



Before and after a natural disaster: Disruption in emotion component of place-identity and wellbeing

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ABSTRACT

The aim was to investigate relationships between emotion and cognition components of place-identity and wellbeing, before and after a natural disaster. A total of 656 respondents, living near the area of the largest forest and landscape fire in modern times in Sweden, participated in this study. Before the disaster, a positive association was found between place-identity and wellbeing, indicating that the stronger emotions participants evolved to the place, as well as remembered more and thought about the place, the stronger wellbeing they experienced at the site. After the disaster, the strength of this relationship decreased more than twice, accounted for by the weakening of the emotion-wellbeing link. Accordingly, participants almost lost their emotional bond to the area but maintained their memories and thoughts about the site intact and, by that, their positive wellbeing associations with the location. This indicates tentatively the phenomenon of post-traumatic growth, type of resilience involving operations of cognitive appraisal.

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1. Introduction

News about floods, heat waves, storms, and fires and their impact on society reach us almost every day, implying that “disasters signal the failure of a society to adapt successfully to certain features of its natural and socially constructed environment in a sustainable fashion” (Oliver-Smith, 1996 p. 303). A natural disaster is not only an ecological and economic catastrophe, but also a social and psychological one (Schmuck & Vlek, 2003). Psychological research on environmental issues has, for example, reported findings on environment-related risk perception (Slovic, 2001), risk judgment (Bonnes & Bonaiuto, 2002), ethics (Karpiak & Baril, 2008), risk and affect (Slovic & Peters, 2006), resource dilemmas (Aitken, Chapman, & McClure, 2011), value orientations (Schultz, 2001), and affect (Knez, 2013; Leiserowitz, 2006). Knez, Thorsson,

and Eliasson (2013) showed, furthermore, that women and the young, compared to men and the elderly, were more concerned for, and afraid of, the consequences of environmental issues, and Knez (2013; 2016a) reported that egoistic individuals were more worried about *myself* than *others* environment-related issues and that the opposite effect applied for the altruistic persons. (see Fig. 1)

Moreover, it is indicated that after a natural disaster many individuals experience positive changes in their selves and lives, a phenomenon of posttraumatic growth (Tedeschi & Calhoun, 1995; Joseph & Williams, 2005; Hefferon Grealy & Mutrie, 2009), as well as emotional and health-related problems (Evans & Kantrowitz, 2002; Martin, 2015; Stern, 1976). For example, Adams and Adams (1984) reported a significant increase in illness and stress after a volcano eruption catastrophe, and Galupp Poll, (2013) indicated an increase in depression levels after the Hurricane Sandy. Similarly, Graham (2012, p. 15) reported an “emotional aftermath” of Sandy involving emotional states of hopelessness and anxiety. Natural disasters have been shown to have a negative impact on place-identity (“significant places” related to individual and collective identity), leading to emotions of loss and grief (Ruiz & Hernandez,

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Fig. 1. Area before the fire.

2014) that result in the “loss or a removal of a community from its ground” (Oliver-Smith, 1996 p. 308). Accordingly, all this points to the long-term effects of natural disasters on human wellbeing and health (Yzerman, Donker, & Vasterman, 2004) (see Fig. 2)

Disasters affect our cognitions too (Helton, head, & Kemp, 2011), such as memory, and especially autobiographical memory which is a cognitive basis for the identity construction and maintenance of who we are and where we belong (Brown et al., 2009; Knez, 2017). We also remember these catastrophes for a long time (Schuman & Scott, 1989), which might trigger the phenomenon of “flashbulb memories” (Brown & Kulik, 1977). This is a type of collective remembering of “emotionally-charged” public incidents (Brown et al., 2009), such as September 11 attacks (Luminet et al., 2004; Pezdek, 2003), indicating general psychological impacts that do not differ, according to some findings (Conway, Skitka, Hemmerich, & Kershaw, 2008), with gender, age, education, and geographical region.

Finally, losing a link to and longing for (melancholia) an appreciated and beloved place is commonly defined as *nostalgia* (a psychoterratic illness). A psychoterratic illness of suffering the loss of a cherished place without being displaced is called *solastaliga* (Albrecht et al., 2007). Accordingly, a nature-related distress of solastaliga might be implicated when people remain in the disaster area, experiencing a devastating physical change of their home-related environment. Several studies have indeed indicated the psychological role of the place after a dramatic change of the environment including feelings of loss (Ruiz & Hernandez, 2014), association between psychological distress and solastaliga (Eisenman, McCaffrey, Donatello, & Marshal 2015), but also positive feelings of social unity and optimism (Silver & Grek-Martin, 2015). The latter finding is in accordance with the “growth following adversity” research recognizing positive changes (type of resilience) following traumatic events (Joseph, 2009).

