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Follow the Crowd in a New Direction: When Conformity Pressure Facilitates Group Creativity (And When It Does Not)

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Disciplines

Industrial and Organizational Psychology | Labor Relations | Organizational Behavior and Theory | Social Psychology | Social Psychology and Interaction | Work, Economy and Organizations

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Suggested Citation

Goncalo, J. A. & Duguid, M. M. (2011). *Follow the crowd in a new direction: When conformity pressure facilitates group creativity (and when it does not)* [Electronic version]. Retrieved [insert date], from Cornell University, ILR School site: <http://digitalcommons.ilr.cornell.edu/articles/528>

Required Publisher Statement

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Follow the Crowd in a New Direction:

When Conformity Pressure Facilitates Group Creativity (And When It Does Not)

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Abstract

Adopting a person by situation interaction approach, we identified conditions under which conformity pressure can either stifle or boost group creativity depending on the joint effects of norm content and group personality composition. Using a 2 x 2 x 2 experimental design, we hypothesized and found that pressure to adhere to an individualistic norm boosted creativity in groups whose members scored low on the Creative Personality Scale (Gough, 1979), but stifled creativity in groups whose members scored high on that measure. Our findings suggest that conformity pressure may be a viable mechanism for boosting group creativity, but only among those who lack creative talent.

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Follow the Crowd in a New Direction:

When Conformity Pressure Facilitates Group Creativity (And When it Does Not)

To remain competitive, many organizations actively seek out creative ideas that may lead in profitable new directions (Amabile, 1996). A creative idea is defined as one that is both novel and useful (Amabile, 1983). The classical research on group creativity has assumed that because creative ideas are initially out of the ordinary, even deviant, (Moscovici, 1976), pressure to conform to a group majority stifles creative expression (Crutchfield, 1962; Nemeth & Staw, 1989; Woodman, Sawyer & Griffin, 1993). This argument reached its clearest and most extreme form in Nemeth & Staw (1989) who claimed that creativity and conformity are a direct one-to-one tradeoff; the freer people are to deviate from shared expectations, the more likely they are to suggest creative solutions.

A decade ago, Flynn and Chatman (2001) tried to turn the tables on this perspective by proposing that conformity pressure can reinforce creativity relevant norms and thereby increase rather than stifle creative performance. This alternative point of view on group creativity suggests a number of exciting possibilities. Yet ten years later, the empirical evidence that would either definitively support or refute this prediction has not materialized.

Indeed, the classical assumption that conformity necessarily stifles creative expression is a logic that many researchers of creativity still find appealing. For example, Sutton (2002) suggested that to promote creativity firms should actively hire employees who break the rules and resist adapting to norms because these “misfits” offer new perspectives and initiate different solutions to problems. This logic is evident in a spate of recent research arguing that conformity pressure is useful for the implementation of new ideas, but stifles the generation of new ideas (Kaplan, Brooks-Shesler, King & Zaccaro, 2009), that psychological states that reduce

conformity also increase creative problem solving (Galinsky, Magee, Gruenfeld, Whitson & Liljenquist, 2008), and that mere exposure to incidental cues representing conformity reduce individuals' ability to generate creative solutions on subsequent tasks (Forster, Friedman, Butterbach & Sassenberg, 2005). Others are somewhat more optimistic and suggest that conformists may play a role in the creative process, but they do so by providing a supportive environment for their more creative counterparts rather than themselves being a source of creative ideas (Kaplan, et. al., 2009; Miron-Spektor, Erez & Naveh, 2011).

In this paper, we seek to re-open the question of whether conformity pressure can be used as a tool to facilitate creative idea generation. Existing research has adopted a rather partisan approach with each side of the debate arguing that their point of view on the conformity-creativity relationship is the most obvious, logical and consistent with the available evidence (Nemeth & Staw, 1989; Nemeth, 1997; Flynn & Chatman, 2001; Staw, 2009). Rather than fire yet another volley in one direction or the other, our objective is to specify the boundary conditions that make conformity pressure either a tool in the effort to promote creative expression or a stifling force that homogenizes thought and behavior. Specifically, we adopt a person-by-situation interaction approach (Oldham & Cummings, 1996; Shalley, Zhou & Oldham, 2004) to investigate the joint effects of conformity pressure, norm content and group personality composition in order to specify more precisely when conformity can promote the expression of creative ideas and when it will not.

Stand out or get out: Conformity to an individualistic norm

According to Flynn and Chatman (2001), those who argue that conformity pressure necessarily stifles creativity have not considered the possibility that the group may pressure people to comply with norms and expectations that are known to facilitate creative expression. If

norm content and conformity pressure are considered separately, then it is possible to specify conditions under which conformity pressure can actually promote creativity by encouraging the regular expression of creativity enhancing behaviors such as the freedom to dissent (Hornsey, Jetten, McAuliffe & Hogg & 2006). For example, an organization can create a norm that encourages the expression of dissenting opinions (content) and because everyone agrees the norm is important, those who believe that dissent should be silenced will be rejected by the group (conformity pressure).

There is some evidence to support this idea from research on organizational climate which shows that a strong climate supportive of innovation subsequently leads to higher rates of innovation (e.g. Gonzalez-Roma, Fortes-Ferreira & Peiro, 2009). Following the seminal article by Schneider, Salvaggio and Subirats (2002), climate strength is defined and measured as the degree of agreement around a particular belief; the higher the level of agreement, the stronger the climate. Yet, though agreement alone may imply the presence of conformity pressure (Allen, 1965), groups may also reach agreement because people believe the majority point of view is accurate and not because they fear the threat of social sanctions (Deutsch & Gerard, 1955). In other words, conformity should not be equated with agreement (Allen, 1965). Therefore, we focus specifically on conformity pressure to test the more extreme “strong norms” argument that groups can use the threat of rejection to reinforce norms that facilitate the expression of creative ideas (Flynn & Chatman, 2001; O’Reilly & Chatman, 1996).

Research has identified a number of creativity relevant norms that facilitate creativity in groups and might have a more powerful effect on creative performance when they are reinforced by conformity pressure (Caldwell & O’Reilly, 2003). Here we focus on a particular norm, individualism-collectivism, because it speaks directly to the controversy over whether

conformity pressure constrains creativity in groups. When individualism is the dominant orientation, persons tend to define themselves as independent of groups, autonomous, unique and guided by their personal goals and values (Jetten, Postmes & McAuliffe, 2002). In contrast, in collectivist cultures, there is a strong emphasis on social goals, a feeling of interdependence and a concern to maintain harmony within groups (Markus & Kitayama, 1991; Brewer & Chen, 2007).

It has been argued that since creativity requires independence of thought and a willingness to diverge from the group to suggest a new idea that might not be readily accepted, then individualistic norms are an advantage when creativity is a desired outcome (see Goncalo & Krause, 2010 for a review). Although there is evidence that individualism promotes creative expression (Beersma & De Dreu, 2005; Goncalo & Kim, 2010; Goncalo & Staw, 2006; Mok & Morris, 2010; Wiekens & Stapel, 2008), the idea that conformity to a norm for individualism can promote creativity seems to some like an oxymoron (Staw, 2009). Indeed, Goncalo and Staw (2006) argued that individualism promotes creativity in groups precisely because it *reduces* conformity pressure in team settings. To wit, one of the most robust and well replicated findings in cross-cultural research is that the pressure to conform to a group majority is stronger in collectivistic as opposed to individualistic cultures (Bond & Smith, 1996).

The problem with using Goncalo & Staw (2006) as evidence against the notion that conformity pressure can facilitate creativity, however, is that they did not differentiate between norm content (e.g., individualism) and conformity pressure (e.g., the extent to which members of a group agree that an individualistic norm is appropriate and are willing to reject or sanction people who do not comply with it) (Allen, 1965; Jackson, 1965; Mischel, 1968; O'Reilly & Chatman, 1996). Because cross-cultural studies have found that people are less likely to

conform to individualistic as opposed to collectivistic cultures (Bond & Smith, 1996), one might immediately assume that people of individualistic groups do not conform to any shared expectation. Instead, they feel free to behave in any way they see fit.

