

THE CULTURE OF DISCLOSURE: EFFECTS OF PERCEIVED REACTIONS TO DISCLOSURE ON POSTTRAUMATIC GROWTH AND DISTRESS IN JAPAN

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This study examined the effects of disclosure about a highly stressful event and perceived social reactions to the disclosure on posttraumatic growth (PTG) and distress. Participants (395 Japanese university students) reported on their most traumatic life event that had occurred less than 10 years previously. Those who had disclosed about their events provided open-ended descriptions of the perceived social reactions they received. The reactions were coded using two different classifications: a global categorization (Positive, Negative, and Other), and then a more precise assignment to 7 categories (Sympathizing, Encouraging, Listening, Mutual disclosing, Being confused, Not taking it seriously, and Other). PTG was higher in those who disclosed about the event. In addition, those who perceived their recipients' reactions as involving mutual disclosure reported higher PTG than those who reported reactions of being confused, and higher distress than those who reported reactions of listening, encouraging, and sympathizing. These findings point to the importance of disclosure and of perceived recipients' reactions to disclosure in the PTG and distress processes.

Highly stressful or traumatic events influence social relationships depending on the way people do or do not interact with others following the events. People who experience stressful events may find

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it useful to talk to others about what has happened to them and express their thoughts or emotions. In doing so they may hope to gain social support, find meaning, or reappraise the event as a means of understanding and coping. Although some may find this sharing of thoughts and feelings to be helpful, others may find that the reactions they receive leave them feeling damaged or inhibited as a result of their disclosing. On the other hand, some people may choose not to discuss their experiences with others at all. This decision may be due to a desire to contain their thoughts and work through the issues alone or because they want to share with outsiders but cannot find a way to broach the topic with appropriate others. This study addresses the effects of self-reported disclosure choices and responses to that disclosure on the aftermath of a highly stressful or traumatic event.

A number of studies have shown that expressing one's thoughts or emotions following exposure to a highly stressful event has positive consequences, while avoiding disclosure generally has negative effects. Disclosure following traumas has been associated with a lower level of distress (e.g., Bolton, Grenn, Orsillo, Roemer, & Litz, 2003), better physical functioning in daily activities (Kelley, Lumley, & Leisen, 1997), and even a more resilient self-concept (Hemenover, 2003). A growing body of literature has shown that an overall decrease in negative outcomes, such as PTSD symptoms or distress, can be observed as associated with disclosure; however, there have been only a few studies that examined the effects of disclosure on positive outcomes as a result of struggling with highly stressful or traumatic events, known as posttraumatic growth.

Posttraumatic growth (PTG) refers to the positive psychological changes experienced as a result of struggling with highly challenging life circumstances or a major life crisis (Calhoun & Tedeschi, 1999). The presence of PTG is not merely the absence of distress, but PTG can be "an indication that persons who experience it are living life in ways that, at least from their point of view, are fuller, richer, and perhaps more meaningful" (Calhoun & Tedeschi, 2006, p. 7). One model of PTG (Tedeschi & Calhoun, 2004) suggests that a factor that might foster PTG involves disclosing and positive responses to disclosure about the event. This PTG model suggests multiple roles that disclosure might play in the process of growth.

First, expressing emotions and thoughts can be the initial stage of management of the acute distress caused by a highly stressful event and thereby may promote psychological preparedness for eventual

PTG. Second, disclosure may contribute to reconstructing one's assumptive world (e.g., Janoff-Bulman, 1989) when it has been threatened, disrupted, or shaken as a result of highly challenging life circumstances. Supportive responses in others may help provide a means to craft narratives about the changes that have occurred and offer perspectives that can be integrated into schema change (Neimeyer, 2004). Third, disclosure can provoke PTG through enhancing constructive forms of cognitive processing (Tedeschi, & Calhoun, 2004). Expressing emotion can enhance well-being by alleviating intrusive rumination (Lepore, Ragan, & Jones, 2000) and fostering more productive, deliberate and reflective rumination (Treyner, Gonzalez, & Nolen-Hoeksema, 2003), which has been seen as one of the major antecedents to PTG (e.g., Calhoun & Tedeschi, 2006). Fourth, given the interpersonal characteristics of expressing emotion, disclosure may directly influence PTG by the discloser's recognizing a significant relationship has been (re)established or strengthened by responses to disclosing. Significant changes in relationships, such as a greater sense of intimacy and closeness, have been found to be one of the major domains of PTG (e.g., Tedeschi & Calhoun, 1996). And fifth, disclosure may, but sometimes may not, produce adequate social support that can also affect the extent of any subsequent PTG. There may be an indirect role of disclosure in PTG being mediated by social support.

