Social Networks 43 (2015) 91–99

Contents lists available at ScienceDirect

Social Networks

journal homepage: www.elsevier.com/locate/socnet

The affective antecedents of cognitive social network activation

Catherine T. Shea[a,*,1], Tanya Menon[b,1], Edward B. Smith[a], Kyle Emich[c]

[a] Kellogg School of Management, Northwestern University, United States
[b] Fisher College of Business, Ohio State University, United States
[c] Alfred Lerner College of Business and Economics, University of Delaware, United States

ARTICLE INFO

Keywords:
Social networks
Cognition
Affect
Relationships

ABSTRACT

How might people's moment-to-moment feelings influence the social network contacts they call to mind? Three datasets indicate that experiencing positive affect leads people to cognitively activate larger and more sparsely connected social network structures, while experiencing negative affect leads them to activate smaller, redundant social network structures. A preliminary association emerged between positive affect and activating large, diversified network structures in the General Social Survey. To isolate causality, we then conducted two experiments where we randomly assigned participants to experience either positive or negative affect. Both studies supported the hypothesized relationship between affect and cognitive network activation. These findings contribute to a burgeoning literature examining how psychological states shape the activation of social network structures.

Introduction

It was Darwin who first observed that "In joy, the face expands whereas in sadness. . . [the] head hangs on contracted chest (1872, p. 817)." Modern psychological research on the *Broaden-and-Build Theory* has complemented Darwin's insights about affect and physical expansion and contraction by providing evidence of an analogous link with respect to cognition. Specifically, the *Broaden-and-Build Theory* indicates that positive affect, or consciously accessible positive feelings (Fredrickson, 2001; Isen, 2008) leads to cognitive broadening, while experiencing negative affect results in a "narrowed thought-action repertoire" (Fredrickson, 2001, p. 220). In support of the *Broaden-and-Build Theory*, psychologists have found that positive affect leads to better problem solving and creativity (e.g., Amabile et al., 2005; Estrada et al., 1997; Isen, 2008; Isen et al., 1987; Staw and Barsade, 1993), increased perspective taking (Waugh and Fredrickson, 2006), and expanded information search when making decisions (Amabile et al., 2005; Bramesfeld and Gasper, 2008; Emich, 2014; Isen et al., 1978, 1991; Staw and Barsade, 1993; Urada and Miller, 2000).

The current research integrates the *Broaden-and-Build Theory* with research on social networks to investigate how people's affective states shape their perceptions of their social networks. When people experience sadness, for instance, do they constract their social worlds by thinking about tight-knit cliques of highly interconnected people? Likewise when people are happy, do they exhibit patterns of cognitive broadening by mentally activating larger, sparser networks composed of people who are weakly connected or unacquainted?

Building on research on cognitive social structures (Michaelson and Contractor, 1992; Janicik and Larrick, 2005; Kilduff et al., 2006; Krackhardt, 1987), we use experimental methods to document how social networks may be conceptualized as dynamic rather than static, fluctuating in response to differing situations and psychological states. As such, we focus on *cognitive network activation*, the process by which people call to mind certain sets of network contacts at a given moment (Smith et al., 2012; Menon and Smith, 2014).

We argue that people's networks are best understood through a tri-partite model (Smith et al., 2012) consisting of people's potential networks (i.e., the entire set of contacts to which a person has access), their activated networks (i.e., the contacts that people call to mind at a given moment), and their mobilized networks (i.e. the contacts with whom people ultimately interact) (McCarthy and Zald, 2001). Fig. 1 diagrams these three images of networks which capture the flow from social structure to cognitive structure to mobilized structure. The psychological process by which people sample from their potential network structure is important because it logically precedes networking behavior. As such, we view the activated and mobilized networks as a more proximate and precise predictor of individual outcomes than the more complete potential

* Corresponding author at: Kellogg School of Management, Northwestern University, 2001 Sheridan Drive, Evanston, IL 60608, United States.
Tel.: +1 847 467 3344.
E-mail address: c-shea@kellogg.northwestern.edu (C.T. Shea).
[1] These authors contributed equally.

http://dx.doi.org/10.1016/j.socnet.2015.01.003
0378-8733/

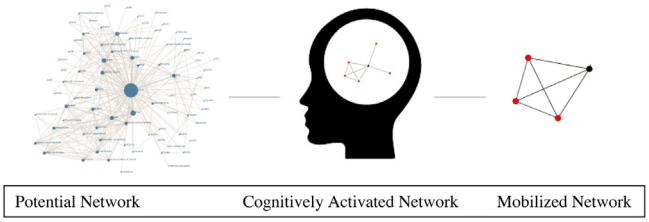

Fig. 1. Tripartite model of social networks.

structure. Further, if psychological fluctuations lead people to cognitively activate and selectively mobilize particular subsets of their networks, this has macro-structural implications by shaping how their potential structure ultimately manifests (Smith et al., 2012).

Given that affective states can vary considerably both between individuals and within individuals over-time (Clore and Storbeck, 2006), they can influence how individuals construe and ultimately utilize their social networks. In this research, we experimentally manipulate affect to document systematic variation in network activation in response to fluctuating psychological states.

