

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

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Interest has burgeoned, in recent years, in how social networks influence individual creativity and innovation. From both the theoretical and empirical points of view, this increased attention has generated many inconsistencies. 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., Barron & Harrington, 1981; McCrae, 1987), 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, researchers have extensively used a social view of innovative behavior and a social network approach (e.g., Burt, 1980; Ebadi & 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 merging of macro approaches to innovation with micro approaches to creativity.

Greater attention and more 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, & Wadhwa, 2012); however, empirical support linking structural holes and creativity is equivocal. Burt (2004) found a positive association between structural holes and "good ideas," but others (e.g., Perry-Smith, 2006; Zhou, Shin, Brass, Choi, & Zhang, 2009) have found 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 & Sørensen, 1999;

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Morrison, 2002; Reagans & McEvily, 2003). Accordingly, some studies suggest that bringing people together is critical for innovative activities (Hargadon & Bechky, 2006; Lingo & O'Mahony, 2010; Obstfeld, 2005). Yet, at the same time, these structures have been described as promoting conformity (Fleming et al., 2007; Uzzi & Spiro, 2005)—the antithesis of creativity (Goncalo & Duguid, 2012; Woodman et al., 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., Chua, Morris, & Mor, 2012; Sosa, 2011), consistent with creativity theorists' emphasis on positive affect and support (e.g., Isen, Johnson, Metz, & Robinson, 1985; Isen & Patrick, 1983; Madjar, Oldham, & Pratt, 2002)? 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—that is, 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). In both the creativity literature and innovation literature, however, scholars have independently 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 it has confounded the two by not clearly specifying either. Some social network researchers have begun to emphasize single

phases other than generation or implementation (e.g., Lingo & O'Mahony, 2010), whereas other researchers have considered multiple phases simultaneously (e.g., Fleming et al., 2007). However, even these studies do not explain or clarify where each phase is situated within the broader idea journey.

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 to 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, therefore potentially being abandoned prematurely. For example, some creators might come up with groundbreaking ideas but never voice them because of 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 article 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

To clarify the network drivers, we first conceptualize each phase in the idea journey process. Integrating literature across a variety of research domains, we define each phase and articulate the primary needs associated with each. For simplicity, we assume the creator 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) highlighted 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. Importantly, although our emphasis on needs differs from an emphasis on tangible resources accessible through ties, our approach is complementary. Needs are the by-product of resources that are accessed via relationships. See Table 1 for a summary of each phase and need.

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 Table 2 for examples of each phase in other contexts.

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 variation process, creators generate many different ideas and then self-select one (Campbell, 1960; Mednick, 1962; Simonton, 2003). This phase concludes when the creator selects a single, novel idea that he or she deems more promising, useful, or valuable than others (Amabile, 1983; Woodman et al., 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 generation initiates within the creator’s mind (Campbell, 1960) yet 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, such as 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: 28). This anecdote underlines the randomness and unpredictability of the idea generation process, which is largely unconscious and often serendipitous (Campbell, 1960; Mednick, 1962; Zhong, Dijksterhuis, & Galinsky, 2008) and can be affected by a variety of environmental stimuli.

While complex, nonredundant knowledge is generally thought to facilitate the generation of new ideas (Granovetter, 1973; Taylor & Greve, 2006), creativity theorists suggest that it is not the accumulation of new knowledge that matters but, rather, its effect on cognitive structures in the mind (Amabile, 1983; Dane, 2010). For example, additional knowledge may elicit more rigid

¹ In some cases the originator of an idea may be plural, and attributing the generation of an idea to any one creator might be difficult (e.g., Harrison & Rouse, 2015). However, some scholars have argued that the origin of any creative act resides first within the creator’s 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” (1952: 130). For example, in their study of creative collectives, Hargadon and Bechky (2006) showed that the idea for the Reebok Pump originated from a single inventor and was subsequently elaborated by the collective. Nevertheless, we conceptualize the “creator” as the entity originating the idea. This may be a single creator, which we reference for simplicity, but may also be multiple creators, in which case multiple creators can be considered the focal entity, with “contacts” being all persons outside of this entity.

