Non-human Support: Broadening the Scope of Attachment Theory

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Abstract

Attachment theory proposes that people form strong social ties because certain relationships provide feelings of security and support. Traditionally, theorists and researchers have assumed that because this process is innate and evolved, only human targets are capable of meeting a person's needs for security. Recent research challenges this assumption by demonstrating that an array of targets, such as places and pets, can also satisfy needs for security, particularly under conditions of threatened or absent connection to other people. We bring together these diverse findings and discuss how they enrich our understanding of the nature and operation of attachment processes and related phenomena. Specifically, this line of research contributes to a comprehensive picture of the diverse means by which people flexibly seek and maintain psychological security both within and outside of their close, interpersonal relationships. It also raises new research questions concerning the similarities and differences between human and non-human support.

In many parts of the world today, we are observing a major cultural shift from social integration to isolation. Researchers have observed decreased involvement in community and political activities (Putnam, 2000), avoidance of social intimacy (Turkle, 2012), and an increasing number of adults living alone (Klinenberg, 2013). This may be cause for concern. Adults with weaker social ties have less access to social support, an important resource for coping with illness and other stressors (Uchino, 2004). Intimate social relationships are also integral to maintaining healthy psychological functioning (Cohen & McKay, 1984). We might worry, then, that rising individualism deprives individuals of a basic requirement for well-being.

Yet people are surprisingly resourceful. Recent research shows that people sometimes seek (and find) feelings of security from a diverse array of non-human targets – things that are not human (e.g., pets), not alive (e.g., landmarks), and indeed may not exist at all (e.g., fictional characters). Although these relationships may not operate in precisely the same manner as close interpersonal attachments, studies show that they provide the person with many of the same psychological benefits, in particular the comforting assurance that someone or something will support them in times of need.

This article brings together these diverse studies to illustrate how people use non-human targets to meet their needs for security and the conditions under which people are likely to do so. We outline attachment theory and discuss how its empirical scope is widened by the recognition that people supplement interpersonal attachments by seeking support from non-human targets. We then articulate a theoretical framework that integrates this evidence to guide future research on attachment and support seeking.

Attachment and Support

Contemporary attachment theory builds on the work of John Bowlby (1969/1992), who proposed that humans have an innate need for supportive relationships with others. Because human

infants are born relatively helpless, they must depend on close others, particularly their parents and other caregivers, for their survival and development. Thus, during our species' evolution, there were selective pressures to experience feelings of security in close relationships and to seek out close, supportive others when faced with threatening stimuli. Building on Bowlby's analysis, attachment theorists propose that people are motivated, throughout the lifespan, to establish and maintain security from their close relationships (Mikulincer & Shaver, 2007). Consequently, adult relationship partners (e.g., friends, lovers) can serve as attachment figures, much as caregivers fill this role for children.

For Bowlby, the motive for security is an innate psychological tendency. Humans acquired it because it was adaptive over the course of evolution to seek and maintain proximity with caregivers. Individuals who detected threats to survival, experienced distress at the absence of caregivers, and attempted to reunite with them were more likely, all else being equal, to survive and eventually reproduce than individuals lacking these characteristics.

Attachment theory distinguishes two forms of security afforded by close relationships. First, attachment figures provide security by offering assistance with an imminent threat to one's safety or survival. If you trip on a rock and twist your ankle, it is advantageous to seek a caregiver who will provide care. This is referred to as the *safe haven* function of attachment figures.

Second, people derive security simply from believing that a caregiver *would* be available if support were necessary. This form of reassurance is referred to as a *secure base*: a retreat that remains available, even if currently unnecessary (Feeney & Collins, 2004).

These two forms of security work in tandem. When facing a threat, the safe haven function provides individuals with a defense against imminent danger. Illness, predators, and other potential environmental hazards provoke proximity seeking to an attachment figure capable of providing immediate assistance. However, when the environment is relatively safe, the secure base function emboldens individuals to explore their environment and expand their behavioral repertoire, secure in the knowledge that support would be available from attachment figures if needed (Feeney & Van Vleet, 2010; Green & Campbell, 2000).