Yet a growing number of studies cast doubt on this assumption by demonstrating that groups can exert conformity pressure by *agreeing* that individualism is appropriate and *rejecting* those who do not fit. For instance, a recent stream of research has shown that people are more likely to behave individualistically when they strongly identify with an individualistic group (Jetten, et al, 2002), and that when group norms endorse individualism, people were more likely to value group members that displayed individualistic behaviors despite the fact that collectivistic behaviors were more likely to actually benefit the group (McAuliffe, Jetten, Hornsey & Hogg, 2003). These findings demonstrate how individualistic behavior can result from conformity to salient group norms (Miller, 1999).

Applying this research to group creativity, it is possible that conformity pressure within individualistic groups might not stifle the behaviors that are necessary for such groups to be creative but make them more likely to emerge with regularity (Mischel, 1968). Without conformity pressure, it is possible that greater behavioral variability will emerge as people deviate from the norm to engage in behaviors that are not well aligned with the task environment (Sorenson, 2002). In contrast, since individualistic norms promote behaviors that stimulate creativity, such as the willingness to stand out from the group and to openly express dissenting points of view, creating pressure to conform to this type of norm, a norm that is appropriate to the task of generating creative ideas, should facilitate performance.

How group creative personality composition influences the interaction between norm content and conformity pressure

Once creativity-relevant norms (such as individualism-collectivism) have been identified (Caldwell & O'Reilly, 2003), it might be advisable for groups who desire creative performance to apply conformity pressure to ensure individuals will fall in line (Flynn & Chatman, 2001; O'Reilly & Chatman, 1996). In other words, individualism should promote greater creativity in groups when pressure to conform to that norm is high rather than low.

An important assumption underlying this very straightforward two-way interaction prediction is that people will invariably respond to conformity pressure by complying with the group's expectations. However, even Asch's (1956) classical experiments suggest that this assumption will not always hold because individuals sometimes respond to group pressure by remaining independent or reacting against the norm (Levine, 1999). Moreover, the very personality traits that cause people to resist group pressure, such as independence, are also those that contribute to creative performance (Gough, 1979) making the application of conformity pressure in a creative context potentially risky.

We argue that the relationship between conformity pressure and norm content may be contingent on the personality composition of the group in two ways. First, highly creative people tend to be individualistic so conformity pressure might not be necessary to ensure such behaviors will emerge (Gough, 1979; Helson, 1996). For instance, Crutchfield (1951; 1955) found in a series of classic studies that people who scored high on a number of different measures of creativity were more independent than people who scored low. Hall and MacKinnon (1969) found that the most creative architects scored low on "communality", "good impression" and "achievement via conformity" scales of the California Psychological Inventory and scored low on the affiliation scale of the Adjective Checklist but high on its autonomy scale.

The tendency of creative personalities to exhibit individualistic behavior crosses professional boundaries and includes professionals working in many fields (Chambers, 1964; Helson, 1971; Roe, 1952; Rushton, Murray & Paunonen, 1987). Conversely, less creative personalities are fearful of criticism, socially anxious, deferent to authority and situationally focused as opposed to internally focused (Neulinger & Stein, 1971) and tend to be very high in personal need for structure (Roman, Moskowitz, Stein & Eisenberg, 1995). In other words, creative personalities are intrinsically more individualistic than their less creative counterparts and should behave individualistically even in the absence of pressure to do so (Feist, 1998).

Second, pressuring highly creative people to conform to group norms may actually have unintended negative consequences. Indeed, Albert Einstein is a frequently cited example of an eminently creative individual who was unable to be creative in environments with excessive conformity pressure and only managed to resume his creative endeavors once he moved into a less controlling environment (Amabile, 1979; Hennessey & Amabile, 1987; Kim, 2008). Einstein himself said of his educational experience, “Coercion had such a deterring effect <upon me> that, after I had passed the final examination, I found the consideration of any scientific problems distasteful to me for an entire year.” (Schlipp, 1951; pp. 17).

Einstein’s withdrawal behavior points to a response to conformity pressure among people with highly creative personalities (Barron & Harrington, 1981; Gough, 1979) that is consistent with psychological reactance (Brehm & Brehm, 1981). According to reactance theory, people desire freedom of choice and if perceived freedom is removed by external constraints then people will act to recapture a sense of freedom (Fogarty, 1997). Specifically, the target can reestablish freedom by behaving either contrary or opposite to what is desired by the source of influence (Kirchler 1999). Given reactance is particularly strong among people with an

independent sense of self (Dillard & Shen, 2005) it is not too surprising that highly creative personalities respond to conformity pressure in way that is consistent with the predictions of reactance theory. For example, conformity pressure can cause highly creative people to distance themselves psychologically by withdrawing from the group (Barron, 1988) to become introverted in social situations (Feist, 1998) and to resist the group by curtailing their task effort (Koestner & Losier, 1996). This response may be particularly problematic on idea generation tasks that require people to openly express their ideas to others (Camacho & Paulus, 1995). In this context, pressure to conform might be experienced as an unduly controlling external constraint that may curtail idea expression (Amabile, Golfarb & Brackfield, 1990). Taken together, in groups composed of highly creative personalities, an individualistic norm should promote greater creativity when pressure to conform is low rather than high.

In contrast, because less creative personalities perform better when there is structure and reduced ambiguity, the opportunity to conform may be desirable since the group's expectations are clear (Judge, Thoreson, Pucik & Welbourne, 1999; Norton, 1975; Roman et al, 1995). For example, Neulinger (1965) reported that less creative personalities reported enjoying an unpleasant task more when they were forced to perform it than when they were given a choice. In addition, Zhou (2003) found that situational factors like supervisor monitoring and the presence of creative co-workers influenced less creative personalities more so than highly creative personalities. Conformity pressure may be necessary to elicit individualistic behaviors, such as independence and competition, that are appropriate to the task of generating creative solutions (Goncalo & Krause, 2010) but are not known to be a part of the behavioral repertoire of less creative people (Gough, 1979). Therefore, in groups composed of less creative personalities,

an individualistic norm should promote greater creativity when pressure to conform is high rather than low.

Hypothesis

In sum, the effect of norm content on group creativity will be contingent on the interplay between group personality composition and conformity pressure. Thus, we hypothesize three-way interaction effects. Specifically, an individualistic norm will promote creativity in groups composed of less creative personalities when conformity pressure is high rather than low. Conversely, an individualistic norm will promote creativity in groups composed of highly creative personalities when conformity pressure is low rather than high.

Method

Participants and design

Four hundred ninety-six undergraduate students at a private university in the United States participated in the study in exchange for \$15. The sample consisted of 49% females. The racial/ethnic composition of the sample was 68% European-Americans, 15% Asians, 5% African-Americans, 8% Hispanics, and 4% East Indian. The study was a 2 (Norm Content: Individualism versus Collectivism) x 2 (Conformity Pressure: High versus Low) x 2 (Creative Personality: High versus Low) factorial design. Groups of four people were randomly assigned to each of the four experimental conditions resulting in a total of 124 groups.

Experimental Procedure

Individuals interested in participating in the study were asked to complete a pre-measure consisting of the 30-item scale of the Creative Personality Scale (CPS; Gough, 1979) of the Adjective Check List (Gough & Heilbrun, 1965), which is a widely used measure of creative potential that has been used and validated in a number of occupational sub-samples (Hocevar &

Bachelor, 1989; Kaduson & Schaefer, 1991; McGrae, 1987; Oldham & Cummings, 1996). Of the 30 adjectives, 18 describe highly creative people (e.g., wide interests, inventive, original). Each of these checked adjectives was given a value of + 1. The remaining 12 adjectives describe less creative people (e.g. narrow interests, cautious, submissive). Each of these checked adjectives was assigned a value of -1. The values were then summed to form a CPS index.