TABLE 1
The Idea Journey Phases and Needs

Phase	Description	Need	Example ^a	Outcome
Idea generation	The process of generating different creative ideas and selecting the most promising one	Cognitive flexibility	The screenwriter generates different ideas for new movies, selecting the one he or she judges to have the highest creative potential.	Core concept of the idea (e.g., idea for a movie)
Idea elaboration	The process of systematically evaluating the novel idea's potential and further clarifying and developing it	Support	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.	More detailed description of the idea (e.g., treatment, first draft)
Idea championing	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	Influence and legitimacy	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 idea. This may happen during a so-called pitch meeting.	Greenlight to develop and produce the idea (e.g., approved final script)
Idea implementation	The process of converting the idea into a tangible outcome that can subsequently be diffused and adopted	Shared vision and understanding	The screenwriter finalizes the script. The production 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.	Detailed blueprint or finished product (e.g., movie)

^aSee Table 2 for examples from other industries.

cognitive pathways, making it less likely individuals will connect previously disconnected elements (Amabile, 1996; Mumford & Gustafson, 1988). These rigid pathways limit the extent to which one is ready to accept and integrate new knowledge (Cronin & Weingart, 2007; Mueller & Kamdar, 2011). At this stage, therefore, the fundamental requisite is cognitive flexibility—the ability to shift schemas and cognitive categories (Amabile, 1983; Guilford, 1968; Mednick, 1962). This flexibility involves a flat associative hierarchy, which enables remote and uncommon associations between conceptually distant ideas (De Dreu, Baas, & Nijstad, 2008; Mednick, 1962; Mumford & Gustafson, 1988; Simonton, 1999, 2003).

With this cognitive structure and organization of content in the mind, the creator has the capacity to integrate content from the social environment to generate novel ideas that depart from existing practices within the field.

Idea Elaboration: Need for Support

We define the elaboration phase as the process of systematically evaluating a novel idea's potential and further clarifying and developing the idea. 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).

TABLE 2
The Idea Journey in Different Settings

Setting	Generation	Elaboration	Championing	Implementation
Academic publishing	Core idea for the paper, including research question	Development of extended abstract or first draft	Submission of the paper to a journal/conference Receiving the decision letter and drafting response to editor and reviewers	Writing the full paper; iterating from first draft to final paper
Advertising ^a	Core idea for the ad, prior to or during brainstorming session	Development of the concept of the ad: key message, look and feel, catchphrase, etc.	Presentation of the elaborated concept to the client during a competition	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.
Industrial patenting	Core idea for a new product or process that can be protected by a patent	Researching existing patents Lab tests and prototyping to test the viability and feasibility of the idea	Submission of application to the national patents office	Realization and industrial production of the product/process protected by the patent
Broadway musicals	Core idea for the plot, music, and lyrics of the musical	Development of detailed plot and of sample music	Selling the musical to a theater and/or a producer	Finalization of plot, music, and lyrics Realization of the musical, including final production, involving others (director, prop designers, actors, etc.)

^aWhile 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 creator. For example, a creator 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) and then has to persuade the team of the soundness of the idea so that it is selected for presentation to the client (i.e., championing).

After a core idea has been generated, creators 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; the creator may anticipate initial resistance to the idea's merits and may even pursue elaboration without authorization (Crisuolo, Salter, & Ter Wal, 2013; Mainemelis, 2010; Staw, 1990).

During this phase, the creator clarifies the initial idea and makes it ready to share with gatekeepers. Ideally, the idea moves from a vague concept in the creator's mind to a more developed form that is sharable with others, unless the creator abandons the idea, at which point the idea journey ceases. The elaboration phase is a success if the creator decides to present the idea, which has retained its novelty, to a wider audience. Consider again the case of a screenwriter. Once the screenwriter 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. The screenwriter will elaborate on this until it is ready to be presented to potential producers during pitch meetings.

During the elaboration phase, creators need support, in two forms, from others. They need emotional support in order to reduce uncertainty and to 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: 73), as with those providing emotional support. Given the uncertainty associated with novel ideas, people voicing them assume some risk of potentially negative feedback from those individuals they share them with (Detert & Edmonson, 2011; Zhou, 1998, 2003; Zhou & George, 2001). Because of this, creators 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 ideas (Harrison & Rouse, 2015). To have a positive effect on creativity, feedback has to be delivered in an informational way. Creators 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 toward tasks and their sense of self-determination (Pittman, Davey, Alafat, Wetherill, & Kramer, 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 so as to shield them from “hurtful criticism” prematurely (2001: 7–8). According to Ed Catmull, CEO of Pixar Animation Studios, 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 their ideas and solve challenges, it is critical that the feedback not undermine the ideas’ novelty or result in premature abandonment.

