FROM CREATIVITY TO INNOVATION:
THE SOCIAL NETWORK DRIVERS OF THE FOUR PHASES OF
THE IDEA JOURNEY

ABSTRACT

In recent years interest has burgeoned in how social networks influence individual
creativity and innovation. This increased attention has generated many inconsistencies from both
the theoretical and empirical points of view. In this article we propose that a conceptualization of
the idea journey encompassing phases that the literature has so far overlooked can help solve
existing tensions. We conceptualize four phases of the journey of an idea from conception to
completion: idea generation, idea elaboration, idea championing, and idea implementation. We
propose that a creator has distinct primary needs in each phase – cognitive flexibility, support,
influence, and shared vision, respectively. Individual creators successfully move through a phase
when the relational and structural elements of their networks match the distinct needs of the
phase. The relational and structural elements that are beneficial for one phase, however, are
detrimental for another. We propose that in order to solve this seeming contradiction and the
associated paradoxes, individual creators have to change interpretations and frames throughout
the different phases. This in turn allows them to activate different network characteristics at the
appropriate moment and successfully complete the idea journey from novel concept to a tangible
outcome that changes the field.
Although creativity was initially conceived of as a function of innate personality traits (e.g., McCrae, 1987; Barron & Harrington, 1981), the notion that creativity is a social process has increasingly gained prominence. In contrast to the lone genius view, theorists suggest that interactions with others influence various aspects of the creative process (e.g. Amabile, 1983; Simonton, 1984; Woodman, Sawyer & Griffin, 1993). This perspective is consistent with accounts from notable and historic creative organizations. For example, accounts of Bell Labs describe how the culture and physical space influenced collaboration and interaction with other scientists (Gertner, 2012). In the realm of innovation, creativity’s close cousin, a social view of innovative behavior and a social network approach have been used extensively (e.g., Burt, 1980; Edabi & Utterback, 1984; Hargadon & Sutton, 1997; Obstfeld, 2005; Tsai, 2001). At the same time, social networks have been increasingly used as a lens through which to understand the effect of social context on creativity (e.g., Brass, 1995; Fleming, Mingo & Chen, 2007; Perry-Smith & Shalley, 2003; Sosa, 2011). These trends have resulted in a merge of macro approaches to innovation with micro approaches to creativity.

Greater attention and research, however, have revealed inconsistencies. In many cases, the discrepant logic and results may appear less significant within a single research domain, but become evident as different research streams are melded. For example, it is widely accepted within the network literature that structural holes facilitate access to novel information and creativity (Phelps, Heidl, & Whadwa, 2012); however, empirical support linking structural holes and creativity is equivocal. Burt (2004) finds a positive association between structural holes and “good ideas,” but others (e.g., Perry-Smith, 2006; Zhou, Shin, Brass, Choi, & Zhang, 2009) find no association between measures of structural non-redundancy and creativity. As another example within the network literature, closure and trust are widely thought to facilitate cooperation and knowledge transfer (Morgan & Soerensen, 1999; Morrison, 2002; Reagans &
McEvily, 2003). Accordingly, some studies suggest that bringing people together is critical for innovative activities (Hargadon & Beckhy, 2006; Lingo & O’Mahony, 2010; Obstfeld, 2005).

Yet at the same time, these structures have been described as promoting conformity (Fleming, Mingo, & Chen, 2007; Uzzi & Spiro, 2005), the antithesis of creativity (Goncalo & Duguid, 2012; Woodman, Sawyer, & Griffin, 1993). Finally, the findings are discrepant related to strong versus weak ties. Are strong ties—rich with trust and support—best for creativity (e.g., Sosa, 2011; Chua, Morris & Mor, 2012), consistent with creativity theorists’ emphasis on positive affect and support (e.g. Madjar et al., 2002; Isen, Johnson, Metz, & Robinson, 1985; Isen & Patrick, 1983)? Or are weak ties – rich with breadth and reach – best (e.g., Baer, 2010; Perry-Smith, 2006; Zhou et al., 2009), consistent with network theorists’ emphasis on different information and recombination (e.g., Burt, 1992; Granovetter, 1973)?

One important tenet of this body of research has been implicit assumptions about the phases of the idea journey—the path followed by a novel idea from its conception to its successful dissemination. Creativity scholars have primarily underlined the importance of generation, or coming up with a novel and useful idea (e.g., Amabile, 1983). In contrast, innovation scholars have stressed the importance of the implementation of the idea and its effects on the field (e.g., Frost & Egri, 1991; Howell & Higgins, 1990; Maidique, 1980). Both the creativity and innovation literatures, however, independently have come to recognize that between the start (the generation of an idea) and the end of the journey (its implementation), there also are intermediary phases. Creativity scholars have highlighted that after an idea is generated, it requires further development and validation checks (Campbell, 1960; Ford, 1996; Harvey, 2014; Staw, 1990). Moreover, innovation scholars have elucidated the importance of championing activities prior to the successful implementation of an idea (e.g., Frost & Egri, 1991; Howell & Higgins, 1990; Maidique, 1980). Despite the importance of these phases for the
idea journey, research taking a social and relational approach primarily has emphasized either idea generation or implementation, neglecting key intermediate phases (i.e., elaboration and championing), or confounded the two by not clearly specifying either. Some social network research has begun to emphasize single phases other than generation or implementation (e.g., Lingo & O’Mahony, 2010), while other work has considered multiple phases simultaneously (e.g., Fleming et al., 2007). Even these studies do not explain or clarify where each phase is situated within the broader idea journey, however.

An explicit distinction among phases and a conceptual framework for considering the entire idea journey are warranted to help resolve inconsistencies in the literature and integrate and reconcile prior research. Their absence makes it difficult to understand how and when a novel idea either successfully moves through the entire journey, ultimately changing the field, or gets “stuck” in any one phase or loop between phases, potentially being prematurely abandoned. For example, some individuals might come up with groundbreaking ideas but never voice them due to a fear of being seen as different (Zhou & George, 2001). They either abandon a promising idea before presenting it to the relevant gatekeepers or strip the idea of its potentially groundbreaking novelty. Others may get “stuck” in championing; they may be geniuses at generation and elaboration but find themselves unable to effectively get support from others (e.g., Elsbach & Kramer, 2003). Thus, without explicitly considering the journey in its entirety, it is difficult to understand the social factors that drive success in each phase and ultimately how creators can succeed through all stages of the idea journey.

In this paper, we conceptualize four phases of the journey: generation, elaboration, championing, and implementation. We articulate the distinct primary needs of each phase, and by doing so, we reconcile contradictory research about the role of relationships and social networks in the complete idea journey process from creativity to innovation. While it provides clarity on
the social network drivers, however, our theorizing also reveals a series of tensions: the network characteristics that facilitate one phase undermine the next. These seeming contradictions suggest a number of paradoxes that ultimately highlight why successful movement through all phases may be a rare and difficult occurrence. Integrating emerging network activation research (e.g., Bridwell-Mitchell & Lant, 2013; Mariotti & Delbridge, 2012; Smith, Menon, & Thompson, 2012) with sensemaking literature (e.g. Gioia & Thomas, 1996), we posit that these looming paradoxes can be resolved when creators change interpretations and frames and subsequently call to mind different networks. This activation fluidity, although difficult in some cases, exposes them to the need-facilitating network characteristic at the right moment.

**THE IDEA JOURNEY PHASES AND RESPECTIVE NEEDS**

In order to clarify the network drivers, we first conceptualize each phase in the idea journey process. Integrating literatures across a variety of research domains, we define each phase and articulate the primary needs associated with each. For simplicity we assume the creator is an individual who remains the primary driver and developer of his or her creative idea throughout the idea journey.¹ We conceive of needs as the primary socially derived ingredients that facilitate success in each phase. In contrast to the flow perspective (Borgatti & Halgin, 2011; Podolny, 2001), our concept of needs emphasizes the less tangible yet more proximate inputs. These needs may not flow directly from social ties yet can be affected by them. For example, Burt (1998) highlights the importance of emotional and cognitive resources that come from “living among” particular types of ties rather than more tangible resources, such as information, that one may directly receive from a tie. See Table 1 for a summary of each phase and the respective needs.
In order to illustrate each phase, we use the running example of a screenwriter, thus focusing on a specific setting. Nevertheless, we believe these phases generalize to a variety of contexts. See Appendix A for examples of each phase in other contexts.

Insert Table 1 about here

Idea Generation: Need for Cognitive Flexibility

We define the idea generation phase as the process of generating a novel and useful idea. Through an associative, “blind-variation” process individuals generate different ideas then self-select the one that they deem more promising and useful (Campbell, 1960; Mednick, 1962; Simonton, 2003). Although the generation process includes variation, this phase concludes with the creator selecting a single, novel idea that is potentially useful or valuable (Amabile, 1983; Woodman, Sawyer, & Griffin, 1993). This differs from brainstorming, in which the goal is to generate a high number of novel ideas that may or may not be useful (Paulus & Dzindolet, 1993; Sutton & Hargadon, 1996). Importantly, the selected idea is merely a vague idea or core concept to be elaborated upon in future phases. We assume the variation process initiates within an individual’s mind (Campbell, 1960), as the idea is first generated by an individual but is indirectly influenced by the social context (Cronin & Weingart, 2007; Mueller & Kamdar, 2011).

As an illustration, consider the case of a screenwriter. Screenwriters’ ideas for new movies can be inspired by different elements, like a book, a real-life event, or an anecdote. For example, Wes Anderson, the famous screenwriter and director, got the initial inspiration for the story of The Royal Tenenbaums by the chance purchase of a CD of Maurice Ravel’s music. While he was listening to Ravel's "String Quartet in F Major," he started thinking about “an F. Scott Fitzgerald-type New York story. I pictured it being set in the 1960s, though. It was
probably a bit like *Good Night and Good Luck*, something like that!” (Seitz, 2013, p. 28). This anecdote underlines the randomness and unpredictability of the idea generation process, which is largely unconscious and often serendipitous (Campbell, 1960; Meidnick, 1962; Zhong, Dijksterhuis, & Galinsky, 2008) and can be affected by a variety of environmental stimuli.

While new and non-redundant knowledge is generally thought to facilitate recombination and ultimately the generation of new ideas (Burt, 2004; Granovetter, 1973), creativity theorists suggest that the association between knowledge and creativity is complex. For example, it is not just the accumulation of new knowledge content that matters, but rather the effect of that content on cognitive structures in the mind (Amabile, 1983; Dane, 2010). In particular, this effect can include whether the knowledge elicits more rigid cognitive pathways, making it less likely that individuals will connect previously disconnected elements (Amabile, 1996; Mumford & Gustafson, 1988). Further, it is not just how much knowledge an individual is exposed to, but the extent to which one is ready to accept and integrate new knowledge content (Mueller & Kamdar, 2011; Cronin & Weingart, 2011). Although some minimal level of knowledge provides a necessary foundation for novelty, domain-relevant knowledge alone is not sufficient.

The fundamental requisite at this stage is cognitive flexibility, defined as the ability to shift schemas and cognitive categories (Amabile, 1983; Guilford, 1968) so that cognitive pathways can be altered to achieve broader categorization of content (Mednick, 1962). Cognitive flexibility involves a flat associative hierarchy, which enables remote and uncommon associations between conceptually distant ideas that depart from existing paradigms within the domain (De Dreu, Baas, & Njstad, 2008; Mednick, 1962; Mumford & Gustafson, 1988; Simonton, 1999, 2003). With this cognitive structure and organization of content in the mind, more novel ideas are likely. These arguments suggest that during the generation phase,
individuals need to be cognitively flexible in order to generate ideas that are novel enough to be perceived as creative with respect to existing practices within the field.

**Idea Elaboration: Need for Support**

We define the elaboration phase as the process of systematically evaluating the novel idea’s potential and further clarifying and developing it. Creativity theorists have recognized the importance of elaboration for the creative process both explicitly (Ford, 1996; Mainemelis, 2010; Staw, 1990) and implicitly (Amabile, 1983, 1988; Torrance, 1988). After a core idea has been generated, individuals refine it by checking for inconsistencies and making improvements (Csikszentmihalyi, 1997; Hargadon & Bechky, 2006; Mainemelis, 2010). Importantly, given that a creative idea is unique and potentially discomfiting, the creator must balance some uncertainty and risk with traditional assessments of potential; he or she may anticipate initial resistance to the idea’s merits and even may pursue elaboration without authorization (Criscuolo, Salter, & Ter Wal, 2013; Staw, 1990; Mainemelis, 2010). During this phase, the creator clarifies the initial idea or concept and makes it ready to share with gatekeepers. It moves from a vague concept in the creator’s mind to a more developed idea that is sharable with others. The phase is a success if the creator decides to present the idea, which has retained its novelty, to a wider audience, rather than abandon it. Consider again the case of a screenwriter. Once he or she has generated and selected an idea, he or she will start to develop a synopsis – a short summary of major plot points – and/or a treatment—a more detailed summary of each major scene of a proposed movie. He or she will elaborate until it is ready to be presented to potential producers during pitch meetings.

During the elaboration phase, individuals need support from others in two forms. They need emotional support in order to reduce uncertainty and be motivated to push the idea further and not abandon it (Madjar et al., 2002). Intrinsic motivation “flourishes in contexts characterized by a sense of security and relatedness” (Ryan & Deci, 2000, p.73) like those providing emotional
support. Given the uncertainty associated with novel ideas, people voicing them assume some risk of potentially negative feedback from those with whom they share them (Detert & Edmonson, 2011; Zhou 1998, 2003; Zhou & George, 2001). Because of this, they could decide to abandon ideas that are very novel if they do not receive encouragement in the form of emotional support. This is particularly critical because many creative projects initially look like bad ideas, only to reveal their full potential after elaboration (Catmull & Wallace, 2014; Harvey, 2014).

