A Dynamic Model of Narcissism and Creativity Over Time

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Abstract

The literature on group creativity is representative of most research on groups and teams: Rather than incorporate a dynamic view of the creative process over time it has largely viewed creativity from a static point of view (Cronin, Weingart, & Todorova, 2011). In this paper, we focus on a particular example of this static approach: Recent research linking narcissism to group creativity (Goncalo, Flynn & Kim, 2010). We critique this work to demonstrate how research on group creativity might incorporate more dynamic models of how the creative process in groups unfolds over time. First, we review the evidence that narcissists can contribute to group creativity. We uncover three critical gaps in that research: It focuses narrowly on one stage of the creative process while neglecting other stages, it neglects the fact that events in one stage can impact subsequent stages, and it assumes a dynamic process that is not actually tested empirically. Second, we propose a dynamic model that, at least in part, addresses these gaps and in doing so generates a series of novel propositions. Finally, we conclude by suggesting an empirical approach that might be useful for studying group creativity over time.

A Dynamic Model of Narcissism and Creativity Over Time

A creative idea is one that diverges from existing solutions in an appropriate or feasible way (Amabile, 1983). In organizations such ideas may relate to a wide variety of domains such as organizational products, practices, services or procedures (Shalley & Gilson, 2004). As the organizational environment becomes increasingly competitive (Barnett & Hansen, 1996), creative ideas are viewed as an important advantage because they may lead firms in a profitable new direction (Amabile, 1996).

In order to meet the demand for creative solutions, organizations have employed a variety of strategies, including the formation of teams (Paulus & Yang, 2000) to promote idea generation. In her comprehensive review of the literature on creativity, George (2007) noted that most of the research on group creativity has been conducted in the laboratory with groups that have no history of interaction nor any expectation that they will interact again. This stream of laboratory research has yielded many important insights that are useful for managing short term interactions between people who meet for the first time to generate a wide range of ideas; a brainstorming process that is foundational to creativity in organizations (Paulus & Yang, 2000).

Yet, there has been wide agreement for many decades that the creative process unfolds in stages that may extend over a longer period of time (West, 2002; Lubart, 2001). In other words, teams must not only generate new ideas but they must also decide which ideas to implement and then undertake the process of bringing their favored idea to fruition (West, 2002). Moreover, merely generating a wide range of solutions does not guarantee that those ideas will be identified as creative nor that they will be implemented (Nijstad & De Dreu, 2002; West, 2002; Rietzschel, Nijstad & Stroebe, 2006). Indeed, many organizations claim to want creative solutions, but fail

to pursue them when they have the opportunity to do so (Mueller, Goncalo & Kamdar, 2011; Mueller, Melwani & Goncalo, 2012).

Unfortunately, the literature on group creativity is therefore typical of most research on groups and teams: Rather than incorporate a dynamic view of the creative process over time it has largely viewed creativity as a static process (George, 2007; Cronin, Weingart, & Todorova, 2011). In this paper, we focus on a particular example of this static approach: Recent research linking narcissism to group creativity (Goncalo, Flynn & Kim, 2010). We intend to use this concrete example to illustrate how time can be fruitfully incorporated into our models of group creativity and to highlight the potential insights that may emerge from a more dynamic perspective. First, we review the evidence that narcissists can contribute to group creativity (Goncalo et al., 2010). Our critique uncovers three critical gaps in this research: It focuses narrowly on one stage of the creative process while neglecting other stages; it neglects the fact that events in one stage can impact subsequent stages, and it assumes a dynamic process that is not actually tested empirically. Second, we propose a dynamic model that, at least in part, addressed these gaps and in doing so generates novel propositions that can be tested in future research. Finally, we conclude by suggesting an empirical approach for studying group creativity over time.

NARCISSISM AND GROUP CREATIVITY

The personality trait narcissism refers to a set of egocentric traits including self-admiration, self-centeredness, and high self-regard (Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004). Individuals scoring high in narcissism have an exaggerated sense of entitlement, a constant need for attention and a strong desire to be admired by others (Bogart, Benotsch, and Pavlovic, 2004). Narcissists frequently use singular personal pronouns (e.g., I, me) in speech

(Raskin & Shaw, 1998) and may often ignore others in conversation (Kernis & Sun, 1994). They report a lesser need for intimacy (Carroll, 1987) and have little empathy for their peers, even those in need (Watson, Grisham, Trotter, & Biderman, 1984). Given these seemingly anti-social characteristics, it is somewhat surprising that narcissists tend to emerge as leaders (Brunell, Gentry, Campbell, Hoffman, Kuhnert, & Demaree, 2008), even at the highest levels of organizations (Chatterjee & Hambrick, 2007). The initially positive impression individuals have of their narcissistic colleagues may fade over time, however, as they realize that narcissists are in fact less agreeable, less well adjusted, less warm, and more hostile and arrogant than others (Paulhus, 1998). Paradoxically, there is some evidence that the presence of narcissists is not inevitably destructive. In the next section we review recent evidence that narcissists, even though they themselves are not necessarily creative, may in fact contribute to the creativity of the groups to which they belong.

Existing theory linking narcissism to group creativity

The personality composition of a group may shape group processes and performance (Moreland & Levine, 1991). Recent research has shown that creativity may also be facilitated by the right mix of personalities in a group (Miron-Spektor, Erez, & Naveh, 2011; Schilpzand, Herold, & Shalley, 2011). For example, groups are more creative when some of their members are open to new experience (Schilpzand, et al., 2011;Baer, Oldham, Jacobsohn & Hollingshead, 2008) and when they have a mix of creative individuals as well as members who are more conforming and attentive to detail as they hold the group together and ensure that ideas are implemented (Miron-Spektor, et al., 2011).

While most research regards narcissism as largely negative, Goncalo, Flynn and Kim (2010) theorized that narcissism may actually have a positive impact on group creativity. Group creativity depends heavily on the open expression of ideas because people may extend, combine, and improve upon the contributions made by others (Nijstad, Stroebe & Lodewijkx, 2002). This process of idea expression and recombination allows groups to realize more creative solutions than any one individual could have reached alone (Simonton, 1999). However, considerable research on group brainstorming has found that many good ideas remain unexpressed, leading groups to underperform compared with nominal groups of individuals who work alone (Diehl & Stroebe, 1987). There is strong evidence that social influence processes can mitigate or even reverse some of the problems inherent to face-to-face brainstorming and thereby promote group creativity (Paulus & Dzindolet, 1993). For example, competition can facilitate idea expression because the desire to assert one's value and acquire status (Pettit & Lount, 2010) may motivate people to express ideas they might otherwise withhold from the group discussion (Dugosh & Paulus, 2005; Munkes & Diehl, 2003; Beersma & De Dreu, 2005; Goncalo & Kim, 2010).