Groups were formed based on the results of the pre-measure with three participants who scored among the top one-third of the scale (CPS score greater than or equal to 7; top 34% of the sample) assigned to the highly creative personality condition and three participants who scored among the bottom one-third of the adjective checklist assigned to the low creative personality condition (CPS score less than or equal to 3; bottom 32% of the sample). Existing research has adopted this approach because using the top and bottom thirds of the initial sample ensures that participants who had high creativity scores and those who had low scores formed separate and distinct groups that did not overlap at the median (e.g., Camacho & Paulus, 1995). As we explain in greater detail below, in the first phase of the experiment each group also included a fourth participant whose score on the creativity scale placed them in the middle third of the sample but who did not stay with their group for the entire study.ⁱ

The actual study was divided into 3 phases and took about 50 minutes to complete.

Phase 1: Norm content manipulation: At the beginning of the experiment, participants were told that the experimenter was interested in how groups work together to generate new ideas.

Following the procedures used by Goncalo & Staw (2006), we manipulated norm content by asking each group member to fill out a pre-discussion survey that took 10 minutes to complete. All participants were told that the survey was designed to assess how they viewed themselves in relation to other people.

Participants randomly assigned to the individualistic condition were asked to write three statements: (1) describing yourself, (2) why you think you are not like most other people, and (3) why you think it might be advantageous to “stand out” from other people. Participants randomly assigned to the collectivistic condition were asked to write three statements: (1) describing the groups to which you belong, (2) why you think you are like most other people, and (3) why you think it might be advantageous to “blend in” with other people.

Phase 2: Conformity Pressure Manipulation

After completing the norm content manipulation, participants were told that they would be working together as a group on two tasks. According to the most widely used definition, conformity pressure to a group norm may be induced by giving either descriptive information (what everyone else is doing in this situation) or injunctive information (social sanctions will result from non-compliance) (Allen, 1965; Cialdini, Reno & Kallgren, 1990). To strengthen the manipulation, we incorporated both factors by asking participants to complete a shared task and by telling the groups assigned to the high conformity condition that not only do most people behave (*individualistically/collectivistically*) while working on this task (descriptive) but that their group would also have the opportunity to vote on the person who was the least (*individualistic/collectivistic*) and ask them to leave for the duration of the study (injunctive). We defined individualism for our participants as a norm in which people are expected to remain independent and to prioritize their own goals over those of the group. Conversely, we defined collectivism as a norm in which people are expected to be cooperative and to prioritize their group’s goals over their own personal goals. The specific wording, with the phrases appropriate to each condition in parentheses, are reproduced below with the instructions delivered to groups in the individualistic versus collectivistic conditions in italics:

In the **high conformity** conditions:

“People often behave (*individualistically/collectivistically*) in groups. Indeed, over the last several years we have observed hundreds of groups as they perform these tasks and all of the groups tried to be as (*individualistic/collectivistic*) as possible while working on this task. Since everyone seems to agree on how to approach these tasks, we want to help you enforce a norm for (*individualism/collectivism*) in your group as well. We only need three people to complete the second task, so each of you will be asked to anonymously vote on the person in your group who was the least (*individualistic/collectivistic*) while working on the first task and that person will be asked to go to another room and perform an alternate task.”

In the **low conformity** conditions:

“People sometimes behave (*individualistically/collectivistically*) in groups. Indeed, over the last several years, we have observed hundreds of groups as they perform these tasks and some of the groups were more (*individualistic/collectivistic*) than others while working on this task. Since no one seems to agree on how to approach these tasks, we will let you decide for yourselves how (*individualistic/collectivistic*) you want to be. We only need three people to complete the second task, so we will be asking one person at random to go to another room and complete an alternate task.”

After completing the conformity manipulation, all groups were asked to complete the exercise in which they were asked to decide, as a group, on the items a family should take with them on vacation to the moon. After 10 minutes had elapsed, the groups assigned to the *high conformity* condition were asked to vote on the person in their group who was the least (*individualistic/collectivistic*) while working on the task. In order to provide privacy, a screen

was set up at each seat and each group member was provided with a slip of paper for voting that had the letters “A”, “B”, “C” and “D” printed on it. These letters corresponded to the spots where group member were seated. After each group member voted, the experimenter collected the slips. After looking at each, she announced which of the group members would have to go next door and perform an alternate task. In actuality, the participants who were voted out of the groups were chosen to be excluded beforehand because they had received a score on the CPS that placed them in the middle third of the sample. Therefore, they did not represent the least or the most creative participants.

The groups assigned to the *low conformity* condition were told that one participant was randomly selected to go next door and perform an alternate task. As in the high conformity condition, the person asked to leave received a CPS score that placed them in the middle third of the sample. This was done to ensure that one person left each group across all of the conditions, since membership change itself can influence subsequent creativity (Choi & Thompson, 2005).

Phase 3: Brainstorming

All of the groups were then asked to complete one more task. They were told that this task was a scenario in which they would be asked to generate ideas. The scenario was read to them as follows: “After years of mismanagement and poor quality food, the campus restaurant has finally gone bankrupt and is being shut down. The school administration is trying to decide what new business should go into that space. You have 15 minutes to come up with as many creative solutions to their problem as possible. For this study, a creative idea is both novel and useful.” All groups were given 15 minutes to complete the task.ⁱⁱ All participants were asked to complete a survey at the end of the brainstorming session consisting of the manipulation checks that are described in more detail below.

Measures

Dependent variables

Number of ideas generated: The most frequently used measure of brainstorming performance is the sheer number of ideas a group is able to generate in a fixed amount of time. This is because the more ideas a group generates, the more likely they are to arrive at a quality solution (Diehl & Stroebe, 1987; Simonton, 1999). Therefore, we counted the total number of non-repetitive ideas each group was able to generate in the 15-minute idea generation period ($M = 47.92$, $S.D. = 22.60$).ⁱⁱⁱ All analyses of the number of ideas generated reported below exclude repeated ideas.

Idea creativity: To meet the definition of creativity, however, the ideas generated must satisfy the criteria of both novelty and usefulness (Amabile, 1983). To address both parts of this definition, we asked two coders who were blind to the experimental conditions and the hypotheses of the study to code each non-redundant idea for creativity, which was defined as the extent to which an idea is both novel and useful. Each coder was given a scale of 1 to 5, with the following definitions for specific points on the scale:

5 = Extremely creative.

3 = Average creativity

1 = Not at all creative.

The coders were students who used the campus restaurant regularly and therefore were very familiar with the space. Recently, when actually converting another space, the administration surveyed the student body and formed focus groups in order to generate and vet ideas; therefore we were confident that undergraduate raters were an appropriate choice to code

the ideas. The inter-rater correlation was significant, ($ICC = .79, p < .01$) so their scores were averaged together ($M = 3.70, S.D. = .34$). The correlation between the number of ideas generated and the rating of creativity was $r = .54, p < .01$.

Manipulation checks:

The conformity pressure manipulation check consisted of four items, (1) I felt pressure to follow the norm in my group, (2) I was expected to follow the norm during the group discussion, (3) in my group people had to follow the norm or they would face rejection, and (4) if I hadn't followed the norm, my group would have asked me to leave. Participants responded on a 7 point Likert scale with 1 = Very uncharacteristic and 7 = Very characteristic. The scale was reliable ($\alpha = .82$), and the items were averaged together. Since we measured conformity pressure at the individual level, we aggregated it to the group level by averaging scores across members of each group. Prior to aggregation, we examined whether there was sufficient agreement between the group members. Estimates of inter-rater agreement ($r^{wg} = .72; ICC(1) = .53$) suggested reasonable levels of convergence justifying aggregation.