Idea Championing: Need for Social Influence and Legitimacy

The championing phase is the active promotion of a novel idea, aimed at obtaining 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, 1990). 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 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, the screenwriter tries to sell the idea to film studio executives. This will happen during the so-called pitch meetings, in which the screenwriter attempts to persuade producers of the novelty and potential of his or her idea, as well as of his or her own ability to develop it into a movie or television series (Elsbach & Kramer, 2003).

To be successful, champions need to possess influence and legitimacy. 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; Chakrabarti, 1974; Chakrabarti & Hauschildt, 1989; Howell & Higgins, 1990; Schon, 1963). Moreover, a 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 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 broken into 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 subphases represent important facets of the implementation of an idea (Van de Ven, 1986; West, 2002).

During the production subphase, 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 a screenwriter obtains the green light to develop his or her 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 the screenwriter 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 competencies and skills.

During the impact subphase, 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 departs from existing practices may be dismissed as crazy, face resistance from field members, and ultimately be forgotten (Anand et al., 2007; Hargadon & Bechky, 2006), unless it is considered and reused by others. 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) illustrated this with the example of a Broadway show: high-impact shows include a particular creative approach that influences the development of future shows.

The literature on team innovation and creativity has emphasized the importance of shared vision for an effective implementation phase. Shared vision is a common understanding of a valued outcome that is perceived as a higher-order goal (Cardinal, 2001; West, 1990; West & Anderson, 1996). During the production subphase, a shared

vision provides several advantages. In particular, it facilitates high commitment, better information sharing, and enhanced helping behaviors (Hargadon & Bechky, 2006; Lingo & O’Mahony, 2010). Moreover, it 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 and, ultimately, a more efficient collective production process. In a meta-analytic study, Hülsheger, Anderson, and Salgado (2009) found that shared vision is the most important determinant of a group’s ability to produce innovative outcomes. During the impact subphase, a shared vision is needed to overcome the potential resistance from field members. Without fully understanding the idea and buying into its creative potential, field members may see the idea as simply a threat to their power, or they might just discard it as crazy or nonsensical. Shared vision and understanding helps overcome interpretive problems, creates a common language that guarantees that the idea is correctly communicated to other field members, and ensures its successful interpretation and acceptance (Carlile, 2004; Carlile & Reberntsch, 2003).

SOCIAL NETWORK CHARACTERISTICS AND NEED FACILITATION

The conceptualization of phases and needs provides an overarching logic for when and how contextual characteristics matter for the idea journey. Given that creativity and innovation are essentially a social process, we consider the social drivers of each phase in the form of network characteristics. Figure 1 depicts key papers in the literature and the phases on which they explicitly and implicitly focus.

Delineating phases suggests different degrees of desirable active involvement of contacts and purposeful action of creators to facilitate the respective needs. This can be depicted as a continuum (see Figure 2) where the influence of the social context is similarly strong but contacts’ involvement and creators’ intentionality vary. For example, in the generation phase, we have suggested that others’ effect on the birth of a new idea is serendipitous, which reflects low creator intentionality. Like other serendipitous networks (Kilduff & Tsai, 2003), the creator’s interaction with others is not necessarily premised on fulfilling a predefined goal, compared to later phases in

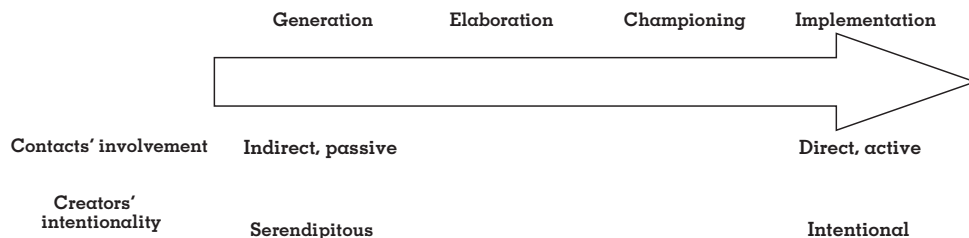
FIGURE 1
Examples of Explicit and Implicit Focus on Phases in Current Research