The potential importance of disclosure, and the benefits derived from the support of others, depends upon the social context in which the sharing of thoughts and feelings about a stressful event occurs (Calhoun & Tedeschi, 2006). Pennebaker (1997) has noted that such beneficial effects of disclosing have been generally considered as evident, at least in many Western cultures; however, the impacts of disclosure on the psychological outcome of dealing with a stressful event may involve culture-specific characteristics. A study with a Japanese sample, for example, found no clear relationships among disclosing trauma, changes in distress caused by trauma, and physical symptoms (e.g., Sato & Sakano, 2001). This finding suggests the possibility that the beneficial role of disclosure may be observed in only some cultures. "Many mental health professionals believe that expressing one's emotions and thoughts in the aftermath of a stressful event promotes mental and physical health, and that to inhibit such expressions is detrimental to health in Western cultures" (Lepore, Fernandez-Berrocal, Ragan, & Ramos, 2004, p. 341), but such notions may not be as pervasive in Japanese culture as in Western

culture (e.g., Nakanishi & Johnson, 1993). This speculation needs to be studied further by examining the effects of disclosure on the psychological outcomes following a stressful event with a cultural perspective.

The present study is designed to examine how disclosure does or does not influence both PTG and distress within a Japanese sample who reported about their responses following their most stressful or traumatic events. This study addresses two research questions. First, it investigates the potential roles in PTG and distress of a combination of (a) whether or not the participants disclosed their event to others and (b) whether or not they had wanted to disclose. PTG was found to be positively associated with talking about trauma in the United States. (Cordova, Cunningham, Carlson, & Andrykowski, 2001); however it is still not clear why those who did not talk showed lower PTG than those who talked. The impact of disclosure may depend on the desire to disclose. People who are unwilling to reveal emotion to others are more likely to show distress (e.g., Barry & Mizrahi, 2005). Clearly not all people seek support from others (e.g., Coyne & DeLongis, 1986); thus, it seems important to know whether there are effects of an inconsistency between disclosing behavior and the personal desire to disclose. Consistency would exist when people who wanted to disclose did and when people who did not want to disclose actually did not. Inconsistency would occur when people wanted to disclose but did not or people who did not want to disclose actually did.

Thus far, moderately positive relationships between symptoms and PTG have been reported (e.g., Taku, Calhoun, Cann, & Tedeschi, 2008), suggesting that PTG and distress may coexist in the person dealing with a major stressful event and that PTG and distress can operate independently. It is expected that the roles of disclosure in PTG are different from those in influencing experienced distress. This study examines the relationships between the desire to disclose, actually disclosing or not disclosing, and PTG and distress. It might be predicted that people who want to and disclose about their event or people who do not want to and do not disclose would report more growth and less distress than those who do not want to but eventually disclose or those who want to but do not disclose.

The second issue addressed in this research is the discloser's perceptions of the recipients' reactions to disclosure. Ullman and Filipas (2001), for example, showed increased levels of PTSD symptoms in those who perceived negative reactions to their disclosing,

such as receiving stigmatizing responses, or being blamed, avoided or given destructive advice. Tedeschi and Calhoun (2004) noted that supportive others can aid PTG through the provision of new schemas, and by offering perspectives on what has happened that can be integrated into schematic change, which can facilitate the survivor's cognitive processing about the event and subsequent growth.

Bolton et al. (2003) assessed recipients' reactions to disclosure using a single item (i.e., ranging from extremely negative to extremely positive), whereas Ullman (2000) used two dimensions, 2 positive reactions (emotional support/belief, and tangible aid/information support) and 5 negative reactions (treat differently, distraction, take control, victim blame, and egocentric) to assess the social reactions to sexual assault victims. Quantitative approaches using the positive - negative scale might either create biases in the participants or be slightly over-simplified (Guay, Billette, & Marchand, 2006). The Social Reactions Questionnaire (Ullman, 2000) may cover a wide range of recipients' responses to disclosure; however, whether it is applicable to people who have other life events besides sexual assault or who have a different cultural background from the United States, is not clear. The current study adopts a qualitative approach to capture the broad range of social reactions to disclosure in a Japanese sample. The use of a qualitative methodology allows for in-depth understanding of perceived reactions to disclosing, including the specific verbal expression in the Japanese language, which may not be found by utilizing standardized measures set a priori. Thus, the second purpose of this study is to examine what kind of perceived reactions following disclosure, if any, produced the differences in the level of PTG and distress.

