationalize that the offense was done unintentionally by him/her.	.81
9) I still judge what he/she had done to me as a serious, wrongful act.	.59
(-)	
10) I no longer hold what he/she had done to me as a wrongful act.	.65
<i>Factor 3: Fostering positive acts towards the transgressor (FP subscale) (CR = .89; AVE = .62)</i>	
11) I think he/she is a good person although he/she has hurt me in the past.	.75
12) I can see the good side of him/her.	.77
13) I am compassionate towards him/her.	.88
14) I wish he/she finds good things in life.	.82
15) I am now friendly to him/her.	.70

Table 1 (Continued)

Factors and Its items	Factor loadings
<i>Factor 4: Belief in the benefits of forgiveness (BB Subscale) (CR = .86; AVE = .55)</i>	
16) I think that forgiving what he/she had done to me makes me find happiness.	.61
17) I believe that forgiveness towards him/her is the highest merit.	.77
18) I think that the best giving is to forgive him/her for how he/she had wronged me.	.86
19) I believe that by forgiving him/her, I will find wholesome things in my life.	.79
20) I believe that forgiveness is doing a merit for myself.	.66

Note: All factor loadings are standardized, (-) indicates a negative item.

During the analysis, the PFS was trimmed by deleting the problem items and the CFA was reconducted after each deletion. The investigation showed 12 items were removed due to their unqualified properties, yielding a better fit with the data. The CFA retained a 20-item, 4-factor structure of the PFS: 5 items for overcoming negative thought and affect towards the transgressor (ON subscale), 5 items for seeking to understand the transgressor's reasons (SR subscale), 5 items for fostering positive acts towards the transgressor (FP subscale), and 5 items for belief in the benefits of forgiveness (BB subscale). The adjusted model with 20 items revealed an acceptable fit ($\chi^2 = 411.98$, $df = 164$, $p < .01$; $NC = 2.51$; $CFI = .98$; $NNFI = .98$; $RMSEA = .06$). The retained items were relabeled as f1 to f20, and the factor loadings are given in Table 1.

Measurement Invariance across Gender

The 20-item, 4 factor model was examined to measure invariance across gender. A multi-group CFA was conducted to investigate whether it was appropriate to use the same structure of the PFS across genders. Four levels of hierarchical testing of measurement equivalence were followed: (a) configural invariance, (b) weak invariance, (c) strong invariance, and (d) strict invariance. The results are presented in the table below.

Table 2

Summary of Fit Indices for Measurement Invariance Testing of the PFS across Genders

Invariance Model	χ^2	df	CFI	RMSEA	ΔCFI	$\Delta RMSEA$
Model 1 Configural Invariance	633.03	338	.97	.06		
Model 2 Weak Invariance	653.88	354	.97	.06		
(Model 2 – Model 1)					.00	.001
Model 3 Strong Invariance	721.70	374	.97	.07		
(Model 3 – Model 2)					.00	.003
Model 4 Strict Invariance	903.71	394	.96	.08		
(Model 4 – Model 3)					.01	.012

Note: ΔCFI = the change in CFI between the comparison models; $\Delta RMSEA$ = the change in RMSEA between the comparison models

Configural invariance (Model 1) was identified as a baseline model which revealed whether participants from different genders, namely male and female, employ the same conceptual framework to answer the PFS's items. The author constrained the number of factors and the pattern of the free and fixed loadings to be the same, showing that factor structure of the PFS is equal across the groups. Results showed the configural invariance model had an adequate fit with the data. The goodness of fit indices were $\chi^2 = 633.03$, $df = 338$, CFI = .97, and RMSEA = .06. The evidence supported configural invariance of the PFS between male and female participants. Both CFI and RMSEA values were set as baseline values in subsequent nested testing. Next, a test of weak invariance was conducted (Model 2). This step aimed to examine whether the factor loadings of PFS are identical across genders. Both the factor structure and factor loadings of the PFS were constrained equally. Results showed model 2 demonstrated adequate fit, CFI = .97 and RMSEA = .06. By comparing the baseline model (model 1) and the weak invariance model (model 2), the differences of the fit indices were trivial with Δ CFI = .00 and Δ RMSEA = .00. Due to the change in CFI and RMSEA were below the recommended criteria (Cheung & Rensvold, 2002; Chen, 2007), the factor loadings of the PFS were equal between male and female. Subsequently, a test of strong invariance was performed (model 3). This step placed equality constraints on intercepts in the equations for predicting items and equality constraints on factor loadings of the PFS. Findings revealed model 3 demonstrated adequate fit, CFI = .97 and RMSEA = .07. By comparing the weak invariance model (model 2) and the strong invariance model (model 3), the differences of the fit indices were insignificant with Δ CFI = .00 and Δ RMSEA = .003. The fit indices were below the cut-off values, thus the equivalence of PFS's factor loadings and intercepts were retained. Finally, a test of strict invariance was conducted (model 4). All parameters in the measurement model were constrained across genders, such as factor loadings, intercepts, and residuals. Finding showed a mediocre fit, CFI = .96 and RMSEA = .08. By comparing the strong invariance model (model 3) and the strict invariance model (model 4), the differences of the fit indices were insignificant, with Δ CFI = .01 and Δ RMSEA = .01, and both fit indices were below the cut-off values. To sum up, the assumption of a measurement invariance of the PFS was supported across genders.