Creators also need constructive feedback and suggestions to help them identify ways to improve and expand their idea. In order to have a positive effect on creativity, feedback has to be delivered in an informational way. Individuals who receive feedback that helps them develop and grow are more likely to perceive it as constructive and supportive (Zhou, 1998), increasing their intrinsic motivation towards tasks and their sense of self-determination (Pittman et al., 1980; Ryan, 1982). In contrast, controlling feedback, more critical and evaluative in nature, can undermine intrinsic motivation and creativity (Shalley & Perry-Smith, 2001). For example, Chris Bangle, BMW director of design, stresses the importance of creating a “fortress” around designers in order to shield them from “hurtful criticism” prematurely (Bangle, 2001: p. 7-8). According to Ed Catmull, CEO of Pixar Animation, a brand-new idea is often an “ugly baby.” As such, it needs to be evaluated with candor and honesty, but harsh criticism too early can prevent the creator from trying to fix and ameliorate problems or, even worse, from generating future ideas. Thus, while creators need feedback to help refine the idea and solve challenges, it is critical that the feedback not undermine the idea’s novelty or result in its premature abandonment.

**Idea Championing: Need for Social Influence and Legitimacy**

The championing phase is defined as the active promotion of a novel idea, aimed at obtaining the approval to push the idea forward and, consequently, also obtaining money, talent, time or political cover (Howell & Higgins, 1990; Kanter, 1983, 1988; Maidique, 1980; Staw,
At this point, the creator begins putting the idea in front of the field’s “gatekeepers,” articulating a compelling argument in its favor and underlining the positive impact that it would have on the organization or field (Howell & Higgins, 1990). Given that highly novel ideas have a high risk of rejection, these are not easy tasks. At the end of the championing phase, the idea either is abandoned or receives the green light to be further developed and, ultimately, implemented (Fried & Hisrich, 1994; Frost & Egri, 1991; Markham, 2000; Rothwell et al, 1974). Consider again the example of a screenwriter. During this phase, he or she tries to sell the idea to film studio executives. This will happen during the so-called “pitch meetings,” in which screenwriters attempt to persuade producers of the novelty and potential of their idea, as well as of their own ability to develop it into a movie or television series (Elsbach & Kramer, 2003).

In order to be successful, champions need to possess influence and legitimacy. Social-political processes are inherent in the championing phase (Howell and Higgins, 1990; Chakrabarti, 1974; Markham, 2000; Walsh & Fahey, 1986). Influence is fundamental to protecting ideas from encroachment and criticism, removing obstacles to their acceptance, and persuading relevant decision makers to provide their approval and resources for implementation (Anand, Gardner, & Morris, 2007; Anderson & Bateman, 2000; Howell & Higgins, 1990; Chakrabarti & Hauschildt, 1989; Schon, 1963). Moreover, an individual creator’s reputation and perceived legitimacy serve as cues about his or her performance and ability to implement an idea (Podolny, 1994). Decision makers are more likely to approve and support ideas proposed by creators that they perceive as legitimate and competent (Cattani & Ferriani, 2008; Hargadon, 2005; Shane & Cable, 2002).

**Idea Implementation: Need for Shared Vision and Understanding**

Idea implementation is formed by two sub-phases: production and impact. While scholars have either emphasized production (e.g., Ahuja, 2000; Obstfeld, 2005) or impact (e.g.,
Abrahamson & Rosenkopf, 1993; Klein & Sorra, 1996), both sub-phases represent important facets of the implementation of an idea (Van de Ven, 1986; West, 2002).

During the production sub-phase, the idea is turned into something tangible—a finished product, service or process. This phase includes changing the core concept into a “blueprint,” with detailed steps to follow as the idea is converted into a finished product. For example, after screenwriters obtain the green light to develop their script, the screenwriter will include the specifics that help the production team convert the script into an actual movie, like information on shooting angles, lighting and settings. At some point, screenwriters will share the detailed script with the production and creative crew that will be put in charge of the realization of the movie. The crew can get involved earlier or later in the process, but the final production of the movie always requires the active involvement of others with necessary competences and skills.

During the impact sub-phase, the innovation is accepted, recognized and used by the field. The acceptance of ideas is socially shaped, with social systems making judgments about products’ novelty and whether to incorporate them in the wider culture (Csikszentmihalyi, 1999; Simonton, 1999). A contribution that is really novel might be dismissed as crazy and ultimately forgotten, unless it is considered and reused by others (Hargadon & Beckhy, 2006). If an idea changes industry standards and becomes a new creative reference point for the field, the idea has successfully affected the field. For example, in order to be considered successful, a screenwriter’s work cannot just be turned into a movie and distributed; it also needs to be recognized as creative by peers and critics by receiving awards and nominations, and other screenwriters need to “cite” the work or write similar scripts in terms of content and style. Uzzi and Spiro (2005) illustrate this with the example of a Broadway show: high impact shows include a particular creative approach that influences the development of future shows.
Literature on team innovation and creativity has emphasized the importance of vision for an effective creative production process. Vision is defined as a projection of a valued outcome that is perceived as a higher order goal and motivator (West, 1990). Sharing a vision means having a common understanding of objectives, being highly committed, and sharing a sense of purpose and responsibility (Cardinal, 2001; West & Anderson, 1996). A shared vision means better communication, information sharing and helping behaviors, leading to a more efficient production process (Hargadon & Bechky, 2006; Lingo & O’Mahony, 2010). Moreover, a shared vision increases the sense of ownership, purpose and responsibility (Cardinal, 2001; Fleming et al., 2007; Gilson & Shalley, 2004), resulting in an enhanced motivation to work together. Individuals not sharing a vision are likely to have a different understanding of objectives, and this may result in an ineffective production sub-phase. In a meta-analytic study on the determinants of team innovation, Hülsheger, Anderson, and Salgado (2009) provide empirical evidence that groups with shared vision are better able to implement innovations, and that vision is the most important determinant of a group’s ability to produce innovative outcomes.

During the impact sub-phase, a shared vision and understanding among field members outside the production team is needed. As creative ideas depart from existing practices and routines, excessively novel ideas may encounter more resistance (Anand, Gardner, & Morris, 2007). Individuals, who see the idea only as a threat to their power or activities without understanding its potential value, may try to resist it. Moreover, field operators who do not understand the creative potential of the idea might just discard it as crazy or nonsensical. Shared vision and understanding help overcome interpretive problems, create a common language that guarantees that the idea is correctly communicated to other field members, and ensure its successful interpretation and acceptance (Carlile, 2004; Carlile & Rebentisch, 2003). These
arguments suggest that, in order to be effective in both sub-phases, creators need a shared vision and understanding around them.

**SOCIAL NETWORK CHARACTERISTICS AND NEED FACILITATION**

Given that creativity and innovation are in part a social process, we consider the social drivers of each phase in the form of network characteristics. As we mentioned previously, social networks research has often confounded different phases or left them undefined. Table 2 depicts key papers in the literature and the phases on which they explicitly and implicitly focus. The conceptualization of the four phases and the articulation of needs associated with each provide an overarching logic for when and how network characteristics matter for the complete journey: from potentially groundbreaking novel concept to one that changes the field.

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Insert Table 2 about here

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Delineating phases suggests different degrees of desirable active involvement of alters and purposeful action of creators to facilitate the respective needs. First, an idea moves from early phases, in which the beneficial influence of others is characterized as indirect and passive, to later phases, in which the beneficial influence of others is characterized as direct and active. In the elaboration phase, the need for support suggests that alters react to the creator’s idea, but it does not necessarily require them to work alongside the creator to directly shape the idea. In the championing phase, alters’ influence is more direct: as field gatekeepers, they have a stake in the idea’s development and their reaction immediately affects its continuation or its end. However, alters’ involvement is still less active than what is suggested by the needs in the implementation phase. While the originator remains primarily responsible for the idea’s development, the need for a shared vision is implicitly social—it requires alters to shape the idea’s content in a
collaborative fashion. Second, the creator’s action becomes more intentional as the phases progress. In the generation phase, as we have suggested, the effect of others’ on the birth of a new idea is serendipitous yet also influenced by social interactions similar, for example, to the way an individual’s mood is affected by the behavior of those surrounding him or her (Madjar et al., 2002). Like other serendipitous networks (Kilduff & Tsai, 2003), however, the actor’s interaction with others is not necessarily premised on fulfilling a pre-defined goal compared to later phases in which the creator may seek others for more instrumental reasons.

Our conceptualization of the social nature of each phase can thus be depicted as a continuum (see Figure 1) where the influence of the social context is similarly strong, but alters’ involvement ranges from being more indirect and passive in earlier phases (i.e., more creator centric) to more direct and active in the later phases (i.e., more collaborative) and actors’ action ranges from being more serendipitous in early phases to being more intentional in later phases. This continuum undergirds our social network propositions.

We will suggest that the micro-level needs of the first two phases primarily are facilitated by dyadic relationships and the strength of those relationships. We define strong ties as ties with a high level of emotional closeness, given the importance of affect for creativity (Amabile, Barsade, Mueller, & Staw, 2005; Bledow, Rosing, & Frese, 2013; George & Zhou, 2002) and its prominence as key property of tie strength (Casciaro & Lobo, 2008; Marsden & Campbell, 1984; Rost, 2011). Duration and frequency are also relevant dimensions of tie strength (Granovetter, 1973); however, given our articulation of needs, we see them as being secondary dimensions.
As we move through the idea journey, we will posit that the social context becomes more important and that the social structure beyond the dyad is a more relevant facilitator of needs than tie strength. We conceptualize structure as local ego-network structure, or the structure among a creator’s direct ties. As such, we focus only on the set of nodes surrounding a given node, and the system of relationship among them. When two of the ego’s contacts do not share a tie, it is said that the ego is spanning a structural hole (Burt, 1992). On the contrary, triadic closure exists to the extent a focal individual’s direct contacts maintain ties to each other (Coleman 1988; Phelps et al., 2012). Although we focus on local structure, we recognize that our logic extends to research referencing global structure (e.g. Cattani & Ferriani, 2008; Ibarra, 1993), the structure of an entire network (Scott, 1988). We reference this work where it is relevant to our arguments.

Our central premise, then, elucidated throughout this section, is that dyadic tie strength is critical to facilitating the micro-needs of the early phases, while structure is critical to facilitating the more socially embedded needs of the later phases. While providing clarity, our logic also will reveal that as the idea progresses across phases, the primarily beneficial network characteristics reverse. That is, the network features that are helpful for one phase are not necessarily helpful in the next phase.

Idea Generation and Elaboration: The Weak versus Strong Tie Paradox

The standard logic commonly used to predict the optimal tie strength and structure for novel ideas can be summarized as follows: tie strength and structures that provide access to non-redundant knowledge content facilitate recombination and, ultimately, creativity (see Perry-Smith & Mannucci, 2015, and Phelps et al., 2012, for reviews). Theorists typically suggest that weak ties provide access to content that differs from what the actor already knows, because they tend to be nonredundant connections to different social circles (Granovetter, 1973, 1983; Ibarra & Andrews, 1993). In addition, actors whose networks are rich in structural holes get access to
more diverse information (Aral & Van Alstyne, 2011; Burt, 1992). As we discussed previously, however, actors do not necessarily automatically recombine disparate knowledge. In order to generate novel ideals, individuals need cognitive flexibility in the form of loose connections between concepts in the mind, which facilitates a broad categorization of concepts and ultimately remote associations (De Dreu et al., 2008; Mednick, 1962).

While structure influences access to diverse knowledge, tie strength affects how individuals interpret and process content and ultimately the cognitive organization of content in the mind (e.g., cognitive flexibility versus rigidity). Individuals desire cognitive and social balance among their social ties and the knowledge held by those ties (Phillips, 2003; Phillips, Mannix, Neale & Gruenfeld, 2004; Phillips & Loyd, 2006). Individuals expect alters they know well to hold similar perspectives and agree with one another. When emotionally close alters disagree by providing non-redundant knowledge content, the disagreement might lead to a state of imbalance that hampers cognitive processes. Moreover, since individuals are motivated to restore balance, this lack of social and cognitive balance might lead them to discard the content received from strong ties (Phillips et al., 2004). Despite the intuition and self-reports that individuals pay more attention to information coming from strong, trustworthy ties (e.g., Levin & Cross, 2004), results show that the above logic, rather than trust, explains how individuals actually process information from ties. In an experimental study, Perry-Smith (2014) finds that individuals receiving information from strong ties spend less time integrating it, as the information merely solidifies existing cognitive pathways, resulting in uncreative solutions. In contrast, receiving different knowledge content from weak ties is a cognitively balanced situation. The content produces more flexible cognitive pathways, resulting in more time spent considering different options and higher creativity (Perry-Smith, 2014).
Notably, and consistent with Baer (2010), these arguments emphasize the number of weak ties, that is, weak ties to multiple individuals rather than a single weak tie. Several studies that controlled for structural non-redundancy found that weak ties facilitate creativity over and above structure (e.g., Baer, 2010; Perry-Smith, 2006; Perry-Smith, 2014; Zhou et al., 2009). Notably, each study utilizes a measure of creativity closer to generation than other phases of creativity. Although too many weak ties generally can become detrimental (Zhou et al., 2009), we expect that during idea generation specifically the benefits of maintaining many weak ties will outweigh the possible downsides.

Our arguments suggest that the structural features of ties may be less relevant for the generation phase, although non-redundant structure may facilitate championing, as we will suggest later. Consistent with this line of thinking, there is little empirical support for the theorized benefits of brokerage, despite the almost taken-for-granted logic relating structural holes and creativity. Rodan and Galunic (2004) do not find a main effect between structural holes and innovativeness. They suggest that the lack of significant main effect of structural holes may be due to the fact that structural holes provide “political maneuverability” rather than diverse knowledge. Zou and Ingram (2013) find that structural holes that exist outside of the organization facilitate creativity, but structural holes within the organization do not. Similar to Rodan and Galunic, one interpretation of this result is that maximizing difference is key, rather than the extent to which the tie spans a structural hole. Taken together, this work suggests that while structural holes may have some role in the idea journey, little empirical evidence links structural holes with idea generation.

Two influential studies may at first glance appear to contradict this lack of empirical support. First, Burt (2004) finds that structural holes facilitate good ideas, or ideas deemed valuable. His logic emphasizes the ability of brokers to identify good ideas and navigate complex
political environments and diverse constituencies to successfully implement them. As we will describe in the next sections, this logic is consistent with championing rather than generation.

Second, Fleming and colleagues (2007) show that structural holes benefit creativity. However, new patent subclass pairs, their dependent variable, imply other phases beyond generation. Patents are finished products that have already been elaborated and championed (Oldham & Cummings, 1996). The results from these studies are thus confounded by the fact that the primary measure encompasses different phases.