We checked the effectiveness of our individualism-collectivism manipulation using items drawn from measures that have been validated and used in cross-cultural research (Triandis, 1995; Triandis & Gelfand, 1998). Participants were instructed to read the following items and rate the extent to which they accurately describe their behavior during the brainstorming session. (1) I would rather depend on myself to generate ideas than the group, (2) I relied on myself to come up with new ideas, (3) I was trying to do "my own thing" during the brainstorming session, and (4) my personal identity in the brainstorming group, independent of others, was very important to me. The scale reliability was acceptable ($\alpha = .78$) and the items were averaged together. Since this measure was taken after the group interaction, the individual scores were no

longer independent. So we aggregated the items to the group level by averaging scores across members of each group. Prior to aggregation, we examined whether there was sufficient agreement between the group members. Estimates of inter-rater agreement ($r^{wg} = .76$; ICC (1) = .49) suggested reasonable levels of convergence justifying aggregation.

Results

Manipulation checks

A 2 (Creative Personality: High versus Low) x 2 (Conformity Pressure: High versus Low) x 2 (Norm Content: Individualism versus Collectivism) ANOVA on the manipulation check measure of conformity pressure yielded only a main effect of the conformity pressure condition, such that groups in the high conformity pressure condition reported experiencing greater conformity pressure ($M = 3.97$, $S.D. = .93$) than did groups in the low conformity pressure condition ($M = 3.28$, $S.D. = .87$), $F(1, 115) = 17.69$, $p < .01$. There was no main effect of norm content, $F(1, 115) = .29$, ns, nor group personality composition, $F(1, 115) = .38$, ns. The two-way interactions and the three-way interaction were not significant.

A 2 (Creative Personality: High versus Low) x 2 (Conformity Pressure: High versus Low) x 2 (Norm Content: Individualism versus Collectivism) ANOVA on the manipulation check measure of norm content yielded only a main effect of the norm content condition such that groups in the individualism condition reported being more individualistic ($M = 3.60$, $S.D. = .78$) than did groups in the collectivism condition ($M = 3.15$, $S.D. = .81$), $F(1, 115) = 8.39$, $p < .01$. There was no main effect of conformity pressure, $F(1, 115) = .46$, ns, nor group personality composition, $F(1, 115) = .02$, ns. The two-way interactions and the three-way interaction were not significant.

Number of ideas generated

A 2 (Creative Personality: High versus Low) x 2 (Conformity Pressure: High versus Low) x 2 (Norm Content: Individualism versus Collectivism) ANOVA revealed no significant main effect of creative personality, $F(1, 116) = 1.99$, ns. There was a significant main effect of conformity pressure, $F(1, 116) = 5.92$, $p < .05$, such that groups generated fewer ideas overall when conformity pressure was high ($M = 44.02$; $S.D. = 21.93$) than when it was low ($M = 52.07$; $S.D. = 22.75$). There was also a significant main effect of norm content, $F(1, 116) = 18.13$, $p < .01$, such that groups generated more ideas overall when the norm was to be individualistic ($M = 55.62$; $S.D. = 23.19$) than collectivistic ($M = 39.96$; $S.D. = 19.10$). None of the two-way interactions were significant (see Table 1). Finally, there was a significant triple interaction between creative personality, conformity pressure and norm content, $F(1, 116) = 18.53$, $p < .01$.

We tested our triple interaction hypothesis using planned contrasts. The results showed that, as predicted, an individualistic norm promoted the expression of more creative ideas in groups composed of less creative personalities when conformity pressure was high ($M = 62.00$, $SD = 27.14$) rather than low ($M = 43.75$, $SD = 23.75$), $F(1, 116) = 7.59$, $p < .01$. Also, as predicted, the pattern of results in groups composed of highly creative personalities was the reverse: An individualistic norm promoted the expression of more creative ideas when conformity pressure was low ($M = 70.40$, $SD = 13.97$) rather than high ($M = 45.14$, $SD = 27.82$), $F(1, 116) = 12.43$, $p < .01$.

Another way to test our triple interaction hypothesis is by investigating when the expected advantages of individualism relative to collectivism will emerge depending on group personality composition. The results were also consistent with our prediction that conformity pressure is more usefully applied in group composed of less creative personalities. In such groups, pressure to be individualistic stimulated more creativity ($M = 62.00$, $SD = 27.14$) than

pressure to be collectivistic ($M = 27.29$, $SD = 14.26$), $F(1, 116) = 28.33$, $p < .01$, but among groups composed of highly creative personalities, pressure to be individualistic did not boost creativity ($M = 45.14$, $SD = 27.82$) relative to groups pressured to be collectivistic ($M = 40.37$; $SD = 11.66$), $F(1, 116) = 0.44$, ns. In contrast, in groups of highly creative personalities, an individualistic norm boosted creativity ($M = 70.40$, $SD = 13.97$) relative to a collectivistic norm ($M = 45.60$, $SD = 21.22$) only when conformity pressure was low, $F(1, 116) = 14.79$, $p < .01$.

Idea creativity

A 2 (Creative Personality: High versus Low) x 2 (Conformity Pressure: High versus Low) x 2 (Norm Content: Individualism versus Collectivism) ANOVA revealed a significant main effect of creative personality, $F(1, 116) = 7.32$, $p < .01$, such that groups composed of highly creative individuals generated ideas that were significantly more creative ($M = 3.78$; $S.D. = .30$) than did groups composed of less creative individuals ($M = 3.64$; $S.D. = .37$). There was a significant main effect of conformity pressure, $F(1, 116) = 7.33$, $p < .01$, such that groups generated less creative ideas overall when conformity pressure was high ($M = 3.58$; $S.D. = .55$) than when it was low ($M = 3.77$; $S.D. = .36$). There was also a significant main effect of norm content, $F(1, 116) = 9.22$, $p < .01$, such that groups generated more creative ideas overall when the norm was to be individualistic ($M = 3.79$; $S.D. = .35$) than collectivistic ($M = 3.62$; $S.D. = .32$). The two-way interaction between group personality composition and conformity pressure was significant (See Table 1). The interaction showed that, for highly creative people, creativity was higher when conformity pressure was low ($M = 3.91$; $S.D. = 0.29$) rather than when it was high ($M = 3.63$; $S.D. = 0.23$), $F(1, 59) = 16.96$, $p < .01$, whereas for less creative people there was no difference between the high ($M = 3.64$; $S.D. = .38$) and low ($M = 3.63$; $S.D. = .37$) conformity pressure conditions, $F(1, 63) = .03$, ns. This finding confirms existing research

suggesting that highly creative people are more sensitive to conformity pressure in general (Feist, 1998). Finally, there was a significant triple interaction between creative personality, conformity pressure and norm content, $F(1, 116) = 26.14, p < .01$ (See Table 1).

We tested our triple interaction hypothesis using planned contrasts. The results showed that, as predicted, an individualistic norm promoted the expression of more creative ideas in groups composed of less creative personalities when conformity pressure was high ($M = 3.90, SD = 0.27$) rather than low ($M = 3.58, SD = 0.38$), $F(1, 116) = 10.21, p < .01$. Also, as predicted, the pattern of results in groups composed of highly creative personalities was the reverse: an individualistic norm promoted the expression of more creative ideas when conformity pressure was low ($M = 4.07, SD = 0.25$) rather than high ($M = 3.57, SD = 0.23$), $F(1, 116) = 22.30, p < .01$ (See Figure 1).