Reliability of PFS

Two types of internal consistency reliability were computed. First is Cronbach's alpha coefficient (α ; Cronbach, 1951), and the second is composite reliability (CR; Hair et al., 2006). The findings showed Cronbach's alpha coefficient of the overall PFS was .91, having an excellent level of internal consistency (see Table 3). The reliability coefficients for the PFS subscales were also acceptable, as suggested by Nunnally (1978), for overcoming negative thought and affect towards the transgressor ($\alpha = .77$, CR = .77), for seeking to understand the transgressor's reasons ($\alpha = .82$, CR = .83), for fostering positive acts towards the transgressor ($\alpha = .88$, CR = .89), and for belief in the benefits of forgiveness ($\alpha = .84$, CR = .86). In summary, results supported the idea that the reliability of the PFS is satisfactory for measuring forgiveness in peer relationships.

Evidence of Construct Validity

Convergent validity

The result showed the overall PFS was positively associated with offense-specific forgiveness ($r = .72$, $p < .01$), revealing that participants rating themselves highly on the PFS are likely to forgive their specific transgressors as well (see Table 3). The PFS subscales were also correlated moderately to highly with offense-specific forgiveness, for ON ($r = .69$, $p < .01$), for SR ($r = .66$, $p < .01$), for FP ($r = .54$, $p < .01$), and for BB ($r = .44$, $p < .01$). Moreover, the overall

PFS was positively related to dispositional forgiveness ($r = .62, p < .01$), showing that participants who had have a high score on the PFS are likely to forgive others in general. Scores on the PFS subscales were moderately to highly associated with dispositional forgiveness, for ON ($r = .59, p < .01$), for SR ($r = .52, p < .01$), for FP ($r = .49, p < .01$), and for BB ($r = .38, p < .01$). Finally, the correlation between the PFS and state forgiveness was examined. The overall PFS was positively related to state forgiveness ($r = .70, p < .01$), indicating that participant who have a high score on the PFS tend to rate higher on their decision to forgive their wrongdoers. The PFS subscales were also correlated moderately to highly with offense-specific forgiveness, for ON ($r = .67, p < .01$), for SR ($r = .61, p < .01$), for FP ($r = .51, p < .01$), and for BB ($r = .42, p < .01$).

Table 3

Correlation Coefficients, Reliability, Mean, and Standard Deviations of Measures

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Overall PFS	(.91)										
2. ON Subscale	.83**	(.77)									
3. SR Subscale	.86**	.68**	(.82)								
4. FP Subscale	.82**	.56**	.66**	(.88)							
5. BB Subscale	.64**	.39**	.34**	.36**	(.84)						
6. Dispositional Forgiveness	.62**	.59**	.52**	.49**	.38**	(.73)					
7. Offense-Specific Forgiveness	.72**	.69**	.60**	.54**	.44**	.68**	(.85)				
8. State Forgiveness	.70**	.67**	.61**	.51**	.42**	.59**	.69**	(-)			
9. Extraversion	.04	.003	-.04	.003	.20**	.09	.07	.02	(.78)		
10. Relation with Others	.25**	.17**	.18**	.17**	.28**	.26**	.25**	.17**	.44**	(.74)	
11. Satisfaction with Life	.19**	.13**	.17**	.14**	.16**	.18**	.18**	.12*	.25**	.42**	(.83)
<i>Mean</i>	4.30	4.01	4.00	4.32	4.86	4.90	4.16	3.90	3.18	4.04	4.44
<i>SD</i>	.73	.91	.97	.94	.85	.95	.71	.95	.57	.74	1.06

Note: Cronbach's Alphas are shown in parentheses, State Forgiveness has one item, * $p < .05$, ** $p < .01$

Discriminant validity

Table 3 showed the overall PFS was not significantly related to extraversion ($r = .04, ns$). For the PFS subscales, small correlations were found with extraversion, for ON ($r = .003, ns$), for SR ($r = -.04, ns$), for FP ($r = .003, ns$), and for BB ($r = .20, p < .01$). Though the BB subscale was significantly associated with extraversion, however, its correlation coefficient was small (Cohen, 1988), and the evidence of discriminant validity was still retained.