Taken together, our arguments and existing empirical evidence suggest that weak ties rather than structural holes should be beneficial for creativity during the idea generation phase.

*Proposition 1a:* The number of weak ties facilitates idea generation.

*Proposition 1b:* The number of weak ties rather than non-redundant structures (i.e., structural holes) facilitates idea generation.

While weak ties are expected to facilitate generation, they do not facilitate elaboration. Because someone highlighting a novel idea might be perceived as incompetent (Hofman, Lei & Grant, 2009) or have his or her idea abruptly dismissed (Zhou, 1998; Zhou & George, 2001), trust is theorized to facilitate sharing unique ideas (Chua et al., 2012; Tortoriello & Krackhardt, 2010). Via trust, strong ties reduce concerns over opportunistic behavior (Kachra & White, 2008; Krackhardt, 1992; Levin & Cross, 2004; Uzzi & Lancaster, 2003) and concerns about having the idea criticized or rejected (McEvily, Perrone, & Zaheer, 2003; Tortoriello, Reagans & McEvily, 2012), thus fostering the likelihood of individuals refining and disclosing ideas rather than abandoning them (Amabile et al., 1996; Oldham & Cummings, 1996; Frese, Teng, & Wijnen, 1999). Trust thus increases the chances that the creator decides to share the idea; when creators perceive trust, they are free to present views and perspectives that may be unusual and will be more likely to share counter-normative ideas without filtering or changing them to meet the
anticipated needs of the alter (Zhang & Zhou, 2014; Zhou & George, 2001). This level of trust helps assure that the idea will move beyond the creator’s mind, an important first step.

Once an idea is shared, strong ties are more likely to provide the support needed during the idea elaboration phase. Close relationships are more likely to provide emotional support and motivation (Sosa, 2011; De Stobbleleir, Ashford, & Buyens, 2011). Moreover, the feedback emotionally close alters provide is likely to be perceived as more supportive and informational than overly directive or critical. As we stated previously, feedback can undermine creativity if it reflects the latter (e.g., Zhou, 1998; 2008), whereas feedback delivered in an informational style increases individuals’ motivation towards their tasks and sense of self-determination (Pittman et al., 1980; Ryan, 1982; Shalley & Perry-Smith, 2001). Emotionally close alters serve the important function of validating one another’s views (Cross & Sproull, 2004; Reis & Shaver, 1988), so the feedback is likely to be supportive and encouraging. In addition, individuals tend to perceive feedback coming from trusted individuals as constructive and useful and to accept more easily suggestions coming from those with whom their relationship is reciprocal (Cross, Borgatti, & Parker, 2001; Sniezek & Van Swol, 2001). This suggests that people who are emotionally close are more likely to use an informational feedback style, not imposing their point of view and demands on the feedback recipient and providing suggestions constructively.

The elaboration phase does not require many ties as the generation phase does, nor does it require that the strong tie contacts belong to the creator’s field. First, help-seeking comes with reciprocation costs. The more people one goes to for help, the more people he or she will have to reciprocate, thus reducing the time that can be devoted to creative activities (Mueller & Kamdar, 2011). Second, rather than belonging to the same field, the strong ties must simply connect the creator with a trusted individual, one with whom he or she feels safe presenting a rough version of an unusual idea. For example, Alfred Hitchcock, the famous director, used to present all his
ideas for new movies to his wife, Alma Raville, before pitching them to producers. Mrs. Raville played an indispensable role in the making of her husband’s movies: “she was his closest confidante, his most trusted ally” (Anderson, 2012, p. AR16). She provided him with feedback about the creative potential of his ideas, pushing him to pursue them even when he did not seem to believe in them (O’Connell & Bouzereau, 2004). Thus, the support required for elaboration comes from one emotionally close tie, or a tie within the creator’s “inner circle.”

A close look at extant research is consistent with our rationale. Madjar and colleagues (2002) find that support from family and friends facilitates creativity via feelings of enthusiasm and excitement (i.e., positive affect). Their logic, that support from family enhances motivation to continue with an idea, is consistent with elaborating an already generated idea. In another empirical study, Sosa’s (2011) results suggest that strong ties have a positive impact on creativity; he argues that this is because they increase positive affect, support and motivation to work together and share ideas. His conceptual emphasis on idea sharing is consistent with the elaboration phase. In another example, Chua, Morris and Mor (2012) find that cultural metacognitions facilitate creativity via affect-based trust. They argue that deep knowledge about another is required to make oneself vulnerable and buffer the anxiety associated with sharing creative ideas. Their work contrasts with other work suggesting the number of weak ties with culturally diverse others facilitates creativity (Perry-Smith & Shalley, 2014). Notably, however, this work emphasizes the generation of ideas via schemas rather than the sharing of ideas.

As with generation, we expect strength to be more important than structure for idea elaboration. Pockets of interconnected and redundant ties may at first glance appear to provide some of the same benefits of strong ties for elaboration. These networks are characterized by greater trust and support among members (Aral & Van Alstyne, 2011; Coleman, 1988; Uzzi, 1996; Chua, Morris & Ingram, 2010). Individuals are more likely to feel psychologically safe to
share ideas within dense networks, since they promote a sense of shared ownership and mutual understanding (Fleming et al., 2007). Moreover, closely tied alters tend to develop cooperative norms that generate social pressure to help each other (Coleman, 1988; Granovetter, 1973, 1985). Dense structures can also promote conformity (Granovetter, 1973), however, inducing people to eliminate the most innovative features of their ideas in order to comply with existing ways of thinking (Perry-Smith & Shalley, 2003; Janis, 1972; Sosa, 2011). Although they are motivated to cooperate, these close ties can inadvertently quash novelty and uniqueness as individuals in dense collectives move toward similarity of perspectives over time (Uzzi & Spiro, 2005). This tendency is also known as “contagion by cohesion” (Burt, 1991). In contrast, dyadic support from one to two strong ties provides individuals the emotional and motivational benefits without the conformity pressures that dense structures generate.

Proposition 2a: A limited number (i.e., one or two) of emotionally charged strong ties facilitates idea elaboration.

Proposition 2b: Strong ties, rather than structural closure, facilitate idea elaboration.

Idea Championing and Implementation: The Sparseness versus Closure Paradox

Scholars have argued that structural holes are a relevant source of influence and legitimacy. Individuals spanning structural holes control the flow of information and resources between disconnected actors, and they can use this control to exert influence and gather support and advocacy for their ideas and initiatives (Burt, 1992; Rodan & Galunic, 2004). In addition, these brokers are thought to have a vision and translation advantage that helps them sell good ideas (Burt, 2004). As connectors between disconnected social groups, they develop skills in translating ideas for different audiences by understanding what resonates and what does not given their contexts and constraints. So while brokerage, or occupying network positions that span
structural holes, may not facilitate the generation of new ideas, this line of reasoning suggests brokerage may be critical during the championing phase.

But can creators directly leverage the advantages of structural holes? Not necessarily. In order for individuals to successfully navigate the championing phase, field members must have a generally positive impression of the creator’s ability and efficacy (Gluckler & Armbruster, 2003). This is inherently difficult in the case of truly novel ideas, as they are at higher risk of rejection because of the lack of benchmarking (Csikszentmihályi, 1988, 1999). As new ideas are characterized by high uncertainty and questionable legitimacy, decision-makers use various cues to determine whether they will support their implementation (Elsbach & Kramer, 2003). While some of those cues may be the characteristics of the creator, others derive from the structural position of creator’s contacts. In general, social network research asserts that individuals can “borrow” influence and legitimacy to reduce the perceived uncertainty by associating with well-regarded individuals (Gluckler & Armbruster, 2003; Hoang & Antoncic, 2003; Stuart, Hoang, & Hibels, 1999). After all, the perceived attributes of an actor’s alters are often attributed to the actor herself (Blau, 1964; Kilduff & Krackhardt, 1994; Uzzi, 1996). Consistent with this logic, Anand, Gardner and Morris (2007) show that champions of emerging practices in management consulting firms used external and internal sources to legitimize and defend new practice areas.

This notion of “borrowing,” which applies to structural holes in particular, offers several advantages for idea champions. When a creator borrows the structural holes of another, the creator’s legitimacy stock increases due to his or her association with the higher status sponsor. Burt (1998) proposes that when individuals lack legitimacy and influence, they may benefit from “borrowing” the structural holes of another rather than brokering structural holes themselves. He found that for female managers in male-dominated firms, structural holes did not demonstrate the expected positive relationship with promotion and bonuses generally found in the literature (e.g.,
Burt, 1997; Seibert, Kraimer & Liden, 2001). Instead, the extent their networks centered on a broker mattered. In a recent study, Brands and Kilduff (2013) find that women in male dominated contexts are less likely to be perceived as brokers than men. If women are perceived as brokers, they perform better individually but experience social sanctions in the form of being seen as competent but less warm. Via borrowing, the creator is not cognitively constrained by the established social norms and paradigms within the field (e.g., Cattani & Ferriani, 2008) or the complexities associated with maintaining structural holes. Directly bridging structural holes thus may not always be an effective strategy during the championing phase.

A close examination of empirical research supports the value of structural holes and borrowed structural holes for the championing phase. Burt (2004) finds that structural holes facilitate acceptance of ideas by others in the field by virtue of key managers rating ideas as “good” ones. Although these ideas may or may not be novel, the results suggest that brokers are more likely to identify ideas that appeal to important others in the firm. Rodan and Galunic (2004) find a significant interaction between knowledge heterogeneity and structural holes. Since their measure of innovativeness includes multiple phases, this result is consistent with our logic that knowledge heterogeneity is relevant to generation, while structural holes facilitate championing. Ibarra (1993) argues that centrality is associated with high status and influence, which should help persuade members of the field that an innovative idea is viable; however, she measures centrality via aggregate prominence, which is based on the centrality of an individual’s direct ties. Although it is not stated in these terms, this finding is consistent with the notion of “borrowing” the centrality of another.

*Proposition 3a: Direct and borrowed structural holes facilitate idea championing.*

*Proposition 3b: Borrowed structural holes, more than direct, facilitate idea championing.*
Direct and borrowed structural holes are more useful than tie strength in the championing phase. The premise behind the argument that strong ties are critical for championing is the idea that friends have more social influence over friends (Krackhardt, 1992). In addition, strong relationships are characterized by the presence of norms of reciprocity that facilitate the exchange of favors and mutual support (Kanter, 1983). Moreover, individuals connected through strong ties are usually more motivated to help each other, supporting alters’ initiatives and pursuits (Granovetter, 1983). This assumes, however, that the friend is in a position to help by providing the resources needed in this phase. We suggest that the structural characteristics of the alter’s network, as well as the resulting access to others, are primary. This is what will determine whether or not the alter can provide the needed social resources. Notably, this kind of “borrowed structural hole” connection is somewhat similar to buy-in relationship – i.e., ties to others whose support may increase the likelihood of idea implementation (Baer, 2012; Podolny & Baron, 1997), but our emphasis is on the structural features of the alter’s ties rather than the “importance” of the tie ascribed by the actor. Inherent in the notion of borrowing is that the tie between the actor and the alter is solid enough for the alter to “lend” her structural holes to the actor. This action does not require the type of emotional depth typical of strong, emotionally laden ties, however. We thus propose that structural borrowing is the primary mechanism.

Proposition 3c: Borrowed structural holes, rather than strong ties, facilitate idea championing.

While structural holes facilitate championing, they do not facilitate implementation. In the production sub-phase, we posit that closure (i.e., fewer structural holes) among those involved in the realization of the idea is most beneficial. Individuals belonging to closed networks are able to reduce perceived uncertainty by drawing on others’ behavioral cues (Coleman, Katz, & Mentzel,
1966) and by creating a shared understanding of the idea. In addition, closure promotes
normative pressure to work collaboratively towards common objectives, thus helping create a
shared vision about the idea throughout the production phase (Lingo & O’Mahony, 2010). For
example, in the case of dense structures, if one collaborator is tempted to go in a direction
inconsistent with the creator’s objectives, the presence of ties between the collaborator and other
collaborators in the production team will help bring the wayward contributor “in line” with the
creator’s vision. Density thus provides the structural condition for creating shared goals and trust
between collaborators, thereby facilitating effective collaboration and information sharing
(Ahuja, 2000; Granovetter, 1985; Uzzi & Spiro, 2005).

We acknowledge that closure can become problematic in some cases. For example,
collaborators in highly dense structures may get stuck and have difficulty considering alternative
approaches to solving problems (Hargadon & Sutton, 1997; Oh, Chung, & Labianca, 2004; Uzzi
& Spiro, 2005). In the production phase in particular, however, it is more important to execute an.idea than it is to generate new ones. Moreover, research on team processes (e.g., Aldag & Fuller,
1993; Fuller & Aldag, 1998; Kozlowski & Ilgen, 2006; Park, 1990; Whyte, 1989) has begun to
refute the notion that cohesion only undermines general performance. We thus expect closure and
the associated cohesion to generally be beneficial for production.

We further suggest that closure combined with reach provide the best structural
opportunity for successful implementation. In particular, outside ties – those that cross a group’s
boundary – that are embedded in dense structures are ideal. In that scenario, ego and the outside
contact are reciprocally connected to one or more common third party (Krackhardt, 1998). The
literature contains many examples of the importance of outside ties (e.g., Ancona & Caldwell,
1992; Oh et al., 2004; Perry-Smith & Shalley, 2014. For example, Uzzi & Spiro (2005) theorize
and find empirical support for the effect of small world structures on successful Broadway
productions. They argue that in addition to closure within sub-clusters, ties outside of these clusters ensure that the idea, not only circulates to other teams but is also effectively understood, accepted and used. Tortoriello and Krackhardt (2010) find that ties facilitate patent applications when they bridge distinct functional areas when the parties involved have some contacts in common. The outside tie thus allows for the spread of the idea to different groups, and dense local structures facilitate the creation of a shared understanding around the idea.