Additional analyses comparing individualism to collectivism were also consistent with the analyses for the number of ideas expressed and with our hypothesis. Specifically, in groups composed of less creative personalities, pressure to be individualistic stimulated more creativity ($M = 3.90, SD = 0.27$) than pressure to be collectivistic ($M = 3.37, SD = 0.28$), $F(1, 116) = 9.80, p < .01$. However, among groups composed of highly creative personalities, pressure to be individualistic did not boost creativity ($M = 3.57, SD = 0.23$) relative to groups pressured to be collectivistic ($M = 3.69, SD = 0.21$), $F(1, 116) = 1.27, ns$. And, in groups of highly creative personalities, an individualistic norm boosted creativity ($M = 4.07, SD = 0.25$) relative to a collectivistic norm ($M = 3.76, SD = 0.25$) only when conformity pressure was low, $F(1, 116) = 9.15, p < .01$ (See Figure 1). These results again suggest that conformity pressure is most likely to boost creativity in groups of less creative personalities assuming the content of the norm is appropriate to tasks that require creativity (e.g., individualism).

Discussion

A longstanding contention in the creativity literature is that conformity pressure homogenizes thought and behavior and should therefore stifle the free expression of ideas. Consequently, groups who desire creativity should adopt a “less is more” approach and give people wide latitude to deviate from shared expectations (Nemeth, 1997; Nemeth & Staw, 1989). Recently, however, this position has been debated by scholars who argue that conformity pressure is a tool that can be used to reinforce norms (like individualism) that are relevant to creative idea expression (Flynn & Chatman, 2001). In this paper, we treated norm content and conformity pressure as orthogonal dimensions to provide a more comprehensive test of the idea that conformity pressure can stimulate group creativity. Our results suggest that, indeed, pressure to be individualistic can facilitate idea expression, but only in groups composed of people who are not highly creative. These results not only contribute to current research by specifying more clearly the conditions under which individualistic norms will stimulate creativity, but they also have broader implications for the potential use of social control to manage creativity in organizations.

One limitation of this study is that groups were homogeneous with respect to creative personality. Our focus in this study, both theoretically and empirically, was on people who are either high or low in terms of creative personality. A strength of this approach is that our split ensured that the two groups, high and low, did not overlap at the median. A limitation, however, is that we do not know how people at the middle of the distribution might respond to conformity pressure. We know that highly creative and less creative people have strikingly different responses to conformity pressure, but we cannot pinpoint exactly where in the personality distribution this shift takes place. Future research might examine groups that are a mix of highly

creative and less creative people. Such a diverse group might create a challenge given our findings that different personalities may require a different approach to managing for creativity; the more controlling approach might work very well for some people but stifle others.

It would also be interesting to investigate how group personality composition impacts creativity over time. Our results showed that less creative personalities compelled to follow an individualistic norm generated ideas that were just as creative as highly creative personalities who followed an individualistic norm of their own accord. Nevertheless, it is still possible that highly creative people may be more suited to the early stages of exploration while less creative people may be more suited to implementation and to the generation of ideas that are incrementally related to what is already known (Audia & Goncalo, 2007).

Theoretical contributions

In contrast to existing research, a unique implication of this study is that conformity pressure under some circumstances may actually be used to capitalize on the creative potential of individualistic groups. Nemeth and Staw (1989) noted that one of the most significant psychological tendencies is a strain toward uniformity because, when left to their own devices, people will mimic each other and become more similar in their behavioral patterns over time (Sherif, 1936). Perhaps, in order to discourage homogeneity of thought and deed, there needs to be an equally strong force that compels people to remain independent from the group. While most people associate conformity with pressure toward homogeneity, perhaps current definitions of conformity need to be expanded to account for pressure toward heterogeneity: be unique or face rejection.

The interaction with group personality composition is particularly important given that in ongoing work groups, people with creative personalities (Barron & Harrington, 1981; Gough,

1979; Helson, 1996) are likely to be attracted to, selected by and retained if their traits are conducive to creative problem solving (Schneider, 1987). This process will likely result in greater homogeneity within groups on the personality traits associated with highly creative people. There is growing evidence, however, that not everyone will respond to situational inducements in the same way, and it is therefore necessary to adopt an interactional perspective that takes both creativity-relevant personality traits and situation factors into account (Oldham & Cummings, 1996; Shalley et al., 2004).

Our results suggest that since highly creative people by their very nature attempt to stand out and assert their uniqueness (Gough, 1979), such heavy handed techniques are not only unnecessary but may actually have unintended negative consequences. A small but growing body of research is focused on the personality composition of creative groups (e.g. Baer, Oldham, Jacobsohn, & Hollingshead, 2008). An assumption implicit in much of this research is that, to be creative, groups should filter out people who do not have traits that are conducive to creative performance. A complimentary approach, however, would be to select relatively uncreative people and use social influence as a mechanism to make people creative in collaboration with one another.

In light of the conventional wisdom that effective brainstorming groups are those that rule out criticism, our ability to elicit creative ideas through the use of social sanctions is also intriguing (Diehl & Stroebe, 1987). In future research, it would be interesting to investigate whether the efficacy of the traditional brainstorming instructions might also vary by group personality composition. Perhaps groups composed of less creative people will welcome the structure that those instructions provide while highly creative people might find them distracting and unnecessary. Interestingly, among the group composed of less creative personalities, there

was only a marginally significant difference between the individualistic groups with high conformity pressure and the collectivistic groups with low conformity pressure, $F(1, 116) = 3.87$, $p < .10$. Future research might investigate the mechanism that might explain this effect, assuming it is indeed a robust finding. It is possible that less creative personalities require a group that encourages independence within the safe confines of a relatively structured environment. Collectivism and conformity pressure may play similar roles in reducing situational ambiguity given that the two are intertwined (Bond & Smith, 1996). The results clearly show, however, that highly creative personalities do not require either to perform creatively and even less creative personalities do not benefit when collectivism is reinforced by conformity pressure.

Finally, our results also have implications for research on individualism-collectivism. We chose not to include a “no norm” control condition because norms in groups can arise quickly and without provocation making a truly normless group difficult to observe. Nevertheless, such a control might be useful for sorting out whether individualism promotes creativity, collectivism stifles creativity, or both. Nevertheless, our results are consistent with growing evidence that individualism (relative to collectivism) is a norm more suited to creative idea expression (Goncalo & Krause, 2010). However, more importantly our results run counter to the prevailing view of individualistic groups as a “loose” collection of individuals who are relatively free of normative constraints (Triandis, 1994). In contrast, this paper contributes to a small set of studies showing that people in groups guided by an individualistic norm are also aware of and behave in accordance with a set of prescriptions that guide appropriate behavior (e.g. Gelfand & Realo, 1999; Hornsey et al., 2006; McAuliffe, Jetten, Hornsey & Hogg, 2003; Miller, 1999). For instance, Bond and Smith (1996) found that people from individualistic

cultures were less conforming in the Asch (1956) line studies than people from collectivistic cultures. But an alternative interpretation of their results might be that people from individualistic cultures have been socialized to the value of remaining independent and were merely conforming to the norms of the groups in which they normally interact.

Implications for managing creativity in organizations: How to win the war for talent

In a strong economy, the war for talent may be fierce as companies compete for “star” performers on the assumption that their great ideas will follow (Groysberg, Nanda & Nohria, 2004). However, this approach has been criticized as expensive and unproven, prompting some management scholars to suggest that firms should opt out of the race. For instance, O’Reilly and Pfeffer (2003) suggest that companies can achieve extraordinary results with “ordinary” people and Sutton (2007) suggests that great systems are more important than great people. However, it is unclear whether this approach will extend to the management of creativity.

In fact, the most innovative firms reflect a mix of these two strategies. For instance, Motorola uses a system developed at the Software Engineering Institute at Carnegie-Mellon that actively manages and accounts for creative performance while Sun Microsystems insists that creativity cannot be managed from the top and instead gives talented people the general outlines of a task and then leaves them alone (Florida, 2002). Management scholars are split along similar lines with some suggesting that creativity can be managed with a cult-like culture in which misfits are rejected (O’Reilly & Chatman, 1996; Collins & Porras, 1994) while others favor a “less is more” approach (Nemeth, 1997).