There are two separate streams of research that provide evidence consistent with this perspective. First, research on social motives has shown that groups of people with a pro-self orientation (i.e., the goal is to maximize one's own outcomes relative to others) are more creative than groups of people with a pro-social orientation (i.e., the goal is to cooperate to maximize outcomes for both oneself and others) (Beersma & De Dreu, 2005). Second, research adopting a cultural values frame has shown that groups of people primed to be individualistic generate more novel ideas than groups of people primed to be collectivistic (Goncalo & Staw, 2006; Goncalo & Duguid, 2012). Taken together, these streams of research suggest that the creative potential of groups may be realized when the competitive drive to be superior compels each group member

to attempt to propose the most novel ideas (Beersma & De Dreu, 2005; Dugosh & Paulus, 2005; Munkes & Diehl, 2003).

Narcissists crave attention and recognition for their valued attributes and contributions (e.g., John & Robbins, 1994) and so they may be more willing to compete with their fellow team mates to suggest more novel solutions. The competition between narcissistic group members may lead the group to uncover new sources of information and new perspectives that can then be recombined to generate novel ideas (De Dreu, Nijstad & van Knippenberg, 2008). For example, narcissists may contribute to a more efficient exchange of ideas by reducing production blocking (Diehl & Stroebe, 1987). Production blocking is a conversational bottleneck that occurs when group members wait for their turn to speak; individuals may forget some of their ideas or even run out of time to express their ideas while listening to others (Nijstad, et al, 2002). Highly narcissistic individuals may be less patient with such turn-taking and tend to "break into" the other person's turn, or not listen as attentively to the other person's ideas and thereby be less likely to forget their own ideas. A somewhat counterintuitive prediction is that this self-focus and aggressive conversational style, while impolite, could reduce production blocking and thereby increase the group's creative output. Indeed, there is recent evidence that people in competitive groups are more likely to interrupt their teammates to express their own ideas and that doing so actually increases the total number of ideas expressed (Goncalo & Kim, 2010).

Recently, a growing number of scholars are calling for organizational scholars to re-examine the common implicit assumption of linear relationships between variables (Le, Oh, Robbins, Ilies, Holland & Westrick, 2011; Pierce & Aguinis, 2013). They argue that even beneficial inputs can be detrimental to outcomes at excessive levels and conversely, even seemingly harmful inputs might be beneficial at lower or more manageable levels. According to

Pierce and Aguinis (2013), researchers would rather posit linear associations because they are easier to explain. Indeed, the relationship between narcissism and group creativity may not be as straightforward as a simple positive and linear association. Goncalo and colleagues (2010) also predicted that as more narcissists join the group, competition can escalate to the point of obstructing the group's ability to reach closure, synthesize new ideas, and complete tasks on time (Jehn & Mannix, 2001). Groups with lower levels of competition may be more efficient and more capable of coordinating their efforts, which would be an advantage when the group moves beyond the idea generation stage to actually select an idea and bring it to fruition (Rietzschel, Nijstad & Stroebe, 2006). Given these tradeoffs, they predicted a curvilinear, inverted U-shaped relationship: the more narcissists there are in the group, the more creative the group's performance will be up to an inflection point when additional narcissists begin to have a negative effect on group creativity.

Empirical test

Goncalo et al. (2010) tested their curvilinear hypothesis in a study of student project teams from an introductory course in organizational behavior. Each team of four was asked to analyze a real organization making use of the concepts and methods highlighted in the course. Part of the assignment required the group to propose a solution to the problem they identified. In this part of the assignment, groups were instructed to generate novel plans that the organization could implement to improve their problems and build on their strengths. The solutions were not intended to be wild or unrealistic. In fact, they were explicitly instructed to come up with feasible action items—things the organization could do given its constraints. These solutions were then coded for creativity.

In addition, surveys designed to assess the creative process were handed out at the mid-point of the group project, halfway between the assignment to groups, and the final deadline. The mid-point was chosen because previous research has shown that the mid-point is when high performing groups experience a concentrated burst of activity at which time they debate competing task-related perspectives (Gersick, 1988). Therefore, it is at this particular stage of a group's development when the authors reasoned that the creative process might be most relevant and important to observe.

The results showed a significant curvilinear effect of narcissism on group creativity such that the more narcissists there were in the group, the more creative the group was to an inflection point, where the effect of narcissism on group creativity became negative. The results suggest that narcissism influenced group creativity by changing the group process, particularly given that narcissists failed to outperform less narcissistic individuals on several tests of individual creative problem solving.

A THEORETICAL AND METHODOLOGICAL CRITIQUE

The finding that narcissists can contribute to creative outcomes in groups is intriguing but the theory and empirical test fall short in at least three important respects that are quite common in the literature on group creativity (George, 2007). Here we critique the Goncalo et al. (2010) study with two goals in mind: To demonstrate the shortcomings of that particular piece and also to use this critique as a starting point for the introduction of more dynamic models to the literature on group creativity.

(1) The theory focuses on one stage of the creative process while neglecting other stages

Goncalo et al. (2010) reasoned that a few narcissists in a group may contribute to idea generation but too many narcissists may prevent the group from choosing an idea and actually implementing it. Their theorizing implies that group creativity unfolds in stages. Yet, rather than specifying a separate prediction at each stage of the creative process, they predicted a curvilinear effect of narcissism on group creativity as though it is a unitary construct that can be observed only at one point in time (the end of the project). In fact, narcissists may be more useful in terms of inspiring a competitive norm at the idea generation stage that motivates idea expression than they might be at the implementation stage at which point the desire for attention may impede the group's progress towards the deadline. This logic would suggest two separate predictions (one at each stage). Moreover, the form of the relationship would also differ at each stage; the relationship between narcissism and creative idea generation would be linear and positive while the relationship between narcissism and implementation would be linear and negative. Interestingly, neither prediction is curvilinear. In sum, a more dynamic view of the creative process (one that we outline in the next section) would suggest that creativity may occur at multiple stages and that narcissism may have a different impact on each stage of the process.