*Proposition 4a: Structural closure within the creator’s ego network facilitates idea production.*

*Proposition 4b: Outside ties emanating from a creator’s dense ego network structure facilitate idea impact.*

As it is with the championing phase, we expect structure to be primary in the implementation phase. In line with empirical results (Tortoriello & Krackhardt, 2010), we argue that during the impact sub-phase of implementation, the strength of outside ties is less important than the characteristics of the local structure in which they are embedded. Some aspects of strong ties may facilitate understanding of an idea, as they favor value recognition (Friedkin, 1980), creation of a common language (Tortoriello & Krackhardt, 2010), and the development of heuristics and shared meaning (Uzzi, 1997). There are downsides to maintaining lots of strong ties outside of the team, however. For example, strong ties can be costly due to the time, attention and reciprocity involved (Mueller & Kamdar, 2011; Perry-Smith & Shalley, 2003). In addition, too many strong ties outside of the team could undermine internal team dynamics, as loyalties become divided (Keller, 2001; Oh et al., 2004; Nelson, 1989; Perry-Smith & Shalley, 2014). Although strong ties have been argued to be necessary to share tacit knowledge (Hansen, 1999), the cohesion and shared vision of embedded outside ties are enough to enable the flow of tacit knowledge within and outside the group (Tortoriello & Krackhardt, 2010). We suggest that ties
that span team boundaries (i.e., outside ties) and are embedded in dense local structures provide the best combination of reach, vision and understanding, without the costs of strong ties.

**Proposition 4c:** Outside ties embedded in dense structures, rather than strong outside ties, facilitate idea implementation.

**NAVIGATING THE IDEA JOURNEY**

Taken together, our propositions and logic suggest a series of contradictions or paradoxes. First, creators need weak ties to facilitate cognitive flexibility, but in the elaboration phase, the lack of support in weak ties will undermine elaboration by reducing the likelihood that creators will share ideas in the first place. As a result, the very tie strength (or lack thereof) that sets someone up to do well in one phase will set him or her up to do poorly in the other. Second, creators need to borrow structural holes to facilitate influence and legitimacy, but they also need closure to facilitate carrying out a shared vision. Yet, those very structural holes are not expected to facilitate implementation, but the converse (closure) will. Last, creators need to rely on strength and not structure in the earlier phases, but they should rely on structure and not strength in the later phases.

As the tension inherent in paradoxes can often result in reinforcing cycles (Lewis, 2000), instead of a linear progression of ideas through each phase, we may see three recursive loops in the process. For example, the tension related to tie strength may result in a continuous loop between generation and elaboration: the creator never feels confident enough to present the idea to external gatekeepers. Consider also the transition between elaboration and championing. The tension between strength and structure may result in an idea cycling between the two phases as strong ties to emotionally close alters might prove useless during championing, when broader network characteristics are more beneficial than close contacts. The process may spiral (e.g.,
Lindsley, Brass, & Thomas, 1995), circling back and forth between two adjacent phases then either moving to the next phase or “dying” as the creator goes back to generation to start over.

Consider the example of *Bolt*, an animated movie by Disney Animation studios. The movie had already received the green light to advance to the production phase. When the new executives of the studio, John Lasseter and Ed Catmull, noticed problems with the plot, visuals and characters, they asked the team to work on the issues. This started a never-ending, unfruitful loop between movie production and pitches to Lasseter and Catmull that lasted more than ten months. Ultimately, Catmull and Lasseter were forced to restart the project, sending it back to the elaboration phase. Retrospectively, they identified the problem as the lack of trust and cohesion within the production team. According to Byron Howard, the new director they assigned to the project, the team was like “a dog that had been beaten again and again”: everyone preferred to stay quiet and consider their self-interests rather than voicing problems and trying to fix them together (Catmull & Wallace, 2014: 259-262). What happened with *Bolt* is simple: the network around the core creator – the writer/director – was sparse, not dense. While this had been an advantage when it came to convincing producers to approve the project, it proved detrimental when it came to making the movie.

Figure 2 provides a visual description of the idea’s journey across each phase and the loops likely to arise due to the inherent tensions. Although we emphasize the social network drivers of recursive loops, there may be a variety of reasons loops occur – for instance, the idea at its core may be a bad one. Nevertheless, the figure represents the general paths a new idea is likely to take over time. At an aggregate, higher level, movement across these phases can be linear, but at a more micro level, the interplay between phases can be recursive and cyclical.
Network Activation

It may at first appear difficult if not highly unlikely for a creator to achieve the ambidexterity required for each competing aim. Individuals tend to rely on relationships and paths that worked in the past because of tie inertia (Dahlander & McFarland, 2013). Individuals may cling to prior approaches (Lewis, 2000) and stay within a comfortable and familiar social space (Ford, 1996). Although the specific ties may change and vary over time (Soda, Usai, & Zaheer, 2004), network patterns and structures are thought to generally remain stable (Sasovova Mehra, Borgatti, & Schippers, 2010). In addition, like other paradoxical elements (e.g., Sitkin, et al., 2011; Smith & Tushman, 2005), different elements appear to be in competition with one another. This is a problem because the capacity for social ties is somewhat fixed, and creators only have the capacity for a limited number of ties (Hansen, 1999; Mariotti & Delbridge, 2012). As a consequence, an idea may not easily move through the idea journey.

While these contradictions make the idea journey seem untenable, the fact that social networks are not only fixed, objective social structures may suggest otherwise. Individuals generate cognitive representations of networks, or mental maps, of whom they know, who is connected to whom, and who occupies certain positions (Carley, 1986; Krackhardt, 1987, 1990). While one line of work emphasizes accuracy, or the extent to which cognitive social structures match actual social structures (e.g., Casciaro, Carley & Krackhardt, 1999; Kilworth & Bernard, 1976; Kilduff, Crossland, Tsai, & Krackhardt, 2008), another line of work suggests that accuracy aside, cognitive representations influence to whom a person ultimately goes for resources (Krackhardt, 1987). The activated network, the cognitive subset of the available network
is made up of all the ties that individuals call to mind in a specific situation. The available set of ties that can be activated includes latent ties – inactive or dormant relationships (Mariotti & Delbridge, 2012; Starkey, Barnatt, & Tempest, 2000) – and embryonic ties – ties that may exist but are very weak – but excludes potential ties (Mariotti & Delbridge, 2012) – possible ties that do not exist yet.

Importantly, activated networks are continuously reconstructed depending on the situation. Different individuals are brought to mind at certain times due to situational or individual triggers (Carley, 1986; Casciaro, 1998). In this way, an individual’s social structure can be considered malleable, consistent with process theory approaches (e.g., Drazin, Glynn, & Kazanjian, 1999; Sonenshein, 2014), since cognitive social structures shift or change depending on how an individual activates their network. This malleability implies that individuals’ ability to satisfy the needs of the different phases of the idea journey does not so much depend on the structure of their networks as much as on the subset of their networks that they cognitively activate. In addition, if network activation is dynamic and can change over time, then the network context that influences behavior also can change across phases of the idea journey.

But what prompts activation? What influences the ties and structures individuals activate at any moment in time? The cognitive representation of a network depends on the frames that are used to define a situation (Carley, 1986; Bridwell-Mitchell & Lant, 2012; Smith et al., 2012). In any situation, frames provide a structure of assumptions and rules that help individuals answer the question, “what is going on here?” (Bartunek, 1984; Goffman, 1974; Snow, Burke-Rochford, Worden & Benford, 1986; Weick, 1995). Frames can affect activation explicitly or implicitly. In the first case, individuals consciously activate the portions of the network that they believe have the resources to match their current needs (Bridwell-Mitchell & Lant, 2013; Dutton & Jackson, 1987; Lant, 2005; Nebus, 2006). Or if this process is implicit, rather than individuals activating
networks based on a purposeful matching of actors and resources, certain situations invoke psychological states that prompt a particular type of network activation (Smith et al., 2012).

Extant literature suggests three example frames that are relevant to network activation and the idea journey process. The first frame, political versus strategic, applies to explicit activation. Individuals can frame issues either politically, emphasizing individuals’ attitudes and goals and the negotiation process between them, or strategically, emphasizing rationality, planning, information collection and organizational goals (Bridwell-Mitchell & Lant, 2013; Gioia & Thomas, 1996). Individuals who frame issues strategically activate contacts they perceive to have broad expertise and information, while individuals who frame issues politically activate contacts they perceive either as more influential or trustworthy (Bridwell-Mitchell & Lant, 2013). This distinction suggests that strategic framing is beneficial during idea generation, because it prompts individuals to anchor less on trust and thus activate distant sections of their network. On the other hand, framing the problem politically should have a positive effect during the elaboration phase, as it prompts individuals to activate strong, emotionally close ties.

The second frame, threat, is an example of implicit activation. It is related to the perceived ambiguity and threat associated with each phase. Smith and colleagues (2012) found that a high threat orientation leads to the activation of closer ties whereas a low threat orientation leads to the activation of broader, more expansive networks. Consistent with the assertion that perceived threat hampers creativity as it narrows an individual’s focus (Amabile & Conti, 1999; Pally, 1955), this logic suggests that low threat orientation is good for generation as individuals activate expansive networks. A high threat frame, however, may be best for elaboration, as individuals who see their idea as potentially risky will activate ties from their “inner circle.” Importantly, interpretations and frames can vary across individuals facing the same issue. For example, Smith and colleagues (2012) show that individuals losing their jobs exhibit different frames and
subsequent activation: individuals who frame job loss as a high-threat situation activate a tighter and narrower subsection of their network, while individuals who adopt a low-threat frame activate sparser sections. This variation suggests that, unlike for elaboration, a low-threat frame may benefit championing as it facilitates the activation of sparser ties.

A third frame, locus of control, is also an example of implicit activation. It derives from literature on social movements and intrinsic motivation (e.g., Deci & Ryan, 1980; Snow et al., 1986). When an individual assumes that he or she is driving and controlling a given event, he or she is said to adopt an internal locus of control as opposed to the assumption that overall performance and control resides outside the individual, the so-called external locus of control (e.g., Ferree & Miller, 1985; Klandermans, 1984; Snow, et al., 1986). The locus of control frame is less about the extent to which individuals interact with others; rather, it is about the extent to which individuals believe they ultimately control the outcome. Individuals who frame a situation as internally controlled prefer to rely on themselves and tend to view alters only as providers of resources (Ng & Feldman, 2011), rather than people to directly involve in their activities. This preference suggests that an internal locus of control frame may be more beneficial during the early phases of the idea journey, when structure and collaborative action are less important than tie strength. In contrast, an external locus of control frame may be positive for later phases, with collective action being more effective, as it prompts individuals to consider the interconnection among alters and activate network ties in terms of structure.

Altogether, these example frames suggest that in order to activate the appropriate network in each phase, individuals need to continuously switch frames and reshape existing interpretations and assumptions across phases. Given the importance of activating different networks, creators who cognitively reconfigure their networks by activating different parts of the
networks across phases may succeed across all phases and successfully bring an idea from
generation through implementation.

*Proposition 5: Individuals who change frames across different phases will be more
likely to cognitively reconfigure and dynamically activate the distinct need-
facilitating part of their networks required in each phase.*

*Proposition 6: Individuals who cognitively reconfigure their networks by activating
the need-facilitating part of their networks in any given phase will generate ideas
that succeed across the entire idea journey from generation to impact.*

**The Limitations of Network Activation**

While network activation may facilitate the kind of fluidity in network structures that
allows success, in some circumstances the effectiveness of activating different networks is
limited. Activation fluidity – activating different networks in different phases – may in fact come
with critical social and personal strain. Weak ties intuitively may appear to be a prime source of
problematic social strain, as these ties are particularly susceptible to decay (Dahlander &
McFarland, 2013; Mariotti & Delbridge, 2012), and activating weak ties in one phase but not
others might lead to the ties becoming latent and then non-existent. Weak ties require low cost to
maintain and establish (Granovetter, 1973; Hansen, 1999), however, and there are minimal
expectations of the level of resources exchanged through them. Moreover, weak tie churn can
actually help during the phase when they are most useful (generation) by providing a fresh
assortment of new perspectives and information.

In contrast, activation fluidity might engender problems when the actor pivots from strong
ties or dense structures. In close relationships and dense social structures, alters expect loyalty
and reciprocity (Coleman, 1988; Tortoriello & Krackhardt, 2010). When expectations are not
met, alters may view the offending actor as disloyal, an out-group member who is not upholding
her or his end of the implicit social contract (Adler & Alder, 1995; Coleman, 1988; Smith, 2005). This dynamic may lead to a variety of social sanctions. Evidence from social networks research suggests in fact that individuals who span structural holes within cohesive contexts are sanctioned and excluded from the group (Xiao & Tsui, 2007). In the same fashion, individuals in dense structures who are left out by any member of the clique find themselves expelled by other members of the clique as well (e.g., Adler & Adler, 1995). The creator who activates some alters in one phase and others in another may experience similar social sanctions, as alters may expect to be consistently involved with the idea across all phases of the idea journey in exchange for their help and input. For example, if an actor activates and mobilizes a dense network to implement an idea and then activates a broader network to obtain extra funds, members of the network may regard him or her as opportunistic and an outsider. If an actor activates a strong tie during the elaboration phase and then activates a structurally dense network for implementation that excludes the strong tie, the strongly tied alter may perceive the actor as unauthentic and utilitarian because of the way he or she strategically either remembers or forgets the alter. Ultimately, alters may partially or fully withdraw from the relationship, either denying the creator access to the intangible or tangible resources the network provides, or making the relationship decay. As a result, the creator may find him or herself having to develop new strong ties to replace those that decay or having to exhibit extra effort to repair and maintain degenerated relationships.

In addition, the creator will likely experience a host of negative intrapersonal consequences associated with this social strain. First, the creator may feel rejected. Rejection emanating from individuals who provided support and goodwill may create emotional discomfort, reduced motivation, and decrements in cognitive performance (Baumeister & Leary, 1995; Baumeister, Twenge, & Nuss, 2002). Further, membership in a stable social group
provides an important sense of belonging, and a loss of this sense is a threat to identity (Adler & Adler, 1985; Baumeister & Leary, 1995). In addition, the creator may experience feelings of inauthenticity. More specifically, acting in ways that are inconsistent with true preferences can engender negative consequences for individuals such as emotional dissonance (e.g., Rafaeli & Sutton, 1987) and additional threats to identity, resulting in depression, distress and burnout (Erickson & Wharton, 1997; Morris & Feldman, 1996). In general, instrumental networking makes people feel “dirty” and inauthentic (Casciaro, Gino, & Kouchaki, 2014). In short, if creators no longer feel a part of their “inner circle,” they may experience a threat to their identity, negative feelings of inauthenticity, and a degree of social isolation that may distract from their creative focus.