Paper	Generation	Elaboration	Championing	Implementation
Baer (2010)				
Baer (2012)				
Burt (2004)				
Chua, Morris, & Mor (2012)				
Delmestri, Montanari, & Usai (2005)				
De Stobbeleir, Ashford, & Buyens (2011)				
Fleming, Mingo, & Chen (2007)				
Hargadon & Sutton (1997)				
Lingo & O'Mahony (2010)				
Madjar, Oldham, & Pratt (2002)				
McFadyen & Cannella (2004)				
McFadyen, Semadeni, & Cannella (2009)				
Mueller & Kamdar (2011)				
Obstfeld (2005)				
Perry-Smith (2006)				
Perry-Smith (2014)				
Rodan & Galunic (2004)				
Sosa (2011)				
Tortoriello & Krackhardt (2010)				
Uzzi & Spiro (2005)				
Zhou, Shin, Brass, Choi, & Zhang (2009)				
Zou & Ingram (2013)				
	Phase the paper implicitly focuses on			
	Phase the paper explicitly focuses on			

which the creator may seek others for more instrumental reasons (e.g., high creator intentionality). The elaboration phase best illustrates when contacts' involvement can be low. Here the need for support suggests that contacts 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 implementation phase, in contrast, while the originator remains primarily responsible for the idea's development, the need for a shared vision requires contacts to form and progress the idea's content in a collaborative

FIGURE 2
Continuum of the Idea Journey



fashion (e.g., high contact involvement). This continuum of creator intentionality and contact involvement undergirds our social network propositions.

We focus on both tie strength and structure as relevant social network characteristics. 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 a 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. We conceptualize structure as local ego-network structure, or the system of relationships among a creator's direct ties. When two of the creator's contacts do not share a tie, the creator is spanning a structural hole (Burt, 1992). On the contrary, triadic closure exists when a creator's direct contacts maintain ties to each other (Coleman, 1988; Phelps et al., 2012). Although we focus on local structure, our logic extends to research referencing global structure (e.g., Cattani & Ferriani, 2008; Ibarra, 1993), or the pattern of relationships within an entire field or organization (Scott, 1988), which we reference where relevant.

Our central premise, elucidated throughout this section, is that dyadic tie strength is critical for facilitating the micro needs of the early phases, while structure is critical for 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 creator already knows, because weak ties tend to be nonredundant connections to different social circles (Granovetter, 1973, 1983; Ibarra & Andrews, 1993). In addition, creators whose networks are rich in structural holes get access to more diverse information (Aral & Van Alstyne, 2011; Burt, 1992). As we discussed previously, however, creators do not necessarily automatically recombine disparate knowledge. To generate novel ideas, creators need cognitive flexibility in order to successfully recombine disparate knowledge into new associations (De Dreu et al., 2008; Mednick, 1962).

While structure may provide access to diverse knowledge, tie strength affects how creators interpret and process content and, ultimately, the cognitive organization of content in the mind (e.g., cognitive flexibility versus rigidity). Creators desire cognitive and social balance among their social ties and the knowledge held by those ties (Phillips, 2003; Phillips & Loyd, 2006; Phillips, Mannix, Neale, & Gruenfeld, 2004), and they expect contacts they know well to hold similar perspectives and agree with one another. When emotionally close contacts disagree by providing nonredundant knowledge content, the disagreement leads to a state of imbalance that hampers cognitive processes. Moreover, since creators are motivated to restore balance, the lack of it 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, is explanatory. In an experimental study, Perry-Smith (2014) showed that creators receiving information from strong ties spend less time integrating it, since the information merely solidifies existing cognitive pathways, resulting in uncreative solutions. In contrast, receiving different knowledge from weak ties is a cognitively balanced situation and results in more time spent considering different options and higher creativity (Perry-Smith, 2014).

These arguments emphasize *number* of weak ties rather than a single weak tie. Several studies have shown that weak ties facilitate creativity over and above nonredundant structure (e.g., Baer, 2010; Perry-Smith, 2006, 2014; Zhou et al., 2009), supporting the unique role of tie strength. Importantly, the measure in each study is closer to

generation than other phases. Although too many weak ties generally can become detrimental (Zhou et al., 2009), we expect that during idea generation specifically, the benefits will outweigh the possible costs.