(2) The theory assumes a dynamic process that is not actually tested.

In the Goncalo et al. (2010) study, creativity was measured in two ways, (as a self-reported process) and as an outcome that was coded from each group's final report of their suggested solution to an organizational problem. The group's creative process was measured in a survey administered at the mid-point of the group's interaction on the assumption that the mid-point might be particularly critical because it is at this time that a flurry of activity related to the project might occur (e.g. Gersick, 1988). This empirical approach is problematic for at least three reasons. First, the dynamics that play out before and in between these time points are not

explored. For example, the same measure of systematic thinking could have been taken at the beginning and at the conclusion of the project as well as the mid-point, in order to verify whether the effect of narcissism persists over time, attenuates at certain stages or perhaps even changes form at different points in time.

Second, survey items asking participants whether they debated different perspectives and explored alternative solutions may tap their experience at the midpoint, at an earlier stage or a mixture of their recollections from both stages. It would be useful to know whether narcissism influenced the systematic processing of ideas throughout the group project or whether this effect was restricted to the midpoint or earlier. Given that the assignment required groups to propose a single solution, we can assume they had to select one idea from among more than one option. But the really difficult decision of which idea to implement was not necessarily made at the midpoint. If the decision did not take place at the point at which the survey was administered, there is a chance that the decision was overturned during the second half of the group project and another idea was implemented instead. It is also possible that idea selection took place at different times for different groups. In fact, Goncalo et al. (2010) predicted that narcissists should slow the process such that idea selection and implementation might be delayed making it even more crucial to measure the process more than once.

Finally, the fact that narcissism was measured at the beginning, systematic thinking at the midpoint, and the creativity of the proposed solution at the end might suggest a meditational process in which the level of narcissism of the group influences systematic thinking, which, in turn, influences creativity. However, they found that systematic thinking and creativity were uncorrelated. Multiple measures of the creative process over time might help specify the point at which systematic thinking might actually influence the final outcome.

(3) The theory neglects the fact that events in one stage can impact subsequent stages.

An advantage of specifying the effect of narcissism at each stage of the creative process is that we can begin to theorize about how creativity at one stage can impact subsequent stages. For example, narcissists may contribute to a competitive norm that promotes idea generation but that norm may carry-over to subsequent stages and impede the group's ability to implement their ideas. Alternatively, the number and quality of ideas generated may have no direct impact on the quality of the idea selected (Rietzschel et al., 2006) thus neutralizing a positive effect that narcissists may have on the creative process and potentially making their presence a liability for other group performance outcomes.

In sum, the three critical shortcomings we identified in the existing research on narcissistic personality composition and group creativity arose because the critical role of time was not seriously considered. These gaps in our understanding of what is most likely a dynamic process provide a starting point for generating new theoretical propositions.

A DYNAMIC MODEL OF NARCISSISM AND GROUP CREATIVITY OVER TIME

In order to develop a dynamic model of group creativity over time, it is important to first specify what distinguishes "early" from "late" in a group's interaction (Jehn & Mannix, 2001). The most straightforward way to delineate the early from the late stage is simply by the midpoint of the allotted time: The early stage occurs prior to the midpoint and the late stage occurs after the midpoint. Indeed, groups undergo a critical transition at the midpoint during which time they may stop work, notice that the deadline is near and complete tasks at a more urgent pace (Gersick, 1988; 1989). In other words, although the dynamic passage of time is a continuous experience, there are certain events that may distinguish an "early" from a "late" phase (McGrath, Arrow, & Berdahl, 2000).

According to Tuckman's (1965) model, groups go through an initial forming stage in which they get to know each other, test inter-personal boundaries and orient themselves to the task. During the early phase, effective teams may also reach explicit agreements about how the group will work together to complete tasks in a timely manner (Mathieu & Rapp, 2009). The development of these agreements may prompt the group to clarify important issues such as group members' roles and responsibilities as well as their task related abilities and work styles (Mathieu & Rapp, 2009). In other words, during the early stages groups may be concerned primarily with planning for the future while in the later stage they may focus more intently on task execution as the deadline nears (Okhuysen & Waller, 2002).

The creative process in our model has three critical time periods that are tied to the stages identified by Gersick (1988). Each of the three time periods map onto a different stage of the creative process. During the *early stage*, group members generate a wide range of ideas while not necessarily evaluating them (Diehl & Stroebe, 1987). During the *middle stage*, group members start to narrow down the number of ideas and eventually select one final idea (Reitzschel et al, 2006). During the *late phase*, group members implement the selected idea (West, 2002). We propose that narcissism has different effects at each of these three stages.

Though narcissism is a continuous variable, we make two important simplifying assumptions for clarity of exposition. First, we assume that groups can vary such that narcissists are either (a) the only narcissist in the group (b) in the minority or (c) in the majority which at the extreme would mean that the entire group is composed of narcissistic individuals. These distinctions map on to the proportions that are typically important in relating group composition to group processes and group performance (Chatman, Boisnier, Spataro, Anderson & Berdahl, 2008) and they allow us to talk about narcissistic group composition as it is likely to be

meaningfully perceived in groups (individuals are viewed as narcissistic or they are not). Second, we assume that social perceivers can distinguish the narcissists from the non-narcissists in their group. We base this assumption on research showing that observers can obtain highly reliable ratings of subjects' narcissism after fairly short interactions (John & Robins, 1994) and that peer ratings of narcissism are far more accurate than ratings of other personality traits (Clifton, Turkheimer & Oltmanns, 2009).

Narcissism and creativity at time 1 (early stage)

In the early, idea generation stage narcissists may dominate the conversation by contributing a large number of ideas because they are extraverted (Miller & Campbell, 2008) and it is important to them to be at the center of attention (Sedikides et al., 2004). Narcissists believe that they are better than others (Campbell, Rudich, & Sedikides, 2002) and feel the need to demonstrate this (Nevicka, De Hoogh, Van Vianen, Beersma, & McIlwain, 2011).