While one could debate the relative merits of each, our results suggest that both strategies may be useful for managing the creativity of different types of people. Firms that undertake the expense of attracting and retaining virtuosos with proven creative talent might do well to give

them the autonomy to decide for themselves how they should behave. In contrast, firms that choose to opt out of the race for creative talent can elicit creativity by using conformity pressure to encourage individualistic behavior; thus, such cultures may arise naturally. For instance, Gelfand et al (2006) point to societies that are individualistic and loose (conformity is low), such as the United States and New Zealand, but they also point to societies that are individualistic and tight (conformity is high), such as Germany (Triandis, 1989). The research on strong culture organizations also offers some guidelines about how to create a strongly individualistic organization (O'Reilly & Chatman, 1996) which might include putting people through a rigorous socialization process that emphasizes the value of standing out and being different (Van Maanen & Schein, 1979).

While this advice sounds straightforward, there is still plenty of room for error. For instance, overzealous organizations might try to combine strategies by not only selecting highly creative people but also ensuring that social sanctions are in place to direct employees who might stray from the group's expectations. After all, the most effective way to manage most behaviors at work is to use both attraction-selection-attrition processes (Schneider, 1987) in concert with socialization (Cable & Parsons, 2001). However, in terms of managing creativity, these two approaches may be substitutable, as the use of one may detract from the effectiveness of the other. Firms like Motorola that use a relatively controlling approach to manage creativity (Florida, 2002) might encounter an additional challenge. If such firms have a strong identity as a company that values creativity (Glynn & Abzug, 2002), then they may inadvertently attract the types of highly creative people that will feel stifled in such environments.

Finally, for groups that want to use social influence to elicit creativity from the average employee, current research has identified a number of norms that can facilitate creativity in

groups. For instance, West (1990) suggested that groups with (1) a vision, (2) participative safety, (3) task orientation, and (4) support for innovation are more innovative than groups that lack these norms. More recently, Caldwell & O'Reilly (2003) found that norms that (1) support risk taking, (2) tolerate mistakes, (3) encourage teamwork, and (4) increase speed of action all contribute to group creativity. One implication of our findings is that groups will realize the greatest gains in terms of increasing their creative capacity by creating pressure to conform to all of these norms. However, future research might also examine the possibility that while certain norms that promote individualism should be strengthened, attempts to strengthen other norms that are arguably more collectivistic in nature (Caldwell & O'Reilly, 2003) might actually backfire and lead to lower levels of creativity. In other words, managers might be faced with the complicated task of determining from an array of norms that are relevant to creativity which ones should or should not be reinforced by conformity pressure.

Conclusion

The traditional view holds that conformity is the very antithesis of creativity. Perhaps Moscovici (1985: 385) expressed this sentiment most succinctly, "The innovation process in its genuine form stands at the opposite pole from the conformity process and cannot conceivably be one its manifestations." The present research suggests this assumption should be relaxed so that we can learn to better exploit through conformity pressure the creativity of less creative personalities in addition to the lucky few whose creative talent requires no intervention.

References

- Allen, V.L., (1965). Situational factors in conformity. *Advances in Experimental Psychology*, 2, 133-175.
- Amabile, T. M. (1979). Effects of external evaluation on artistic creativity. *Journal of Personality and Social Psychology*, 37, 221-233.
- Amabile, T. (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.
- Amabile, T.M., Goldfarb, P. & Brackfield, S. (1990). Social influences on creativity: Evaluation, coaction and surveillance. *Creativity Research Journal*, 3, 6-21.
- Asch, S. E. (1956). Studies of independence and conformity: A minority of one against a unanimous majority, *Psychological Monographs*, 70(9, Whole No. 416).
- 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.
- 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, 4, 255.
- Barron, F. (1988). Putting creativity to work. In R.J. Sternberg (Ed.) *The Nature of Creativity* (pp. 76-98). Cambridge University Press.
- Barron, F., & Harrington, D.M. (1981). Creativity, intelligence, and personality. *Annual Review of Psychology*, 32, 1, 439.
- 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, 3, 345-357.
- Bond, R. & Smith, P.B. (1996). Culture and conformity: A meta-analysis of studies using Asch's (1952b, 1956) line judgment task. *Psychological Bulletin*, 119, 111-137.
- Brehm, S., & Brehm, J.W. (1981). *Psychological reactance: A theory of freedom and control*. New York: Academic Press.
- Brewer, M.B., & Chen, Y.R. (2007). Where (who) are collectives in collectivism? Toward conceptual clarification of individualism and collectivism. *Psychological Review*, 114, 1, 133.
- Cable, D.M., & Parsons, C.K. (2001). Socialization tactics and person-organization fit. *Personnel Psychology*, 54, 1, 1.
- Caldwell, D.F. & O'Reilly, C.A. (2003). The determinants of team based innovation in organizations: The role of social influence. *Small Group Research*, 34, 4, 497-517.
- Camacho, L. M., & Paulus, P. B. (1995). The role of social anxiousness in group brainstorming. *Journal of Personality and Social Psychology*, 68, 1071–1080.
- Chambers, J.A. (1964). Relating personality and biographical factors to scientific creativity. *Psychological Monographs: General and Applied*, 78, 1-20.
- Choi, H.S. & Thompson, L. (2005). Old wine in a new bottle: Impact of membership change on group creativity. *Organizational Behavior and Human Decision Processes*, 98, 121-132.
- Cialdini, R.B., Reno, R.R., & Kallgren, C. (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, 6, 1015.
- Collins, James & Porras, Jerry (1994). *Built To Last: Successful Habits of Visionary Companies*.

New York: Harper Collins Publisher.

- Crutchfield, R.S. (1951). Assessment of persons through a quasi-group interaction technique. *Journal of Abnormal and Social Psychology*, 46, 4, 577.
- Crutchfield, R.S. (1955). Conformity and character. *The American Psychologist*, 10, 5, 195.
- Crutchfield, R.S. (1962). Conformity and creative thinking. In H. E. Gruber, G. Terrell, & M. Wertheimer (Eds.), *Contemporary Approaches to Creative Thinking*, 120-140. (pp. 120-140). Englewood Cliffs, NJ: Prentice-Hall.
- Deutsch, M. & Gerard, H.B., (1955). A study of normative and informational social influences upon individual judgment. *Journal of Abnormal and Social Psychology*, 51, 3, 629.
- 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.
- Dillard, J. P., & Shen, L. (2005). On the nature of reactance and its role in persuasive health communication. *Communication Monographs*, 72, 144–168.
- Feist, G.J. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and Social Psychology Review*, 2, 290-309.
- Florida, R. (2002). The economic geography of talent. *Annals of the Association of American Geographers*, 92, 4, 743.
- Flynn, F. & Chatman, J. (2001). Strong cultures and innovation: Oxymoron or opportunity? In S. Cartwright, et.al. (Eds.) *International Handbook of Organizational Culture and Climate*, Sussex, John Wiley & Sons.