Our arguments suggest that the structural features of ties may be less relevant for the generation phase, although nonredundant structure may facilitate championing, as we 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. For example, several studies (i.e., Rodan & Galunic, 2004; Zou & Ingram, 2013) found no direct effect between spanning structural holes and innovativeness, although the researchers noted moderating effects. The lack of main effect was explained by suggesting that structural holes provide "political maneuverability" rather than diverse knowledge (Rodan & Galunic, 2004), or that the key to creativity is maximizing differences, which ties that span structural holes within organizations do not maximize (Zou & Ingram, 2013).

Two influential studies may at first glance appear to contradict the lack of empirical support (Burt, 2004; Fleming et al., 2007). However, in both the researchers adopt logics or measures encompassing other phases. Burt's (2004) logic emphasizes the ability of brokers to navigate complex political environments and diverse constituencies to successfully convince others of the merits of their ideas (i.e., championing). Fleming and colleagues (2007) confound different phases by using measures such as patent subclasses, which are considered finished products that have already been elaborated and championed (Oldham & Cummings, 1996).

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

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

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

Although weak ties are expected to facilitate generation, they do not facilitate elaboration.

Because someone highlighting a novel idea might be perceived as incompetent (Hofmann, 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). Trust thus increases the chances that the creator will decide to disclose the idea rather than abandon it; when creators perceive trust, they are free to present counternormative perspectives without filtering or changing them to meet the anticipated needs of the contact (Zhang & Zhou, 2014; Zhou & George, 2001). This level of trust helps ensure that the idea will move beyond the creator's mind, an important first step.

Once the creator shares an idea, strong ties are more likely to provide the support needed during the idea elaboration phase. Close relationships are associated with emotional support (e.g., De Stobbeleir, Ashford, & Buyens, 2011; Sosa, 2011). Moreover, the feedback emotionally close contacts provide is likely to be perceived as more encouraging and informational than overly directive or critical. Emotionally close contacts serve the important function of validating one another's views (Cross & Sproull, 2004; Reis & Shaver, 1988), and their feedback is perceived as both constructive and useful and is more easily accepted (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 and providing suggestions constructively.

The elaboration phase does not require many ties, as the generation phase does, nor does it require that strong tie contacts belong to the creator's field. Rather than belonging to the same field, the strong ties must simply connect the creator with a trusted contact, one with whom the creator 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 Reville, before pitching them to producers. Ms. Reville played an indispensable role in the making of her husband's movies: "She was his closest confidante, his most

trusted ally" (Anderson, 2012: 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 empirical research is consistent with our rationale. Madjar and colleagues (2002) show that support from family and friends facilitates creativity; they argue that this is due to the creator's enhanced motivation and enthusiasm to pursue a generated idea. Sosa (2011) suggests that strong ties have a positive impact on creativity because they increase support and motivation to share ideas. In another example, Chua and colleagues (2012) show that cultural metacognition facilitates 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 novel ideas. While some scholars have found that the number of weak ties with culturally diverse others facilitates creativity (Perry-Smith & Shalley, 2014), this work emphasizes the generation of ideas rather than the sharing and elaboration of them.

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; Chua, Morris, & Ingram, 2010; Coleman, 1988; Uzzi, 1996). 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 contacts 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 so as to comply with existing ways of thinking (Janis, 1972; Perry-Smith & Shalley, 2003; Sosa, 2011). Although motivated to cooperate, these close ties can inadvertently squash novelty and uniqueness as creators in dense collectives move toward similarity of perspectives over time (Uzzi & Spiro, 2005). In contrast, dyadic

support from one to two strong ties provides creators 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 facilitate 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 contacts, and they can use this control to gather support for their ideas and initiatives (Burt, 1992; Seibert, Kraimer, & Liden, 2001). In addition, these brokers are thought to have a vision and translation advantage that helps them sell good ideas to different audiences by understanding what resonates and what does not (Burt, 2004). Accordingly, their ideas are rated as "good" ones by others in the field. So while brokerage—occupying network positions that span structural holes—may not facilitate the generation of new ideas, this line of reasoning suggests that brokerage may be critical during the championing phase.