In summary, the social strain and intrapersonal consequences of activating different networks limit the likelihood of activation fluidity in the first place and the effectiveness of activation if it occurs. Essentially, maintaining one's ties and structure in the network requires the actor to behave in ways consistent with the expectations of those ties and structures (e.g., Dahlander & McFarland, 2013). This is particularly problematic in the case of strong ties and dense network structures. Network activation fluidity is thus likely to be more difficult when transitioning from strong tie and dense network activation to other types of networks.

**Proposition 7:** Network activation fluidity is likely to be more difficult and less effective when transitioning from strong tie and dense network activation than when transitioning from other types of ties and structures.

In addition to the problems engendered by strong ties and dense structures, the effectiveness of network activation may also be limited by the extent to which an idea gets caught in recursive loops between phases. With each loop back to a prior phase, the balance between viability and novelty shifts. A creative idea possesses a balance between novelty (bringing
something new to the field) and viability (producing economic advantages for the organization) (Amabile, 1996; West, 2002). Very novel ideas have a very high risk of rejection (Howell & Higgins, 1990), and getting stuck in a loop might prompt the creator to make the idea more acceptable—more viable—to get it implemented and diffused. Novelty and viability often diverge (Berg, 2014; Mueller, Melwani, & Goncalo, 2012), and emerge from different antecedents (e.g., Amabile, 1983; Fleming et al., 2007; Morris & Leung 2010), however. For example, Lee and colleagues (Lee, Walsh, & Wang, 2014) find that team size has an inverted U-shaped relationship with idea novelty, but a direct and positive relationship with usefulness and impact. This suggests that, with a shift toward viability, the needs associated with a particular phase may change. If the needs change from support to expertise for making the idea more viable, for example, the association between strong ties and elaboration may be weaker. Consequently the network elements that were beneficial during the first iteration might have diminishing benefits in further iterations.

For example, if a screenwriter’s pitch to a producer does not go well, he or she will revise the idea before presenting it to another producer. During this repeat elaboration, receiving support is still important to giving the screenwriter confidence to continue with the novel idea. To move forward, however, the creator also needs advice from knowledgeable screenwriters in order to understand what is not working in the pitch and fix it. As an illustration, consider the case of *Dallas Buyers Club*, a movie that won three Academy Awards and earned three more nominations in 2014. Craig Borten, the screenwriter, first pitched the story in 1992 unsuccessfully. Initially, he kept elaborating the plot on his own, getting feedback from family and close contacts. After receiving several rejections from different producers, he decided to go to another screenwriter, Melisa Wallack, to ask for help re-elaborating the story. He and Melissa were not close, but a mutual friend introduced them, and she could provide expert advice. Borten
recalls, “I was tired. I needed another eye, and she’s an incredible writer. She helped elevate everything I’d started.” Thanks to Wallack’s suggestion, the plot improved enough to attract the attention of Universal Pictures, which optioned the film (Shaw, 2013). The problem experienced by Borten was generated by a change in needs during the loop back from championing to elaboration.

Recursive loops also solidify existing habits, making activating different networks increasingly difficult. While some individuals may actively reframe and reconstruct their networks, others get stuck in their interpretation and invoke only incremental variations within an existing frame (Argyris, 1993). In some cases failure can be a significant event that triggers new interpretations (Weick, 1995) and the activation of a different portion of the network. But habitual action and cognitive entrenchment (Dane, 2010; Ford, 1996) suggest that the longer the creator gets stuck in one loop, the more difficult it is to activate different networks. This pattern holds despite the fact that changing needs actually produce greater reactivation demands on the creator, as changing needs suggest an increasing number of required frame and activation changes.

In summary, with each cycle back, work to enhance the viability of the core idea is associated with a shift in needs, different network requirements, and in turn greater activation demands. If the loops between the phases last for a long time, the change in needs grows larger, leading to the creation of a vicious circle (Masuch, 1985). Thus, we propose:

*Proposition 8: The more extensive the recursive loop between phases, the lower the success of network activation fluidity.*

**DISCUSSION**

Articulating four distinct phases of the idea journey clarifies a social view of creativity and innovation. We define each phase: generation, elaboration, championing, and
implementation, and suggest the unique socially derived needs of each phase. Among the first
two phases, the generation phase requires cognitive flexibility, and the elaboration phase requires
feedback and emotional support. Among the latter two phases, championing requires influence
and legitimacy, while implementation requires shared understanding and vision. By first
articulating the needs, it is possible to have a better understanding of the relative importance of
network ties and structure in each phase. Currently, the literature suggests seemingly
contradictory results (see Perry-Smith & Mannucci, 2015). More specifically, we propose that
weak ties facilitate generation, whereas strong ties facilitate elaboration. In the latter two phases,
in contrast, borrowed structural holes facilitate championing and a combination of closure and
outside ties facilitates implementation. While providing clarity, the full picture emerging from
our theorizing simultaneously suggests paradoxes, in which the network elements that are
beneficial in one phase are detrimental in the next. We suggest that these contradictions can be
resolved if the creator activates different parts of his or her network in different phases, and that
this depends on him or her changing interpretations and frames across phases.

We contribute to and extend existing theory in a number of ways. First, we contribute to
general theory of creativity and innovation by answering the call for a stronger integration of
creativity and innovation literatures (Anderson, Potočnik, & Zhou, 2014; George, 2007). In many
cases, creativity and innovation research draws on separate and parallel literatures, probably
reflecting different disciplinary origins. Creativity and innovation are closely related, however,
and in some cases the underlying ideas are interchangeable. Take, for example, Schumpeter’s
theory of recombination. This notion that innovation requires old ideas combined in new ways is
very similar to the notions of broad categorization (Campbell, 1960) and remote association
(Mednick, 1962). Nevertheless, networks are the linchpin that has brought the two literatures
together. Our investigation of the idea journey from generation to acceptance by the field helps illuminate how the creativity literature can inform the innovation literature and vice versa.

Further, our articulation of intermediate phases can potentially clarify debates within the creativity and innovation literatures beyond networks. Although speculative, we can envision how a careful consideration of the idea journey phases can be helpful. For example, there are some inconsistencies about the role of positive versus negative mood in the creativity literature (Baas, De Dreu, & Nijstad, 2008; Davis, 2009). It may be that, for example, dual tuning (George & Zhou, 2007)—in which both positive and negative mood facilitate creativity—is applicable to generation due to the divergent thinking and dissatisfaction with the status quo that each suggests; however, positive mood alone (e.g., Amabile et al., 2005) may be more beneficial in the case of elaboration, given the need for enhanced confidence. Another example is the debate about the role of rewards (Eisenberger & Cameron, 1996; Shalley, Zhou, & Oldham, 2004). It may be that rewards negatively affect generation, as the reward may detract from the cognitive generation process, but rewards may be beneficial during the elaboration phase, when a creator is at risk of abandoning the idea. A third example emerges from innovation research on the effects of resource constraints (Katila & Shane, 2005). On one side, scholars have proposed that a lack of resources negatively affects innovation (e.g., Ancona & Caldwell, 1992; Teece, 1986); on the other side, literature in entrepreneurship has shown that resource constraints can promote venture generation and innovation (e.g., Baker & Nelson, 2005). It may be that resource constraints favor idea generation, following the logic of “necessity is the mother of invention,” while abundant resources are needed to elaborate on the idea and to implement it. While speculative, our point is to suggest that future research can apply our phased approach to other concepts beyond networks.

Our theorizing also contributes to network theory. Granovetter’s strength-of-weak-tie theory (1973), while initially counterintuitive, is now a classic within the field and recognized as
one of the most important overarching network theories (e.g., Borgatti & Halgin, 2011). Yet at the same time, tie strength has been relegated to “stepchild” status relative to structure; theory and research on networks emphasizes the structural mechanism inherent in Granovetter’s ideas (Kilduff & Brass, 2010). Naturally, then, attention has shifted to structure as the more proximate mechanism. Our theorizing, consistent with existing empirical work (Baer, 2010; Hansen, 1999; Zhou et al., 2009), sheds light on the role of strength separate from structure. We suggest mechanisms related to emotional support and cognitive readiness that rely on strength separate from structure. Last, a growing body of work has focused on activated networks (Mariotti & Delbridge, 2012; Smith et al., 2012). This approach is situated within the cognitive approach to networks (e.g., Kilduff et al., 2008; Kilduff & Krackhardt, 1994). Our logic is that individuals can change the networks they activate if they change interpretations or frames. This logic suggests that a dynamic view of networks may be captured not only by the extent to which individuals lose or gain new ties (e.g., Mariotti & Delbridge, 2012; Sasovova et al., 2010), but also by the extent to which individuals activate different ties from their potential network. This is a novel approach to understanding creativity in the social context. Although the importance of changing frames for creative problem solving has been acknowledged (Mumford, Mobley, Reiter-Palmon, Uhlman, & Doares, 1991; Reiter-Palmon, Mumford, O’Connor, & Runco, 1997), our application to social networks extends its importance beyond generating novel solutions.

Our propositions suggest a number of possible empirical and theory-based avenues for future research. First, while we suggest that dyadic tie strength and structure are more beneficial in certain phases, this does not mean that the non-primary network characteristic can never be beneficial. Rather, our proposition is that one is more beneficial than the other because of the characteristics of the phase and the associated need. Future research could identify conditions under which one element is more or less beneficial than another, and vice-versa. Another
potentially fruitful and interesting avenue for future research is the role of cognitive networks. Given the importance of changing frames, the antecedents of changing frames and how they affect the choice of activated networks deserve further exploration. Possible mechanisms worth exploring include individuals’ cognitive approaches, as recent literature seems to suggest (Lüscher & Lewis, 2008), or their expertise. In fact, creators’ expertise, or the extent creators have experienced creative success, has a variety of interesting additional implications. For example, the need to borrow structural holes may be lower for expert creators than for novices, but the need for weak ties to generate the next big idea may be more important. Finally, future research could measure and test the mechanisms implied by our theorization of primary needs. For example, research could explore whether weak ties foster generation via cognitive flexibility as we theorize, or if the positive effect of closure is due to a shared vision.

In conclusion, our paper posits that different network elements are beneficial at different points of the idea journey, and that an idea’s successful journey depends on the creator changing frames and activating different networks. In doing so, we advance existing research on networks, creativity and innovation, and offer a useful framework to solve existing theoretical debates and guide future research.
FOOTNOTES

1. In some cases, the originator of an idea may be plural, and attributing the generation of an idea to any one individual might be difficult (e.g., Harrison & Rouse, 2014). However, some scholars have argued that the origin of any creative act resides first within the individual mind (Campbell, 1960). While the idea can later be developed and extended by the collective, in the words of Nobel laureate John Steinbeck, “the group never invents anything” (Steinbeck, 1952, p. 130). For example, in their study on creative collectives, Hargadon and Bechky (2006) show that the idea for the Reebok Pump originated from a single inventor that was subsequently elaborated by the collective. Nevertheless, we conceptualize the “creator” as the entity originating the idea. This may be a single individual, which for simplicity we reference, but may also be multiple individuals, in which case multiple individuals can be considered the focal entity with “alters” being all persons outside of this entity. One example of multiple creatives can be found in our example on the external idea journey within the advertising industry, illustrated in Table A1 in the Appendix.
REFERENCES


Kilduff, M., & Brass, D. J. 2010. Organizational social network research: Core ideas and key debates. *Academy of Management Annals*, 4: 317-357.


**TABLE 1**
The Idea Journey Phases and Needs

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
<th>Need</th>
<th>Example ¹</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea Generation</td>
<td>The process of generating different creative ideas and selecting the most promising one.</td>
<td>Cognitive Flexibility</td>
<td>The screenwriter generates different ideas for new movies. He or she selects the one that they judge to have the highest creative potential.</td>
<td>Core concept of the idea (e.g., idea for a movie)</td>
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<tr>
<td>Idea Elaboration</td>
<td>The process of systematically evaluating the novel idea’s potential and further clarifying and developing it.</td>
<td>Support</td>
<td>The screenwriter starts working on the idea to develop a more detailed summary of the movie, a “treatment” or a first draft that can be presented to potential producers during a pitch meeting.</td>
<td>More detailed description of the idea (e.g., treatment, first draft)</td>
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<tr>
<td>Idea Championing</td>
<td>The active promotion of the novel idea, aimed at obtaining the green light for pushing it forward and consequently the resources in terms of money, talent and political cover to implement it.</td>
<td>Influence and Legitimacy</td>
<td>The screenwriter tries to sell the idea for the movie to studio executives. He or she must convince producers of the novelty and potential of the ideas. This may happen during a so-called “pitch meeting”.</td>
<td>Greenlight to develop and produce the idea (e.g., approved final script)</td>
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<tr>
<td>Idea Implementation</td>
<td>The process of converting the idea into a tangible outcome that can subsequently be diffused and adopted.</td>
<td>Shared Vision and Understanding</td>
<td>The screenwriter finalizes the script. The productive and creative crew work to realize the movie. Once the movie is finished, its success is evaluated by the extent to which it is recognized as creative by peers and critics</td>
<td>Detailed blue-print or finished product (e.g., movie)</td>
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</tbody>
</table>

¹See the Appendix for examples from other industries.
# TABLE 2
Examples of Explicit and Implicit Focus on Phases in Current Research

<table>
<thead>
<tr>
<th>Paper</th>
<th>Generation</th>
<th>Elaboration</th>
<th>Championing</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hargadon &amp; Sutton, 1997</td>
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<td>Madjar, Oldham, &amp; Pratt, 2002</td>
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<td>Burt, 2004</td>
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<td>Rodan &amp; Galunic, 2004</td>
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<td>Delmestri, Montanari, &amp; Usai, 2005</td>
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<td>Obstfeld, 2005</td>
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<td>Uzzi &amp; Spiro, 2005</td>
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<td>Perry-Smith, 2006</td>
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<tr>
<td>McFadyen &amp; Cannella, 2006</td>
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<td>Fleming et al, 2007</td>
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<td>Zhou et al., 2009</td>
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<tr>
<td>McFadyen, Semadeni, &amp; Cannella, 2009</td>
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<td>Baer, 2010</td>
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<td>Lingo &amp; O’Mahony, 2010</td>
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<td>Tortoriello &amp; Krackhardt, 2010</td>
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<td>De Stobbeleir, Ashford, &amp; Buyens, 2011</td>
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<td>Mueller &amp; Kamdar, 2011</td>
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<td>Sosa, 2011</td>
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<td>Baer, 2012</td>
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<td>Chua, Morris, &amp; Mor, 2012</td>
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<td>Zou &amp; Ingram, 2013</td>
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</table>

