UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

CLIMATE FOR CREATIVITY:

THE USE OF STORYTELLING TO INFLUENCE CLIMATE PERCEPTIONS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

Degree of

DOCTOR OF PHILOSOPHY

By

JENSEN TRICE MECCA
Norman, Oklahoma
2014

Downloaded from SHAREOK. Persistent Handle URL: https://hdl.handle.net/11244/13642

CLIMATE FOR CREATIVITY: THE USE OF STORYTELLING TO INFLUENCE CLIMATE PERCEPTIONS

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PSYCHOLOGY

BY

_____
Dr. Michael D. Mumford, Chair

_____
Dr. Michael Buckley

_____
Dr. Jennifer Barnes

_____
Dr. Shane Connelly

_____
Dr. Robert Terry

© Copyright by JENSEN TRICE MECCA 2014
All Rights Reserved.

Many thanks to my labmates, Carter Gibson, Vincent Giorgini, Kelsey Medeiros, Paul Partlow, Logan Watts, Logan Steele, Tristan McIntosh, and Tyler Mulhearn, for your help and support. Thank you to Bailey Schrock and Noorain Chaudhry for your help managing and coordinating this project. Finally, the utmost thanks to Judy Truesdell and Joseph Hodgson for putting up with all of my nonsense.

Table of Contents

List of Tables v

List of Figures vi

Abstract vii

Introduction 1

Method 7

Sample 7

General Procedure 7

Covariates 8

Experimental Task 10

Manipulations 11

Story vs. Facts 11

High vs. Low Creative Climate 11

Within-Story Manipulations 12

Climate Perception Assessment 12

Creative Performance 14

Analyses 16

Results 16

Discussion 19

References 30

List of Tables

Table 1. Effects of Culture, Context, and Level Manipulations on Positive Interpersonal Exchange Perceptions 27

Table 2. Effects of Culture, Context, and Level Manipulations on Intellectual Stimulation Perceptions 28

Table 3. Effects of Culture, Context, and Level Manipulations on Challenge Perceptions 29

List of Figures

Figure 1. Example blog post with high climate for creativity manipulation..... 25

Figure 2. Example newsletter article with low climate for creativity manipulation 26

Abstract

Storytelling may represent an effective approach to organizational communication. The present study examines the efficacy of a storytelling intervention intended to influence perceptions of organizational climate, where climate elements are related to creative performance, as compared with an intervention utilizing more traditional, fact-based presentation of climate information. Participant perceptions of climate variables appear to be more accurate when climate information is presented in story format. Variations on story level and context are explored, and implications for organizations attempting to influence perceptions using communication are discussed.

Introduction

In the complex landscapes of modern organizations, individuals must increasingly rely on sensemaking in order to understand the organizational contexts in which they find themselves. Sensemaking is a process through which an individual interprets information from the environments in order to construct an understanding of an event or circumstance that is novel or ambiguous (Maitlis & Christianson, 2014; Weick, 1995). This sensemaking process allows individuals to build rational accounts that explain the contexts in which they find themselves, enabling them to use these accounts as bases for action (Maitlis, 2005). Individuals may thus utilize sensemaking when attempting to understand the climates of the organizations of which they are a part – to be sure, a task that requires comprehending a complex body of information in a way that enables action.

As employees of organizations gather information for sensemaking, they seek sources of relevant knowledge available in their environments. Stories about the organization represent one such rich source of information for individuals engaging in sensemaking efforts. Stories are collections of events or experiences in which events are organized in a temporal sequence and wherein a plot serves to provide causal explanations for events (Elliot, 2005). Stories represent one alternative to an analytical, fact-based presentation of information. In order to understand this distinction, consider a situation in which a teacher wishes to inform a student's parents that she is behaving badly in class. With a fact-based approach, the teacher might cite the number of times the student has visited the principal's office, the average number of days per week when she has caused a problem in class, or the estimated impact on the student's grade. In

order to convey this information in a story format, the teacher might share with the parents an account of an incident the week prior when the student stood on her desk screaming and hurling handfuls of red paint at her fellow students.