Because each narcissist is self-absorbed and wants to be at the center of attention, competition among narcissists easily ensues (Goncalo et al., 2010). Each narcissist wants to contribute a better idea than the others. During the discussion of ideas, the narcissists thus establish a competitive norm that may, in turn, influence non-narcissists either by making the norm salient (Cialdini, Reno & Kallgren, 1990) or through a more implicit process of social contagion (Barsade, 2002). This competitive norm stimulates the generation of unique, creative ideas because every group member wants to outperform the others (Rijsman, 1974). Furthermore, the competitive norm forces group members to think their ideas through and argue well in order to convince others that their idea is the best. The emergence of a competitive norm is generally beneficial for creative idea generation because a larger number of unique ideas are

generated than when this norm is absent (Cummings & Oldham, 1997; Shalley & Oldham, 1997; Munkes & Diehl, 2003). This leads to our first proposition:

> **Proposition 1:** Narcissism is positively correlated with the emergence of a competitive norm at the early stage of the group project and a competitive norm, in turn, stimulates the expression of creative ideas.

Narcissism and creativity at time 2 (middle stage)

At the middle stage of a group project the focus may turn from idea generation to idea selection, particularly if the group perceives that at the mid-point time is becoming limited (Gersick, 1988). When there is only one highly narcissistic individual, it is likely that their idea will be selected with minimal conflict. Narcissists enjoy having an audience who admires them (Campbell et al., 2002), so they attempt to appear charming and confident to others. This initial "act" works in their favor, at least at the outset, because non-narcissists perceive them as popular, and likable (Back, Schmukle & Egloff, 2010). Furthermore, each narcissist is convinced of his or her ideas and thus confidently presents and defends them if necessary, which convinces others that the ideas suggested by narcissistic individuals are more creative than they really are (Goncalo et al., 2010).

Narcissists may not be objectively creative, but their high levels of self-confidence may nevertheless influence the way others evaluate their ideas. Although researchers have numerous tools at their disposal for measuring creativity, there are many contexts in which creativity is judged by observers who lack rigorous criteria (Amabile, 1982; Taylor & Barron, 1963) and are subject to attributional biases (Kasof, 1995). For example, in a qualitative study of Hollywood "pitches," Elsbach and Kramer (2003) found that judgments of creativity were influenced by

perceptions of the "pitcher" and the extent to which they matched the prototypical traits of a highly creative person, such as "charismatic" and "witty."

This research suggests that perceptions of creative ability may be separate from whether a product is objectively creative (Mueller et al, 2011). It also suggests that certain behaviors of the person who expresses creative ideas, especially their energy, enthusiasm, and conviction, can prompt evaluators to judge their ideas to be more creative than they actually are. This second point is supported by the classical research on social influence in which behaviors that signal confidence, such as taking the head seat prior to a group discussion, can make one's ideas seem more plausible and convincing (Nemeth & Wachtler, 1974). More recent research also suggests that dominant individuals are more likely to attain social status in groups because others inaccurately perceive them as more competent (Anderson & Kilduff, 2009).

Goncalo et al. (2010) found that narcissists are at a significant advantage in these evaluations because they will be both highly confident that they are more creative than others and more inclined to publicly share these flattering self-views with people who are in a position to evaluate their ideas. In the absence of any objective information about an idea's creative quality or criteria on which to base such an evaluation, narcissists' self-aggrandizing behaviors may be persuasive, particularly because they match evaluators' prototypes of how highly creative people tend to behave (Elsbach & Kramer, 2003). This social influence process, more than the objective creativity of the idea itself, could help explain why narcissists appear creative to others (Deutschman, 2005: 44). Non-narcissists might thus readily accept the narcissist's ideas as the best ones and might be willing to implement the narcissist's favorite idea without much discussion. Thus, our first proposition is as follows:

Proposition 2: Non-narcissists perceive narcissists as creative at the middle stage even if their ideas are not more creative than the ideas suggested by others.

As the number of narcissists in the group increases (while remaining in the minority), the effect of narcissism on idea selection may initially be positive because conflict between narcissistic group members may slow the group and prevent them from reaching premature closure when discussing which idea should be selected. Relationship conflict is always deleterious (De Dreu & Weingart, 2003), but moderate levels of task conflict may be beneficial at the idea selection stage. For example, dissent at this stage may prompt the group to consider a wider range of potential solutions, to scrutinize the solutions more carefully and in a less biased way (Nemeth & Rogers, 1996).

Once the number of narcissists in the group has reached a majority, however, potentially beneficial task conflict may be more likely to transform into relationship conflict (Greer, Jehn & Mannix, 2008). Individuals may freely suggest a wide range of potential solutions at the idea generation stage without criticism, but at some point the list of ideas will need to be scrutinized as the group converges on the one solution they want to select and pursue to fruition.

The process of idea selection may pose a threat to narcissists because all of them want one of their own ideas to be selected for implementation (while perhaps secretly insecure that their ideas are not worthy of selection). Narcissists may seem to have high self-esteem because they are so extroverted and overtly confident, but they are, in fact, generally riddled with self-doubt and score below average on implicit self-esteem

measures (Zeigler-Hill, 2005). Thus, a narcissist's self-esteem hinges on his or her idea being praised, selected and implemented by the group. Therefore, the more narcissists belong to the group the more conflict is likely to ensue. At this point less narcissistic group members may realize that the narcissists in their midst are not as charming and creative as they seemed initially. Instead, the level of relationship conflict in the group may highlight the fact that narcissists are self-centered to the point of being willing to allow the project to fail if their ideas are criticized or overlooked. Thus, groups with a majority of narcissists might come to an impasse.

Furthermore, with a majority of narcissists in the group the likelihood that conflict will entail personal attacks is higher. Narcissists have a grandiose sense of self (Stuke & Sporer, 2002), are disagreeable (Miller & Campbell, 2008; Paulhus & Williams, 2002), and very extroverted (Miller & Campbell, 2008), which translates into people who are verbose, interrupt others, and try to manipulate them (Raskin & Hall, 1981). Narcissists may even react with verbal aggression when their ego is threatened (Stucke & Sporer, 2002), which might occur when others criticize their ideas during the idea selection stage. With a majority of narcissists in the group the likelihood increases that there will be an upward spiral of destructive personal attacks in which narcissists prod each other to higher and higher levels of relationship conflict. Such relationship conflict over interpersonal style, values, and taste has consistently been shown to be detrimental to team performance (De Dreu & Weingart, 2003). This leads to the following propositions:

> **Proposition 3:** Narcissism will impact both the type of conflict and the level of conflict at the middle stage of idea selection. There will be a low level of conflict when there is only a single narcissistic individual in the group. With narcissists in

the minority task conflict will initially increase to a point at which narcissists become the majority which will trigger increasing levels of relationship conflict.

