

Cultural Differences in Levels of Autonomous Orientation in Autobiographical Remembering in Posttraumatic Stress Disorder

LAURA JOBSON*

School of Medicine, Health Policy and Practice, University of East Anglia, Norwich, UK

Summary: This study investigated cultural differences in levels of autonomous orientation (the tendency to express autonomy and self-determination) in autobiographical remembering in those with and without posttraumatic stress disorder (PTSD). Trauma survivors with PTSD and without PTSD from individualistic and collectivistic cultures (N = 101) provided self-defining, everyday and trauma autobiographical memories. Memories were coded for levels of autonomous orientation and interdependence. It was found trauma survivors from individualistic cultures with PTSD had lower levels of autonomous orientation in their autobiographical remembering than trauma survivors from individualistic cultures without PTSD. In contrast, trauma survivors from collectivistic cultures with PTSD had higher levels of autonomous orientation in their autobiographical remembering than trauma survivors from collectivistic cultures without PTSD. The results suggest the cultural distinction in self-impacts on the relationship between the nature of autobiographical remembering and posttraumatic psychological adjustment. Copyright © 2010 John Wiley & Sons, Ltd.

Theoretical models and an increasing body of empirical work have focused on the role of autobiographical memory in the understanding of posttraumatic stress disorder (PTSD) (e.g. Conway, 2005; Dalgleish, 2004; Ehlers & Clark, 2000; McNally, Lasko, Macklin, & Pitman, 1995; Rubin, Berntsen, & Bohni, 2008; Sutherland & Bryant, 2006). However, these theoretical and empirical advances have not considered the influence of cultural differences in self-construal on autobiographical remembering. People in different cultures have strikingly different understandings of the self which have been found to impact on autobiographical remembering. In individualistic cultures (typically Western), the self is perceived to be an independent, autonomous and self-determining unit. In contrast, in collectivistic cultures (typically non-Western) the self is perceived as an interdependent, related unit (see Markus & Kitayama, 1991). Wang and Conway (2004) theorize a unique, symbiotic, bi-directional relationship between the culturally appropriate self and autobiographical memory. Specifically, an emphasis on autonomy *versus* relatedness in the self at the macro cultural level influences the encoding, organization and retrieval of individuals' autobiographical memory and autobiographical memories function to develop, express and maintain the culturally appropriate self.

This relationship is demonstrated in the emergence, content and organization of autobiographical memory. Research has shown that mothers from collectivistic cultures engage their children in reminiscing that encourages ongoing relationships, social interactions and collectivity, and downplay autonomy and self-determination. In contrast, mothers from individualistic cultures invite their children to actively participate in the creation of their own life story and there is an emphasis on the individual's self-definition, autonomy and self-determination (e.g. Choi, 1992; Mullen &

Yi, 1995; Nelson & Fivush, 2004; Wang, 2007; Wang & Fivush, 2005). Furthermore, children and adults from individualistic cultures have been found to provide more self-revealing, self-focused, specific, autonomously oriented (tendency to express autonomy and self-determination) autobiographical memories than those from collectivistic cultures. In contrast, collectivistic cultures tend to focus on collective activities, social interactions and significant others (e.g. Gu-Yaish & Wang, 2006; Jobson & O'Kearney, 2008a; Pillemer, 1998; Wang, 2008; Wang & Conway, 2004; Wang, Hutt, Kulkofsky, McDermott, & Wei, 2006; Wang, Leichtman, & Davies, 2000).

Given the centrality of autobiographical memory in PTSD, the question remains, what does this mean for the autobiographical memory of trauma? Do autobiographical memories of trauma also reflect the cultural differences evident in everyday autobiographical memories? What is the role of trauma memories in the re-affirmation of the self? Such consideration is important for evaluating cognitive models that implicate autobiographical memory in the development and maintenance of PTSD and for ensuring culturally appropriate ways of treating PTSD.

Accumulating evidence suggests that regardless of culture temporary primes, situations and events can call forth a particular orientation of the self (e.g. McGuire, McGuire, Chile, & Fujioka, 1978; Trafimow, Triandis, & Goto, 1991; Wagar & Cohen, 2003; Wang & Ross, 2005). Traumatic events challenge goals to survive, to protect personal safety and to personally control and master the situation (i.e. goals of autonomy, control and self-determination) (e.g. Dalgleish, 2004). An evolutionary perspective suggests that across all cultures humans focus on personal survival when faced with trauma. Therefore, it is hypothesized that there will be cultural differences in levels of autonomous orientation in the everyday memory but the trauma memory will contain culturally similar levels of autonomous orientation.