*Phase the paper focuses on without mentioning them
Phase the paper explicitly focuses on

*See references for full citations
FIGURE 1

Continuum of the Idea Journey

ALTERS' INVOLVEMENT
- Indirect, Passive
- Direct, Active

CREATOR'S INTENTIONALITY
- Serendipitous
- Intentional
The loops likely to be affected by the strength paradox and the structure paradox are noted with solid lines. The loops affected by the transition between strength and structure transition are denoted with dashed lines.
### APPENDIX

Table A1 – The Idea Journey in Different Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Generation</th>
<th>Elaboration</th>
<th>Championing</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic publishing</td>
<td>Core idea for the paper, including research question</td>
<td>Development of extended abstract or first draft.</td>
<td>Submitting the paper to a journal/conference. Receiving the decision letter, and drafting response to editor and reviewers</td>
<td>Writing the full paper; iterating from first draft to final paper.</td>
</tr>
<tr>
<td>Advertising *</td>
<td>Core idea for the ad, prior to or during brainstorming session</td>
<td>Development of the concept of the ad: key message, look-and-feel, catchphrase, etc.</td>
<td>Presentation of the elaborated concept to the client during a competition</td>
<td>Realization of the advertising campaign across different media: detailed images for posters and magazine ads, fully produced video ad, specific images and viral videos for online media, etc.</td>
</tr>
<tr>
<td>Industrial patenting</td>
<td>Core idea for a new product or process that can be protected by a patent</td>
<td>Research existing patents Lab tests and prototyping to test the viability and feasibility of the idea.</td>
<td>Submit application to the national patents office.</td>
<td>Realization and industrial production of the product / process protected by the patent.</td>
</tr>
<tr>
<td>Broadway musicals</td>
<td>Core idea for the plot, music and lyrics of the musical.</td>
<td>Development of detailed plot and of sample music</td>
<td>Selling the musical to a theatre and/or a producer</td>
<td>Finalization of plot, music and lyrics. Realization of the musical including final production, involving others (director, prop designers, actors, etc.)</td>
</tr>
</tbody>
</table>

*: While in advertising the origins of an idea may seem to reside with a collective rather than any one individual, we assume the idea’s origins can often be traced to an individual. For example, an individual comes up with an idea and then decides to present it to others during a brainstorming session. If the idea is selected by the team, the individual becomes the primary driver of the idea (e.g., creative director) throughout the remainder of the process. In this way, the individual creator goes through a “mini” idea journey in that he or she briefly elaborates on the idea before disclosing it to other brainstorming participants (i.e., elaboration) then has to persuade the team of the goodness of the idea so that it is selected for presentation to the client (i.e., championing).
Response to Editor

We sincerely thank you for the developmental feedback and clear guidance. We very much appreciate your clear summary of the reviewer’s concerns, description of problem areas that you noted, and your very helpful suggestions on how to address these issues. We have carefully considered all comments and have revised the paper accordingly. We believe that this version of the paper is better than the last as a result.

At a big picture level, we worked to offer a more compelling theoretical contribution in this version of the paper. We extended the final section of the paper “navigating the journey” by 7 pages. We simultaneously worked to streamline the earlier sections of the paper so that the overall length is not significantly greater than the prior version. We provide more details of the revisions in our point-by-point response to your recommendations below as well as our point-by-point responses to each reviewer’s comments. We pasted each of your original comments (in italics) followed by our response.

***

1. Theoretical contribution.
Here are some suggestions for making a stronger theoretical contribution. I see four intertwined concerns that will need to be addressed.

A. Originality of your contribution

Reviewer 3 (pts. 1a-1d) suggests that your work reads more like “a literature review and extension than an original set of arguments.” I believe that your current manuscript is valuable in the way that it integrates the creativity and the social network literatures and provides a framework for understanding a collection of empirical results that have not been understood in a holistic way. However, I agree with this reviewer that this manuscript could be more provocative. S/he offers suggestions (pts. 1c, 1d) for how to push your thinking. I strongly urge you to consider these suggestions as I believe that framing the issue as a paradox would be very interesting; furthermore, these suggestions are both highly relevant and doable. This may also link to Reviewer 1’s (pt. 10) comment about activated networks. I, too, thought this was an important area for development.

We took your recommendation very seriously. Considering yours and the reviewers’ suggestions, we further developed the ideas in the network activation and frame-switching sections of the paper (now starting on page 29) and we used the paradox idea to guide the paper. We have added additional propositions that reflect new ideas (i.e., proposition 7 and 8) and clarify previously existing ideas (i.e., proposition 5 and 6). Although we trimmed the earlier sections of the paper, we agree that our framework for understanding prior results is an important contribution, so we worked to maintain the core ideas and clarity of the prior version.

B. Linearity

Reviewer 1 (pt. intro-b), Reviewer 3 (pt. 2a), and I request that you reconsider this assumption. As you mention in your concluding remarks, there is a dynamic nature between phases. Rather than mentioning
this in passing, I encourage you to work on capturing this dynamism within your model. Reviewer 3 (pt. 2a) provides a reference for incorporating a more dynamic model.

Thank you for this comment. We considered various ways of addressing the concern. In this version, we embrace the non-linearity of the process and tie it in with the paradox framework (see page 27-29). We suggest that the tension between our network propositions has the potential to create a variety of recursive loops between phases. In addition, we posit that the longer the loops, the more difficult it is to have effective network activation (see page 36-38).

C. Intrapersonal vs Interpersonal influences.

Personally, this is where I had the most difficulty with your model. Like the reviewers (Reviewer 1: pt. 2; Reviewer 2: pts. 3 and 5; Reviewer 3: pt. 2b), I was not convinced that the first two phases in your model were more intrapersonal and the second two phases were more interpersonal. Although the example you used throughout the manuscript enabled you to describe a relatively linear process that got progressively interpersonal, I do not believe that the creativity process across different contexts would operate in a similar manner. For example, if I think about creativity in the academic publishing context (e.g., conceptualizing, developing, writing, publishing) the phases where there is most interpersonal interaction may be in the 2nd and 4th phases (if we stick to the linear phases). Likewise, a creative marketing campaign that requires focus group feedback may require extensive interpersonal interaction in the earlier stages. One suggestion is to think about seven or eight different environments (contexts) where the creative process occurs. Think through what happens at each of the different phases (in either a linear or a dynamic process model). Conducting this exercise may help clarify the extent to which different forms of intrapersonal/interpersonal interactivity is required. I would like to see a table or visual description of this thought exercise either in the actual paper (or in your response letter).

In hindsight, we see that our description of intrapersonal vs interpersonal influence across phases was problematic. Your very clear articulation of the issue and clear suggestions on how to address them very much helped us clarify our thinking and come up with ideas on how best to revise the paper.

First, we considered different contexts and followed your suggestion to think about what happens in each phase within each setting. The table resulting from this exercise is now included in the appendix (page 63). For example, in thinking about academic publishing we settled on the following: we identified the elaboration phase with writing an extended abstract or a first draft, for a conference for example; the championing phase with the submission to a conference or journal including editor/reviewer comments and decisions; and the implementation phase with writing the full paper and re-writing it (production) to encompass editor’s and reviewer’s requests and publication of the final paper (impact). This thought exercise really pushed us to clarify our conceptualization of each phase and our ideas about the influence of social ties. We modified the text where we describe each phase accordingly. In addition, this helped us to clarify our assumptions about individual creators versus teams. In this version, we made explicit the fact that, for simplicity, throughout the paper we identify the creator as an individual (p. 5 and p. 42). However, we recognize that creators can also be plural and include a team.
Second, we decided to abandon the intrapersonal and interpersonal labeling. Interestingly, we found ourselves agreeing with your description of the interpersonal nature of each phase. This prompted us to realize that in our model it is less about the level of interpersonal interaction across phases but more about the nature of the interaction across the phases. For example, we think the effect of social interactions in generation and elaboration is strong but that the nature of the creator’s role and alters’ influence differs. We now more clearly characterize this as alters’ influence (passive versus direct) and actor’s involvement (serendipitous versus intentional). We also decided to remove this from throughout the section where we describe each phase to the beginning of the network drivers section (p. 13-14). We believe this allows us to better explain and clarify the nature of social influence.

Again, thank you for pushing us along these lines, we think this comment really helped improve the paper in a very positive way.

D. Implicit assumptions
As I read your manuscript, I felt as if there were a number of assumptions that were not explicit but could have huge implications for your framework. First, would you say that your framework is only relevant for “new creators?” For example, once someone has a reputation as a creator (e.g., Steve Jobs) might they not need certain networks or ties for certain phases (e.g., championing phase)? Second, must a certain level of novelty be retained throughout the whole process? On p. 22 you point out that a downside of cohesive structures is that they promote conformity. Is one of the outcomes of the elaboration phase “continued novelty?” Third, are you assuming that the idea that an individual has is a good idea? During the idea elaboration phase, there is a lot of space to how feedback is given (e.g., supportive, not negative) but what if the idea is a bad one? This puts strong ties in a quandary—how do they balance giving accurate feedback with giving supportive feedback in a way that keeps the relationship intact?

First, we thank you for your comment on new versus more “famous” creators. After thinking about it, we decided previous success is an interesting contingency factor for our model. We now discuss this as a potential avenue for future research (p. 41).

Second, your comment on novelty helped us realize an assumption we had taken for granted but that we agree should be specified in the paper. We believe that an idea that moves through all phases and retains its core novelty has the best chance of changing the field. In this version, we now state explicitly that creativity requires a balance of novelty and usefulness and that if one is reduced or eliminated the idea is not creative anymore (p. 36). Your comment also helped us think about the limitations of activation, where the risk of losing novelty plays a pivotal role (see p. 36-38).

Third, we do agree that ideas are not always necessarily good ones. We clarified our discussion of supportive and constructive feedback so that it is clearer that feedback does not have to be positive but should be such that it doesn’t promote the premature abandonment of a novel idea (p. 9). We also added that many creative ideas look like “ugly babies” at first, so we see the greater risk being novel ideas are prematurely abandoned than too many bad ideas go forward (p. 9).

E. Other relevant comments to contribution
There are a number of other “minor” points that the reviewers commented on. I believe that the majority of these points will be addressed by your rework of the manuscript addressing the earlier comments. Reviewer 2 (pt. intro-c) is not convinced that something has to be “satisfied” in the various phases. Both Reviewer 2 (pt. 4) and I felt a fairly big disconnect between the first part of the paper concentrating on the four phases and the network analytic approach. Framing the paper as a paradox (pt. a above) would require a closer linking of these two sections of the paper.

We have addressed these comments in this version of the paper. We no longer reference needs as being “satisfied.” In hindsight, we see why this was problematic. We also worked to bridge the phases/needs section with the network section. We believe clarifying the intra-/inter-individual assumptions (see response to comment c above) helped but we also eliminated other points we had at the beginning of the network section that we think may have contributed to a muddy bridge between sections.

2. Logic
All three of the reviewers had concerns about either the strength of your logic or ways that you integrated previous research in your arguments. Reviewer 1 (pts. 6-9) points out a number of areas that need to be clarified or where arguments need to be strengthened. Reviewer 2 (pt. 4) asks that you reconcile your proposition 1a with previous research that has found nonlinear effects between number of weak ties and creativity. This reviewer (pt. 6) also requests that you provide stronger rationale for proposition 5. Reviewer 3 (pts. 3a and 3b) disagreed with two of your claims based on past empirical findings.

We took the logic concerns very seriously, and we revised the paper to reflect the various points about our logic. See our response to Reviewers’ comments for more details on how we addressed each specific concern.

3. General writing, organization, and tables
There were a number of grammatical issues and typos throughout the paper (e.g., Reviewer 1: pt. 7a). I found numerous sentences that were grammatically incorrect or difficult to follow. I encourage you to proofread the paper numerous times before submission.

There were a couple of other minor issues that were brought up by the reviewers that you should fix to enhance the readability of the manuscript (e.g., Reviewer 1: pts. 3 and 5).

We worked to improve the overall clarity of the paper. We followed your suggestion to proofread the paper many times. In doing so, we were able to catch and correct many, if not all, grammatical and typographical errors. In addition, we tried very hard to improve sentence clarity via this process.

4. Title
Two reviewers suggested that you might come up with a different title for your manuscript. Reviewer 1 thought that your focus on individual creativity should be reflected in the title. Based on his/her comment (pt. 1), Reviewer 2 felt like “ideation process” might not be the best term to have in your title.

We thought a lot about how best to describe the process and change the title, prompted by this comment. We decided to go with “idea journey” instead of ideation process. In hindsight, we agree that “ideation” was not ideal. We also considered adding “individual” to the title but did not come up with a clear yet succinct way of doing this. We did,
however, make sure that we reference “individual” throughout the abstract and paper so that our level of analysis is clear.

As you can see, successfully addressing our concerns will require a great deal of effort and a significant amount of risk. Although I cannot guarantee that a revision will be publishable in AMR, these revisions will improve the ultimate ability of the manuscript to make a contribution to the literature.

We thank you again for the guidance and the opportunity to submit a revision. We worked very hard to address all of yours and the reviewer’s comments and sincerely believe that this helped to significantly improve the paper.
**Response to Reviewer 1**

Thank you for the insightful and developmental comments. We have carefully considered each and revised the paper accordingly. We pasted each of your original comments below (in italics) followed by our response.