A scientific perspective would champion the superiority of facts over anecdotal evidence, the prior depiction using analytical data over the story. However, individuals appear to comprehend and respond to story-based information presentation to a greater extent than to fact-based information presentation (Ball, 1997; Barthes, 1988). This may be true to an even greater extent when the individual is utilizing the information in a sensemaking context. One such example is shared by Stephen Denning in his 2001 account of his attempts to convince stakeholders that the World Bank should make information about its efforts available online for public use. This complex and novel concept – Denning pitched this idea prior to the widespread posting of information in online databases – was resistant to explanation via traditional, analytical means, such as through the presentation of relevant facts and figures. Only by sharing the story of a health worker in Zambia who used information provided through the Centers for Disease Control website to prevent the spread of malaria could Denning convince stakeholders of the efficacy of an online database. In fact, Denning cites the greater relatability of stories, as compared with analytical information presentation, as the source of his success. Denning suggests that his audience members were able to place themselves in the context of the story he shared in order to better understand the ways in which the idea of providing information online might be useful to them. Thus, stories provided a more effective source of information in a sensemaking context – and one audience members were more likely to utilize than a simple presentation of facts.

While we have reason to suspect that storytelling may represent a useful approach to organizational communication, particularly when the goal is to promote and provoke sensemaking among organizational members, little research exists comparing this method with more traditional, fact-based approaches to communication in an organizational context. The present effort seeks to provide some evidence of the value of storytelling to organizational communication.

Organizations may seek to communicate with employees in ways that influence employee perceptions of key organizational factors. One target for influence along these lines is organizational climate (Boje, 1991). Organizational climate may be understood as perceptions of policies, practices, and procedures, both formal and informal, within an organization – perceptions of the patterns of experiences and behaviors within organizations (Ostroff, Kinicki, & Tamkins, 2004; Reichers & Schneider, 1990). Organizations may seek to influence perceptions of organizational climate through communication in order to achieve climate-related outcomes. Specifically, certain climate perceptions may be desirable goals for organizational communication due to the relationships of those perceptions with employee performance.

One such link between organizational climate perceptions and performance exists with regard to employee creative problem-solving performance. Hunter, Bedell, and Mumford (2007) conducted a meta-analytic investigation of the relationships between climate variables and creative performance. According to this meta-analysis, three particularly impactful climate variables were positive interpersonal exchange (Δ= .91, *SE* = .39), intellectual stimulation (Δ= .88, *SE* = .18), and challenge (Δ= .85, *SE* =

.14). Positive interpersonal exchange is defined as the perception of togetherness and cohesion within a given climate, along with the sense that there is little affectively laden conflict in the organization. Intellectual stimulation is the perception that the debate of ideas is encouraged by the organization. It is noteworthy that this construct refers to discussion and dissection of ideas rather than contentious interaction focusing on the authors of those ideas. Finally, challenge is considered the perception that tasks within the organization are challenging, interesting, and complex, but not overwhelming (Hunter, Bedell, & Mumford, 2007). Given the relationships between these three constructs and performance, organizations may seek to influence employee perceptions of positive interpersonal exchange, intellectual stimulation, and challenge among employees in order to enhance creative performance.

Given the usefulness of stories as an information source for individuals engaging in sensemaking activities, stories may be a more effective method of communication than fact-based information presentation when the goal of communication is to influence organizational climate perceptions, like those described above. By providing information in a format that is preferable to sensemakers, organizations should be able to more effectively influence organizational climate perceptions. Given this logic, we propose the following hypotheses:

Hypothesis 1: Perceptions of high versus low positive interpersonal exchange will be more accurate when this information is presented in story form than when it is presented in analytical fact form.

Hypothesis 2: Perceptions of high versus low intellectual stimulation will be more accurate when this information is presented in story form than when it is presented in analytical fact form.

Hypothesis 3: Perceptions of high versus low challenge will be more accurate when this information is presented in story form than when it is presented in analytical fact form.