These basic postulates of attachment theory are supported in a large body of empirical research. Relevant studies show that close relationships are crucial for providing individuals with security and support to cope with numerous threats, ranging from physical illness (Simpson, Rholes, Oriña, & Grich, 2002) to the abstract awareness of one's mortal fate (Cox et al., 2008). Moreover, attachment processes profoundly affect a wide range of relationship-relevant outcomes, including initial attraction, conflict resolution, and dissolution (Mikulincer & Shaver, 2007). Following Bowlby and other attachment theorists, we might interpret this literature as demonstrating that close interpersonal relationships play a unique role in human behavior and functioning. Yet this conclusion might lead us to overlook some of the more complex dynamics of attachment processes and their consequences for everyday social life.

Non-human Sources of Security

Recent lines of research inspire us to broaden our conception of attachment processes and support-seeking behavior in general. That is because they show that people can derive feelings of psychological security from their engagement with non-human targets, including deities, media personae, pets, places, and objects. Indeed, studies show that non-human targets can serve the same safe haven and secure base roles traditionally thought to be filled only by other people.

In the next few pages, we selectively review these intriguing findings. But first: How does the possibility of non-human support-seeking square with attachment theory? Recall that the theory traditionally holds that the attachment system evolved to promote supportive bonds with close others specifically. While this may be true, people nevertheless seek security in strangers,

including baristas, barbers, and bartenders who can provide emotional support (Adelman & Ahuvia, 1995; Cowen, 1982). In fact, people are particularly likely to seek support from these outside parties as a supplement when support from close others is insufficient (Rosenbaum, Ward, Walker, & Ostrom, 2007). It appears, then, that the attachment system did not evolve such that its "outputs" are so specific as to orient people to seek security exclusively from a small set of adult attachment figures. It is therefore possible that people can derive security from an even wider range of targets than traditionally acknowledged, particularly when they feel that other people are not capable of providing support.

Deities

Individuals commonly derive feelings of security from prayer, meditation, or other religious rituals intended to connect with a divine figure. Prominent attachment theorists have argued that seeking support in this way serves many of the same roles as interpersonal attachment (Kirkpatrick, 2005). Accordingly, studies show that religious individuals behave in ways that are consistent with having an attachment bond with a deity (for a review, see Granqvist & Kirkpatrick, 2008). For example, when children were given a storyboard to illustrate a story in which they faced a threatening situation (e.g., physical injury), Christian children placed a figure representing God significantly closer to a figure representing themselves (Granqvist, Ljungdahl, & Dickie, 2007). This increased symbolic proximity is analogous to proximity seeking in response to threat – the safe haven function traditionally reserved for human attachment figures. This function also appears in other religious traditions: the Nayaka people of Southern India view their forest homeland as populated by beings with whom they seek (perceived) physical proximity through trance and other rituals during illness (Bird–David, 2004).

Research also finds that a deity can serve a secure base function, fostering exploration. In one study (Beck, 2006), Christians who felt more confident that they could depend on God were more open to thinking about novel ideas and perspectives.

When do people turn to a deity for support? Some evidence suggests that people turn to God to compensate for a lack of interpersonal attachments. For example, individuals with more insecure interpersonal attachments report more intimate relationships with God (Granqvist & Hagekull, 1999) and are more likely to experience sudden religious conversion (Granqvist & Kirkpatrick, 2004). Furthermore, widows and others who suffer the loss of a close attachment figure subsequently show an increase in religiosity (Brown, Nesse, House, & Utz, 2004).

Media personae

People can sometimes derive support from perceived relations with celebrities, talk show hosts, athletes, and fictional characters in media. These are commonly referred to as parasocial relationships because they feature many components of close relationships (e.g., fans profess to know intimately about and to care for the media personae) despite the fact that the media personae are unaware of the fan's existence, and indeed may not exist at all (Cohen, 2004).

Do parasocial relationships actually provide a sense of security? While this issue is relatively unexplored, initial evidence suggests that the answer is "yes." When participants in one study (Derrick, Gabriel, & Hugenberg, 2009) were primed to feel lonely, thinking about watching a favorite television show alleviated feelings of loneliness and restored feelings of belonging to the same level as participants who experienced no threat. This effect was specific to the beloved show: Thinking about channel surfing did not buffer loneliness.

As in the case of religious figures, people appear to turn to (even fictional) media personae to compensate for absent or unreliable interpersonal relationships. The more often participants in

one study experienced solitude, the stronger their felt intimacy and closeness with a favorite television character (Greenwood & Long, 2009); furthermore, this correlation held regardless of whether the experience of solitude was subjectively aversive or not.