Nomological validity

Path analysis was performed to test the hypothesized model using LISREL (Joreskog & Sorbom, 1993). The results showed a satisfactory fit ($\chi^2 = 7.02, df = 2, p < .05; NC = 3.51; CFI = .98; NNFI = .95; RMSEA = .08$).

Table 4

Standardized Direct, Indirect, and Total Effects of Relationship among Peer Forgiveness and its Related Variables

Causal Variables	Dependent Variables								
	Peer Forgiveness			Relations with Others			Satisfaction with Life		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
Dispositional Forgiveness	.63**	-	.63**	-	.16**	.16**	-	.11**	.11**
Peer Forgiveness	-	-	-	.25**	-	.25**	.08	.10**	.18**
Relations with Others	-	-	-	-	-	-	.40**	-	.40**
Squared Multiple Correlation (R^2)	.40			.06			.18		

Note: DE = Direct Effect, IE = Indirect Effect, TE = Total Effect, ** $p < .01$

The tabular summary of the estimated standardized direct, indirect, and total effects is shown in Table 4. The findings revealed dispositional forgiveness had a statistically significant direct effect on peer forgiveness ($\beta = .63$, $p < .01$), as dispositional forgiveness explained 40 percent of the variance in peer forgiveness. Peer forgiveness had a statistically significant direct effect on relations with others ($\beta = .25$, $p < .01$). The standardized indirect effect of dispositional forgiveness on relations with others through peer forgiveness was statistically significant ($\beta = .16$, $p < .01$). Both dispositional forgiveness and peer forgiveness explained six percent of the variance in relations with others. Moreover, relations with others had a statistically significant direct effect on satisfaction with life ($\beta = .40$, $p < .01$). The result found peer forgiveness had no significant direct effect on satisfaction with life ($\beta = .08$, ns), however, the standardized indirect effect of peer forgiveness on satisfaction with life through relations with others was statistically significant ($\beta = .10$, $p < .01$). Dispositional forgiveness had a statistically significant indirect effect on satisfaction with life through peer forgiveness and relations with others ($\beta = .11$, $p < .01$). The 18% of the variance in satisfaction with life was explained. Finally, when considering the indirect effects shown in the path model, the results yielded the full mediating role of relations with others on the relationship between peer forgiveness and satisfaction with life.

Discussion

The development and examination of the psychometric properties of the PFS that are situation or culture-specific would enable interested researchers to study peer relationships in the Thai context further. A confirmatory factor analysis yielding a clearer factor structure and the quality of the items of the PFS found that forgiveness in peer relationships was composed of four factors. The finding is consistent with the concept of forgiveness in Boonyarit et al. (2013), which was used as a foundation for creating this scale.

The first factor of the PFS is overcoming negative thought and affect towards the transgressor. It consists of items that reflect a person's attempt to eliminate or control negative thought and feeling (i.e., anger, grudge, and resentfulness) towards the transgressor. The items from the first factor reflect the concept of forgiveness in the Thai context, which is influenced by Buddhism. The emphasis is on the fact that forgiveness is an individual practicing, starting from letting go of revenge and grudge-holding towards the offender. Individuals who forgave would try to liberate their mental state from the influence of anger and consequently turn it into a clear mind (H.H. Somdet Phra Nyanasamvara, 2008). The second factor is seeking to

understand the transgressor's reasons. The items in this subscale refer to the process of trying to understand the reasons or finding positive reasons to comprehend the transgressor and the offensive event. This is found to be consistent with the qualitative findings in the Thai context from Boonyarit et al. (2012) which stated that before individuals can forgive, they have to undergo reattribution of thought by seeking to understand the offender's reason or view and accept the offender's mistake. The third factor is fostering positive acts towards the transgressor. The items in this subscale reflect the individual's attempt to encourage positive thoughts and emotions, such as empathy, and maintain a friendly manner towards the transgressor. It is consistent with Buddhism's concept of forgiveness, which is related to loving-kindness and compassion. The transgressed is encouraged to react positively towards the transgressor such as transforming their own perspective into a positive one and trying to have empathy for the transgressor. The last factor is belief in the benefits of forgiveness. The question items reflect the concept of forgiveness among Thai people whose definition of the concept is relative to Buddhism (Rye et al., 2000). This subscale focuses on the awareness of the individual that forgiveness would bring happiness and that it is a valuable act of giving, showing the benefit of abandoning vengeance and making the good karma from forgiving the transgressor.