METHOD

PARTICIPANTS

A total of 445 undergraduate students enrolled in psychology classes were recruited at five private medium-sized universities in different cities in regional areas of Japan. The breakdown of the participants' majors was: 46.8% sociology, 23.7% psychology, 9.9% human studies, 8.3% health science, and 11.2% other. The current sample consisted of 395 (151 males, 244 females) students who reported about their experiences with the most traumatic or stressful life event that had occurred less than 10 years previously. The participants' aver-

age was 19.9 years ($SD = 1.2$) and the vast majority were single ($n = 393$). More than half (61.5%) lived with their family, 34.9% lived by own, 2.3% lived in a dorm, and 1.3% other. The types of events reported were as follows: being bullied at school verbally and/or physically (14.7%), death of a family member (9.4%), romantic relationship break-up (9.4%), failure on an entrance for a university examination (8.6%), having a severe illness or accident (7.6%), death or suicide of a close friend or a significant person (6.1%), significant academic problems (5.5%), divorce or separation of parents (4.1%), family member's severe illness, injury, or accident (2.3%), and others with low frequencies (32.3%) such as natural disaster or relocation. Almost half of the events (46.4%) had occurred in the past 2 years, and 76% with the past 5 years.

MEASURES

Posttraumatic Growth. The Japanese version of the Posttraumatic Growth Inventory (PTGI-J; Taku et al., 2007) was used. The PTGI-J consists of four subscales: Relating to Others (6 items), New Possibilities (4 items), Personal Strength (4 items), and Spiritual Change & Appreciation of Life (4 items). Each item is rated from 0 (*I did not experience this change as a result of my crisis*) to 5 (*I experienced this change to a very great degree as a result of my crisis*). The α coefficients of the PTGI-J in the current sample were: Total ($\alpha = .91$), Relating to Others ($\alpha = .85$), New Possibilities ($\alpha = .82$), Personal Strength ($\alpha = .77$), and Spiritual Change & Appreciation of Life ($\alpha = .67$). The PTGI-J was developed from a Japanese translation of the PTGI (Tedeschi & Calhoun, 1996), the standardized measure most commonly used to assess personal growth following traumatic events. Internal consistency and the test-retest reliability of the PTGI have been reported as satisfactory, and the concurrent, discriminant, and construct validity has been also demonstrated (Tedeschi & Calhoun, 1996).

Psychological Distress. To measure the distress focusing on traumatic symptoms such as intrusion, avoidance, and hyperarousal, the revised Impact of Event Scale (IES-R; Weiss, 2004; Weiss & Marmar, 1997) was used. The IES-R consists of three subscales: Intrusion (8 items), Avoidance (8 items), and Hyperarousal (6 items). Each item is rated from 0 (not at all) to 4 (extremely), with higher scores implying higher levels of traumatic symptoms. In this study, the Japanese translation of the IES-R (IES-R-J) that has demonstrated

satisfactory reliability and validity (Asukai et al., 2002) was used. The α coefficients for the Intrusion, Avoidance, and Hyperarousal subscales in the current sample were: .89, .84, and .80, respectively.

Disclosure. Two dichotomous items were used to evaluate the combination of actual disclosure and desire to disclose. The questions were: (a) Did you want to talk about what had happened to you? and (b) Did you actually talk about it? Each item was answered either yes (1) or no (0).

Perceived Recipient's Reactions to Disclosure. A single open-ended question about recipients' reactions to the disclosure was used for those who reported disclosing to others. The instruction was "Please describe how the person with whom you talked about the event that you identified as the most traumatic or stressful event in your life reacted when you disclosed it, including what the person said and/or how the person looked."

PROCEDURE

Prior to completing the measures, all participants provided demographic information, such as gender, age, and marital status. They then identified the most traumatic event they had experienced that would serve as the focus when completing the remaining measures. Those who reported they had disclosed about their event were asked to describe when they had disclosed. Data collection took place in classroom settings and required approximately 30 minutes to complete. Order of presentation of the measures was counterbalanced to avoid any possible order effects. The survey was done without course credit or any other compensation given.

CODING THE PERCEIVED RECIPIENT'S REACTIONS TO DISCLOSURE

Although 80.8% ($n = 319$) of the participants reported that they disclosed their event to others, only 248 out of 319 (77.7%) provided responses to the open-ended descriptions; thus, analyses of perceived recipients' reactions were done with this subsample. The responses ranged from short phrases to complete paragraphs consisting of up to six sentences. The perceived recipients' reactions given in the open-ended question format were coded using

two strategies for classification. First, in order to examine how well the simple positive-negative classification that has been used in the previous studies (e.g., Bolton et al., 2003; Moriwaki, Sakamoto, & Tanno, 2002; Ullman, 2000) could be applied to these participants, all responses were assessed on whether the overall impression was positive, negative, or other (neither positive nor negative including a few illegible or unintelligible responses) by four coders who were unaware of the purposes of the current study: One Japanese speaker coded the original responses; two native English speakers coded the responses that were translated into English; and another Japanese speaker coded the back-translated responses. Inter-rater reliabilities among four independent coders were: .88 for positive (54.4% of the total responses); .80 for negative (8.1%); and .61 for other (37.5%, all coders agreed on 57 out of 93 responses coded as other, only two of the coders agreed on 11 out of 93 responses and three coders agreed on 25 out of 93 responses). When discrepancies among the four coders occurred, the response was placed in the positive or negative category if 3 of 4 agreed, but if only 2 agreed, the response was designated as other. These three categories were used as the first classification in this study.