While storytelling is anticipated to result in superior organizational communication, inasmuch as this communication results in the desired climate-related perception, little is known about the features of these stories that might make them more or less effective. For instance, varying the source of organizational communication, where the source is either an immediate supervisor or a senior manager, has been shown to influence employee receptiveness. When they are seeking information relevant to their immediate job duties, individuals prefer to receive information from their immediate supervisors. However, they are more likely to turn to senior managers as sources of information relevant to organization-level concerns, such as overall business strategy (Allen, Jimmieson, Bordia, & Irmer, 2007).

Positive interpersonal exchange, intellectual stimulation, and challenge are all immediately relevant to the individual's own work; all of these climate elements are more impactful at the work-group level than at the organizational level. Given the level at which these climate perceptions are relevant, a closer source of information is likely to be received more positively than a more distant one. We therefore propose the following hypothesis:

Hypothesis 4: Stories including climate-related information will impact climate perceptions to a greater extent when the storyteller is a peer of the story recipient.

In addition, stories may be presented to organizational members in a variety of contexts. While it may be possible for organizations to introduce stories organically – for example, to encourage leaders to tell stories in public settings so that they may be passed through the organization via natural channels – a more controlled method may be desirable. Two such presentation methods include blogs, in which individuals from the organization describe their experiences, or newsletters, in which members are asked to share their stories in an interview or similar format. Both formats may offer advantages; no extant research suggests the benefits of one over the other. In order to further explore these two contexts for the presentation of organizational communication, we propose the following exploratory hypothesis:

Hypothesis 5: Varying the context in which stories are presented will result in differential impacts on relevant climate perceptions.

Finally, we know that perceptions of climate variables influence creative performance in organizations (Hunter, Bedell, & Mumford, 2007). Given this relationship, it is possible that climate perceptions, as influenced by stories, may influence creative performance even in a low-fidelity context. As individuals use story information to engage in sensemaking, resulting rational accounts may dictate the degree to which individuals feel comfortable and confident engaging in creative problem solving. We therefore propose the following hypothesis:

Hypothesis 6: When a relevant climate is perceived as high in pro-creativity elements, creative performance will be higher than when the climate is perceived as low in these elements.

Method

In order to investigate these hypotheses, we engaged undergraduates in a low-fidelity simulation including a series of stories in which climate information was embedded, followed by a creative problem-solving task and a measure of participants' perceptions of organizational climate variables.

Sample

The sample for this effort consisted of 206 undergraduates from a large southwestern university. Of these students, 134 were female, 73 were male, and 7 chose not to report their gender. The average participant age was 19, and the average self-reported ACT score was 26. These demographic data are typical of students in an introductory psychology class.

General Procedure

Participants first completed a series of timed covariate measures, which will be described in more detail below. Following the completion of these covariate measures, participants were informed that they had been hired in the marketing department of a music company and were asked to find out more about this new employer. Participants were either given a fact-based description of the climate of their new organization or asked to read a series of three stories containing climate information. After reading information about the organization's climate, participants were asked to complete a task

requiring creative problem solving: to design a marketing campaign for the new employer with the goal of generating interest with individuals between the ages of 17 and 29. Following the creative task, participants were asked to complete the KEYS to Creativity and Innovation (Center for Creative Leadership, 2010), as well as a battery of untimed covariates.

Covariates

Participants were first asked to complete a series of timed covariates. Timed covariates were placed first in order to ensure all participants could begin these measures at the same time, given their need for timed proctoring. Given Vincent, Decker, and Mumford's (2002) findings regarding the relationships between divergent thinking and intelligence on creative problem-solving performance, timed covariates assessing both of these constructs were included in the present effort. The Employee Aptitude Survey was utilized to assess intelligence, with 30 verbal reasoning items each presenting a collection of facts and asking participants to indicate which of five following conclusions are true, false, or uncertain given this information. Retest reliabilities for the EAS Verbal Reasoning Test are above .80, and Ruch and Ruch (1980) have provided evidence for the criterion-related and construct validity of this test as a measure of intelligence.