But can creators directly leverage the advantages of structural holes? Not necessarily. For creators to successfully navigate the championing phase, field members must have a generally positive impression of the creators' ability and efficacy (Glückler & Armbrüster, 2003). This is inherently difficult in the case of truly novel ideas because of the lack of benchmarking (Csikszentmihalyi, 1988, 1999). Because new ideas are characterized by high uncertainty and questionable legitimacy, decision makers use various cues to determine whether they will support the ideas' implementation (Elsbach & Kramer, 2003). Some of those cues may be the characteristics of the creator, whereas others derive from the structural position of creator's contacts. In general, researchers assert that individuals can "borrow" influence and legitimacy to reduce the perceived uncertainty by associating with

well-regarded contacts (Anand et al., 2007; Glückler & Armbrüster, 2003; Hoang & Antoncic, 2003; Stuart, Hoang, & Hybels, 1999). After all, the perceived attributes of a creator's contacts are often attributed to the creator as well (Blau, 1964; Kilduff & Krackhardt, 1994; Uzzi, 1996).

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. Moreover, via borrowing, the creator is not cognitively constrained by the established social norms and paradigms within the field (e.g., Cattani & Ferriani, 2008) or by the complexities associated with maintaining structural holes. Several empirical studies support the benefits of borrowing structural holes when legitimacy is questionable. For example, Burt (1998) found that for female managers in male-dominated firms, being a broker (e.g., spanning structural holes) did not demonstrate the expected positive relationship with career outcomes generally found in the literature, but being connected to a broker did. Brands and Kilduff (2013) found that women in male-dominated contexts are less likely to be perceived as brokers than men, and if they are, they experience social sanctions. Ibarra (1993) found that centrality is related to innovativeness; her aggregate prominence measure, which is based on the centrality of a creator's contacts, is consistent with the notion of borrowing the centrality of another. Directly bridging structural holes may therefore not always be an effective strategy during the championing phase.

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

Proposition 3b: Borrowed structural holes, more than direct ones, 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 that friends have more social influence over friends (Krackhardt, 1992). Strong ties are characterized by norms of reciprocity that facilitate the exchange of favors and mutual support (Kanter, 1983), and individuals connected through strong ties are motivated to help and support each other's initiatives (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 contact's network, as well as the resulting access to others, are primary. This is what will determine whether the contact can provide the needed social resources. Notably, this kind of borrowed structural hole connection is somewhat similar to a buy-in relationship—that is, 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 contact's ties, rather than the "importance" ascribed to the tie by the creator. Inherent in the notion of borrowing is that the tie between the creator and the contact is solid enough for the contact to "lend" his or her structural holes to the creator. This action does not require the type of emotional depth typical of strong, emotionally laden ties, however. We therefore propose that structural borrowing is the primary mechanism that facilitates idea championing.

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

Although structural holes facilitate championing, they do not facilitate implementation. We posit that, in the production subphase, closure (i.e., fewer structural holes) among those involved in the realization of the idea is most beneficial. Creators belonging to closed networks are able to reduce perceived uncertainty by drawing on others' behavioral cues (Coleman, Katz, & Mentzel, 1966). In addition, closure promotes normative pressure to work collaboratively toward common objectives (Lingo & O'Mahony, 2010) and enhances information sharing (Ahuja, 2000; Granovetter, 1985; Uzzi & Spiro, 2005), thus helping create a shared vision about the idea. 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. Admittedly, closure can become problematic in some cases. For example, collaborators in highly dense structures may get stuck and have difficulty considering alternative approaches (Hargadon & Sutton, 1997; Oh, Chung, & Labianca, 2004; Uzzi & Spiro, 2005). In the production phase, however, executing an idea, not generating

new ones, is primary. 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 performance. We thus expect closure and the associated cohesion to generally benefit production.

We further suggest that closure combined with reach provides the best structural opportunity for successful impact. In particular, outside ties—those crossing a relevant boundary—that are embedded in dense structures are ideal. In that scenario the creator and contacts outside of the production team are connected to one (or more) common third party (Krackhardt, 1998). The literature contains many examples of the importance of outside contacts (e.g., Ancona & Caldwell, 1992; Oh et al., 2004; Perry-Smith & Shalley, 2014). In particular, Uzzi and Spiro (2005) and Tortoriello and Krackhardt (2010) found that outside ties either embedded in or emanating from dense structures are associated with successful innovations, presumably because they ensure that the idea circulates and is effectively understood, accepted, and used. 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.