The findings from the multiple-group analysis of the PFS showed no difference in the factor structure and parameters in the measurement across genders. This evidence shows the equivalent measurement model of the PFS among genders, reflecting that both male and female participants perceived and interpreted the items of the PFS in the same way. The finding is consistent with Berry, Worthington, Parrott, O'Connor, and Wade (2001), in which the Transgression Narrative Test of Forgiveness (TNRFT) was developed and differential item functioning analysis of the question items across male and female was performed. No differences in question responses were found between genders. Moreover, it is consistent with a meta-analysis that found no significant correlation between gender and forgiveness-encouraging strategies (Worthington, Sandage, & Berry, 2000).

Upon examination of the construct validity of the PFS and other related variables, the author found evidence of convergent validity, in that the score of the PFS had a positive correlation with other standard forgiveness scales. The high positive correlation coefficients prove that this forgiveness scale has similar properties with other scales that were proved previously to have sound psychometric properties. Moreover, when analyzing discriminant validity between the scores of the PFS and extraversion, the author found no statistically significant correlation between these variables and a very low correlation coefficient, showing that peer forgiveness, as measured by the PFS, was different from the concept of extraversion. This is consistent with the results from previous studies in western contexts which found a low correlation between the two variables (McCullough & Hoyt, 2002; Kamat, Jones, & Row, 2006; Wang, 2008). The result from the examination of convergent and discriminant validity is consistent with the Workplace Forgiveness Scale (Boonyarit et al., 2013), whose four factors served as the foundation for creating the PFS to have good convergent and discriminant properties as well.

The evidence from the examination of nomological validity found that forgiveness in peer relationships measured by the scale developed in this study correlated with other theoretically-related variables. Dispositional forgiveness had a direct positive correlation with peer forgiveness. The findings are consistent with that of research by Thai (Boonyarit et al., 2013) and western researchers (Wade & Worthington, 2003; Koutsos, Wertheim, & Kornblum, 2008). It was found that individuals with the tendency to forgive in general correlated with offense-specific forgiveness. Also, forgiveness in peer relationships had a direct positive correlation with relations with others, and that corresponded to the idea proposed by western

scholars that showing forgiveness had a positive connection with relationship reconciliation and improvement of positive relationships (Exline & Baumeister, 2000). Furthermore, it is consistent with the findings from other studies which revealed that forgiveness is positively correlated with cooperative intention (Karremans & Van Lange, 2004), and current closeness (McCullough, Sandage, & Worthington, 2002). The analysis of nomological networks also revealed that relations with others was positively related to satisfaction with life, corresponding to findings from previous studies in that students who had good peer relationships at school or university tended to have high satisfaction in life as well (Chang, Osman, Tong, & Tan, 2011; Li & Lau, 2012; Goswami, 2012; Imaginario, Vieira, & Jesus, 2013).

Implications

The results of the current study have implications for future research. This study was conducted on a sample group of Thai emerging adults studying in university and there was a limitation in extending generalization of the results of peer forgiveness to other groups. Thus, further research is required in order to prove replicability of the PFS in, for example, emerging adults in university nation-wide, or emerging adults who do not engage in academic education but in vocational education or those who are in an early stage of their career. For the practical implications, the PFS and content of the factors in peer forgiveness can be used and included in the counseling session aiming for monitoring students to be aware of their perspective in interpersonal conflict and helping them into the stage of granting forgiveness. Fostering forgiveness after conflict, tends to produce better peer relationships, and this can be done by including the PFS into the forgiveness strategies to aid individuals in conflict management, such as Forgiveness Therapy (Reed & Enright, 2006), which applied the forgiveness process developed by Enright and Fitzgibbons (2000). The aim is to eliminate negative thoughts and vengeance towards the transgressor, which may begin by introducing the four components of the PFS to the prospective trainees, fostering empathy and kindness, and setting a new life goal. Moreover, factors on understanding the transgressor's reasons and perspective-taking are important in reflecting forgiveness in peer relationships. Because of this strategy, the individual may, for instance, explain his/her thoughts, feelings and behavior towards the situation in which he/she is the transgressor.

In conclusion, the findings in this study demonstrate the detailed development of the PFS, in which the scale items were developed to measure and reflect the four factors of forgiveness in peer relationship. The PFS proves the validity of the generalization of the Thai concept of forgiveness as presented in Boonyarit et al. (2012, 2013) to Thai university students in emerging adulthood. The PFS demonstrates good psychometric properties showing measurement equivalence across genders, good reliability and evidence of construct validity.

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