In order to assess divergent thinking, we asked participants to complete the Consequences 'A' Test (Christensen, Merrifield & Guilford, 1953), in which individuals completing the measure are asked to list consequences of a series of five unlikely events. Examples include, "What would happen if everyone lost the ability to read and write?" and "What would happen if gravity were cut in half?" Internal

consistency coefficients for this test are in the .70 when responses are scored for fluency, or the number of consequences generated. Merrifield, Guilford, Christensen, and Frick (1962) and Vincent, et al., (2002) provide validity evidence for the use of this test as a measure of divergent thinking.

In addition to these timed covariate measures, participants were asked to complete a number of untimed covariates following the completion of all other study activities. Specifically, participants were asked to provide demographic information and to complete measures of relevant expertise, need for cognition, and personality. With regard to expertise, a measure assessing involvement in and knowledge about marketing based on the work of Scott, Lonergan, and Mumford (2005) was provided to participants, with items asking participants to indicate the extent to which they had been involved in relevant activities. For example, participants were asked, "How often do you discuss advertisements with friends?" and "How likely is it that you will go into advertising or marketing as a career?" with all responses rated on a scale from 1 to 5. Internal consistency coefficients for this 7-item inventory are above .70, and Lonergan, Scott, and Mumford (2004) provide relevant construct validity evidence.

Participants were also asked to complete Cacioppo and Petty's (1982) Need for Cognition scale. Producing internal validity coefficients in the .80s, this 15-item scale asks people to rate their agreement with statements such as, "I prefer my life to be filled with puzzles I must solve." Participants also completed Goldberg's (1972) adjective checklist to provide data with regard to their levels of personality variables, including agreeableness, conscientiousness, extraversion, neuroticism, and openness to experience. This measure includes a list of 100 adjectives, such as relaxed, brave, and

untidy, and asks participants to indicate on a scale from 1 to 9 how each adjective is in describing them, with a score of 9 indicating an adjective that is extremely accurate and a score of 1 indicating a word that is extremely inaccurate. Subscales of this measure yield internal consistency coefficients above .80, and validity evidence is provided by Goldberg (1972), as well as Dailey and Mumford (2006).

Experimental Task

Participants completed a revised version of the Roots Music task developed by Shipman and Mumford (2011). In this task, participants were instructed to imagine that they had been hired as members of the marketing department at Roots Music and instructed to find out more about their new employer. In the conditions in which participants read stories, students were then told that they had investigated Roots online and had come across either several posts on the company blog or an issue of the company newsletter, depending upon the condition. They were told that they had targeted either information written by people a couple of levels above them in the company or at the same level at which they would be working, which represented the manipulation with regard to storyteller source level. Participants in the story conditions were then provided with three stories, all in either blog or in newsletter form. Stories were further manipulated to include content indicating high or low climate for creativity.

Next, all participants read an email from the marketing director. In the non-story conditions, this email included a fact-based description of the climate at Roots Music in which climate variables were manipulated. In all conditions, this email included instructions to read over subsequently provided company information. This

company information, which participants received next, included history, staff information, products and store layout information, and marketing information, followed by the minutes from a quarterly management meeting. This background information served to increase the face validity of this low-fidelity simulation task.

Following this information, participants received another email from the marketing director in which they were instructed to develop a marketing strategy intended to increase sales with the 17-29-year-old demographic. Participants were then asked to come up with a list of ideas for their plan, which were subsequently evaluated for fluency and flexibility; finally, participants were asked to create a marketing plan based on these ideas.

Manipulations

Story vs. Facts

Information regarding organizational climate was provided to participants either in a fact-based or a story-based format. In the non-story, fact-based conditions, this information was provided in an email from the participant's supervisor. Here, participants were told in a straightforward manner by the supervisor that the climate possessed the manipulated characteristics. In the story conditions, the information was provided in the form of three stories in which climate-related details were included.