Affect and cognitive social network activation

Affect, according to Clore and Storbeck (2006), is simply the experience of having feelings, both positive (e.g., happiness) and negative (e.g., sadness, anger, Russell, 1980). In contrast to *emotions*, which are discrete, targeted feelings in response to a specific object or situation (e.g., sadness, anger, and anxiety, Batson et al., 1992; Ekman and Davidson, 1994), *affect* refers to generalized, valenced feeling (positive vs. negative affect). Affect guides how we process information with positive affect inducing broadened, relational processing and negative affect inducing narrowed, detailed processing (see Clore and Storbeck, 2006 for a review; Fredrickson, 2001; Isen, 2008). Previous research has examined how affect can influence social relationships. Specifically, when people experience positive affect, they expand their circle of trust (Chua et al., 2008; Drolet and Morris, 2000; Dunn and Schweitzer, 2005; Mauss et al., 2011), perceive their social interactions more positively (Kok et al., 2013), and form more inclusive social categories (Dovidio et al., 1995; Isen et al., 1992). While this research links people's affective states to their social relationships, it does not consider social network *structures*.

Affect can be conceptually linked to social network structure in at least three distinct ways: (1) as a relational property of network connections, (2) as an outcome of social network structure, and (3) as an antecedent to social network formation and change (c.f. Borgatti and Lopez-Kidwell, 2011, who distinguish between network theories based on their focus on networks as antecedents vs. outcomes).

When network research has considered the role of affect, it has usually been conceptualized as a *feature of relationships*. Researchers differentiate between instrumental ties, which are based on cognitive judgments such as whether a contact is pertinent to the task at hand, and expressive ties, which are based on affective features of the relationship such as warmth and liking (Casciaro, 2014; Casciaro and Lobo, 2008; Chua et al., 2008; Ibarra, 1993; Umphress et al., 2003). Expressive ties can be laden with either positive affect (Chua et al., 2008) or negative affect (LaBianca and Brass, 2006). Psychological research has likewise explored the affective content of relationships, finding, for instance, that negative affect tends to increase over time in marriages (Gottman, 1998), and that such spirals can be regulated (Finkel et al., 2013). This relational affect (Casciaro, 2014) influences how ties evolve and how individuals within those ties achieve goals.

By comparison, a predominant structuralist assumption is that affect, like other fleeting psychological states, is epiphenomenal or an *outcome* of structure. Rather than treating affective states as having important independent causal significance, social network research in the structuralist tradition commonly views variations in individual affect as outcomes and correlates of network structure. Affective responses such as trust, comfort, and anxiety, for instance, emerge as products of being situated in certain kinds of network structures over others (Burt, 1992; Emirbayer and Goodwin, 1994; Smith-Lovin, 2007; White, 1997), with dense, overlapping network structures producing increased feelings of trust (Uzzi, 1997). According to the structuralist perspective, individuals, along with their transitory feelings and psychological attributes, take backseat to largely stable and persistent relationships (Spillman, 1995; Vaisey and Lizardo, 2010) in which they are embedded.

Recent empirical research, however, has proven unsympathetic to the view that social networks are persistent and unresponsive to psychological factors. Longitudinal studies have shown significant instability and turnover in people's social networks (see Wellman et al., 1997). Research on cognitive social structures (Michaelson and Contractor, 1992; Janicik and Larrick, 2005; Kilduff et al., 2006; Krackhardt, 1987) suggests there may be psychological origins of this instability. Specifically, building on situational fluctuations (e.g., order, anchoring, and priming effects) in interpersonal outcomes (e.g., Krosnick and Alwin, 1987; Tversky and Kahneman, 1974; Tourangeau and Rasinski, 1988), a fast growing literature demonstrates how cognitive frames can affect the recall of network contacts in particular (Bailey and Marsden, 1999; Brashears, 2013; Bridwell-Mitchell and Lant, 2014; Pustejovsky and Spillane, 2009).

In addition to viewing affect as an outcome of structure or a feature of relationships, affect can also be viewed as an *antecedent* to network structure. For instance, individual differences in personality can shape network structures, with highly neurotic people (who typically exhibit high negative affect) exhibiting lower centrality in networks (Klein et al., 2004), and lonely people finding themselves on the periphery of social networks (Cacioppo et al., 2009). Such research implies that the association between individual characteristics and network structures arise when affect leads to repulsion or attraction responses in others (Casciaro and Lobo, 2008), feedback which in turn could lead people to further withdraw from or engage with their networks (Derfler-Rozin et al., 2010).

We also argue that affective states are important antecedents to network structures. However, we suspect that this is not only because affect provokes responses in others. Instead, we argue that such feelings matter because they directly affect the way people process information (Clore and Storbeck, 2006; Isen, 1990). For instance, in a social network context, the information processing effects of positive affect have been examined by Casciaro et al. (1999). Specifically, the authors showed that positive affect improved recall accuracy of an entire friendship network while also creating unrealistic images of individuals' personal advice ties. In the present paper we are less interested in assessing the accuracy of people's network perceptions overall (Casciaro, 1998; Casciaro et al., 1999; Krackhardt, 1990), but rather aim to highlight the effect of affective states on their network sampling process. In other words, while people may use cognitive heuristics adaptively to facilitate network recall (Brashears, 2013), their variations in affective states can exert unintended but systematic biases, leading individuals to cognitively activate different subsections of their potential social networks.

To do this, we draw from psychological research on the *Broaden-and-Build Theory*, a psychological theory that delineates affect's influence on cognition. Specifically, we build on this work by introducing hypotheses about how affective states can shape cognitions about network structures. Across a variety of domains, positive affect has been shown to expand information search when making