Second, in order to shed light on a wider variety of recipient's reactions, the responses were coded by one English and one Japanese speaker into as many distinct subcategories as possible. A total of 29 subcategories emerged. These 29 subcategories were sorted into seven categories by the first author and two coders, by looking for thematic similarity of the subcategories produced. All responses were then assessed by two different coders based on these seven categories as well as the 29 subcategories: (a) Sympathizing or Comforting (22.6%) including accepting and understanding subcategories; (b) Encouraging or Giving Advice (18.1%) including cheering me up subcategory; (c) Listening (16.9%) including nodding and being together without a word subcategories; (d) Mutual Disclosing or Working Through Together (14.9%) including sharing emotions or thoughts subcategory; (e) Being Confused or Shocked (11.7%) including being perplexed, surprise, and getting upset subcategories; (f) Not Taking it Seriously or Denying (8.5%) including being incredulous, trying to distract, showing arrogant attitudes, and making fun of it subcategories; and (g) Other (7.3%). Inter-rater reliabilities of the six main categories (not Other) between two independent raters ranged from .71 for Sympathizing or Comforting to .90 for Not Taking it Seriously or Denying. Any discrepancies between these two independent raters were resolved by assigning the

response to the category the first two coders selected, if one of the current coders agreed, or to the Other category when that was not true. These six categories were used as the second classification.

The results for the combination of the two classifications showed that 57.1% of Sympathizing, 93.3% of Encouraging, 78.6% of Listening, 70.3% of Mutual Disclosing, and 6.9% of Being confused were originally coded as positive; 24.1% of Being confused, 57.1% of Not taking it seriously, and 5.6% of Other were coded as negative; and the rest were coded as other in the first classification.

RESULTS

CHARACTERISTICS OF DISCLOSURE, PTG, AND DISTRESS REPORTED

Scores for the total scale and the four subscales of the PTGI-J were: Total ($M = 34.87$, $SD = 17.87$, range = 0 – 90), Relating to Others ($M = 13.79$, $SD = 7.75$, range = 0 – 30), New Possibilities ($M = 8.08$, $SD = 5.53$, range = 0 – 20), Personal Strength ($M = 7.03$, $SD = 4.85$, range = 0 – 20), and Spiritual Change & Appreciation of Life ($M = 5.97$, $SD = 4.64$, range = 0 – 20). Scores for the total scale and the three subscales of the IES-R-J were: Total ($M = 22.52$, $SD = 17.10$, range = 0 – 88), Intrusion ($M = 8.72$, $SD = 7.34$, range = 0 – 32), Avoidance ($M = 8.92$, $SD = 7.15$, range = 0 – 32), and Hyperarousal ($M = 4.78$, $SD = 4.98$, range = 0 – 24). There was a positive relationship between the total score of the PTGI-J and the IES-R-J ($r = .20$, $p < .001$).

Of the current sample ($N = 395$), 19.2% ($n = 76$) reported that they had not talked about their stressful or traumatic events to anyone: 15.8% of this subgroup ($n = 12$) reported that they had wanted to talk but did not, whereas 84.2% ($n = 64$) did not want to talk and did not talk. Of those who had disclosed about their events ($n = 319$, 80.8%), 77.4% ($n = 247$) reported that they had wanted to talk and did, whereas 22.6% ($n = 72$) did not want to but did talk. For those who disclosed, disclosure occurred: right after the event ($n = 218$, 68.3%), within 1 week ($n = 21$, 6.6%), within 1 month ($n = 21$, 6.6%), within 6 months ($n = 25$, 7.8%), or 6 months or more after the event ($n = 34$, 10.7%).