High vs. Low Creative Climate

For the purposes of the present study, positive interpersonal exchange, intellectual stimulation, and challenge were manipulated together. Either the organizational climate was high on all three of these variables or low on all three. These constructs were manipulated in one of two contexts, either in the supervisor email in the fact-based

conditions or in the three stories participants read in the story conditions. Examples of a blog with high climate for creativity and a newsletter with low climate for creativity are provided in Figures 1 and 2.

Within-Story Manipulations

Some manipulations took place in only those conditions where participants received information in a story format. These within-story manipulations are therefore irrelevant to the fact-based information presentation conditions. The first of these within-story manipulations was level, in which participants were informed that stories originated either with individuals who would be operating at the same level as the participant in the organization or with employees several levels higher. This manipulation was intended to simulate having either a close or a distant source for story information.

In addition, stories were manipulated with regard to context. Here, stories were either presented as blog posts on the company website or as articles in the company newsletter. In the latter context, the story was told via an interview with an individual in the organization, while the blog format read in a manner similar to a journal entry, with the storyteller sharing information in an uninterrupted flow. Please see Figure 1 above for an example of these two formats.

Climate Perception Assessment

In order to assess participant perceptions of climate variables as manipulated in the story above, the KEYS to Creative Climate inventory (Center for Creative Leadership, 2010) was used. The KEYS inventory draws from the Creative Environment Scale developed by Amabile and Gryskiewicz (1989). It is important to note that some adaptations were made to the content of the scale for the purposes of the

present effort. First, items were reworded in order to indicate that the participant should answer with regard to Roots Music rather than his or her own real, current workplace. For instance, the scale's original question, "People in my work group are open to new ideas," was changed to, "People at Roots Music are open to new ideas." Thus, participants rated the degree to which each statement matched their perceptions of the organization as presented in the stories or facts shared by their supervisor. Items were also shifted when necessary so that they did not refer to the individual filling out the survey specifically. This change was made in order to account for the fact that individuals were filling out the survey about an organization about which their only "experiences" were facts and stories communicated by others. For example, "I feel challenged by the work I am currently doing," was changed to, "People feel challenged by the work they are doing." This change led participants to answer questions on this scale based on the information provided in the manipulated sections of their prompt, rather than how they felt about the creative problem-solving task they were assigned.

Only three subscales from the original inventory were utilized, each tapping onto a variable of interest in the present effort. Work Group Supports, a subscale dealing with the perception that people communicate well and trust and help each other, was used to assess positive interpersonal exchange. Organizational Encouragement, a subscale focused on the fair, constructive judgment of ideas, as well as an active flow of ideas, was used to assess perceptions related to intellectual stimulation. Finally, Challenging Work, described as a sense of having to work hard on challenging tasks and important projects, was used to assess the climate variable of challenge. Items on

these three subscales were randomized using a random number generator prior to their presentation to participants.

In the present study, these three scales were somewhat more related than in initial validation efforts as discussed by Amabile and Gryskiewicz (1989). Specifically, Work Group Supports was positively related to Organizational Encouragement at r = .60 in initial validation efforts and at r = .89 in the present study. Work Group Supports was related to Challenging Work at r = .45 in initial studies and at r = .65 in the effort at hand. Finally, Organizational Encouragement and Challenging Work were related at the r = .45 level in initial validation studies and at r = .65 in the present effort. The relatively larger positive relationships between these scales is likely due to the fact that manipulations for the three climate variables occurred simultaneously – in other words, when positive interpersonal exchange was high, intellectual stimulation and challenge were also high, and vice versa. The similar rank order of correlations indicates that relationships were consistent with previous work by Amabile and Gryskiewicz (1989) despite the larger relationships between climate outcomes identified in the present study.