Proposition 4a-b: The relationship between narcissism and the creativity of the group's selected idea will be an inverted U-shape. (4a) The least creative ideas will be selected when there is only a single narcissistic individual (because there will be no conflict to spur thoughtful decision making) and when there are only narcissists in the group (because the level of relationship conflict will be high). (4b) The most creative ideas will be selected by groups when the narcissists in the group comprise the minority.

Narcissism and creativity at time 3 (late stage)

The implementation stage of the creative process may not demand creativity as much as efficiency and coordination so that the group can turn their idea into a final product or proposal. It is this stage of the process that is most likely to be affected by events that have already occurred in earlier stages. During the implementation stage, groups with one narcissist will quickly implement an uncreative idea selected in the previous stage without much reflection. Moreover, ideas are likely to be selected not because they are objectively creative, but because the lone narcissist in the group sold the idea with confidence and charisma. At this point, the group is unlikely to be aware that their idea is ordinary or even of low quality and will move to the implementation stage without a very objective evaluation of their idea. Groups with a minority of narcissists will generate task related conflicts that can help generate and identify more creative solutions, but will not necessarily cause long lasting conflict that might interfere with idea implementation. Finally, the high levels of relationship conflict that the groups with a majority of narcissists generated during the idea selection stage will likely carry over to the

implementation stage. Narcissistic group members whose ideas were not chosen may try to sabotage the implementation of other peoples' ideas, withhold effort and generally impede the progress of the group as retribution for perceived slights. The most narcissistic groups are therefore more likely to be late in delivering a final product or worse they may fail to deliver one at all. Thus, we predict the following:

> **Proposition 5**: There will be an inverted U-shaped relationship between the number of narcissists in the group and the effectiveness of idea implementation.

Once the groups have finished their project and implemented their new product or process, they are likely to receive external feedback. The groups in which a lone narcissist convinced the rest of their group to pursue his/her idea may have helped the group to quickly move on to the idea implementation stage. However, the narcissist's confidence may belie the fact that their ideas are not particularly good or creative and once the group receives more accurate and likely negative feedback from external evaluators, the experience of failure may cause the group to disband. Conversely, groups with a majority of narcissists may also dissolve, not because they lacked the necessary level of conflict that would prevent them from reaching premature closure but because they are riddled with so much destructive relationship conflict that future collaborations would be strained. The group process that we posit may be characteristic of groups in which the narcissists are in the minority (e.g. task as opposed to relationship conflict) may make such groups more likely to succeed and also because of this positive feedback, to choose to collaborate again (Lawler, 2001). Therefore, we predict the following:

Proposition 6: Groups in which the narcissists are in the minority are more likely to experience success on a project which will, in turn, cause them to choose to collaborate again on a subsequent project.

Unfortunately, past success and repeat collaboration may also have a downside. The problem with repeat collaboration is that during the first project, team members have obtained mental models of how to structure their work and their relationships with one another. These enduring, cognitive structures tend to carry over into new projects, effectively reducing aberration from procedures and modes of thinking (Skilton & Dooley, 2010). In addition, the shared experience of past success may lead to further collaboration but it may also increase confidence in past solutions and thereby limit the exploration of new ideas (Audia & Goncalo, 2007). This process might increase the speed with which the project is completed the second time around because everyone has their set roles, but excessive confidence in the status quo can ultimately reduce creative output. Having a minority of narcissists in the group might counteract this problem. The narcissists will likely continue to compete and cause conflict in the group because they are unwilling to settle or compromise. They are less likely to adhere to procedures that worked for the past project if they were not leading them. Thus, we predict the following:

Proposition 7: The number of narcissists in the group will moderate the consequences of past success on subsequent creativity such that the more narcissists in the group, the less likely past success will constrain exploration (so long as narcissists are not in the majority).

The moderating role of audience attention

Given that narcissists crave attention, they are the most competitive and motivated when they have an audience because there is an opportunity to achieve glory (Campbell et al., 2002). In fact, an evaluative audience that holds narcissists accountable for their actions - as is the case in most organizational work teams - fuels narcissists' desire to self-enhance to a larger degree than without an audience or when they are not accountable (Collins & Stukas, 2008). We thus propose that audience scrutiny will exacerbate all of the effects of narcissism we have discussed up to this point. An audience will spur narcissists to compete and get into conflict to a larger degree than groups who are not evaluated by an audience or where the audience is less salient. Furthermore, narcissists are known to engage in self-defeating behaviors such as aggression (Miller, Campbell, Young, Lakey, Reidy, Zeichner, & Goodie, 2009), and an audience might exaggerate those behaviors further. The following proposition emerges:

> **Proposition 8:** Audience scrutiny is going to strengthen the effects of narcissism on the group process over time (e.g. competition and conflict).

Narcissism and the pace of creative work

An important feature of our dynamic model of group creativity is that the progression from one stage to another is not necessarily uniform. We know from prior research (Gerisck, 1988) that there is often a critical mid-point transition during which groups may pick up the pace of their work. However, different groups may spend a different amount of time in each stage and may even return to an earlier stage before moving forward. Thus, our dynamic model incorporates the possibility that groups may spend more time in certain stages than others. For example, groups with a large number of narcissists are likely to spend considerably more time in each stage than groups with a

moderate number of narcissists or a single narcissist. For instance, in the idea selection stage the level of relationship conflict will be high in groups with a majority of narcissists and thus hold up the selection of a single idea. In contrast, groups with a lone narcissist might move through the idea selection stage rather quickly because the narcissist will be able to convince the other group members of the superiority of his or her idea without stimulating much debate. One obvious consequence, of course, is that the higher the number of narcissists in the group the more time is needed to complete a project. However, though they may take longer to complete a project, the product is not necessarily of higher quality due to the destructive conflict that may arise. Nevertheless, it is likely that narcissists will influence the pace at which creative work is completed.

> **Proposition 9a-b:** As the number of narcissists in the group increases, (a) the longer the group will spend at each stage of the creative process and (b) the less likely the group will be able to complete projects on time.