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 in 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 subphase 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, since they favor value recognition (Friedkin, 1980), creation of a common language (Tortoriello & Krackhardt, 2010), and development of heuristics and shared meaning (Uzzi, 1997). There are downsides to maintaining lots of strong ties outside the team, however. For example, strong ties can be costly because of the time, attention, and reciprocity involved (Mueller & Kamdar, 2011; Perry-Smith & Shalley, 2003). In

addition, too many strong ties outside the team could undermine internal team dynamics, as loyalties become divided (Keller, 2001; Nelson, 1989; Oh et al., 2004; Perry-Smith & Shalley, 2014). Although researchers have argued that strong ties are necessary for sharing tacit knowledge (Hansen, 1999), the cohesion and shared vision of embedded outside contacts 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 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 that individual 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.

Because 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 since strong ties to emotionally close contacts 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 and then either moving to the next phase or “dying” as the creator goes back to generation to start over.

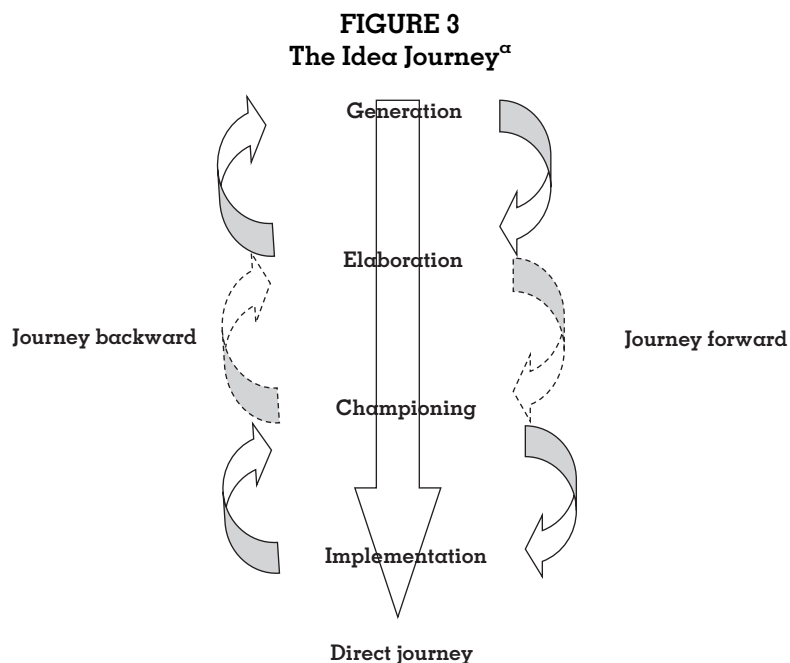
Consider the example of *Bolt*, an animated movie by Walt Disney Animation Studios. The movie had already received the green light to advance to the production phase. When the new executives of the studio, John Lasseter and Ed Catmull, noticed problems with the plot, visuals, and characters, they asked the team to work on those 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 his or her 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 3 provides a visual depiction of the idea journey across each phase and the loops likely to arise because of 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). Creators may cling to prior approaches (Lewis, 2000) and stay



^aThe 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 are denoted with dashed lines.

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 situations (e.g., Sitkin, See, Miller, Lawless, & Carton, 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 appear 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; Kilduff, Crossland, Tsai, & Krackhardt, 2008; Kilworth & Bernard, 1976), 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 (Bridwell-Mitchell & Lant, 2013; Smith et al., 2012), 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 contacts are brought to mind at certain times owing to situational or individual triggers (Carley, 1986; Casciaro, 1998). In this way, a creator'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 a creator activates his or her 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 it does 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 creators activate at any moment in time? The cognitive representation of a network depends on the frames that are used to define a situation (Bridwell-Mitchell & Lant, 2013; Carley, 1986; Smith et al., 2012). In any situation frames provide a structure of assumptions and rules that help creators answer the question, "What is going on here?" (Bartunek, 1984; Goffman, 1974; Snow, Rochford, Worden, & Benford, 1986; Weick, 1995). Frames can affect activation explicitly or implicitly. In the first case, creators consciously activate the portions of the network they believe have the resources to match their current needs (Bridwell-Mitchell & Lant, 2013; Lant, 2005; Nebus, 2006). Or, if this process is implicit, rather than activating networks based on a purposeful matching of people and resources, creators can have 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. Creators can frame issues either politically, emphasizing creators' 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). Creators who frame issues strategically activate contacts they perceive to have broad expertise and information, whereas creators who frame issues politically activate contacts they perceive either as more influential or as more trustworthy (Bridwell-Mitchell & Lant, 2013). This distinction suggests that strategic framing is beneficial during idea generation, because it prompts creators 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, prompting creators to activate strong, emotionally close ties.