Creative Performance

Marketing plans were assessed with regard to quality, originality, and elegance (Besemer & O'Quin, 1999; Christiaans, 2002), and idea lists were assessed regarding fluency and flexibility (Christensen, Merrified, & Guilford, 1953). A set of benchmark rating scales for quality, originality, and elegance was developed by a group of four judges, all doctoral students in industrial-organizational psychology familiar with the literature on creative problem solving. These raters were presented with 30 participant

product examples from the present study, exhibiting a wide range of quality, originality, and elegance, along with variable descriptions to be used in rating these constructs. Quality was defined here as the completeness, usefulness, and coherence of the product. Originality was defined as the elaboration, unexpectedness, and richness of the solution. Finally, elegance was defined as the degree to which solution elements flowed together with a minimum number of steps and complications. Creative problem solutions that received ratings with means near the low, medium, and high points on a 5-point scale, with the lowest possible standard deviations, were selected as anchors.

Following the establishments of these anchors, three other doctoral students also familiar with the creative problem-solving literature were asked to use these scales to appraise all of the problem solutions generated by participants. They first completed an extensive training program in which they were familiarized with the variables to be rated, as well as the benchmark rating scales to be used. Following this training, they were asked to rate a preliminary set of 23 participant responses with regard to quality, originality, and elegance, as well as fluency and flexibility, where fluency was defined as the number of participant ideas and flexibility was defined as the number of categories of ideas present. Fluency and flexibility were both raw counts. Inter-rater agreement coefficients following these preliminary ratings were $r_{wg} = .83$, $r_{wg} = .80$, $r_{wg} = .71$, $r_{wg} = .71$, and $r_{wg} = .80$ for fluency, flexibility, quality, originality, and elegance, respectively. Given the acceptable levels of inter-rater agreement, raters then assessed the rest of the participant products, with final inter-rater reliability coefficients of $r_{wg} = .64$ for fluency, $r_{wg} = .67$ for flexibility, $r_{wg} = .81$ for quality, $r_{wg} = .78$ for originality, and $r_{wg} = .75$ for elegance.

Analyses

A series of multivariate analyses of covariance were performed in order to determine the degree to which the various manipulations interacted with the manipulation regarding climate for creativity to predict perceptions of climate variables. In addition, a blocked regression was conducted where significant covariates were placed in the first block, manipulations in the second, climate perceptions in the third, and creative performance in the fourth. In all analyses, covariates were retained only when they produced relationships significant at the .05 level with relevant outcome variables.

Results

Our first hypothesis stated that perceptions of positive interpersonal exchange, where this variable has been manipulated to be either high or low, would be more accurate when this information was presented in story form than when it was presented in analytical fact form. Table 1 presents the effects of the story versus facts manipulation when significant covariates were included in analyses. With regard to positive interpersonal exchange, extraversion ($F(1, 202) = 2.94$, $p = .00$, $\eta_p^2 = .014$) proved to be a significant covariate. A significant main effect of the climate manipulation on perceptions ($F(1, 202) = 43.01$, $p = .00$, $\eta_p^2 = .176$) and an effect of story versus facts approaching significance ($F(1, 202) = 2.49$, $p = .12$, $\eta_p^2 = .012$) may be better interpreted in light of a significant interaction ($F(1, 202) = 44.25$, $p = .00$, $\eta_p^2 = .180$) between these two terms. Here, while means were similar for the low ($M_{low} = 3.92$, $SE = .108$) and high positive interpersonal exchange ($M_{high} = 3.92$, $SE = .106$) conditions when information was presented in fact form, means diverge accurately

when information was presented in story form, with the low positive interpersonal exchange condition (M_{low} = 3.22, *SE* = .058) displaying a smaller mean than the high positive interpersonal exchange condition (M_{high} = 4.35, *SE* = .058). Thus, perceptions regarding positive interpersonal exchange were more accurate when information was presented in story form, providing support for hypothesis one.