TABLE 1. Means and SD for the PTGI-J and IES-R-J Subscales Associated with Disclosure and Desire to Disclose

Disclosure Desire to Disclose	Yes				No			
	Yes		No		Yes		No	
	M	SD	M	SD	M	SD	M	SD
PTGI-J Relating to Others	2.53	1.23	2.14	1.32	1.36	1.02	1.85	1.32
New Possibilities	2.13	1.37	1.92	1.46	1.23	1.13	1.89	1.34
Personal Strength	1.81	1.19	1.73	1.37	1.21	0.73	1.73	1.21
Spiritual Change & Appreciation of Life	1.45	1.20	1.82	1.15	1.04	0.93	1.41	1.00
IES-R-J								
Intrusion	1.06	0.93	1.32	0.88	1.24	1.01	0.95	0.88
Avoidance	1.03	0.85	1.30	0.89	1.75	1.05	1.13	0.98
Hyperarousal	0.76	0.82	0.94	0.82	1.19	1.07	0.72	0.83

Note. Score ranges for the PTGI-J and IES-R-J subscales are 0 – 5 and 0 – 4, respectively.

DIFFERENCES IN THE PTGI-J AND IES-R-J ASSOCIATED WITH DISCLOSURE AND DESIRE TO DISCLOSE

A 2 (Disclosure or Not) \times 2 (Desired to disclose or Not) ANOVA on the subscale scores of the PTGI-J and IES-R-J was conducted. Table 1 contains the means and the standard deviations for each subscale. Significant interactions between disclosure and desire to disclose for the Avoidance and Hyperarousal subscales of the IES-R-J were found, $F(1, 388) = 8.65, p = .003, \text{partial } \eta^2 = .022, F(1, 389) = 5.63, p = .018, \text{partial } \eta^2 = .014$, respectively. Acting against one's desire appears to be related to higher PTSD symptoms such as avoidance and hyperarousal. Also, significant main effects (estimated marginal means used due to unequal n 's in groups) for disclosure, with those who disclosed about their traumatic events reporting higher growth than those who did not disclose, were found on the Relating to Others (2.33 vs. 1.59), New Possibilities (2.03 vs. 1.54), and Spiritual Change & Appreciation of Life (1.63 vs. 1.21) subscales of the PTGI-J, $F(1, 391) = 11.60, p = .001, \text{partial } \eta^2 = .029, F(1, 391) = 4.18, p = .042, \text{partial } \eta^2 = .011$, and $F(1, 391) = 4.55, p = .034, \text{partial } \eta^2 = .012$,

DIFFERENCES IN THE PTGI-J AND IES-R-J ASSOCIATED WITH PERCEIVED RECIPIENT'S REACTIONS TO DISCLOSURE

A series of *t* tests showed no significant differences between those who completed the open-ended question ($n = 248, 77.7\%$) and those who did not ($n = 71, 22.3\%$) for the scores of the subscales of the PTGI-J and the IES-R-J. A one-way ANOVA comparing groups created by the first classification of reactions to disclosure (positive, negative, or other) revealed significant differences for the Relating to Others and the Personal Strength subscales of the PTGI-J, $F(2, 245) = 9.78, p < .001$ and $F(2, 245) = 5.14, p = .007$, respectively. After a Bonferroni correction to provide some control over experiment-wise error, post hoc tests (Scheffe) showed that those who perceived recipient's reactions as positive had greater growth than those whose responses were classified as other on the Personal Strength score, $M(SD) = 2.08(1.16)$ vs. $1.58(1.20)$, $p = .008$. Also, those who saw recipient's reactions to disclosure as positive reported greater growth on the Relating to Others subscale than those whose reactions were categorized as either negative or other, $M(SD) = 2.79(1.22)$ vs. $1.80(1.56)$, $p = .004$, $2.21(1.11)$, $p = .002$, respectively. There were no differences for any of the IES-R-J subscales.

For the second phase, six groups formed using the more precise categorization were compared. The ANOVA was significant for the three out of four subscales of the PTGI-J (not significant for the Spiritual Change & Appreciation of Life subscale) and all subscales of the IES-R-J (Table 2). Post hoc tests (Scheffe) revealed that those who reported reactions of mutual disclosing showed significantly higher growth in the areas of Relating to Others and Personal Strength than those who reported reactions of being confused. Those who reported reactions of mutual disclosing showed significantly higher intrusion and hyperarousal than those who reported sympathizing. Also, those who reported reaction of being confused showed significantly lower growth in the areas of Relating to Others and New Possibilities than those who reported reactions of listening, and showed significantly higher avoidance and hyperarousal than those who reported sympathizing.

DISCUSSION

Self-disclosing about one's traumatic event has been regarded as a key for building and maintaining constructive relationships, gaining social support, alleviating negative emotions, and offering perspectives that can be integrated into the schema change that has been thought to be important for posttraumatic growth (PTG) to occur (e.g., Barry & Mizrahi, 2005). The findings of the current study extend the examination of the role of disclosure and perceived recipient's reactions to one's disclosure in the PTG process (Calhoun & Tedeschi, 2006). In addition to the beneficial effect of disclosing behavior in PTG, the current data highlighted the value of examining the desire to disclose as part of understanding PTG and distress resulting from a significant stressful event. The present data also suggest that the types of perceived reactions from close others to the disclosure could affect levels of both PTG and distress. Additionally, the pattern of results indicates that PTG and distress may be understood best as two separate and potentially independent experiences, not as the ends of a single.