People have schema-driven expectations as to appropriate levels of autonomous orientation in autobiographical remembering which are derived from the cultural self (e.g.

*Correspondence to: Laura Jobson, School of Medicine, Health Policy and Practice, University of East Anglia, Norwich NR4 7TJ, UK.
E-mail: L.Jobson@uea.ac.uk

Markus & Kitayama, 1991; Nelson & Fivush, 2004; Wang & Conway, 2004). For those from individualistic cultures, an emphasis on the independent self results in schema-driven expectations of high levels of autonomous orientation in autobiographical remembering as this reaffirms personal control, uniqueness and autonomy. For those from collectivistic cultures, an emphasis on an interdependent self results in schema-driven expectations of low levels of autonomous orientation in autobiographical remembering as autonomous orientation is not valued and has the potential to undermine group harmony, 'fitting in' and a sense of interdependence (Wang & Conway, 2004). Research has found that information that deviates from schema-driven expectations results in enhanced memory of the information (i.e. salience, clarity, vividness, detail) (e.g. Brewer & Treyns, 1981; Brown & Kulik, 1977; Rubin & Kozin, 1984). Berntsen and Rubin (2007) claim that the trauma memory typically deviates from schema-driven expectations and thus, remains highly accessible and a cognitive reference point for the organization of other autobiographical memories. This influences the attribution of meaning given to other less significant events as well as influencing the generation of expectations for future events. Current situations are therefore perceived as a current threat resulting in PTSD symptoms (Ehlers & Clark, 2000). For some trauma survivors, the level of autonomous orientation in their autobiographical remembering of trauma may violate schema-driven expectations of appropriate levels of autonomy in autobiographical remembering. Such violations result in enhanced memory of the trauma event which then becomes the reference point for autobiographical memory and results in PTSD symptoms. While other processes (e.g. biological, memory, appraisals, etc.) are involved in the development and maintenance of PTSD, this is one mechanism that may contribute to PTSD symptoms. Secondly, it is hypothesized that trauma survivors from individualistic cultures with PTSD will have lower levels of autonomous orientation in their trauma memories than those without PTSD and trauma survivors from collectivistic cultures with PTSD will have higher levels of autonomous orientation in their trauma memories than those without PTSD.

Third, it is hypothesized that the central trauma memory will have an influence on the relationship between autobiographical memory and the self. The central trauma memory and its level of autonomous orientation are likely to impact on the expression, development and maintenance of the self. Given self-defining memories are a measure of alteration in self-concept (Sutherland & Bryant, 2006), the third hypothesis is that trauma survivors from individualistic cultures with PTSD will have lower levels of autonomous orientation in self-defining memories than those without PTSD and trauma survivors from collectivistic cultures with PTSD have higher levels of autonomous orientation in self-defining memories than those without PTSD. Furthermore, this impact on the self will influence on-going encoding, organization and retrieval of other everyday autobiographical memories. The fourth hypothesis is that those from individualistic cultures with PTSD will have lower levels of autonomous orientation in their everyday memories than

those without PTSD, while those from collectivistic cultures with PTSD will have higher levels of autonomous orientation in their everyday memories than those without PTSD.

Finally, given (a) the relationship between autonomy and interdependence and (b) to rule out the alternate explanation that any differences observed are the result of group differences in language use or skill, the study will also investigate levels of interdependence expressed in the memories. The opposite predictions are made for interdependence. Specifically, trauma survivors from individualistic cultures with PTSD will have higher levels of interdependence in their trauma, self-defining and everyday memories than those without PTSD, while trauma survivors from collectivistic cultures with PTSD will have lower levels of interdependence in their trauma, self-defining and everyday memories than those without PTSD.

In sum, it is hypothesized that there will be culturally similar levels of autonomous orientation in the trauma memory; trauma survivors from individualistic cultures with PTSD will have lower levels of autonomous orientation and higher levels of interdependence in their autobiographical remembering than those without PTSD; and trauma survivors from collectivistic cultures with PTSD will have higher levels of autonomous orientation and lower levels of interdependence in their autobiographical remembering than those without PTSD. These hypotheses are tested in the current study with trauma survivors with and without PTSD from individualistic and collectivistic cultures currently living in Australia.