Additionally, our dynamic model also incorporates the potential for the group to return to an earlier stage. For example, during the implementation stage, groups who were taken in by the charm of the lone narcissists might discover at a later stage that the idea they were persuaded to select might be of poor quality or inappropriate to solving the problem. A dilemma like this one might necessitate the return to a former stage. It might be necessary to select another idea that is more feasible from the list of generated ideas. Or it might even be necessary to return to the idea generation stage in order to incorporate knowledge gained during the implementation stage into the process of generating new ideas. Another intriguing possibility is that more narcissistic group members might try to persuade the group to return to the idea generation stage in order to

get another opportunity at getting their idea selected. Feedback loops of this kind not only add realism to the model but they also present an exciting and largely untapped opportunity for future research. In sum, we predict the following:

> **Proposition 10:** The more narcissists there are in a group, the more likely the group will return to an earlier stage of the creative process after having progressed to a later stage.

METHODOLOGICAL CONSIDERATIONS FOR FUTURE RESEARCH

Testing our propositions will require a methodological approach that differs from the approach used by Goncalo et al. (2010) and indeed most studies of group creativity. In this section, we suggest some methodological considerations that might be useful for testing a dynamic model of group creativity.

The experimental method is limited in its ability to capture the creative process over time as most experiments are necessarily quite short and focused on testing propositions relevant to a single stage rather than multiple stages. Alternatively, a field study in an organization using ongoing groups would be ideal for capturing the process as it occurs in a real world setting. However, it would be difficult to control what kinds of tasks the groups are working on, how the groups were formed and for what purpose. Such an endeavor would undoubtedly be worthwhile but may be daunting; it is not surprising that this kind of work is extremely rare (e.g. Amabile, Barsade, Mueller & Staw, 2005 as an excellent example). We think it may be possible to test some initial hypotheses about group creativity over time using classroom project teams. An advantage of this approach is that there is substantial control over the parameters of the task, the formation of groups and the criteria that researchers may apply in judging creative output. In

addition, it may be easier to observe such groups at every stage of the process from idea generation to implementation in a fixed period of time. Unlike the laboratory, such groups are working together on a task with real consequences for them and they are working over the course of several weeks rather than one hour. Given the relative dearth of longitudinal research on group creativity, on balance, it may be better for researchers to begin with a more doable method rather than ignore group dynamics entirely in favor of the increasingly common scenario method in which participants imagine "hypothetical" groups with no interaction (Moreland, Hogg & Hains, 1994). Here we offer some specific suggestions for how such a study might be conducted.

Task: Each team project may involve choosing a topic within organizational behavior (e.g. job satisfaction, employee motivation, leadership) and then examining that topic within the context of an actual organization. The task should involve multiple steps, including the selection of an organization to study, establishing a contact person, selecting a particular issue to study, gathering relevant information about the organization, analyzing the problem and suggesting a solution in a final group term paper. Groups should only be required to hand in their final project and they should not receive any feedback, nor should they submit any preliminary assignments before the final project deadline. Ideally, the team project would be worth a substantial portion of their final grade so the students have a reason to take their project seriously In addition, the fact that the assignment asks them to contact a real organization may mean that such contact could lead to summer internships or job offers at the organizations they chose to study, thus making the project even more consequential.

Timing: Given that the primary goal is to observe how the creative process unfolds, the question of how to time data collection is critical. Assuming a typical 15-week semester, students should

be randomly assigned to project teams by the course instructor in week 7 of the semester at the latest to give ample time for teams to interact and form a meaningful working relationship. In order to obtain a comprehensive view of the process, survey data should be collected at five different points in time. Several weeks prior to the assignment of teams (to reduce demand effects), participants should complete a questionnaire containing basic demographic information (time 0) including a measure of narcissism if that trait is the independent variable. Two weeks after groups are formed, participants should complete measures of their group process such as intra-group conflict and group norms such as competition-cooperation (time 1). Subsequent surveys should be identical and should be completed at approximately one week intervals with the last survey completed at the end of the semester during the week the final project is submitted (times 2-5). It would also be valuable to include items that would capture which stage of the process groups are actually in so that it would be possible to trace when groups transition from one stage to the next, the factors that might lead to that transition, whether some groups progress through these stages at the same pace (or skip some stages entirely) and how the overall pattern might impact the final product. The groups should not receive any feedback about their project prior to turning in the final paper so as to prevent knowledge of their performance shaping their perception of the group process (Staw, 1975). At each survey collection, participants should complete the questionnaire independently and return it directly to the researchers.

Additionally, the students could keep anonymous diaries on the events at group meetings and other interactions between group members. Such personal diary entries often entail rich information about conflicts, emotions, and Eureka moments, which might provide unexpected as well as confirm expected insights into the group process (Amabile et al., 2005).

Conclusion

In sum, we proposed a dynamic group model that incorporates and connects the three stages of the creative process. It consists of an early, idea generation stage, a middle, idea selection stage and a late, idea implementation stage. Several novel propositions emerged from our theory including the idea that narcissists can (a) have different consequences at different stages of the project, (b) that they can set in motion events like conflict that can impact subsequent stages of the process and (c) that they can compel groups to speed through certain stages or return to earlier stages. By focusing on the role of narcissism, we were able to give a concrete illustration of how a dynamic model of group creativity might play out. But more importantly, we intend our model to be a general template for theorizing about the creative process over time. We encourage other researchers to use our model as a starting point to gain new insights into the group processes that occur over time to either stifle or stimulate creative performance.

References

Amabile, T. M. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of Personality and Social Psychology, 43*, 997-1013.

Amabile, T. M. (1983). The social psychology of creativity: A componential conceptualization. *Journal of Personality and Social Psychology, 45*, 357-376.

Amabile, T. M. (1996). *Creativity in context.* Boulder, CO: Westview Press. Anderson, C. A., & Kilduff, G. J. (2009). Why do dominant personalities attain influence in face-to-face groups? The competence signaling effects of trait dominance. *Journal of Personality and Social Psychology, 96,* 491-503.

Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. (2005). Affect and creativity at work. *Administrative Science Quarterly, 50,* 367-403.

Audia, P.G. & Goncalo, J.A. (2007). Success and creativity over time: A study of inventors in the hard-disk drive industry. *Management Science*, 53, 1-15.

Back, M. D., Schmukle, S. C., & Egloff, B. (2010). Why are narcissists so charming at first sight? Decoding the narcissism-popularity link at zero acquaintance. *Journal of Personality and Social Psychology, 98,* 132-145.