The first purpose of the study was to examine the effect of the combination of the actual behavior of disclosing and desire to disclose. Consistent with the empirical findings with an American sample (Cordova et al., 2001), regardless of desire to disclose, those who disclosed their traumatic events showed higher growth in relating to others, new possibilities and spiritual change and appreciation of life. As the PTG model (Calhoun & Tedeschi, 2006) includes the role of narratives, people are likely to experience PTG by developing a narrative account through communicating with other people. However, an interaction indicated that engaging in the nonpreferred behavior did produce higher avoidance symptoms, suggesting the potentially adverse effects of inconsistency in desire to disclose and actual disclosure. Since Sato and Sakano (2001) showed that there were no clear relationships between disclosing trauma and physical symptoms within a Japanese sample, desire to disclose may be one factor that can explain the relationships.

In order to experience greater growth, people may need to engage in disclosure and expression of their experiences even though they do not want to do so initially. Thus, there is a possibility that for

TABLE 2. Mean and SD for the PTGI-J and IES-R-J Subscales Associated with Second Categorization of the Recipient's Reactions

Denying	Sympathizing / Comforting		Encouraging/ Giving Advice		Listening		Mutual Disclosing/Working Through Together		Being Confused/ Shocked		Not Taking it Seriously/ F		
	Ma	SD	Mb	SD	Mc	SD	Md	SD	Me	SD	Mf	SD	
PTGI-J													
RO	2.57	1.18	2.52	1.22	2.96	1.13	2.96	1.17	1.90	1.23	1.63	1.25	6.12**
NP	2.36	1.41	1.92	1.51	2.49	1.24	2.40	1.09	1.34	1.24	2.33	1.73	3.37**
PS	2.15	1.27	1.97	1.21	1.96	1.06	2.18	1.13	1.09	1.08	1.45	1.38	4.30**
SA	1.76	1.28	1.41	1.19	1.46	1.07	1.84	1.09	1.59	1.20	1.48	1.22	.92
IES-R-J													
Intrusion	.83	.87	.94	.80	1.01	.92	1.76	.91	1.44	.84	1.51	.94	7.09**
Avoid-ance	.86	.83	.98	.74	.92	.77	1.32	.92	1.59	1.00	1.53	.95	4.80**
Hyperarousal	.50	.67	.74	.74	.75	.76	1.30	.95	1.16	.92	.98	.85	5.66**

Note. RO = Relating to Others; NP = New Possibilities; PS = Personal Strength; SA = Spiritual Change & Appreciation of Life. Eta squared for Relating to Others, New Possibilities, Personal Strength, Spiritual Change & Appreciation of Life, Intrusion, Avoidance, and Hyperarousal are: .12, .07, .09, .02, .14, .10, and .11, respectively. Even after a Bonferroni correction ($p < .05/7 = .007$), all of the subscales, except for the Spiritual Change & Appreciation of Life, reached the significance level. Results of post hoc tests (Scheffe, $p < .05$) are as follows: Relating to Others; Mc, Md > Me, Mf. New Possibilities; Mc > Me. Personal Strength; Ma, Md > Me. Intrusion; Ma, Mb, Mc < Md. Avoidance; Ma < Me. Hyperarousal; Ma < Md, Me. ** $p < .01$.

some people who would prefer not to disclose, but have ultimately disclosed their traumatic event, by being encouraged by a third person, through an intervention, accidentally, or for some other reason, that the experience can help them to develop PTG, even though it can be initially stressful, indicated by interactions between desire to disclose and disclosure on the avoidance and hyperarousal subscales of the IES-R-J. In relation to disclosure, there may be a threshold effect, that is, the critical distinction between having no supportive relationships and having at least one has been reported (e.g., Coyne & DeLongis, 1986). Further examining the relationship of disclosure, PTG, and distress may have clinical implications, especially for those who do not initially show desire to disclose or those who show inconsistency of desire to disclose and disclosing behavior. Positive associations between openness to experience, emotional expression, and PTG, have been reported (e.g., Jaarsma, Pool, Sanderman, & Ranchor, 2006), and future research will need to investigate how the situational factors allow people who may not have such characteristics (openness or motivation for emotional expression) to disclose their traumatic events and express PTG, for the current studies have shown that while the effect sizes indicate these are relatively small effects, the consistent pattern of responses across the PTSD symptoms and PTG domains suggest a reliable impact.

