

## Summary

# The Centrality of Events Scale: A Study of Reliability and Validity

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Autobiographical memories which have many functions in our daily lives have a great role in restructuring and perception of life narratives (Bluck, 2003; Bluck, Alea, Habermas and Rubin, 2005). Berntsen and Rubin (2006) claimed that taking a memory; which is excessively negative, rare and unexpected, as a reference point for personal identity and the life story leads to ruminations, unrealistic worries and continuous and unhealthy effort to avoid similar events in the future. They developed a new scale, the Centrality of Events Scale (CES) to measure the extent to which a memory for stressful event represents a reference point for personality and person's life story.

A number of studies have consistently showed that individuals tend to remember positive memories easier and more often than negative ones (see Walker, Skowronski and Thompson, 2003), however research on negative memories has given contradictory results. Considering traumatic memories, one line of research suggests that highly negative experiences have poorer memory characteristics in comparison to other memories because of the disruptions in memory led by suppressing mechanisms. On the other hand there is also strong evidence for that negative affect enhances memory traces and leads to superior memory characteristics (see Moore and Zoellner, 2007). In consistent with the view of superior traumatic memories, it was found that excessively negative memories are recalled more often, more detailed and with intensive emotions (e.g., Fivush, Hazzard, Sales, Sarfati and Brown, 2003; Porter and Birt, 2001; Rubin, Boals and Berntsen, 2008; Rubin, Feldman, and Beckham, 2004).

Berntsen and Rubin (2006) discussed functions of excessively negative memories under three main headlines:

**Traumatic Memories as Reference Points.** As a part of current self (Berntsen et al., 2003), traumatic experiences can become a reference point for organiz-

ing the long term memory and influencing the meaning which is attributed to other experiences (Gauer, Souza, Silveira and Sediya, 2013). Individuals have a tendency to remember reference points easily and more frequently. Connected to availability heuristic as "events that easily and frequently remembered have the potential to re-occur more often", traumatic experiences may lead to precautions and unnecessary worries for the future (Berntsen and Rubin, 2006).

**Traumatic Memories as Turning Points in Life Stories.** Probably because traumatic events form turning points or landmarks in the life story of the person (Berntsen and Rubin, 2006), they generate expectations for future events (Sutherland and Bryant, 2005). Traumatic events often cause profound changes in a person's viewpoint (Berntsen and Thomsen, 2005; Janoff-Bulman, 1988; Rubin, Dennis and Beckham, 2011) and stay highly accessible for years (Berntsen, 2001; Fivush et al., 2003). Thus, they can serve as a major causal agent for ongoing events (Berntsen and Rubin, 2006).

**Traumatic Memories as Components of Personal Identity.** If a traumatic memory is defined as a turning point for one's life story it is most likely to be regarded as one of the main components of the person's self. According to Berntsen and Rubin (2006), having a traumatic experience may become a symbol representing the identity of a person or specific themes of the person's life story. As a matter of fact, clinical case studies indicated that traumatic memories become one of the main components of the personality in time (Moore, 2008; Sutherland and Bryant, 2005). Individuals with Post-Traumatic Stress Disorder (PTSD) tend to regard traumatic experiences as a part of their identity and to perceive more connections and similarities between the traumatic and current experiences (Berntsen et al., 2003). Research findings indicate that integration of a traumatic memory into self-schema and the overall life story is critically as-

sociated with the PTSD symptoms (Boals, 2010; Rubin et al., 2008; Rubin et al., 2011).

Following the studies on traumatic events, the centrality of positively valenced memories has also become an intriguing subject of current research. Firstly, the centrality of negative and positive events has been compared in these studies. There was found no significant difference between positive and negative events for university students (Boals, 2010; Rasmussen and Berntsen, 2009). Another study, however, showed that older adults had higher scores in the CES for positive events experienced a long time ago (e.g., Berntsen et al., 2011; Scherman et al., 2014). Probably, positively and negatively valenced memories are associated in a different way with identity and the life story; while positive events may be processed in accordance with the cultural life scripts, negative events may gain centrality through more individual and emotion-driven processes (Berntsen et al., 2011; Scherman et al., 2014).

Regarding cultural differences, some research has focused on the centrality of positive and negative events. It is found that excessively positive events are perceived more central than excessively negative events across cultures (Sherman et al., 2014). Scherman et al. (2014) detected that excessively negative events are perceived more central for the collective cultures such as Asian countries compared to the more individual cultures from the West. In a research in Turkey, centrality of events is examined for self-defining memories and it was observed that experiences consistent with the self-concept are regarded more central just like positive memories (Mutlutürk and Tekcan, 2015).

Autobiographical memory is a central issue for different subfields of psychology including cognitive, social, developmental, and clinical psychology. Measures for different aspects of autobiographical memory make valuable contributions to research in the field by providing new concepts and research questions. The aim of the present study is to adapt the CES into Turkish and to test psychometric properties of the CES for both positive and negative autobiographical memories.