**Intro-a.** This is a very ambitious paper trying to make theoretical sense of the important but unclear role of social networks in creative processes. Towards this end you develop a process model starting with (1) idea generation, (2) idea elaboration, (3) idea championing and ending with (4) idea implementation, which is considered, I think, more or less equivalent to innovation. While the start of this process is conceptualized as being entirely intra-individual (“The phase happens within the creator’s mind”) the final phase – implementation – is conceptualized as inter-individual (“This phase requires the active involvement of multiple others”). However, the major contribution of the paper is, from my perspective at least, not so much the presentation of this four-phase model as making sense of the different roles which social networks play in this process. Such clarification is indeed urgently needed, as the theoretical ideas and empirical findings regarding how social networks affect creativity are very diverse and, at least in part, contradictory.

We are pleased that you see the importance of our contribution. We agree with your perspective that our major contribution is clarifying the different network affects.

**Intro-b.** While I very much appreciate your effort to address these diverse and contradictory issues surrounding individual creativity and social networks, I am more skeptical about the linear process model proposed. Importantly, at least in its present form, it does not account for the diversity of shapes the creative process may take – and the potentially or, from my perspective at least, even likely recursive character you mention yourself in the concluding section of the paper. In order to give just three examples: First, why should the start of the process be intra-individual? The very first idea may arise in social interaction and, as much of the team research shows, depend on the very individuals that meet at a particular time in a specific location. Second, why should it be sufficient for the implementation of a novel and potentially useful idea to interact with others? Innovation is a much more organizational, possibly even inter-organizational process than (individual) creativity, depending upon internal and external resources and, eventually, super-individual i.e. systemic capabilities to mobilize them. Finally, in the light of creativity research which is informed by organization theory (e.g. Drazin et al., 1999; Hargadon & Bechky, 2006; Sonenshein, 2014) I found your conceptualization much too deterministic and not really compatible with Weick’s sensemaking perspective, which you refer to at the end of the paper.

Thank you for this thought provoking comment. It prompted us to think a lot about the non-linearity of the model. We now agree that the linear approach we took in the prior version may have been an oversimplification of the different paths an idea may take and agree that there may be a variety of different loops or paths through the process. We played around with different ways of incorporating these ideas into our theorizing. We ultimately decided that this fit nicely with the contradictions inherent in our network propositions. That is, creators could get caught in various loops if their network characteristics are static and do not include the appropriate dimensions, or if they fail to recognize the needs of each phase. We have added this to the current version (pages 27 to 29).

Prompted by your comment, we worked to clarify the intra versus inter-individual distinction made in the prior version. In this version, we describe the difference in social interactions across the phases in terms of actor involvement and creator action (see pages
We agree that a new idea could arise as a result of social interactions but see a difference in the nature of interaction and their effect. More specifically, we tried to clarify that our needs suggest particular actor/alter interactions across phases, although the actual interactions could look differently. In addition to clarifying the difference in the nature of interactions and move away from intra versus inter individual, we also moved our discussion of this from the description of needs to the beginning of the network section (page 13). We believe the differences in the nature of the alter influence and interaction is better explained at this point. We also modified figure 1 to reflect these changes.

It was very interesting for us to think about our assumptions about the origins of ideas – in teams or in the mind of individuals. We agree that in some cases, ideas can originate in social interactions such as a team. We considered various ways of dealing with this. We ultimately decided to maintain our focus on individual creators. However, we believe some of our ideas would apply to plural creators. In this case, our ideas about network characteristics would apply to relationships between the creators as a unit and others. We added a footnote to capture this point (referenced on page 5) and also include the example of an advertising context in table A1 to capture this as well.

Although we focus on individuals and relationships with other individuals, we see your point that in some cases, the other individuals may be part of organizations and thus could be represented as individual to organizational relationships. We considered possibly expanding the paper in this way, but decided to maintain our focus on the individual level and individual-to-individual relations, and to work to clarify our focus. We believe the new footnote referenced above and emphasizing “individual” throughout helps achieve better clarity.

Finally, in hindsight we see why our approach might seem overly deterministic in light of our use of sensemaking. We carefully read the citations that you suggested with your comment in mind and this helped to prompt ideas that are reflected in our expanded “navigating the idea journey” section (starting on page 27). In this version, we say more about how individuals continuously reconstruct their activated networks via different frames and that these activated networks influence the idea journey. We think this may “soften” our deterministic perspective. Moreover, we added a section on the circularity of the process, where we emphasize that, if the creator gets stuck in loops between phases, needs might change, thus reducing the effectiveness of activation. We also believe this provides a less deterministic edge.

Intro-c. An entirely different, but also somewhat major concern touches upon your conceptual idea that something has to be “satisfied” in the process. Already in the abstract you state: “We propose that success in each phase requires the satisfaction of distinct primary needs – cognitive flexibility, support, influence, and shared understanding, respectively ... matching the distinct needs in each phase” (p. 1). This all sounds rather functionalist to me. I would strongly suggest looking out for a more compelling concept than satisfaction. The reasons behind somebody being “satisfied” are potentially too diverse, not least, they may result from adaptive expectations or resignation. Do you really wish to include these? Obviously, this functionalist flavor is repeated in the main body of the paper, e.g. on p. 6.
Thinking about your comment, we see your point that needs being “satisfied” may not have captured our intentions and may have been confusing. We decided to emphasize more the notion that a particular network characteristic generally may facilitate a particular need (see page 14-15).

Intro-d. Given these principal or more fundamental doubts and concerns regarding the linear and also limited conception, I think it would be fair to let the scientific community debate its adequacy. For in all other respects the paper reviews relevant literature, provides concise definitions of concepts, and illustrates these with examples from script writing to directing. Moreover, the paper is full of interesting specific ideas and interpretations. It is almost unnecessary to say that it is also convincingly structured and written in a compelling style, and that it obviously has a clear and yet differentiated message.

Thank you. We appreciate this comment.

1. Regarding literature, I suggest referring to the excellent review of creativity research by George (2007) and the more recent paper by Anderson et al. (2014), which pleads for a stronger linkage between creativity research on the one hand and innovation management research on the other. And I quite agree with you (p. 35) that you can and do deliver this with the help of the social network perspective.

Thank you for the suggestions. We have added the citations (page 38), and agree that they help support the importance of our contribution.

2. Why do you adopt a cognitive view (p. 5)? I find this unnecessarily restrictive, as creativity is about behavior. At the very least, focusing on this view requires explanation and justification. And should this statement be restricted to the first two phases of the process?

We have eliminated referencing our overall perspective as a cognitive one. In hindsight, we can see why this was not well explained and perhaps not necessary.

3. Do screenwriters always “have to share the idea with the productive and creative crew” (p. 12)? Depending upon the former experience of the writer and his or her reputation, this “sharing” could occur very late in the process. This is one more example arguing against an all too deterministic conceptualization of the creative process.

Thank you for this comment. We believe that part of the confusion was that we were describing an “ideal” process that would best facilitate the proposed need rather than simply describing the need at this point in the paper. We agree that screenwriters may not always share ideas and consider their input. We have revised these sentences in the paper and try to simply describe that during production, the screenwriter works with other personnel (directors, etc) to produce an actual movie. We also have clarified that the screenwriter may or may not share the idea and consider alters’ input early (see page 11).

By eliminating the “ideal” social interaction in describing the need, we moved these ideas to the beginning of the social network section. Here, we describe how early and active involvement is generally preferred to facilitate the shared vision need via social network drivers (see page 13-14). This implies that in some cases, this type of involvement may not occur.
4. The link between the first conceptual part of the paper concentrating on the four phases and the network analytic approach taken in the second part starting on p. 14 could and should be stronger. Exactly why do you adopt this social network perspective? What do you expect from this theoretical lens on the creative process?

We have revised the paragraphs at the beginning of the social network section to address your comment. We better connected the two sections highlighting why we adopt a network perspective and removing some content that may have created a disconnect. As mentioned in our response to your point intro-b above, we consolidated our discussion of the nature of interactions across phases and placed these points at the beginning of the networks section. We believe that this also helps provide a better bridge.

5. My concern that your principal process-related argument is too deterministic becomes particularly clear on p. 15, where you state that “social structure beyond the dyad becomes important” in later phases of the process. Is this necessarily and always the case? I suggest presenting the argument in a more balanced, perhaps contingent way.

After considering your comment, we revised our language throughout this section (p. 13-15). Instead of making declarative statements, such as the one you point out, we are careful to state the link between structure/ties and the various phases in terms of what generally facilitates the phase. We agree that structure does not always become important beyond the dyad (as we previously stated), so we tried to frame our ideas in terms of what generally facilitates to imply that there may be cases where structure is not emphasized and/or does not help performance in that phase. In addition, your comment prompted us to suggest the study of moderators in the discussion section (p. 41). We think this is an important area that should be explored in future research.

6. How does the duration of the ties you focus on (also p. 15) relate to Granovetter’s suggestion of the frequency of another way to conceptualized tie strength? I would agree with Granovetter and most network researchers that duration is different from frequency.

Your comment helped us realize that our description of strength was unclear and perhaps unnecessarily restrictive. We have revised this version to describe that we focus primarily on closeness, given its emphasis in the literature and the affect component, but we acknowledge the frequency and duration component of strength as well (see page 14). We agree that duration is distinct from frequency and also is distinct from closeness. We believe our approach of emphasizing one dimension is consistent with the literature, although we agree with the spirit of your comment that the dimensions may not be interchangeable.

7. At the bottom of p. 16 you state that tie strength affects individual interpretation more than social structure. Why should this be the case? I am not convinced by the reasons given in the sentences following this statement. Why do you refer to balance theory?

Thank you for pushing us to clarify our logic. Reading this section, we see why our arguments may not have been as clear as they could have been. We have revised this section accordingly (see page 16). In this version, we tried to clearly step through our logic and better explain how it derives from existing theories and empirical results, yet we tried
to be succinct at the same time. For example, we think our early reference to balance theory may have been confusing given that the arguments we draw upon come from psychological approaches to relationships, teams, and decision making rather than how it has been applied in network theory. We hope our logic is now clearer.

8. I find “production collaborators” a too restricted notion to be included in propositions 4a and 4b (p. 29).

In hindsight, we agree that production collaborators might not be generalizable to many contexts. Consequently, in this version of the paper we decided to use “ego network” instead (p. 26), which we think is more generalizable across contexts and is more consistent with our theoretical focus.

9. The weak-strong tie hypothesis in the last sentences of the first paragraph on p. 30 is a classic in creativity and innovation research and should be declared as such. Some references should perhaps even be provided.

We agree that the “strength of weak ties” theory is a classic. The sentence that you referenced is no longer in the manuscript, but we now explicitly state the stature of the theory in the manuscript (see p. 40) and we reference Granovetter’s work appropriately throughout the paper.

10. I find your reference to “activated” or “enacted” networks very compelling, including the mention of “latent” relationships. In think, however, that Starkey et al. (2000) should be credited for this idea or label.

Thank you. We have added the citation of Starkey et al.’s work. In addition, your comment helped to prompt us to expand the ideas in the network activation section of the paper. We have worked to solidify our logic and added new ideas. This expanded sections starts on page 29.

11. Distinguishing political from strategic framing is difficult (pp. 31-32). At the very least, the two adjectives are not well chosen, as strategy often implies political maneuvering.

We agree that the term strategic may be somewhat confusing. We thought about using a different term and played around with different words. Although we do see why it may not be totally clear, we ultimately decided to stay with the term strategic, since this is what has been used in the literature. In this version, we tried to clarify the definition of a strategic frame by incorporating definitions from other papers. We hope this helps minimize the confusion. See page 31.

12. Finally, I would like to suggest specifying in the title that your research addresses primarily individual rather than collective creativity.

Prompted by your comment, we carefully considered how to add “individual” to the current title. However, we could not come up with a clear and unambiguous way of doing it. For example, adding “individual” before creativity, in fact, could be read as an indication that only creativity is at the individual level, while innovation is not. To emphasize our
individual focus, we tried, however, to clarify that our research focuses primarily on individual creators by referencing “individual” throughout the abstract and paper.

Although I do not agree with your linear and limited conception of the creative process, I like your paper a lot and wish you good luck with it!

Thank you very much for the guidance and encouragement. We hope that you like this version better than the last and are able to see how your comments helped us to improve the paper.
Response to Reviewer 2

We thank you very much for the helpful and clear comments. We have worked to address each of your comments and suggestions in this version of the paper. We pasted each of your original comments below (in italics) followed by our response.

This is an impressive paper. It addresses an important topic, presents interesting ideas, and is well-written. Specific comments and suggestions are as follows.

Thank you. We are pleased that you see the paper as important, interesting and well-written.

1. The ideation process

I liked how you position the paper: focusing on individual creators’ needs at different phases of the creativity—innovation process, and theorizing how social network properties differentially meet those needs. I wonder though why you call the entire process the ideation process. Some creativity researchers use the term ideation to refer to the cognitive process of generating an idea. By contrast, your paper involves both idea generation (creativity) and implementation (innovation). You may address this issue either by presenting clearer rationale justifying your choice of this term, or by call the entire creativity-innovation process something else.

We very much appreciate this comment. It prompted us to think carefully about what to call the entire process. We agree, in hindsight, that ideation may not have been the ideal term. In this version, we decided to go with the term “idea journey” to capture the notion that we follow the idea from its inception to its dissemination and impact on the field. We also think it better reflects all phases, rather than suggest only one, as your comment pointed out with the term “ideation process.”

2. Phase One’s needs

I am wondering whether it’s overly simplistic to say the first phase—idea generation only needs cognitive flexibility. It would seem that in addition to cognitive flexibility, the idea generator needs to acquire knowledge and information, so that he or she may have the raw material from which he or she may generate good ideas. Once the generator has the raw material, he or she needs to recombine and toy with the raw material in order to generate good ideas, and the need of this second part of Phase one—idea generation is cognitive flexibility. Social network may facilitate this second part of Phase one by providing role models so that the idea generator may learn from the role models how to be cognitive flexible. Social network should also facilitate the first part of Phase one by providing non-redundant information so that the idea generator may acquire the raw materials for idea generation.

Thank you for this comment. We thought a lot about how to address this. We indeed agree that information is helpful before cognitive flexibility kicks in. However, we think that even with exposure to knowledge and information, the key is how individuals make use of it. New knowledge can simply solidify existing ways of thinking (in the case of experts for example) but cognitive flexibility is key to ensuring that knowledge actually stimulates new ideas. So, after thinking about your comment, we decided to maintain our focus on cognitive flexibility as one primary need.
Your comment points out that there may be other very interesting ways that social interactions can facilitate cognitive flexibility – for example, via role models versus the strength of the tie. Our thinking was that, since the tie strength/structure arguments are so prominent in the conflicting research on networks and creativity, we should focus there as a key network characteristic and try to clarify the role of tie strength in facilitating cognitive flexibility specifically.