The second frame, threat, is an example of implicit activation. It is related to perceptions of harm and ambiguity and their effect on subsequent action (Dutton & Jackson, 1987; Jackson & Dutton, 1988). 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 by narrowing a creator's focus (Amabile & Conti, 1999; Pally, 1955), this logic suggests that a low-threat orientation is good for generation, since creators activate expansive networks. A high-threat frame, however, may be best for elaboration, since creators who see their idea as potentially risky will activate ties from their "inner circle." Importantly, interpretations and frames can vary across creators 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, whereas 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 the literature on social movements and motivation (e.g., Deci & Ryan, 1980; Rotter, 1966; Snow et al., 1986). When creators assume that they are driving and controlling a given event, the creators are said to be adopting an internal locus of control; this is opposed to the assumption that overall performance and control reside outside the creator—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 creators interact with others and more about the extent to which creators believe they ultimately control the outcome. Creators who frame a situation as internally controlled prefer to rely on themselves and tend to view contacts only as providers of resources (Ng & Feldman, 2011) rather than as 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 since it prompts creators to consider the interconnection among contacts and activate network ties in terms of structure.

Altogether, these example frames suggest that in order to activate the appropriate network in each phase, creators 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: Creators 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: Creators 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 may be 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, since these ties are particularly susceptible to decay (Dahlander & McFarland, 2013; Mariotti & Delbridge, 2012), and activating weak ties in one phase but not others might cause the ties to become latent and then nonexistent. Weak ties require low costs 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 creator pivots from strong ties or dense structures. In close relationships and dense social structures, contacts expect loyalty and reciprocity (Coleman, 1988; Tortoriello & Krackhardt, 2010). When their expectations are not met, contacts may view the offending creator as disloyal—an outgroup member who is not upholding his or her end of the implicit social contract (Adler & Adler, 1995; Coleman, 1988; Smith, 2005). This dynamic may lead to a variety of social sanctions. Evidence from social networks research suggests, in fact, that creators who span structural holes within cohesive contexts are sanctioned and excluded from the group (Xiao & Tsui, 2007).

In the same fashion, creators in dense structures who are left out by any member of the clique will find themselves expelled by other members of the clique as well (e.g., Adler & Adler, 1995). A creator who activates some people in one phase and others in another may experience similar social sanctions, since contacts 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 a creator 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 the creator as opportunistic and an outsider. If a creator 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 contact may perceive the creator as inauthentic and utilitarian because of the way the creator strategically either remembers or forgets the contact. Ultimately, contacts 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 have to develop new strong ties to replace those that decay or may have 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 contacts 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, 1995; 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 the creator, 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 them 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 one 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 therefore 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 being limited by 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) found 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 instance, if a screenwriter's pitch to a producer does not go well, the screenwriter will revise the idea before presenting it to another producer. During this repeat elaboration, receiving support is still important for 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, unsuccessfully first pitched the story in 1992. 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, Melissa Wallack, to ask for help in 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 Borten experienced 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 creators 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 for the individual to activate different networks. This pattern holds despite the fact that changing needs actually produce greater reactivation demands on the creator, since 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 the following.

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, whereas 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 the creator's ability to change 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 the creativity literature and innovation literature (Anderson, Potočnik, & Zhou, 2014; George, 2007). In many cases creativity research and innovation research draw on separate and parallel bodies of literature, 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 bodies of literature 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.

Second, our articulation of intermediate phases can potentially clarify debates within the creativity literature and innovation literature 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, for example, that dual tuning (George & Zhou, 2007)—in which both positive and negative mood facilitate creativity—is applicable to generation owing 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, since a reward may detract from the cognitive generation process, but they 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, the entrepreneurship literature 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.

Third, our theorizing contributes to network theory. Granovetter's strength-of-weak-tie theory (1973), while initially counterintuitive, is now a classic within the field and is 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 emphasize 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, our perspective informs the growing body of work 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 creators 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 creators lose or gain new ties (e.g., Mariotti & Delbridge, 2012; Sasovova et al., 2010) but also by the extent to which creators 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 Boes, & 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 creators' 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, this article 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's changing frames and activating different networks. In doing so, we advance existing research on networks, creativity, and innovation, and we offer a useful

framework to solve existing theoretical debates and guide future research.

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