The second purpose of this study was to attempt a categorization of the recipient's reactions to disclosure and its relation to PTG and distress. Although the positive - negative distinction has been common in the research on social reactions to disclosure, 37.5% of the descriptions provided by the current sample could not be categorized as clearly positive or negative, requiring an Other category. To capture the wider variety of reactions to disclosure, a second classification used 7 categories that emerged from the open-ended responses. Although all categories seem to be included in the Social Reactions Questionnaire (Ullman, 2000), one particular perceived reaction categorized as "mutual disclosing or working through together" may not be a reaction that the existing inventory has covered.

Results showed that those who perceived recipient's reactions as positive reported more growth on relating to others and personal strength than those who perceived recipient's reactions as negative and other, or as negative, respectively. Also, those who reported reactions of mutual disclosing, encouraging, and listening showed higher PTG than those who reported others' reactions of being con-

fused or shocked. The research in the area of social constraints (e.g., Lepore & Helgeson, 1998) has consistently shown adverse effects of social constraints in the aftermath of trauma. This study supports the adverse effects of recipient's reactions when they are perceived as negative or being confused or shocked.

Interestingly, perceiving mutual disclosure or working through together seems to have a central role in influencing PTG positively and distress negatively in the current Japanese sample. This study showed that disclosure could bring out disclosure by the recipients and that this interactive process could go beyond a one-way interaction, and, although still being stressful, could lead to PTG. These results seem to support the idea that PTG and distress can coexist. As the nature of interdependence, "fundamental connectedness of human beings" (Markus & Kitayama, 1991) is held in the Japanese culture in which the current participants are embedded, this path may reflect culture-specific characteristics. Future research will need to clarify these social interactive processes to explore more deeply the role of social interactive processes between the discloser and recipient in PTG.

Several limitations of this study should be noted. Only 8% of the recipient's reactions described in the answer to an open-ended question were categorized as negative by our coders. Although there were no significant differences between those who provided the recipient's reactions and those who did not, it is reasonable to interpret these findings as both being biased as a result of the research method (i.e., open-ended question format rather than an inventory) and reflecting Japanese participants' response bias including a tendency of social desirability. Because a set of dichotomous items of self-disclosure was used in this study, future research should consider using a multi-item index that might more comprehensively capture disclosing. In addition, although the creation of categories of response to disclosure reflected both Japanese and American perspectives, one might argue that because only Japanese reactions were examined, the generalizability of the current results is in question. Also, the categorization of the perceived recipients' reactions may not be inclusive. Japanese expressions, "Kiite-kureta" and "Kiite-ita," were both categorized into listening; however, the former implies appreciation to listeners whereas the latter depicts overt listening behavior. Including that, the issues of language differences—collecting data in one language and analyzing and interpreting data

in a different language—likely play a role in the way these results are understood.

Future research needs to address several other issues. Even if disclosing plays an important role in the PTG process, it is clear that PTG can occur without self-disclosure about a traumatic event. Experiencing hardships or suffering without sharing thoughts and feelings with others can still allow people to experience PTG. The variability of the time when disclosing occurred in the current sample showed that future research should examine what factors can make people be psychologically ready to talk to others about what had happened. In addition, future research may need to distinguish between the role of disclosure after people are aware of their PTG experience, and the role of disclosure during the struggling process before experiencing PTG. The PTG model has described that the importance of self-disclosure lies in development of narrative skills associated with not just trauma but PTG. Additional research will be necessary to identify the fundamental aspects of self-disclosing that might seriously impede PTG processes, as well as foster PTG.

REFERENCES

- Asukai, N., Kato, H., Kawamura, N., Kim, Y., Yamamoto, K., Kishimoto, J., et al. (2002). Reliability and validity of the Japanese-language version of the impact of event scale - revised (IES-R-J): Four studies of different traumatic events. *Journal of Nervous and Mental Disease, 190*, 175-182.
- Barry, D. T., & Mizrahi, T. C. (2005). Guarded self-disclosure predicts psychological distress and willingness to use psychological services among East Asian immigrants in the United States. *Journal of Nervous and Mental disease, 193*, 535-539.
- Bolton, E. E., Glenn, D. M., Orsillo, S., Roemer, L., & Litz, B. T. (2003). The relationship between self-disclosure and symptoms of posttraumatic stress disorder in peacekeepers deployed to Somalia. *Journal of Traumatic Stress, 16*, 203-210.
- Calhoun, L. G., & Tedeschi, R. G. (1999). *Facilitating posttraumatic growth: A clinician's guide*. Mahwah, New Jersey, and London: Lawrence Erlbaum Associates.
- Calhoun, L. G., & Tedeschi, R. G. (2006). The foundations of posttraumatic growth: An expanded framework. In L. G. Calhoun, & R. G. Tedeschi (Eds.), *Handbook of posttraumatic growth* (pp. 3-23). Mahwah, NJ: Lawrence Erlbaum Associates.
- Cordova, M. J., Cunningham, L. L. C., Carlson, C. R., & Andrykowski, M. A. (2001). Posttraumatic growth following breast cancer: A controlled comparison study. *Health Psychology, 20*, 176-185.
- Coyne, J. C., & DeLongis, A. (1986). Going beyond social support: The role of social relationships in adaptation. *Journal of Consulting and Clinical Psychology, 54*, 454-460.