Similarly, the second hypothesis suggested that perceptions of intellectual stimulation would be more accurate when this information was presented in story form than when presented in analytical fact form, when intellectual stimulation had been manipulated to be either low or high. Table 2 presents the effects of the story versus facts manipulation on intellectual stimulation perceptions when significant covariates were included. In this analysis, intelligence ($F(1, 203) = 5.41$, $p = .02$, $\eta_p^2 = .026$) was included as a significant covariate. A significant main effects of the climate manipulation ($F(1, 203) = 5.377$, $p = .02$, $\eta_p^2 = .026$) and a main effect approaching significance of the story versus facts manipulation ($F(1, 203) = 2.82$, $p = .09$, $\eta_p^2 = .014$) should again be interpreted in light of a significant two-way interaction between these manipulations ($F(1, 203) = 34.72$, $p = .00$, $\eta_p^2 = .146$). Means for the conditions in which information was presented in fact format were M_{low} = 3.65, *SE* = .108 for the low-intellectual stimulation condition and M_{high} = 3.34, *SE* = .109 in the high-intellectual stimulation condition – similar scores in which perceptions were actually lower in the latter condition. Contrastingly, when information was presented in story form, means were M_{low} = 3.29, *SE* = .060 for the low-intellectual stimulation condition and M_{high} = 4.00, *SE* = .050 for the high condition, indicating more accurate perceptions among individuals who had received the information in story form than for those who

received it in analytical fact form. Once again, this result provides support for the second hypothesis.

Hypothesis three stated that perceptions of challenge, when this variable has been intentionally manipulated, would be more accurate when information regarding this climate variable was presented in story form than when presented in analytical fact form. Table 3 includes the effects of information presentation type on challenge perceptions; no covariates proved to significantly impact this relationship. Again, significant main effects of the climate manipulation ($F(1, 202) = 32.70$, $p = .00$, $\eta_p^2 = .139$) and of the story versus facts manipulation ($F(1, 202) = 16.64$, $p = .00$, $\eta_p^2 = .076$) should be interpreted in light of a significant two-way interaction between these variables ($F(1, 202) = 36.29$, $p = .00$, $\eta_p^2 = .152$), where means when information was provided in fact form were $M_{low} = 3.78$, $SE = .101$ for the low-challenge condition and $M_{high} = 3.76$, $SE = .101$ for the high-challenge condition, and means when information was provided in story form were $M_{low} = 2.96$, $SE = .056$ for the low-challenge condition and $M_{high} = 3.92$, $SE = .056$ for the high-challenge condition.

The fourth hypothesis suggested that stories including climate-related information would impact climate perceptions to a greater extent when the storyteller was a peer of the story recipient. Results indicated no significant main effects of the level manipulation and no significant interactions between the climate and level manipulations, leading us to find no support for this hypothesis.

Our results suggest partial support for our fifth hypothesis, that varying the context in which stories were presented would result in differential impacts on relevant climate perceptions. With regard to positive interpersonal exchange and intellectual

stimulation, there were no significant effects of context, where contexts were either blog posts or newsletter articles. However, as shown in Table 3, when intelligence, a significant covariate ($F(1, 151) = 5.43$, $p = .00$, $\eta_p^2 = .334$), was included in analyses, significant main effects were found for both the climate manipulation ($F(1, 151) = 75.70$, $p = .00$, $\eta_p^2 = .334$) and the context manipulation ($F(1, 151) = 5.34$, $p = .02$, $\eta_p^2 = .034$) with regard to perceptions of challenge. A significant interaction between these two effects ($F(1, 151) = 9.77$, $p = .00$, $\eta_p^2 = .061$) appeared, with stories presented in a blog context resulting in mean challenge perceptions of $M_{low} = 3.04$ ($SE = .088$) for the low-challenge condition and $M_{high} = 4.04$ ($SE = .087$) for the high-challenge condition, and stories presented in a newsletter context resulting in mean challenge perceptions of $M_{low} = 3.50$ ($SE = .087$) for the low-challenge condition and $M_{high} = 3.97$ ($SE = .081$) for the high-challenge condition.

Our sixth and final hypothesis predicted that creative performance would increase as perceptions of pro-creativity climate variables increased. Blocked regressions in which significant covariates were placed in the first block, manipulations in the second, climate perceptions in the third, and creative performance outcomes in the fourth revealed no significant relationships between perceptions and creative performance outcomes. Thus, hypothesis six did not receive support.