METHOD

Participants

Participants from individualistic cultures (Australia, New Zealand, Western Europe and North America) with PTSD ($N = 25$; 6 male; mean age = 41.08, $SD = 12.54$; mean length of years in Australia = 36.53, $SD = 14.72$) and without PTSD ($N = 29$; 6 male; mean age = 39.21, $SD = 14.04$; mean length of years in Australia = 34.97, $SD = 14.64$) and collectivistic (Asia, Africa, Middle East and South America) cultures with PTSD ($N = 23$; 9 male; mean age = 34.35, $SD = 14.49$; mean length of years in Australia = 5.72, $SD = 9.08$) and without PTSD ($N = 24$; 11 male; mean age = 33.54, $SD = 13.09$; mean length of years in Australia = 7.52, $SD = 8.94$) were recruited from the community. The groups did not differ in terms of gender, $\chi^2(3, N = 101) = 5.93, p = .12$, and age, $F(3, 97) = 1.85, p = .14$, but did differ in terms of length of time in Australia, $F(3, 97) = 45.52, p < .001$. All participants who were not born in Australia were first generation immigrants. Participants were recruited using posters in public places, advertisements in newspapers, Adult Migrant English Programs and contacts with ethnic organizations and communities, and organizations that provide treatment for trauma survivors. Notices called for those who had experienced a traumatic event and identified the study as researching trauma, memory and culture. Participants received a \$20 supermarket voucher for their participation.

Measures

Autobiographical memory

Trauma event. Participants were asked to, 'Please think about a significant, emotionally, traumatic event. Please write about this event in as much detail as you can. All your writing will be completely confidential. As you write do not worry about punctuation or grammar, just write as much as you can and you can include thoughts, feelings, reflections, etc. If you need more room please use the next page'.

Everyday event. Participants were asked to, 'Please think about an event that took place in your life. It may be positive, negative or neutral. Please write about the first event that comes to mind in as much detail as you can. All your writing will be completely confidential. As you write do not worry about punctuation or grammar, just write as much as you can and you can include thoughts, feelings, reflections, etc. If you need more room, please use the next page'.

Self-defining memories. Using Singer and Salovey's (1993) method, participants were informed that 'A self-defining memory is a memory from your life that you remember very clearly, is important to you and leads to strong feelings, that may be either positive or negative, or both. It is the kind of memory that helps you to understand who you are and might be the memory you would tell someone else if you wanted that person to understand you in a more profound way. They are memories that you feel convey powerfully how you have come to be the person you currently are. Please briefly write down five self-defining memories'.

Posttraumatic stress disorder status

PTSD was diagnosed using the Posttraumatic Stress Diagnostic Scale (PDS; Foa, Riggs, Dancu, & Rothbaum, 1993). The PDS has four parts. Parts I and II contains trauma screening questions which correspond to (American Psychiatric Association, 1994) PTSD Criteria A. Part III contains 17 items each corresponding to the Criteria B through Criteria D. Participants are asked to rate these items, for the past month, on a 4-point scale ranging from 0 (not at all) to 3 (*almost always*). A symptom is considered to be present if it is scored 1 or higher. The ratings of the items are summed to calculate a total severity score. The PDS then ascertains duration of the symptoms (Criteria E) and impairment of functioning (Criteria F). To be considered a positive screen on the PDS, a participant must meet Criteria A, endorse a broad enough range of items to meet Criteria B (reexperiencing), C (avoidance), and D (increased arousal), have symptoms present for over one month and indicate that the disturbances are causing significant impairment in functioning (i.e. a diagnosis of PTSD is only made if all the six *DSM-IV* criteria are endorsed). The PDS has adequate test-retest reliability, concurrent and convergent validity with other measures of psychopathology (including the Structured Clinical Interview; Spitzer, Williams, & Gibbon, 1987) and predictive validity (Foa et al., 1993). The PDS has been used in previous research with collectivistic cultures (e.g. Garcia, 2005).

Trauma history questionnaire

To control for lifetime exposure to traumatic events, the Trauma History Questionnaire was used (THQ; Green, 1996). The THQ is designed to assess exposure to a wide range of potentially traumatic experiences in three areas: Crime-related events, general disaster and trauma, and unwanted physical and sexual experiences (Green, 1996). Test-retest reliability and interrater reliability has been found to be moderate to high (Mueser et al., 2001) and the THQ has been used in collectivistic cultures (e.g., Fiszman, Cabizuca, Lanfredi, & Figueira, 2005).