- Fogarty, J. S. (1997). Reactance theory and patient noncompliance. *Social Science and Medicine*, 45, 1277–1288.
- Forster, J., Friedman, R.S., Butterbach, E.B. & Sassenberg, K. (2005). Automatic effects of deviancy cues on creative cognition. *European Journal of Social Psychology*, 35, 3, 345-359.
- Galinsky, A.D., Magee, J.C., Gruenfeld, D.H., Whitson, J.A. & Liljenquist, K.A. (2008). Power reduces the press of the situation: Implications for creativity, conformity and dissonance. *Journal of Personality and Social Psychology*, 95, 6, 1450-1466.
- Gelfand, M. J. & Realo, A. (1999). Individualism-collectivism and accountability in intergroup negotiations. *Journal of Applied Psychology*, 84, 721-736.
- Gelfand, M.J., Nishii, L.H. & Raver, J.L. (2006). On the nature and importance of cultural tightness and looseness. *Journal of Applied Psychology*, 91, 6, 1225-1244.
- Glynn, M.A., & Abzug, R. (2002). Institutionalizing identity: Symbolic isomorphism and organizational names. *Academy of Management Journal*, 45, 267–80.
- 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. & Krause, V. (2010). Being different or being better?: Disentangling the effects of independence and competition on group creativity. In: S. Thye & E.J. Lawler (Eds) *Advances in Group Processes* (Vol. 27), 129-157.
- Goncalo, J.A. & Staw, B.M. (2006). Individualism-collectivism and group creativity. *Organizational Behavior and Human Decision Processes*, 100, 96-109.
- Gonzalez-Roma, V., Fortes-Ferreira, L. & Perio, J.M. (2009). Team climate, climate

- strength and team performance. A longitudinal study. *Journal of Occupational and Organizational Psychology*, 82, 3, 511.
- Gough, H.G. (1979). A creative personality scale for the Adjective Check List. *Journal of Personality and Social Psychology*, 37, 8, 1398.
- Gough, H. G, & Heilbrun, A. B., Jr. (1965). *The Adjective Check List*. Palo Alto, CA: Consulting Psychologists Press
- Groysberg, B., Nanda, A., & Nohria, N. (2004). The risky business of hiring stars. *Harvard Business Review*, 82, 5, 92.
- Hall, W.B. & MacKinnon, D.W. (1969). Personality inventory correlates of creativity among architects. *Journal of Applied Psychology*, 53, 322-326.
- Helson, R. (1971). Women mathematicians and the creative personality. *Journal of Consulting and Clinical Psychology*, 36, 210-220.
- Helson, R. (1996). In search of the creative personality. *Creativity Research Journal*, 9, 295-306.
- Hennessey, B. A., & Amabile, T. M. (1987). *Creativity and learning*. Washington, DC: NEA Professional Library.
- Hornsey, M.J., Jetten, J., McAuliffe, B.J., & Hogg, M.A. (2006). The impact of individualist and collectivist group norms on evaluations of dissenting group members. *Journal of Experimental Social Psychology*, 42, 1, 57.
- Hocevar, D., & Bachelor, P. (1989). A taxonomy and critique of measurements used in the study of creativity. In J. A. Glover, R. R. Ronning, & C. R. Reynolds (Eds.), *Handbook of creativity* (pp.53-75). New York: Plenum.
- Jackson, J.M. (1965). Structural characteristics of norms. In I.D. Steiner & M. Fishbein (Eds.)

- Current Studies in Social Psychology (pp. 301-309). New York: Holt, Rinehart & Winston.
- Jetten, J., Postmes, T., & McAuliffe, B.J. (2002). "We're all individuals": Group norms of individualism and collectivism, levels of identification, and identity threat. *European Journal of Social Psychology*, 32, 189-207.
- Judge, T.A., Thoresen, C.J., Pucik, V., & Welbourne, T.M. (1999). Managerial coping with organizational change: A dispositional perspective. *Journal of Applied Psychology*, 84, 107–122.
- Kaduson, H.G., & Schaefer, C.E. (1991) Concurrent Validity of the Creative Personality Scale of the Adjective Checklist. *Psychological Reports*, 69, 601-602.
- Kaplan, S., Brooks-Shesler, L., King, E.B. & Zaccaro, S. (2009). Thinking inside the box: How conformity promotes creativity and innovation. In E.A. Mannix, M.A. Neale & J.A. Goncalo (Eds) *Research on Managing Groups and Teams: Creativity in Groups* (vol. 12), 229-265: Emerald Group Publishing Limited.
- Kim, K.H. (2008). Underachievement and creativity: Are gifted underachievers highly creative? *Creativity Research Journal*, 20, 234-242.
- Kirchler, E. (1999). Reactance to taxation: Employers' attitudes towards taxes. *Journal of Socio Economics*, 28, 131-138.
- Koestner, R., & Losier, G.F. (1996). Distinguishing reactive versus reflective autonomy. *Journal of Personality*, 64, 465–494.
- Levine, J. M. (1999). Solomon Asch's legacy for group research. *Personality and Social Psychology Review*, 3, 358-364
- Markus, H.R., & Kitayama, S. (1991). Culture and the self: Implications for cognition,

- emotion, and motivation. *Psychological Review*, 98, 2, 224.
- McAuliffe, B. J., Jetten, J., Hornsey, M. J., & Hogg, M. A. (2003). Individualist and collectivist norms: When it's OK to go your own way. *European Journal of Social Psychology*, 33, 57-70.
- McCrae, R.R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology*, 52, 6, 1258.
- Miller, D. T. (1999). The norm of self-interest. *American Psychologist*, 54, 1053-1060.
- Miron-Spektor, E., M. Erez, E Naveh, in press. The effect of conformists and attentive-to-detail members on team innovation: Reconciling the innovation paradox. *Academy of Management Journal*.
- Mischel, W. (1968). *Personality and Assessment*. New York: Wiley.
- Mok, A. & Morris, M.W. (2010). Asian-Americans' Creative Styles in Asian and American Situations: Assimilative and Contrastive Responses as a Function of Bicultural Identity Integration. *Management and Organization Review*, 6, 3, 371-390.
- Moscovici, S. (1976). *Social Influence and Social Change*. London: Academic Press.
- Moscovici, S. (1985). Social influence and conformity. In G. Lindzey & E. Aronson (Eds.) *The Handbook of Social Psychology* (3rd. ed., vol. 2, 347-412). New York: Random House.
- Nemeth, C.J. (1997). Managing innovation: When less is more. *California Management Review*, 40.
- Nemeth, C.J. & Staw, B.M. (1989). The tradeoffs of social control and innovation in small groups and organizations. In L. Berkowitz (ed.), *Advances in Experimental Social Psychology*, vol. 22, 175-210. New York: Academic Press.

- Neulinger, J. (1965). Person types, environment types and resultant forces. Unpublished doctoral dissertation, New York University.
- Neulinger, J. & Stein, M.I. (1971). Personality characteristics of volunteer subjects. *Perceptual and Motor Skills*, 32, 283-286.
- Norton, R. (1975). Measurement of ambiguity tolerance. *Journal of Personality Assessment*, 39, 6, 607.
- Oldham, G.R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39, 607-634.
- O'Reilly C.A., & Chatman, J.A. (1996). Culture as social control: Corporations, cults and commitment. In L.L. Cummings and B.M Staw (Eds.) *Research in Organizational Behavior*, 18.
- O'Reilly, C.A. & Pfeffer, J. (2003). *Hidden value: How great companies achieve extraordinary result results with originally people*. Boston, MA: Harvard Business School Press.
- Roe, A. (1952). *The Making of a Scientist*. New York: Dodd, Mead.
- Roman, R.J., Moskowitz, R.B. Stein, M.I. & Eisenberg, R.F. (1995). Individual differences in experiment participation: Structure, autonomy, and the time of the semester. *Journal of Personality*, 63, 1, 113-138.
- Rushton, J.P., Murray, H.G. & Paunonen, S.V. (1987). Personality characteristics associated with high research productivity. In D. Jackson & J.P. Rushton, (Eds.), *Scientific Excellence* (pp. 129-148). Beverly Hills, CA: Sage.
- Schilpp, P. (1951). "Autobiographical Notes," in *Albert Einstein: Philosopher-Scientist*, pp. 17-19 © 1951 by the Library of Living Philosophers, Inc.
- Schneider, B. (1987). The people make the place. *Personal Psychology*, 40, 437-453.