Baer, M., Oldham, G. R., Jacobsohn, G. C., & Hollingshead, A. B. (2008). The personality composition of teams and creativity: The moderating role of team creative confidence. *The Journal of Creative Behavior, 42,* 255-282.

Barnett, W. P. & Hansen, M. T. (1996). The red queen in organizational evolution. *Strategic Management Journal, 17,* 139-157.

Barsade, S. G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly, 47,* 644-675.

Beersma, B., & De Dreu, C. K. W. (2005). Conflict's consequences: The effects of social motives on post-negotiation creative and convergent group functioning and performance. *Journal of Personality and Social Psychology, 89,* 345-357.

Bogart, L. M., Benotsch, E. G., & Pavlovic, J. D. (2004). Feeling superior but threatened: The relation of narcissism to social comparison. *Basic and Applied Social Psychology, 26,* 35-44.

Brunell, A. B., Gentry, W. A., Campbell, W. K., Hoffman, B. J., Kuhnert, K. W., & DeMarree, K. G. (2008). Leader emergence: The case of the narcissistic leader. *Personality and Social Psychology Bulletin, 34,* 1663-1676.

Campbell, W. K., Rudich, E. A., & Sedikides, C. (2002). Narcissism, self-esteem, and the positivity of self-views: Two portraits of self-love. *Personality and Social Psychology Bulletin, 28,* 358-368.

Carroll, L. (1987). A study of narcissism, affiliation and power motives among students in business administration. *Psychological Reports, 61,* 355-358.

Chatman, J. A., Boisnier, A. D., Spataro, S. E., Anderson, C., & Berdahl, J. L. (2008). Being distinctive versus being conspicuous: The effects of numeric status and sex-stereotyped

tasks on individual performance in groups. *Organizational Behavior and Human Decision Processes, 107,* 141-160.

Chatterjee, A., & Hambrick, D. C. (2007). It's all about me: Narcissistic chief executive officers and their effects on company strategy and performance. *Administrative Science Quarterly, 52,* 351-386.

Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology, 58,* 1015-1026.

Clifton, A., Turkheimer, E., & Oltmanns, T. F. (2009). Personality disorder in social networks: Network position as a marker of interpersonal dysfunction. *Social Networks, 31,* 26-32.

Collins, D. R. & Stukas, A. A. (2008). Narcissism and self-presentation: The moderating effects of accountability and contingencies of self-worth. *Journal of Research in Personality, 42,* 1629-1634.

Cronin, M. A., Weingart, L. R. & Todorova, G. (2011). Dynamics in groups: Are we there yet? *Academy of Management Annals, 5,* 571-612.

Cummings, A. & Oldham, G. R. (1997). Enhancing creativity: managing work contexts for the high potential employee. *California Management Review, 40,* 22-38.

De Dreu, C. K. W., Nijstad, B. A., & van Knippenberg, D. (2008). Motivated information processing in group judgment and decision making. *Personality and Social Psychology Review, 12,* 22-49.

De Dreu, C. K. W. & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology, 88,* 741-449.

Deutschman, A. (2005). Is your boss a psychopath? *Fast Company*, *96*, 44-52.

Diehl, M., & Stroebe, W. (1987). Productivity loss in brainstorming groups: Toward the solution of a riddle. *Journal of Personality and Social Psychology, 53*, 497-509.

Dugosh, K. L., & Paulus, P. B. (2005). Cognitive and social comparison processes in brainstorming. *Journal of Experimental Social Psychology*, *41*, 313-320.

Elsbach, K. D., & Kramer, R. M. (2003). Assessing creativity in Hollywood pitch meetings: Evidence for a dual process model of creativity. *Academy of Management Journal*, *46*, 283-301.

George, J. M. (2007). Creativity in Organizations. *The Academy of Management Annals, 1,* 439-477.

Gersick, C. (1988). Time and transition in work teams: Toward a new model of group development. *Academy of Management Journal*, *32*, 274-309.

Gersick, C. J. G. (1989). Marking time: Predictable transitions in task groups. *The Academy of Management Journal, 32,* 274-309.

Goncalo, J.A. & Duguid, M.M. (2012). Follow the crowd in a new direction: When conformity pressure facilitates group creativity (and when it does not). *Organizational Behavior and Human Decision Processes, 18*, 14-23.

Goncalo, J. A., Flynn, F. J., & Kim, S. H. (2010). Are two narcissists better than one? The link between narcissism, perceived creativity, and creative performance. *Personality and Social Psychology Bulletin, 36,* 1484-1495.

Goncalo, J. A. & Kim, S. H. (2010). Distributive justice beliefs and group idea generation: Does a belief in equity facilitate productivity? *Journal of Experimental Social Psychology, 46*, 836-840.

Goncalo, J. A., & Staw, B. M. (2006). Individualism-collectivism and group creativity. *Organizational Behavior and Human Decision Processes, 100,* 96-109.

Greer, L. L., Jehn, K. A., & Mannix, E. A. (2008). Conflict transformation - A longitudinal investigation of the relationships between different types of intragroup conflict and the moderating role of conflict resolution. *Small Group Research, 39,* 278-302.

Jehn, K. A., & Mannix, E. A. (2001). The dynamic nature of conflict: A longitudinal study of intra-group conflict and group performance. *Academy of Management Journal*, *44*, 238-251.

John, O. P., & Robbins, R. W. (1994). Accuracy and bias in self-perception: Individual differences in self enhancement and the role of narcissism. *Journal of Personality and Social Psychology*, *66*, 206-219.

Kasof, J. (1995). Explaining creativity: The attributional perspective. *Creativity Research Journal*, *8*, 311-356.

Kernis, M. H., & Sun, C. R. (1994). Narcissism and reactions to interpersonal feedback. *Journal of Research in Personality, 28,* 4-13.

Lawler, E. J. (2001). An affect theory of social exchange [Electronic version]. *American Journal of Sociology 107*, 321-352.

Le, H., Oh, I.-S., R. S. B., Illies, R., Holland, E., & Westrick, P. (2011). Too much of a good thing: Curvilinear relationships between personality traits and job performance. Journal of Applied Psychology, 96, 113-133.

Lubart, T. I. (2001). Models of the creative process: Past, present and future. *Creativity Research Journal, 13,* 295-308.

Mathieu, J. E. & Rapp, T. L. (2009). Laying the foundation for successful team performance trajectories: The roles of team charters and performance strategies. *Journal of Applied Psychology, 94,* 90-103.