Depression

Depression was measured using Part II of the Hopkins Symptom Checklist (HSCL-25; Derogatis, Lipman, Rickels, & Cori, 1974). The HSCL-25 depression score has been consistently shown in several populations to be correlated with major depression as defined by the *DSM-IV* (1994), has adequate psychometric properties (Derogatis et al., 1974) and is regularly used in cross-cultural research (e.g. Mouanoutoua & Brown, 1995).

Independence/interdependence

As in previous research (e.g. Bochner, 1994; Jobson & O'Kearney, 2008b; Ma & Schoeneman, 1997; Watkins & Gerong, 1999), the Twenty Statements Test (TST; Kuhn & McPartland, 1954) was used to verify cultural group differences in self. The TST asks respondents to provide 20 statements in response to the question 'Who Am I'? The 20 responses are coded into comparable categories of the independent-interdependent dichotomy. Responses are coded as independent if they refer to personal qualities, attitudes, beliefs or behaviours that are not related to other people and as interdependent if they refer to collective self-cognitions (i.e. responses concerning to particular groups or categories, e.g. 'I am Asian') or cognitions pertaining to interdependence, friendship and relationships or to the sensitivity of others. Each participant receives a score which is the ratio of independent cognitions divided by the number of cognitions provided.

Demographics

Participants were asked to disclose their age, gender, length of time in Australia and ethnicity. Following this, participants were asked to rate on a 10-point Likert-type scale from 1 (*not at all*) to 10 (*extremely*) how hard they found the study.

Scoring/Coding

Autonomous orientation

The memory narratives were scored for autonomous orientation based on previous studies (e.g. Jobson & O'Kearney, 2006; Jobson & O'Kearney, 2008a; Wang & Conway, 2004; Wang & Ross, 2005). Autonomous orientation is an index of participants' tendency to express autonomy and self-determination in their memories. The raters counted the number of occurrences of the following instances. The scores of these six instances were combined to produce a single score of autonomous orientation for each

memory: (1) reference to personal needs, desires or preferences; (2) reference to personal dislikes or avoidance; (3) reference to personal evaluations, judgments or opinions regarding other people, objects or events; (4) reference to retaining control over one's own actions and resisting group or social pressure; (5) reference to personal achievement or competency and (6) the number of instances that involved just the individual. In the self-defining memories, autonomous orientation was scored as above. However, the score of autonomous orientation for each memory was summed across the number of memories provided. To control for number of memories provided (as not all participants retrieved five self-defining memories), an autonomous orientation ratio was developed by dividing total autonomous orientation by the number of memories reported.

Interdependence

Interdependence was indexed by the number of social interactions and references to others in the memories. Social interactions were defined as instances that involved social interactions or group activities (Jobson & O'Kearney, 2006; Wang & Conway, 2004). The number of instances that involved social interactions or group activities were counted and totalled for each memory. References to others were defined as the number of times participants mentioned other people in their memories. Social interactions and reference to others were combined to provide an interdependence score. In the self-defining memories, interdependence was scored as above. However, the score of interdependence for each memory was summed across the number of memories provided and an interdependence ratio was developed by dividing total interdependence by the number of memories reported.

Design and procedure

Interested potential participants were sent a data package. Return rate was 42.4% (44.8% individualistic culture; 40% collectivistic culture). The data package contained a letter outlining the aims of the study, the instructions for participation and that if the participant decided to return the questionnaire they were giving their consent to having their questionnaire used in the study. The package also contained a reply paid self-addressed envelope so the participants could return the questionnaire to the researcher and a voucher slip. The voucher slip required participants to enter their name and address and these slips were returned with the questionnaire in the reply paid envelope. However, once the voucher was sent to the participant the slip was destroyed so the questionnaires were examined anonymously. Participants were informed of this in the letter. In the questionnaire, participants were asked to provide self-defining memories, a trauma narrative and an everyday narrative (the order of the narratives were counterbalanced) and were then asked to complete the PDS, HSCL-25, THQ, TST and demographics.