- Schneider, B., Salvaggio, A.N., & Subirats, M. (2002). Climate strength: A new direction for climate research. *Journal of Applied Psychology, 87*, 2, 220.
- Shalley, C.E., Zhou, J., & Oldham, G.R. (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here? *J. Management 30*, 933–958.
- Sherif, M. (1936). *The psychology of social norms*. New York: Harper & Row.
- Simonton, D. K. (1999a). Creativity as blind variation and selective retention: Is the creative process Darwinian? *Psychological Inquiry, 10*, 309-328.
- Sorenson, J.B. (2002). The strength of corporate culture and the reliability of firm performance. *Administrative Science Quarterly, 47*, 1, 70-91.
- Staw, B.M. (2009). Is group creativity really an oxymoron? Some thoughts on bridging the cohesion-creativity divide. In E.A. Mannix, M.A. Neale & J.A. Goncalo (Eds), *Research on Managing Groups and Teams: Creativity in Groups*, (vol. 12), 311-323: Emerald Group Publishing Limited.
- Sutton, R. I. 2002. *Weird ideas that work*. New York: Free Press.
- Sutton, R.I. (2007). *The no asshole rule: Building a civilized workplace and surviving one that isn't*. New York: Warner Business Books.
- Triandis, H.C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review, 96*, 269-289.
- Triandis, H.C. (1994). *Culture and Social Behavior*. New York: McGraw-Hill.
- Triandis, H.C. (1995). *Individualism and collectivism*. Boulder, CO: Westview Press.
- Triandis, H.C., & Gelfand, M.J. (1998). Converging measurement of horizontal and

vertical individualism and collectivism. *Journal of Personality and Social Psychology*, 74, 1, 118.

Van Maanen, J. & Schein, E.H. (1979). Toward a theory of organizational socialization. In Staw & Cummings (eds), *Research in Organizational Behavior*, 1, 209-264.

Wiekens, C.J. & Stapel, D.A. (2008). I versus We: The effects of self-construal level on diversity. *Social Cognition*, 26, 3, 368-377.

West, M.A. (1990). The social psychology of innovation in groups. In M. West and J. Farr (Eds.), *Innovation and Creativity at Work: Psychological and Organizational Strategies*, pp. 309-333. Chichester: Wiley.

Woodman, R.W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a Theory of Organizational Creativity. *The Academy of Management Review*, 18, 2, 293-321.

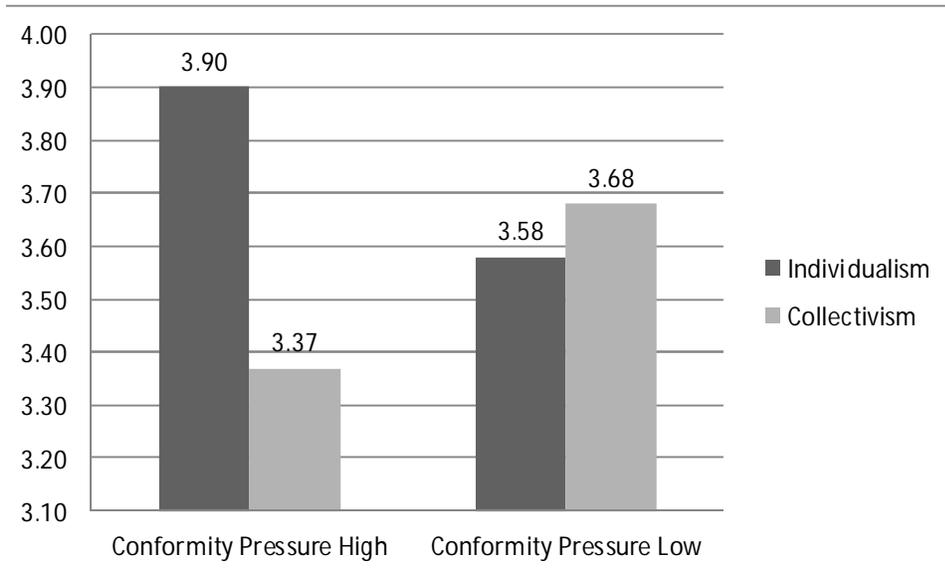
Table 1
ANOVA Results for Ideas Generated and Idea Creativity

| | Ideas Generated | | | Idea Creativity | | |
|---|-----------------|----------|------------------|-----------------|----------|------------------|
| | F | <i>d</i> | partial η^2 | F | <i>d</i> | partial η^2 |
| Group Personality Composition (Creativity High = 1) | 1.99 | 0.29 | 0.02 | 7.32 ** | 0.77 | 0.06 |
| Norm Content (Individualism = 1) | 18.13 ** | 0.99 | 0.14 | 9.22 ** | 0.85 | 0.07 |
| Conformity Pressure (High = 1) | 5.92 * | 0.67 | 0.05 | 7.34 ** | 0.77 | 0.06 |
| Group Personality Composition x Norm Content | 0.00 | 0.00 | 0.05 | 1.29 | 0.20 | 0.01 |
| Group Personality Composition x Conformity Pressure | 3.82 | 0.49 | 0.03 | 7.85 ** | 0.79 | 0.06 |
| Norm Content x Conformity Pressure | 2.03 | 0.29 | 0.02 | 0.78 | 0.14 | 0.01 |
| <i>Triple Interaction</i> | 18.53 ** | 0.99 | 0.14 | 26.14 ** | 0.99 | 0.18 |

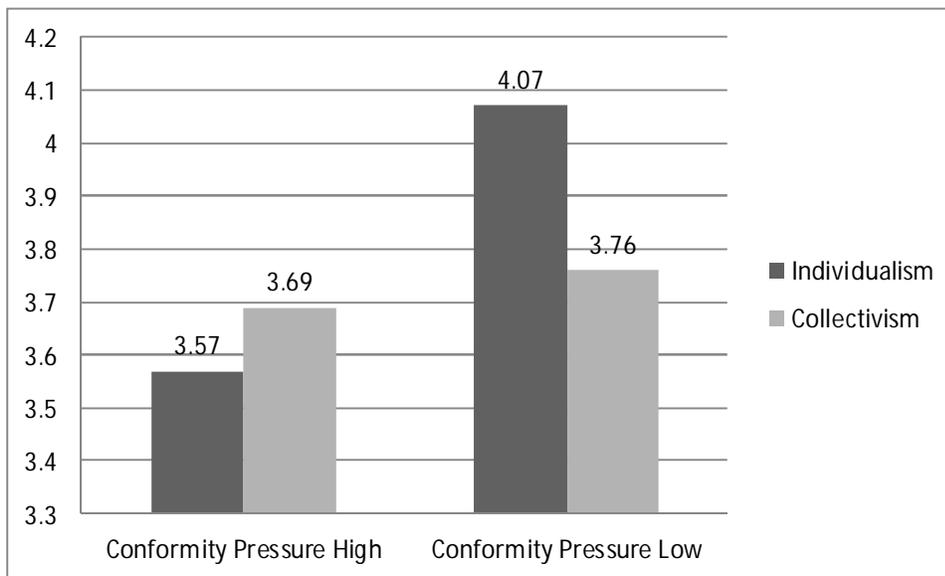
* = $p < .05$, ** = $p < .01$

Figure 1 Triple interaction between group personality composition, norm content and conformity pressure on creative idea expression.

Groups composed of less creative personalities



Groups composed of highly creative personalities



ⁱ Aside from the scores on the Gough Adjective Checklist, additional analyses confirmed that there were no differences on all demographic indicators, between participants who were and were not included in three-person groups.

ⁱⁱ We chose not to deliver Osborn's (1957) instructions (e.g. do not criticize) because they might create a confound with our norm manipulations.

ⁱⁱⁱ We identified and eliminated redundant ideas (the same idea expressed more than once) by asking two coders to independently identify the repeated ideas in each group. The coders reached perfect agreement; in other words, they identified the identical set of ideas as repeated. The number of repeated ideas per group ranged from zero to three with 78% of the groups expressing zero repeats. We excluded the repeated ideas from the final sample but the results are identical whether the repeated ideas are included or not.