Miller, J. D. & Campbell, W. K. (2008). Comparing clinical and social-personality conceptualizations of narcissism. *Journal of Personality, 76,* 449-476.

Miller, J. D., Campbell, W. K., Young, D. L., Lakey, C. E., Reidy, D. E., Zeichner, A., & Goodie, A. S. (2009). Examining the relations among narcissism, impulsivity, and self-defeating behaviors. *Journal of Personality, 77,* 761-794.

Miron-Spektor, E., Erez, M., & Naveh, E. (2011). The effect of conformist and attentive-to-detail members on team innovation: reconciling the innovation paradox. *Academy of Management Journal, 54,* 740-760.

Moreland, R. L. & Levine, J. M. (2001). Socialization in organizations and work groups. *Groups at work: Theory and research*. Turner, M. E. (Ed.). 69-112.

Moreland, R. L., Hogg, M. A., & Hains, S. C. (1994). Back to the future: Social psychological research on groups. *Journal of Experimental Social Psychology, 30,* 527-555

Mueller, J. S., Goncalo, J. A., & Kamdar, D. (2011). Recognizing creative leadership: Can creative idea expression negatively relate to perceptions of leadership potential?, *Journal of Experimental Social Psychology, 47,* 494-498.

Mueller, J. S., Melwani, S., & Goncalo, J. A. (2012). The bias against creativity: Why people desire but reject creative ideas. *Psychological Science, 23,* 13-17.

Munkes, J., & Diehl, M. (2003). Matching or competition? Performance comparison processes in an idea generation task. *Group Processes and Intergroup Relations, 6,* 305-320.

Nemeth, C. J., Connell, J. B., Rogers, J. D., & Brown, K. S. (2001). Improving decision making by means of dissent. *Journal of Applied Social Psychology, 31,* 48-58.

Nemeth, C. & Rogers, J. (1996). Dissent and the search for information. *British Journal of Social Psychology, 35,* 67-76.

Nemeth, C., & Wachtler, J. (1974). Creating the perceptions of consistency and confidence: A necessary condition for minority influence. *Sociometry, 37,* 529-540.

Nevicka, B., De Hoogh, A. H. B., Van Vianen, A. E. M., Beersma, B., & McIlwain, D. (2011). All I need is a stage to shine: Narcissists' leader emergence and performance. The Leadership Quarterly, 22, 910-925.

Nijstad, B. A. & De Dreu, C. K. W. (2002). Creativity and group innovation. *Applied Psychology: An International Review, 51,* 400-406.

Nijstad, B. A., Stroebe, W., & Lodewijkx, H. F. M. (2002). Cognitive stimulation and interference in groups: Exposure effects in an idea generation task. *Journal of Experimental Social Psychology, 38,* 535-544.

Okhuysen, G. A. & Waller, M. J. (2002). Focusing on midpoint transitions: An analysis of boundary conditions. *Academy of Management Journal, 45,* 1056-1065.

Paulus, P. B. & Yang, H. C. (2000). Idea generation in groups: A basis for creativity in organizations. *Organizational Behavior and Human Decision Processes, 82,* 76-87.

Paulus, P.B. & Dzindolet, M. T. (1993). Social influence processes in group brainstorming. *Journal of Personality and Social Psychology, 64,* 575-586.

Paulhus, D. L. (1998). Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology, 74,* 1197-1208.

Paulhus, D. L. & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism and psychopathy. *Journal of Research in Personality, 36,* 556-563.

Pettit, N. C. & Lount, R. B. (2010). Looking down and ramping up: The impact of status differences on effort in intergroup contexts. *Journal of Experimental Social Psychology, 46,* 9-20.

Pierce, J. R. & Aguinis, H. (2013). The too-much-of-a-good-thing effect in management. *Journal of Management, 39,* 313-338.

Raskin, R. & Hall, C. S. (1981). The narcissistic personality inventory: Alternate form reliability and further evidence of construct validity. *Journal of Personality Assessment, 45,* 159-162.

Raskin, R. N., & Shaw, R. (1988). Narcissism and the use of personal pronouns. *Journal of Personality, 56,* 393-404.

Rietzschel, E., Nijstad, B., & Stroebe, W. (2006). Productivity is not enough: A comparison of interactive and nominal brain-storming groups on idea generation and selection. *Journal of Experimental Social Psychology, 42*, 244-251.

Rijsman, J. B. (1974). Factors in social comparison of performance influencing actual performance. *European Journal of Social Psychology,* 4(3), 279–311.

Schilpzand, M. C., Herold, D. M., & Shalley, C. E. (2011). Members' openness to experience and teams' creative performance. *Small Group Research, 42,* 55-76.

Sedikides, C., Rudich, E. A., Gregg, A. P., Kumashiro, M., & Rusbult, C. (2004). Are normal narcissists psychologically healthy?: Self-esteem matters. *Journal of Personality and Social Psychology, 87,* 400-416.

Shalley, C. E. & Gilson, L. L. (2004). What leaders need to know: A review of social and contextual factors that can foster or hinder creativity. *Leadership Quarterly, 15,* 33-53.

Shalley, C. E. & Oldham, G. R. (1997). Competition and creative performance: effects of competitor presence and visibility. *Creativity Research Journal, 10,* 337-345.

Simonton, D. K. (1999). Creativity as blind variation and selective retention: Is the creative process Darwinian? *Psychological Inquiry, 10,* 309-328.

Stucke, T. S. & Sporer, S. L. (2002). When a grandiose self-image is threatened: narcissism and self-concept clarity as predictors of negative emotions and aggression following ego-threat. *Journal of Personality, 70,* 509-532.

Taylor, C. W., & Barron, F. (1963). *Scientific creativity*. New York, NY: Wiley.

Tuckman, B. 1965. Developmental sequence in small groups. *Psychological Bulletin, 63,* 384–99

Watson, P. J., Grisham, S. O., Trotter, M. V., & Biderman, M. D. (1984). Narcissism and empathy: Validity evidence for the narcissistic personality inventory. *Journal of Personality Assessment, 48,* 301-306.

West, M. A. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology: An International Review, 51,* 355-424.

Zeigler-Hill, V. (2005). Discrepancies between implicit and explicit self-esteem: Implications for narcissism and self-esteem instability. *Journal of Personality, 74,* 119-144.