Participants ($N = 5$) who provided trauma memories that were not the same as the trauma event indicated on the PDS were excluded from the study. Participants were allocated to one of the two cultural groups based on their identified

ethnicity. Participants' identified ethnicity was compared to Hofstede and Hofstede's (2004) categorization of cultures along the individualism (i.e. societies in which the ties between individuals are loose and everyone is expected to look after themselves and their immediate family) *versus* collectivism (i.e. individuals are integrated into strong, cohesive groups and there is a tight social framework) dimension (i.e. if the participant identified themselves as Australian they would be placed in the individualistic group whereas as a participant who identified themselves as Chinese would be placed in the collectivistic group). Only cultures that could be clearly identified as individualistic or collectivistic were selected. Two participants (both Spanish) were excluded based on this criterion. This allocation was then validated using the TST. The individualistic group ($M = 0.70$, $SD = 0.25$) provided significantly higher proportion of independent statements on the TST than the collectivistic group ($M = 0.51$, $SD = 0.26$), $t(99) = 3.70$, $p < .01$.

Participants who met *DSM-IV* (1994) PTSD Criteria A on the PDS were allocated to either the PTSD or no PTSD group based on their completion of the remaining sections of the PDS. Nine participants (five collectivistic culture) were excluded as they did not meet Criteria A. Following PDS scoring, if participants endorsed items that were consistent with a *DSM-IV* diagnosis of PTSD, participants were allocated to the PTSD group.

Reliability

A second independent rater who was Chinese coded 20% of responses. Raters were blind to the cultural group and PTSD status of participants, and study hypotheses. Discrepancies between raters were resolved through discussion. Interrater reliability was good for the TST (Kappa coefficient = .89). The mean Kappa coefficient of reliability was .72 for autonomous orientation of narratives and .73 for autonomous orientation of self-defining memories. The mean Kappa coefficient of reliability was .74 for interdependence in narratives and .73 for interdependence in self-defining memories.

RESULTS

PTSD severity and trauma exposure

Table 1 shows the means and standard deviations of PTSD symptoms, trauma exposure and depression. There were no cultural differences in terms of PTSD symptom score on the PDS, $F(1, 97) = 2.73$, $p = .10$. Those with PTSD scored significantly higher than those without PTSD, $F(1, 97) = 194.63$, $p < .01$. The interaction was not significant, $F(1, 97) = 2.63$, $p = .11$. The four groups did not differ in terms of trauma history (THQ), $F(1, 97) = 1.88$, $p = .14$. The individualistic culture group did not differ from the collectivistic culture group in terms of depression, $F(1, 97) = .28$, $p = .60$. Those with PTSD were significantly more depressed than those without PTSD, $F(1, 97) = 75.33$, $p < .01$. The interaction was not significant, $F(1, 97) = 2.19$, $p = .14$.

Table 1. Means and (standard deviations) of PTSD, trauma exposure, depression, and autonomous orientation and interdependence in self-defining memories

	Individualistic culture		Collectivistic culture	
	PTSD	No PTSD	PTSD	No PTSD
PDS total score	26.75 (8.81)	3.13 (4.58)	21.78 (11.12)	3.09 (4.14)
THQ	7.87 (3.33)	4.93 (3.84)	5.96 (5.24)	6.04 (5.85)
Depression	2.35 (.60)	1.34 (.45)	2.15 (.50)	1.44 (.39)
Self-defining memories				
Autonomous orientation	1.83 (1.03)	2.44 (1.41)	1.06 (.71)	.68 (.53)
Interdependence	1.10 (.75)	1.06 (.53)	1.84 (.88)	1.81 (.95)

Memories

For all analyses, there was no difference between whether participants retrieved the everyday or trauma memory first. For the narratives, two $2 \times 2 \times 2$ way ANOVAs with culture (individualistic vs. collectivistic) and PTSD status (PTSD vs. no PTSD) as between subject factors, memory type (everyday vs. trauma) as a within subject factor and either autonomous orientation or interdependence as the dependent variable, were conducted. For the self-defining memory task, two 2×2 way ANOVA with culture (individualistic vs. collectivistic) and PTSD status (PTSD vs. no PTSD) as between subject factors and either autonomous orientation or interdependence as the dependent variable were conducted. The means and standard deviations for autonomous orientation and interdependence in the self-defining memories are shown in Table 1.

Autonomous orientation

Figure 1 shows the means for autonomous orientation for the narrative tasks.