Related evidence shows that people who are chronically uncertain that they can depend on close others – known as high attachment anxiety (Mikulincer & Shaver, 2007) – are more likely to develop parasocial relationships with fictional characters (Cole & Leets, 1999; Greenwood, Pietromonaco, & Long, 2008). Similarly, people who feel like they lack the resources to cope with negative experiences report greater felt intimacy with fictional characters (Greenwood, 2008). Individuals who are uncertain about their relationships also express greater separation anxiety (a marker for an attachment bond; Ainsworth, Blehar, Waters, & Wall, 1978) from their favorite TV characters: When asked to imagine losing their favorite shows, more anxiously attached individuals felt a greater sense of fear and loss (Cohen, 2004).

Pets

Pets can also serve to provide security and support (for a review, see Sable, 2013). In quasi-experimental clinical studies, pet therapy has helped people manage anxiety and develop feelings of independence (Barker & Dawson, 1998; Churchill, Safoui, McCabe, & Baun, 1999). In one study, hospitalized children showed benefits from both play and pet therapies but displayed more positive affect during pet therapy and were perceived by parents as showing more improvement in mood (Kaminski, Pellino, & Wish, 2002).

Related studies show that pets serve the safe haven function of attachment figures, providing security from threat. Indeed, participants in one study (Kurdek, 2009) said they would be more likely to turn to a pet dog as a source of comfort than their brother or father. McConnell, Brown, Shoda, and Stayton (2011) showed that, for participants primed with social rejection, thinking about a favorite pet or a best friend equally restored feelings of belonging to baseline levels. Furthermore, when the researchers asked pet owners how much pets and humans fulfilled their social belongingness needs, they found the same patterns of correlations between those ratings and various measures of well-being, including depression, loneliness, self-esteem, physical health, and subjective happiness. This finding suggests that participants' well-being was as closely yoked to relations with pets as to human attachments.

Pets also appear to serve the secure base function of attachment figures. In Kurdek's (2008) research, the secure base was among the most central aspects of participants' relationships with their dogs. In converging experimental studies, Zilcha-Mano, Mikulincer, and Shaver (2012) found that individuals who felt close to their pets generated more personal goals and felt more confident they could attain them (an established benefit of supportive interpersonal relationships; Feeney, 2004), when a pet was either physically present or brought to mind.

Psychiatrists have long contended that pets could allow clients to compensate for a lack of close interpersonal connection (e.g., Rynearson, 1978). In one study supporting this notion (Garrity, Stallones, Marx, & Johnson, 1989), pet ownership had no relationship to depressive symptoms for participants with three or more trusted friends, but for participants with smaller social support networks, closeness to a pet negatively predicted depressive symptoms.

Places

People also sometimes rely on specific places, such as the home, to restore a sense of security (for reviews, see Lewicka, 2011; Scannell & Gifford, 2010). For example, research consistently demonstrates that people not only feel safer in their homes than other places but also use the home as a place to restore well-being after stressful experiences (Gustafson, 2001; Seamon,

1979). In fact, people express certain dimensions of attachment, such as feelings of trust and dependence, toward entire cultures (Hong, Fang, Yang, & Phua, 2013).

These findings raise an important question: Do people derive security from a place, *per se*, or do those places simply serve as a proxy for close interpersonal relationships? After all, people find security and comfort in their home presumably because of the presence of close others. Yet evidence suggests that physical places afford security independent of that afforded by the social bonds associated with those places (Giuliani, 2003). In one study (Hidalgo & Hernandez, 2001), elderly adults found it equally distressing to imagine relocating all of their social relations to a new physical location and to imagine staying in the same physical space but losing all social relationships.

Qualitative studies consistently find that people see particular spaces as providing security and comfort, particularly as a secure base. For children from diverse cultural backgrounds, places function very similarly to interpersonal attachments in fostering growth and exploration (Dallago et al., 2009). Having a space to return to allows children to explore the world, secure in the knowledge that safety is available when needed. Children who feel that the home will be there for bandaging scraped knees, for example, feel more confidence and desire to explore. Because safe places foster security and growth, practitioners go so far as to propose that factors (e.g., frequent moves) that undercut children's ability to establish an emotional connection to a particular place undermine their psychological well–being (Jack, 2010).