1.1. Place-identity and wellbeing

Humans develop bonds to physical places (e.g., Jorgensen & Stedman, 2001; Scannell & Gifford, 2010; Droseltis & Vignoles, 2010; Lewicks, 2011) that embody natural, psychological, social, historical, religious, cultural, and wellbeing dimensions (Graumann, 2002; Knez, 2005; Knez, Thorsson, Eliasson, & Lindberg, 2009; Lachowycz & Jones, 2013; Sarlöf-Herlin, 2007; Butler & Åkerskog, 2014; Ratcliffe & Korpela, 2017; Morton, van der Bles, & Haslam, 2017). This suggests that places in our lives may *locate* our past, present and future; triggering the first-person epistemological question of how we come to know who and what

we are (Klein, German, Cosmides, & Gabriel, 2004). In other words, physical places aid our self-formation (Knez, 2014) by reminding us of important personal and collective experiences, events, traditions and memories, by which we uphold and strengthen different types of identifications (Lewicka, 2008, 2014; Wang, 2008). Identity is grounded in the autobiographical memory (Conway, 2005; Fivush, 2008; Knez & Nordhall, 2017; Knez, Ljunglöf, Arshamian, & Willander, 2017), resulting in a “feeling that we are re-living our past” (Klein, 2013, p. 3).

This type of cognitive activity is characterized as a life story (Fivush, 2008), involving several context-specific selves/identities (Knez, 2016b; McConnell, 2011; Stobbelaar & Pedroli, 2011) that might comprise cognitive processes of mental temporality, coherence, correspondence, reflection, and agency (Conway, Singer, & Tagini, 2004; Klein et al., 2004), and the process of attachment/belonging/closeness accounting for the phenomenological experience of place-of-mine to which I bond emotionally (Knez, 2014). Thus, we do not only think, remember and reflect on places (cognitive component of place-identity) in our lives, but we also feel emotionally attach and close (emotion component of place-identity) to these sites (Marris, 1982).

Previous research has, moreover, shown that place-related identifications include nature-related details (Knez, 2005; 2006), suggesting that “Natural or semi-natural features of the environment are often associated with the identity of an individual.” (Daniel et al., 2012, p. 8814). In line with this, Knez and Eliasson (2017) revealed that when visiting favorite natural sites (incorporating strong place-identity) people experience high levels of wellbeing, suggesting that the go-greener-feel-better relationships (Carrus et al., 2015) might to some degree be accounted for by the psychological mechanisms of people-place bonding. All this is consistent with previous findings suggesting that human wellbeing benefits from nature-related dimensions in both rural and urban settings (Bowler, Buyung-Ali, Knight, & Pullin, 2010; Abraham, Sommerhalder, & Abel, 2010; Hartig et al., 2011; Bratman, Daily, Levy, & Gross, 2015; Sandifer, Sutton-Grier, & Ward, 2015; Ode Sang, Knez, Gunnarsson, & Hedblom, 2016; Hedblom, Knez, Ode Sang, & Gunnarsson, 2017; Gunnarsson, Knez, Hedblom, & Ode Sang, 2016); as a consequence, promoting processes of affect-regulation in natural milieus defined as favorite places (Knez & Eliasson, 2017; Korpela, Ylén, Tyrväinen, & Silvennoinen, 2008; Parkinson & Totterdell, 1991; Ratcliffe & Korpela, 2017).

1.2. Present study

Most of the disaster research has focused on the phenomena of risk perception, post-traumatic stress, and coping (e.g., Bonaiuto, Alves, de Dominicis, & Petruccioli, 2016; Bonnano, Brewin, Kaniasty, & La Greca, 2010; Dominicis de, Fornara, Cancellieri Ganucci, Twigger-Ross, & Bonaiuto, 2015; Shavit, Shahrabani, Benzion, & Rosenboim, 2013). This study will, on the other hand, investigate the links between peoples’ place bonding before and after a natural disaster. We posed the following question: How does a natural disaster impact on the emotion and cognition components of place-identity and wellbeing, given that physical places shape our understanding of who we are (Casey, 2000; Knez, 2014) and that wellbeing is related to the phenomenon of people-place bonding (Knez & Eliasson, 2017; Knez, 2006; Korpela, 1992; Morton et al., 2017; Ratcliffe & Korpela, 2017)?

It has been shown (Brown & Perkins, 1992), that processes of developing a place-identity, losing it, and later coping with that by creating a new one, may be understood in relation to the processes of a *stability-change-progression*; including: (a) pre-disruption of place-identity - involving evolvement, sustainment, and potency of the place-identity; (b) disruption of place-identity - including

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