The individualistic culture had significantly more autonomous orientation in their narratives than collectivistic culture, $F(1, 97) = 19.83, p < .01$. The PTSD status main

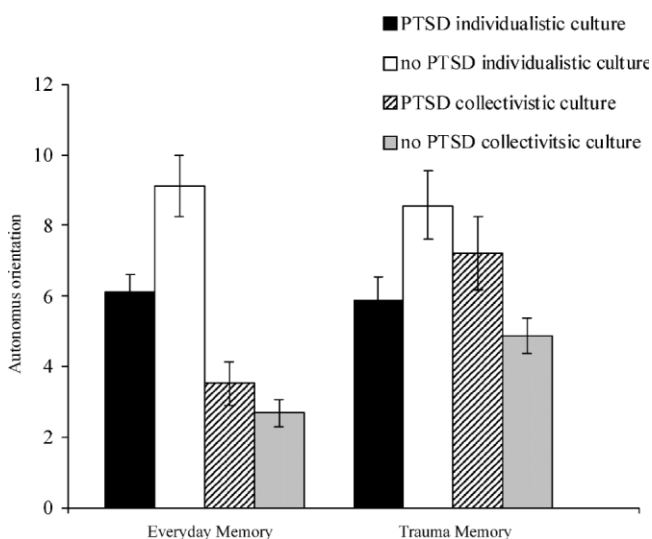


Figure 1. The mean autonomous orientation for the individualistic PTSD group, individualistic no PTSD group, collectivistic PTSD group and collectivistic no PTSD groups for both the everyday and trauma memory. Error bars indicate ± 1 SE of the mean

effect, $F(1, 97) = .99, p = .32$, was not significant. The trauma memories were significantly more autonomous than the everyday memories, $F(1, 97) = 9.32, p < .01$. The interaction between culture and memory type was significant, $F(1, 97) = 15.68, p < .01$. For the everyday memory, individualistic culture had significantly more autonomously orientated memories than did collectivistic culture, $t(99) = 6.67, p < .01, CI_{.95} = 3.26, 6.01, d = 1.57$. However, for the trauma memory, individualistic and collectivistic cultures did not differ in terms of autonomous orientation, $t(99) = 1.48, p = .14, CI_{.95} = -.44, 3.04, d = .23$. The interaction between culture and PTSD status was significant, $F(1, 97) = 12.12, p < .01$. For individualistic culture, those with PTSD had significantly less autonomous orientation in their autobiographical memories than those without PTSD, $t(53) = 2.84, p < .01, CI_{.95} = -4.87, -.83, d = .79$. For collectivistic culture, those with PTSD had significantly more autonomous orientation in their autobiographical memories than those without PTSD, $t(44) = 2.25, p = .03, CI_{.95} = .16, 3.01, d = .66$. The interactions between PTSD status and memory type, $F(1, 97) = 1.20, p = .28$, and between PTSD status, culture and memory type, $F(1, 97) = .50, p = .48$, were not significant.

While the individualistic culture group had significantly more autonomous orientation in their self-defining memories than the collectivistic culture group, $F(1, 97) = 38.35, p < .01$, those with and without PTSD did not differ, $F(1, 97) = .29, p = .59$. The interaction between culture and PTSD status for the self-defining memory task was significant, $F(1, 97) = 5.89, p = .02$. Individualistic PTSD tended to provide less autonomous orientation than individualistic no PTSD, $t(53) = 1.78, p = .08, CI_{.95} = -1.29, .08, d = .50$. Whereas, collectivistic PTSD provided more autonomous orientation than collectivistic no PTSD, $t(44) = 2.08, p = .04, CI_{.95} = .01, .76, d = .61$.

Interdependence

Figure 2 shows the means for interdependence for the narrative tasks.

Individualistic culture had significantly less interdependence in their narratives than collectivistic culture, $F(1, 97) = 7.33, p = .01$. The PTSD group had less interdependence than the non-PTSD group, $F(1, 97) = 7.70, p = .01$. The trauma memories did not differ significantly from the everyday memories, $F(1, 97) = 1.46, p = .23$. The interactions between culture and memory type, $F(1, 97) = 1.70, p = .20$, culture and PTSD status, $F(1, 97) = .60, p = .44$,