However, research has not systematically explored the extent to which a lack of interpersonal support motivates people to use places as a source of security. Indeed, one might expect the opposite relationship: that the existence of positive social bonds in a place increases the extent to which that setting provides a sense of security (Lewicka, 2011). However, some suggestive studies indicate that people may seek out certain kinds of places in response to social isolation. Oishi, Miao, Koo, Kisling, and Ratliff (2012) demonstrated that participants who had moved more often showed a consistent preference for familiar environments. This preference was mediated by feelings of relationship–related anxiety, such as the prospect of losing friends in a cross-country move. Future research could also investigate the possibility that people turn to particular places for emotional security in response to a felt lack of social support in other places. For example, a college freshman may pine for her favorite swimming hole if she feels isolated by her peers.

Objects

People also commonly derive security from material objects. This may seem counterintuitive, because objects lack the capacities for care and concern that typify a caregiver from the perspective of traditional attachment theory. Yet theorists propose that objects afford security *by virtue of* this inertness (Winnicott, 1953/1986). Most people learn as infants that they can exercise total control over objects because objects do not resist influence or act unpredictability. According to Winnicott, this is why security objects, such as blankets and stuffed animals, help children maintain a sense of control as they confront their limited influence over their environment. In one supporting study, when children entered an uncertain learning situation, the presence of a familiar blanket facilitated learning just as much as the presence of their mother (Passman, 1977).

Turning to objects for security is not just for kids. For adults, too, objects can serve the safe haven function. People commonly see household objects as providing a sense of meaning and comfort, particularly in times of stress (Miller, 2008). Also, teenagers with more depressive symptoms are increasingly likely to turn to objects, such as cell phones and computers, to establish felt security (Erkolahti & Nyström, 2009).

Related experimental research shows that people seek security from objects particularly when they perceive a lack of social support (Keefer, Landau, Rothschild, & Sullivan, 2012). Participants primed to feel uncertain about their ability to rely on close others were more willing than control participants to report a willingness to seek security from objects. This effect was mediated by attachment anxiety, suggesting that object relations serve a compensatory function. In a follow-up study, priming uncertainty about close relationships led participants to report greater separation anxiety after having their cell phones removed from the cubicle (as in research with children and their caregivers; Ainsworth & Bell, 1970), and this effect was independent of the phone's perceived ability to connect with close others. This is perhaps one compelling explanation for the link between loneliness and materialism (Pieters, 2013).

Objects can also serve the secure base function of attachment figures, fostering self-growth and exploration. Study participants primed to feel uncertain about their ability to rely on close others showed decreased growth motivation, a finding that is consistent with the notion that the prime diminished their secure base. However, this effect was eliminated if participants subsequently thought about *either* a close friend or a desired commodity, and the latter two conditions did not statistically differ (Keefer & Landau, 2014).

Summing up our review, several lines of research in social, clinical, and environmental psychology converge on the central importance of non-human targets as supplemental sources of security in everyday life. Thus far, these findings have been fragmented in the literature. Bringing them together has allowed us to identify some intriguing patterns: People seek security in non-human sources particularly when they encounter stressful circumstances and are unable to derive support from close others; also, supportive relationships with non-human targets are capable of promoting psychological growth and well-being. Taken together, these findings suggest that non-human sources of security can fulfill the safe haven and secure base roles traditionally reserved for close relationship partners. The broader implication is that people are capable of satisfying their deep-seated need for security in a more flexible manner than attachment researchers have acknowledged thus far.

Directions for Future Research

A priority for future research will be to probe the boundaries of what constitutes an attachment bond. The evidence reviewed above suggests that at least some defining features of interpersonal attachment bonds – the safe haven and secure base functions – are not limited to close relationships, as attachment theory has traditionally assumed. This raises an important conceptual issue for the theory: Which features of an attachment bond, if any, are unique to interpersonal attachments, and which manifest in supportive relationships with non-human targets?

From its psychoanalytic predecessors, attachment theory inherited an emphasis on the mental models people have for their attachment figures, or working models as they are called. People confidently depend on attachment figures for support because they expect them to be available, reliable, and responsive. These expectations do not arise spontaneously; rather, they are the result of recurring positive, supportive interactions in which a figure is associated with feelings of security and comfort.

Do people form analogous working models for non-human sources of security? Someone who is attached to her car, for example, should have certain expectations about the car, such as an association with safety and reliability, which are less salient or absent in people who do not depend on their car for security and support (even if they are otherwise quite fond of their car).