## Method

### Participants

The sample of the study consists of 297 college students (186 females, 111 males) from Dokuz Eylül University. The age participants is ranged between 18 and 29 ( $M = 20.99$ ,  $SD = 1.89$ ).

### Measures

**The Centrality of Events Scale (CES).** CES measures the centrality of positive or negative memory of a

person's identity and life story (Zaragoza Scherman et al., 2014). Berntsen and Rubin (2006) produced 23 items in order to measure the extent to which a memory for an emotional event represents a core component in the self, a reference point for current experiences and a landmark for person's life story, but eliminated three items due to low psychometric values. Last form contains 20 items and has 5 point Likert scale (1 = Strongly Disagree and 5 = Strongly Agree). Cronbach alpha for CES is reported as .94.

**The Beck Depression Inventory (BDE).** BDE developed by Beck, Ward, Mendelson, Mock and Erbaugh (1961) has 21 items and one factor. It measures the affective, somatic, cognitive and motivational symptoms of depression. Items are scored between 0 to 3 and high scores indicate serious depression levels. Hisli (1988) adapted the BDE into Turkish and reported that half-split reliability of the scale is .74.

**The Post-Traumatic Stress Disorder Symptoms Scale (PTSDSS).** The PTSDSS developed by Şahin, Batıgün and Yılmaz (2001) has 36 items. High scores indicate relatively more intensive stressful symptoms related to traumatic experience. Internal consistency coefficients are ranged between .89 and .91 for its subscales.

### Procedure

All questionnaires were administered in groups. The undergraduates of Dokuz Eylül University were asked to recall a highly negative personal memory from their lives and write it with few sentences. Then, they completed the CES and the measures for depression and posttraumatic stress disorder symptoms. Lastly, they recalled a highly positive autobiographical memory and completed the CES. Participants signed an informed consent form to indicate their willingness to participate in study and did not receive any reward for it.

## Results

### Psychometric Properties of the Centrality of Events Scale

**Item-Total Correlations.** Consistent with the original study, it was found that the last three items of the scale had low item-total correlations compared to other items ( $.34 \leq r \leq .55$ ). Therefore these three items were eliminated from the further analyses. Item-total correlations of the rest of the items are between .58 and .78 for positive autobiographical memories and between .41 and .73 for the negative autobiographical memories. Item-total correlations have been found above .30 as intended (Kline, 2000).

**Factor Structure.** To examine the factor structure of the Turkish version of the CES, a principle component

analysis was performed. Kaiser-Meyer-Olkin (KMO) was found higher than .60 both for positive memories (.94) and negative memories (.90) and Barlett tests were also significant ( $p < .001$ ). The clearest break in the Scree Plot between the first and second factor suggested one factor. Single factor solution is accounted for 51.01% of the total variance for positive memories and 36.81% for negative memories. Findings related to the short version of the CES indicated that total explained variance is 60.32% for positive autobiographical memories and 47.84% for negative autobiographical memories.

**Criterion-Related Validity.** The centrality of negative events was found positively correlated with the symptoms of PTSD ( $r = .36, p < .001$ ). As expected, there was no significant correlation between the centrality of positive autobiographical memories and the symptoms of PTSD. Consistent with Berntsen and Rubin (2006), there was also found a positive correlation between the centrality of negative autobiographical memories and depression ( $r = .21, p < .001$ ). Moreover, the CES scores for positive autobiographical memories were negatively correlated with depression ( $r = -.12, p < .05$ ).

Regarding gender differences, women ( $M = 3.42, S = .74$ ) regarded negative events more central to their self and life stories ( $t = 2.064, p < .05$ ) compared to men ( $M = 3.23, S = .77$ ). There was found no gender difference in the CES for positively valenced memories, the PTSD symptoms, and depression.

**Reliability.** The internal consistency coefficients were .95 for positive autobiographical memories and .91 for negative autobiographical memories. Regarding 7-item version of the CES, the internal consistency coefficients for were .89 for both positive and .82 for negative autobiographical memories.

## Discussion

Consistent with Berntsen and Rubin (2006), the Turkish version of CES showed sufficiently high reliability and good validity for both positive and negative autobiographical memories. The CES of negatively valenced memories found positively correlated with and the PTSD symptoms and depression. The CES for highly positive memories was not associated with the PTSD symptoms, as expected. But, as an intriguing finding, perceiving positive events more central seems to function as a shield against depression or persons with low depression showed a positivity bias to perceive the past events more central, since there was found a negative correlation between the CES for positive memories and depression. Consistent with previous research (e.g., Boals, 2010), women had higher scores in the CES for negative autobiographical memories than men.

As a result, the present study indicated that both short and long version of CES have strong psychometric properties for Turkish samples. In future studies, the validity and reliability of the Turkish version of CES need be tested for clinically diagnosed samples, since the centrality of excessively negative events is a robust predictor of the PTSD symptoms (Berntsen & Rubin, 2006, 2007).