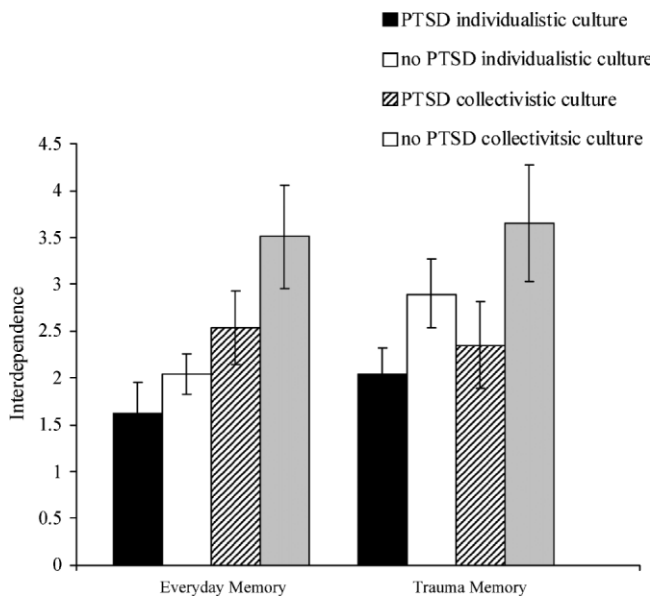


Figure 2. The mean interdependence for the individualistic PTSD group, individualistic no PTSD group, collectivistic PTSD group and collectivistic no PTSD groups for both the everyday and trauma memory. Error bars indicate ± 1 SE of the mean

PTSD status and memory type, $F(1, 97) = .59, p = .46$ and PTSD status, culture and memory type, $F(1, 97) = .01, p = .93$, were not significant. Regarding self-defining memories, while the individualistic culture group had significantly less interdependence than the collectivistic culture group, $F(1, 97) = 23.06, p < .01$, those with and without PTSD did not differ, $F(1, 97) = .05, p = .83$. The interaction between culture and PTSD status for the self-defining memory task was not significant, $F(1, 97) = .00, p = .99$.

Task difficulty

There were no cultural differences ($M = 4.94, SD = 2.68$ individualistic; $M = 5.20, SD = 2.68$ collectivistic) in reports of how hard participants found the study, $F(1, 97) = .23, p = .64$, nor PTSD status differences ($M = 5.57, SD = 2.87$ PTSD; $M = 4.47, SD = 2.43$ no PTSD), $F(1, 97) = 2.45, p = .07$. The interaction was not significant, $F(1, 97) = .81, p = .37$.

DISCUSSION

This study examined cultural differences in levels of autonomous orientation in autobiographical remembering in PTSD. Supporting the first hypothesis, while trauma survivors from individualistic cultures had greater autonomous orientation in their everyday memories than trauma survivors from collectivistic cultures, trauma survivors from both individualistic and collectivistic cultures had equally autonomously oriented trauma memories. Despite cultural similarities in levels of autonomous orientation in the autobiographical remembering of trauma, the study found evidence to suggest that cultural distinction in self-impacts on the relationship between the nature of autobiographical

remembering and posttraumatic psychological adjustment. That is, supporting the hypotheses, it was found that trauma survivors from individualistic cultures with PTSD had *lower* levels of autonomous orientation in their autobiographical memories than trauma survivors from individualistic cultures without PTSD. In contrast, trauma survivors from collectivistic cultures with PTSD had *higher* levels of autonomous orientation in their autobiographical memories than did trauma survivors from collectivistic cultures without PTSD.

It was found that trauma survivors from collectivistic cultures had higher levels of interdependence in their memories than trauma survivors from individualistic cultures. This finding suggests that the autonomous orientation findings were not the result of group differences in language use or skill. Moreover, trauma survivors with PTSD from both cultural groups had less interdependence in their trauma and everyday memories than trauma survivors without PTSD. Given the relationship between the self and memory, it is surprising that this finding was equivalent in both cultural groups (i.e. that the difference was not more marked for collectivistic culture than individualistic culture). This may be related to our findings regarding alienation appraisals as Ehlers and Clark (2000) claim a reciprocal relationship between the nature of the trauma memory and on-going appraisals. We found that trauma survivors from both individualistic and collectivistic cultures with PTSD had more appraisals of alienation than those without PTSD and proposed that alienation maintains PTSD in both cultures *via* different means. Specifically, for those from individualistic cultures, alienation maintains PTSD because the PTSD sufferer does not engage with the world and thus, private cognitions are not altered. For those from collectivistic cultures, alienation challenges the relatedness self (Jobson & O'Kearney, 2009). The relationships between interdependence and autonomous orientation in PTSD and between memory content and appraisals need to be examined further.

The findings support Berntsen and Rubin's (2007) argument that the trauma memory can deviate from schema-driven information and thus, become the central cognitive reference point for other autobiographical memories and the self. This has the potential to result in poor posttraumatic psychological adjustment. The findings suggest that one mechanism by which this can occur is the level of autonomous orientation in the autobiographical remembering of trauma violating schema-driven expectations of autonomous orientation in autobiographical remembering. Second, the findings suggest the central trauma memory may impact on the expression, development and maintenance of the self. Given the self is instrumental in the encoding, organization and retrieval of autobiographical memories, the impact of the central trauma memory may also impact on autobiographical remembering of everyday events. This study only examined autobiographical memory retrieval and future work is required to examine the impact on memory encoding and organization.