In the case of interpersonal attachments, differences in these working models account for individual differences in attachment style (Bartholomew & Horowitz, 1991), and working models tend to be similar across relationships (Fraley, Hefferman, Vicary, & Brumbaugh,

2011). However, very little research has explored the working models people have for non-human targets, whether or not they result in analogous individual differences, and what overlap may exist between human and non-human working models (for exceptions, see Beck & McDonald, 2004; Zilcha-Mano, Mikulincer, & Shaver, 2011).

Another major question for future research will be to determine if and how such models might form for a non-human target in the absence of a sustained history of positive interactions with that target. How, for example, can one attach to a celebrity when that celebrity was never around to toss a ball, lend an ear, or offer a helping hand? One possibility is suggested by research on *transference*, in which people apply expectations from past relationships to make sense of a new or uncertain social situation (Andersen, Thorpe, & Kooij, 2007; Brumbaugh & Fraley, 2007; Sullivan, 1953). In one laboratory demonstration, participants that were told that they would be interacting with a stranger whose personality profile resembled a loved parent were more trusting and willing to work with the stranger (Andersen & Baum, 1994). As it pertains to non-human targets, this research suggests that transference may serve as a means of circumventing a sustained history of positive relations with a given target, thereby providing a shortcut to a support-providing relationship.

Suggestive evidence shows that people transfer trust and dependability onto non-human targets despite the absence of a supportive history. Epley, Akalis, Waytz, and Cacioppo (2008) found that dispositional or situationally primed feelings of loneliness motivated people to anthropomorphize (i.e., project human-like qualities onto) god, animals, and objects. The proposed explanation is that a need for social relatedness motivates individuals to see targets as human to render them capable of fulfilling their social needs.

This work suggests that situational deficits to security could motivate people to enhance their representations of (human or non-human) targets with the qualities of a dependable attachment figure in a compensatory way. If a person feels insecure, they could potentially restore security by seeing greater analogy between novel, yet available, targets and familiar, yet absent, attachment figures in order to restore a sense of felt security. Whether it be an unfamiliar coworker or a new restaurant, the desire to find security in the world may lead people to assimilate novel stimuli into past models.

People may even show situational variation in the forms of enhancement they enact. For example, an individual with a pet hamster might project different capacities onto the hamster depending on situational needs. If the individual were about to attempt something potentially risky (e.g., studying abroad), they may project capacities (e.g., dependability) characteristic of a secure base ("I know she'll be here waiting for me when I get back"), whereas if she were facing an imminent threat (e.g., disease), she may project the qualities of a safe haven (e.g., empathy).

Also, a mere association between a non-human target and a trusted attachment figure may allow those targets to provide feelings of support and security. This may explain why certain places and objects associated with positive relationships (one's parents' home and possessions) can themselves come to be reassuring (Csikszentmihalyi & Rochberg-Halton, 1981; Miller, 2008), as can the gifts received from others (Belk, 1992).

Evidence that people derive security from a variety of targets raises an additional question: How do people choose, consciously or otherwise, which means they will use to fulfill their security needs? Why might someone turn to prayer rather than a friend, or their spouse instead of their car? We propose that two factors will determine, at least in part, people's preferred security source: the nature of the situational threat and the relative availability of attachment figures.

If one faces relatively minor threats to one's well-being, the reassuring presence of a trusty laptop or cartoon character may be sufficient to restore felt security. On the other hand, if one is facing severe threat, one might call on not only a preferred human attachment figure, but any additional source of security at hand in order to supplement that attachment. In the

wake of this kind of threat, people might pray for guidance, curl up for extended marathon sessions of their favorite shows, and call their parents. Here, the criterion for re-establishing equanimity is so high that no one target may suffice, and recognizing the supplemental role of non-human sources of support allows attachment theory to acknowledge the breadth of support-seeking efforts in these scenarios.

Non-human targets, like objects or places, may also be readily available to provide some measure of security and afford relatively less costly (in terms of time and effort) support than traveling to be with a close friend. However, if more convenient and available sources of security fail to afford sufficient support in the face of threat, the criterion to restore security is higher, and efforts to reach more distal, but effective, attachment figures should increase.

Cultural norms and values may also play an important role. Because individuals are less constrained by social relationships under cultures promoting independence (Markus & Kitayama, 2010), there is no guarantee that close others would provide support if needed. In other words, individuals in more independent contexts may face more uncertainty about the availability of assistance from others (a precursor of support seeking from non-human targets).