- Guay, S., Billette, V., & Marchand, A. (2006). Exploring the links between posttraumatic stress disorder and social support: Processes and potential research avenues. *Journal of Traumatic Stress, 19*, 327-338.
- Hemenover, S. H. (2003). The good, the bad, and the healthy: Impacts of emotional disclosure of trauma on resilient self-concept and psychological distress. *Personality and Social Psychology Bulletin, 29*, 1236-1244.
- Jaarsma, T. A., Pool, G., Sanderman, R., & Ranchor, A. V. (2006). Psychometric properties of the Dutch version of the posttraumatic growth inventory among cancer patients. *Psycho-Oncology, 15*, 911-920.
- Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. *Social Cognition, 7*, 113-136.
- Kelley, J. A., Lumley, M. A., & Leisen, J. C. (1997). Health effects of emotional disclosure in rheumatoid arthritis patients. *Health Psychology, 16*, 331-340.
- Lepore, S. J., Fernandez-Berrocá, P., Ragan, J., & Ramos, N. (2004). It's not that bad: Social challenges to emotional disclosure enhance adjustment to stress. *Anxiety, Stress, and Coping, 17*, 341-361.
- Lepore, S. J., & Helgeson, V. S. (1998). Social constraints, intrusive thoughts, and mental health after prostate cancer. *Journal of Social and Clinical Psychology, 17*, 89-106.
- Lepore, S. J., Ragan, J. D., & Jones, S. (2000). Talking facilitates cognitive-emotional processes of adaptation to an acute stressor. *Journal of Personality and Social Psychology, 78*, 499-508.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*, 224-253.
- Moriwaki, A., Sakamoto, S., & Tanno, Y. (2002). The effects of adequate self-disclosure and acceptance of recipients on depression of self-discloser: Examination of the model with longitudinal design (written in Japanese with English abstract). *Japanese Journal of Counseling Science, 35*, 229-236.
- Nakanishi, M., & Johnson, K. M. (1993). Implications of self-disclosure on conversational logics, perceived communication competence, and social attraction: A comparison of Japanese and American cultures. In R. L. Wiseman, & J. Koester (Eds.), *Intercultural communication competence* (pp. 204 - 221). Thousand Oaks, CA: Sage Publications.
- Neimeyer, R. A. (2004). Fostering posttraumatic growth: A narrative elaboration. *Psychological Inquiry, 15*, 53-59.
- Pennebaker, J. W. (1997). Writing about emotional experiences as a therapeutic process. *Psychological Science, 8*, 162-166.
- Sato, K., & Sakano, Y. (2001). Relationship among disclosures of traumatic experiences, changes in distress on the traumatic experiences and physical symptoms (written in Japanese with English abstract). *Japanese Journal of Counseling Science, 34*, 1-8.
- Taku, K., Calhoun, L. G., Cann, A., & Tedeschi, R. G. (2008). The role of rumination in the coexistence of distress and posttraumatic growth among bereaved Japanese university students. *Death Studies, 32*, 428-444.
- Taku, K., Calhoun, L. G., Tedeschi, R. G., Gil-Rivas, V., Kilmer, R. P., & Cann, A. (2007). Examining posttraumatic growth among Japanese university students. *Anxiety, Stress & Coping, 20*, 353-367.
- Tedeschi, R. G., & Calhoun, L. G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*, 455-471.

- Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry, 15*, 1-18.
- Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research, 27*, 247-259.
- Ullman, S. E. (2000). Psychometric characteristics of the social reactions questionnaire: A measure of reactions to sexual assault victims. *Psychology of Women Quarterly, 24*, 257-271.
- Ullman, S. E., & Filipas, H. H. (2001). Predictors of PTSD symptom severity and social reactions in sexual assault victims. *Journal of Traumatic Stress, 14*, 369-389.
- Weiss, D. S. (2004). The impact of event scale – revised. In J. P. Wilson & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD second edition* (pp. 168-189). New York: Guilford Press.
- Weiss, D. S., & Marmar, C. R. (1997). The impact of event scale - revised. In J. P. Wilson & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD* (pp. 399-411). New York: Guilford Press.

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