People who deviate from cultural expectations in terms of autonomous orientation in autobiographical remembering may be more vulnerable to developing PTSD. It would be interesting to examine changes in autonomous orientation

before and following trauma. If autobiographical memory and self-deviations prove to be a vulnerability factor for PTSD these above theoretical conclusions may be premature.

If the findings are robust, the clinical implications are significant. Some clinical theorists (e.g. Ehlers, Maerker, and Boos, 2000; Herman, 1992) emphasize that treatment needs to focus on assisting the survivor in regaining autonomy. Such an approach aligns with the findings associated with individualistic cultures. In individualistic cultures, therapy may need to focus on increasing a sense of autonomy and self-determination in clients with PTSD. Practically, this may involve exposure work that highlights and focuses on autonomous aspects of the memory. It may also involve clients repeatedly re-telling the trauma event with increased autonomous orientation (i.e. the client includes more personal like, dislikes, evaluations, agency, uniqueness, etc. in the personal re-telling of the event). However, the results suggest that primary focus on agency and self-determination in collectivistic cultures may be less relevant. Instead the focus of therapy with clients from collectivistic cultures may need to centre round re-framing and/or reducing the level of autonomous orientation and increasing levels of relatedness. In collectivistic cultures, this may translate to a downplaying of autonomous aspects of the memory during exposure work and clients re-telling the trauma event with decreased autonomous orientation (i.e. the client includes less personal like, dislikes, evaluations, agency, uniqueness, etc. in the personal re-telling of the event). Cultures in the middle of the continuum (e.g. Spain) may need an emphasis on both aspects of self and while assessment should always include assessing clients' self-construal, this may be more important for clients from middle of the continuum cultures. Additionally, given those with PTSD in both cultural groups had lower levels of interdependence than those without PTSD, an increased emphasis on relatedness aspects of the memory may be beneficial.

The shortcomings of this study are acknowledged. First, a limitation of this study was in the method of PTSD diagnosis. The study would be improved if the PDS was followed up with a structured interview. Second, self-completion at home may have biased results such as participants discussing responses with others producing possible culturally desirable responses. Third, there may have been a selection bias given the relatively low response rate. Response rates were relatively equivalent in both cultural groups. However, as a result of the methodology the response rate of trauma survivors with and without PTSD is unknown. Furthermore, the characteristics of those who did and did not respond are unknown and therefore, cannot be compared. This may have influenced findings and generalizability. Fourth, as in any study exploring the impact of culture on certain variables, language and task understanding must be considered. The finding of no cultural differences in the self-report of task difficulty and collectivistic cultures having higher levels of interdependence in their memories than individualistic cultures were taken to suggest that there were no major cultural differences in task understanding and responding. However, retrieving memories in English may impact on memory retrieval. Fifth, this study was conducted in

Australia, an individualistic cultural environment. This may result in an intracultural context for the individualistic groups but an intercultural context for the collectivistic groups. This was minimized by allowing all participants to complete the study at home and including migrants in both groups. Sixth, group differences in length of time spent in Australia may have impacted on findings. Therefore, the analyses were also conducted using length of time in Australia as a covariate. Results from these analyses did not differ from the findings reported above¹. Seventh, there is an acknowledgement of possible demographic differences (e.g. education, economic sufficiency, etc.) between groups, which may have confounded the cultural independent variable. While there is little evidence that such factors would affect autobiographical remembering it may be helpful for groups to be more closely matched in further research. Finally, it is acknowledged that the individualistic/collectivistic construct is only one cultural dimension and the cultures comprising these groups in this study vary on other cultural dimensions.

Despite these limitations, it is believed that this study is an important and timely one that demonstrated a key cultural difference in the impact of the nature of autobiographical remembering on PTSD status. Those from individualistic cultures with PTSD had significantly lower levels of autonomous orientation in their autobiographical remembering when compared to those from individualistic cultures without PTSD, whilst, those from collectivistic cultures with PTSD had significantly higher levels of autonomous orientation in their autobiographical remembering. These findings suggest our current PTSD models and their theoretical assumptions need to consider cultural factors in the nature of the self.

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¹Readers interested in finding out further about these results are encouraged to contact the author.

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