One might expect that individuals in more independent contexts would also be less willing to seek help from close others if it were needed, but the reverse has been shown in previous research (Taylor, Sherman, Kim, Jarcho, & Takagi, 2004). Instead, individuals from more interdependent settings were found to be less likely to seek support, and these effects were due specifically to concerns that seeking support would harm close relationships. Within interdependent settings where relational harmony is more valued, a "selfish" attempt to actively get help from others seems disruptive, and this concern may offer an alternative motivation for choosing non-human sources of security.

With the spread of modern technology, a number of non-human security sources may become more preferable. Psychoanalytic thinkers have argued that children in modernized settings are increasingly likely to become attached to images (e.g., from television) as well as, or even in place of, human caregivers (Hamm, 2009). The proliferation of social media and networks in postindustrial societies has produced an explosion of possibilities for "remote attachment" and feelings of connectedness to groups or individuals with whom one may never be physically near, or who might not exist at all (Meyrowitz, 1985), but who may seem more tangible than traditional non-human security sources (e.g., God).

Practical Implications

By acknowledging support-seeking behavior toward non-human targets, psychologists can gain insight into practically important phenomena. For example, individuals who hoard manifest a pathological desire to seek and maintain proximity with many pets or objects. By acknowledging that these targets likely serve as supplemental sources of security for a hoarder, clinicians can begin to understand why these behaviors persist and how to address them (Frost & Steketee, 2010). The tendency to seek security in objects, deities, or places may also manifest in more common, but no less important, phenomena such as materialism, religious fundamentalism, and nationalism.

Another practical issue concerns the long-term consequences of relating to non-human security sources at the expense of interpersonal relationship engagement. Given that the attachment system evolved to seek social support, we might expect that individuals who turn to inanimate or even fictional security sources will find a temporary safe haven or a secure base, but they are setting themselves up for poorer outcomes by denying themselves what they "truly" need: the sensitive and responsive care that only other people can provide (for initial evidence of this claim regarding pets, see Peacock, Chur-Hansen, & Winefield, 2012).

In fact, not only might non–human support seeking provide a pale substitute for the "real thing", but it can also take a toll on interpersonal relationships. When one relationship partner seeks security in something outside the relationship – even if it is inanimate or fictional – the other partner may respond with emotional distance, jealousy, and even anger. While there may be situations in which non–human support-seeking benefits a relationship (e.g., by reducing the dependence of one partner upon another), in other cases, it might prevent relationship partners from establishing trust, intimacy, and a sense of commitment necessary for relationship satisfaction.

Conclusion

With increasing societal shifts away from community, inhabitants of modern industrialized societies may suffer growing isolation. While this is a legitimate concern, it is important to consider the many strategies individuals employ to flexibly cope with deficient social support. Diverse lines of research show that people seek and find security in a wide range of non–human targets, particularly as a supplement for a perceived lack of reliable, warm support from close interpersonal relationships. These findings show that, in many cases, people do not simply have positive attitudes toward their pets, cars, and so on. Rather, a potent motive for relating to these targets is the satisfaction of a deep–seated need for psychological security.

Future research should examine whether and how the processes involved in interpersonal attachment apply to people's relations with non–human targets. How do people develop working models of non–human targets? Do people transfer experience with interpersonal attachments to construe non–human targets? What situations make people more likely to seek security from human versus non–human sources?

This research has significant practical implications for personal and collective well-being. We do not yet know whether engagement with non–human targets provides a stable basis for well-being. Non–human targets may offer the same benefits of close relationships, yet they may be a diversion from – or even worse, a barrier to – the psychological benefits that can only be gained from interacting with living, present human beings, warts and all.

Short Biographies

Lucas A. Keefer is a graduate student at the University of Kansas. He received his MA in 2011. His research combines attachment theory with perspectives on experimental existential psychology to explore how people compensate for threats to the security provided by close interpersonal relationships. He studies these processes in the context of people's relation to their material possessions and their objectification of themselves and others.

Mark J. Landau is Associate Professor of Psychology at the University of Kansas. He received his PhD from the University of Arizona in 2007. Dr Landau has published many articles and chapters focused on metaphor's influence on social cognition and behavior and the role of existential motives in diverse aspects of human behavior. He has been funded by NSF and serves on the editorial board of the *Journal of Experimental Psychology: General*.

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