3. Persistency has special meaning in the creativity literature

P. 10, first paragraph: here you cite Madjar and colleagues (2011) to argue that “support enhances intrinsic motivation and positive mood, which enhances the creators’ ability to persist...” I understand what you mean by saying the word “persist” in this part of the paper. However, because De Dreu and coauthors’ dual-pathway model of creativity specifies persistency as one of the two critical pathways for creative idea generation (the other pathway is flexibility), using the word “persist” in the section in which you discuss idea elaboration (not idea generation) may confuse the readers who are not well-versed in the creativity literature. This confusion can be easily eliminated by replacing the word “persist” with another word.

Thank you for pointing out our confusing use of persistency. We read the De Dreu and colleagues’ paper that you mentioned and now see how our use of the term may be confusing so we have eliminated it in this version of the paper.

4. Linear or curvilinear relation between number of weak ties and creativity

Proposition 1a is not consistent with some previous research. For example, Zhou et al. (2009) found a curvilinear relationship between the number of weak ties and creativity. Proposition 1a implies that there is a linear and positive relationship between the number of weak ties and idea generation. This discrepancy needs to be reconciled.

After considering your comment, we see why our proposition 1a seemed inconsistent with Zhou et al.’s curvilinear finding. We believe that the drawbacks and problems of too many weak ties suggested by Zhou and colleagues are more likely to affect other phases like idea elaboration. Nevertheless, given your comment, we now explicitly recognize that our proposition is in contrast with Zhou et al.’s findings, and we clarify our rationale for proposing that the number of weak ties has a positive linear relationship with idea generation on p. 17.

5. Mediating mechanism

Early in the paper, when discussing the deficiencies of existing research, you suggest that different researchers theorized different mechanism that explained the effects of social network on creativity and/or innovation. This set my expectation that you will theorize mediating mechanisms for the propositions developed in your paper. Reading ahead, I was a bit disappointed to find out this is not the case. You don’t formally develop propositions revealing the mediating mechanisms. This is not a problem per se about the paper. It’s just that the paper would have been more interesting and the contribution could have been greater if you developed formal propositions about mediation.
Thank you for this comment. In this version of the paper, we tried to clarify expectations early in the paper so that the reader does not expect propositions with mechanisms. More specifically, we have revised page 13 so that we don’t highlight the different mechanisms found in existing research. We believe the different needs reflect the different mechanisms through which networks affect creativity-innovation, and we have clarified in the discussion section that future researchers can extend our ideas as well as test the mechanisms/needs proposed for each phase (page 41).

In thinking about your comment, we considered adding propositions with mechanisms as a possible way to extend the paper’s contribution. We ultimately decided to focus on framing and activation (see response to your point 6 below to extend the contribution) and not to add specific propositions that included mechanisms, but believe the changes references above help properly set expectations as well as provide hints for future researchers to explore along these lines.

6. Characteristics of individuals

Proposition 5 and the arguments developing it are too thin. This part could be expanded by identifying specific characteristics of individuals that would allow individuals to change frames.

In reading the paper again, we see that the arguments developing proposition 5 (now proposition 5 and 6) could be further developed (see page 33). In this version, we worked to clarify our logic. For example, we believe we have better positioned our ideas in existing literature, in particular the notion of activation as a dynamic process. In addition, we added a new example frame “locus of control.” We thought about various ways to improve this section even further prompted by your idea about individual characteristics. We ultimately decided that going into the antecedents of changing frames might require more space then we could dedicate in this paper. However, we made sure to keep in the discussion section that future researchers should explore antecedents of frame switching, since we agree with the premise of your point that this is an interesting and important extension of our ideas.

7. While reading the paper I noticed a few typos, which can be easily fixed.

a. P. 2, Griffin, not Griffen, in the Woodman, Sawyer, & Griffin (1993) cite.

b. P. 10, the Madjar and colleagues (2011) paper is not listed in the references section.

Thank you for pointing these out. We actually miscited Madjar et al. 2002 by writing 2011 in the previous version of the paper. We fixed these errors and tried to catch any others.

All in all, I greatly enjoyed reading your paper. Thanks for your effort at crafting the paper. Best wishes!

We are glad that you enjoyed the paper. We sincerely thank you for the comments and best wishes.
Response to Reviewer 3

Thank you for the thought provoking and helpful comments. We have considered your suggestions carefully and revised the paper accordingly. We pasted each of your original comments below (in italics) followed by our response.

Understanding how social networks influence creativity and innovation is an important topic, both theoretically and practically. I applaud your effort to explain how different network features are important at different phases of the creative process. Despite this enthusiasm for the general aims of the paper, I have serious reservations about a number of issues that limit the theoretical contributions. Below, I describe my concerns and offer developmental suggestions that I hope are useful as you continue with this line of inquiry.

We have taken your overarching concern about the theoretical contribution seriously. In our point-by-point response below, we explain how we revised the paper to address each specific concern.

1. Originality

a. A hallmark of an AMR paper is championing a set of novel ideas that challenge conventional wisdom (Corley & Gioia, 2011, AMR). Ideally, your core arguments should surprise the audience in some way (Davis, 1971, Philosophy of the Social Sciences). In its current form, your paper reads more like a literature review and extension than an original set of arguments. As I examined your propositions, I found myself wondering whether anyone would disagree with the notions that weak ties are fruitful for idea generation, strong ties are helpful for elaboration, and structural holes facilitate idea selling. Since many of these ideas have already been supported by empirical research, it feels as if you are integrating existing knowledge rather than moving it forward. There is nothing wrong with organizing the literature, but I think you could do more to advance it.

We sincerely thank you for referencing these papers and clearly explaining the problems you see with the paper’s originality. We worked to improve the originality of our paper and extend its theoretical contribution. We believe that the integration of existing literature that we provide is helpful in moving the field forward but we also agree that we would like to go beyond integration and move the field even further. Overall, we significantly extended the section on “navigating the journey,” which includes frame switching and network activation. To keep approximately the same length as the prior version, we worked to streamline the sections outlining the phases, needs and network parameters. Our response to the comments below provides more specifics on our approach.

b. To enhance the originality of your paper, I would encourage you to take two steps. First, I think you could gain some traction by lifting your reasoning up to a higher level of abstraction. In focusing on your ideas at the proposition level, you are planting plenty of trees without calling attention to the forest. If you consider your propositions as a set, they tell a broader story that is currently obscured: the very features of networks that are good for generating ideas can be bad for refining and implementing them. Put differently, the kinds of networks that are conducive to creativity can interfere with innovation, and vice-versa.

Thank you for this comment. In particular, as we revised the paper, we kept the analogy of the “forest” in addition to the “trees” in the forefront of our minds. In this version, we tried
to highlight the general/broader point that the network characteristics that are facilitating in one phase are undermining in another. We did this in a few ways: we reference this idea in the introduction (p. 5), and tried to reflect it in the flow of our network ideas and propositions (starting on p. 13). Lastly, we now explicitly discuss paradoxes and the resulting loops at the start of the section “navigating the journey” (p. 27).

c. This is a fascinating paradox, and you might consider reframing the paper around it. For an illustration of what I have in mind, see Sitkin et al. (2011, AMR) on stretch goals. Instead of merely identifying the conditions under which organizations set stretch goals and the benefits of pursuing them, they juxtapose these perspectives to argue that the very organizations that pursue stretch goals are those least likely to benefit from them. You have a similar paradox: the aspects of networks that are good for generating novel ideas may make it harder to convert them into innovations. Along with identifying this tension, your paper could provide a road map for minimizing it. The frame-switching ideas are a promising step in this direction, but I would like to see you go further, which brings me to my next point.

Thank you for pointing out Sitkin et al. This was a very helpful example that helped us understand how we might reframe the paper around a paradox. As stated in the response to 1-b, we organized the paper around paradoxes, as you suggested. We also extended the activation and frame-switching sections to provide a better answer to the question of how to minimize the tension (starting on page 29). We incorporated a new example frame (locus of control), clarified our logic and better grounded our ideas in existing literature, and added additional propositions. Our response to comment d below further explains our extension in light of your comments.

d. Second, you might entertain some bolder propositions. For example, when you address frame-switching, can you highlight the disadvantages of activating different parts of a network, and how to overcome them? Is there a risk of appearing transactional rather than authentic—and might this inhibit the quality of ideas and strength of support that come from the network? How do you activate weak ties in the early phases without appearing self-serving, and without alienating your strong ties? How do you then neglect your weak ties during subsequent phase of the process?

This comment really pushed us to think about how we could go further with our ideas. We played around with the specific ideas you suggested here, as well as other ideas, going back and forth between the literature and our theorizing. We ultimately settled on presenting the “limitations of network activation” (pages 33 to 38). Our broad framework, prompted by your comment, is that in some cases network activation is a less effective strategy to minimize the network tensions than in other cases. In particular, we articulate that “activation fluidity” (changing frames and networks across phases) is more difficult when strong ties or cohesive structures are involved. Second, we posit that the longer an idea is caught in a recursive loop, the less effective activation fluidity will be. We added two new propositions to reflect these ideas.

We sincerely thank you for pushing us in this area because we believe that, in addition to integrating the literature in an interesting way that can stimulate future research, we are now also providing new ideas that have not previously been applied to social networks and creativity/innovation.

2. Assumptions. There are two assumptions that struck me as limiting or problematic.
a) Linearity. I find your treatment of the ideation, elaboration, championing, and implementing phases too linear. I certainly agree that existing research has characterized the process as linear, but my sense is that this is driven by empirical convenience. Often, during the championing and implementing process, people go back to the drawing board to generate new ideas. I would like to see you capture the dynamic, iterative nature of the creative process, and show how networks affect these cycles. For an example of a theory paper that takes cycles seriously, see Lindsley et al. (1995, AMR).

We considered various ways of capturing the non-linearity of the process. We agree that the process may not always be linear for various reasons. In this version, we incorporate this directly by describing the recursive loops that may result from the paradoxes (pages 27 to 29). We also describe how extensive loops can be problematic in that loops change needs and make activation more difficult, but in addition, the novelty and impact of the core idea are at risk with each loop (pages 36 to 38). We really liked the example of the Lindsley et al. paper. Although the spiral idea is not as central to our paper as it was to theirs, their ideas informed our thinking and we reference it in this version.

b) Intrapsychic nature of idea generation and elaboration. Although you maintain that idea generation and elaboration are essentially intrapsychic processes, an ample body of research—and case studies of prominent creative thinkers—suggest otherwise. For instance, our network ties have a profound influence on whether we have the confidence to tackle major problems and the audacity to consider unconventional ideas. See the literatures on group mind (e.g., Drazin, Glynn, & Kazanjian, 1999, AMR), as well as the rich set of examples in Group Genius (Sawyer, 2008) and The Powers of Two (Shenk, 2014).

Your comment helped to push us to clarify our definition of each phase as well as our description of the social interactions within each. We agree with your point that network ties have a strong influence on all phases, even generation and elaboration. After thinking about this, we think the problem in the prior version was that our intrapsychic description was not clear and perhaps was unnecessary. In this version, we no longer refer to generation and elaboration as intrapsychic, instead we describe that the influence of social ties in these phases looks different from the later phases. For example, we think the effect of social interactions in generation and elaboration is strong but that the nature of the creator’s role and alters’ influence differs. We now characterize this as alters’ influence (passive versus direct) and actor’s involvement (serendipitous versus intentional). Similar to your examples of confidence and group mind, we see the influence of others is very relevant and strong in the early phases, but the effect is implicit (p. 13-14).

In addition, we removed our discussion of this from various places throughout the needs section and consolidated it to the beginning of the social network section. We think this helped to clarify our points about the nature of social interactions and influence, because these ideas are premised on understanding the needs in each phase.

3. Questionable arguments. There are a few places in the manuscript where I found myself disagreeing with your claims.

a) Pg. 17: you state that “when emotionally close alters disagree... they will discount the content.” Why would this be? In light of extensive research on trustworthiness and source credibility, the opposite seems
far more plausible: wouldn’t I trust non-redundant knowledge more when it comes from an individual with whom I am emotionally close?

Reading the section in light of your comment, we now see why our arguments may not have been as clear as they could have been. We have revised the section where we describe the role of tie strength in interpreting content (see page 16). Your comment helped us to realize that our logic needed more clarity given the intuition that trust should yield a higher reliance on content from strong ties. In this version, we tried to more clearly step through our logic and better explain how it derives from existing theories and empirical results, yet we tried to be succinct at the same time. Our logic derives from the psychological effect of receiving content from a strong or weak tie, premised on implicit desires for cognitive and social balance, and the affect on recombination and integration. Although individuals may self-report that they trust content from strong tie more, they simply may use it to extend standard ideas but have trouble integrating distinct content to form novel solutions. We worked to clarify this in the current version.

b) Pg. 22: although Janis famously argued that cohesion promotes conformity, research has effectively falsified this idea (for reviews, see Aldag & Fuller, 1993, Psychological Bulletin; Fuller & Aldag, 1998, OBHDP; Kozlowski & Ilgen, 2006, Psychological Science in the Public Interest; Whyte, 1998, OBHDP)

We have incorporated the suggested citations and modified our arguments. After thinking about this further and considering the citations, we think the curvilinear idea is not a strong one – given both the findings related to cohesion as well as the definition of production (see page 25). We now suggest closure and the associated cohesion is linearly and positively associated with implementation.

4. Examples. I enjoyed your illustrations of the ideas, but I felt that you relied too heavily on movie examples. For a broad audience, I would suggest diversifying by covering examples from different industries and types of organizations.

We thought a lot about different industries and relevant examples of each phase. We seriously considered incorporating different examples in the body of the paper, but in trying to balance our need to trim the first parts of the paper with the need for broader examples, we decided to stay with the running example of screenwriting/movie making, but added a table to the appendix with examples from other contexts. We reference this on page 6 and the table can be found on page 63.

I hope these comments are helpful, and I wish you the best with the paper.

Thank you for the developmental comments and best wishes.