Discussion

Before turning to the conclusions flowing from the present effort, certain limitations should be noted. The first of these involves the use of a low-fidelity simulation. While undergraduates do possess the expertise necessary to perform this task (Lonergan, et al., 2004; Redmond, Mumford, & Teach, 1993), there is some

question regarding the generalizability of our findings. In addition, there is some question as to whether a low-fidelity simulation is sufficient to induce climate-related effects. Our lack of findings with regard to the impact of climate perceptions on creative performance illustrates this problem. Given previous findings linking these perceptions to performance (Hunter, Bedell, & Mumford, 2007), it is likely that our failure to identify relationships between these variables is due to the fact that climate perceptions were not salient enough to participants for these perceptions to impact creative performance. However, given the ability of stories to more effectively influence perceptions than other information conveyance methods, it is likely that climate perceptions influenced in this fashion in real organizations would be more impactful. Additional field research is necessary to examine this issue.

Another limitation that may serve to explain the lack of impact of participant perceptions on performance might be the way in which stories are communicated in the present effort. In real organizations, it may be more typical for stories to be conveyed in a verbally – information shared over lunch or on the elevator in normal, everyday conversation. Stories here were shared in written format, potentially a method of storytelling with which participants would be less familiar and that might be less natural. While participants appeared to accurately perceive information when communicated in story format, it is possible that these perceptions were less salient and impactful due to their less natural presentation medium, resulting in a lessened impact on creative problem-solving performance.

Finally, information in the fact conditions was presented as statements by the participant's manager. These statements may have been interpreted as the opinions of

this character rather than as objective facts about the organization. Numerical statements, tables, graphs, or other figures might have been perceived as more typical factual information. However, presenting information in this fashion in the context at hand would have reduced the realism of the materials provided to participants. Furthermore, it is unclear the degree to which undergraduates at the level of the sample at hand would accurately interpret information provided in graph or figure form, introducing a potential confound.

Despite these limitations, several important conclusions may be drawn from the results presented above. With regard to all three climate variables manipulated, information provided in a story format resulted in more accurate perceptions than did information provided in a fact format, despite the seemingly more straightforward nature of fact-based presentation. In all cases, a fact-based presentation resulted in almost no difference in perception between conditions in which climate for creative variables were low and those in which they were high. These results imply that storytelling represents a far more effective way to influence organizational climate perceptions than a more traditional analytical format. As in previous studies, participants in the present effort appear to have been better able to relate to climate information when this information was presented in story form.

The level of the storyteller appeared not to influence the accuracy of perceptions. This finding implies that stories are equally effective regardless of the source of the story. The universal effectiveness of storytelling implies that it is the story itself, rather than the nature of the source of the information, that influences story

recipient receptiveness. In other words, stories appear to compel and captivate listeners whether they are being told by peers or by superiors.

Context, blog versus newsletter, appear to have an effect only with regard to perceptions that work is considered to be complex and challenging. In this case, both formats resulted in accurate perceptions (e.g., individuals in the low-climate condition perceived the climate as lower in terms of challenge perceptions that did individuals in the high-climate condition). However, the difference in perceptions between the two groups was higher when stories were presented as blog posts than when they were presented as newsletter articles. This finding implies that the high versus low climate manipulation was more salient when presented in a continuous blog format than when split into a question-and-answer presentation in the newsletter format. That this pattern did not emerge with regard to the other climate variables, positive interpersonal exchange and intellectual stimulation, implies that certain climate perceptions may be more sensitive to differences in story format than others. Perhaps this is due to the fact that this variable was task related rather than interpersonal in nature. It is also possible that blogs outperformed newsletter articles due to the greater similarity of blogs to the potentially more natural verbal storytelling approach described above. In addition to the uninterrupted nature of the blog presentation as compared with the newsletter, stories in blog format were told as if the writer was speaking directly to the reader, while the newsletter format may have placed greater distance between the storyteller and the participant. If these advantages of blogs exist, however, it is unclear why a similar pattern of evidence did not emerge with other climate variables. Future research is required to tease out differences between climate variables in terms of the most

effective formats for story presentation and further explore the potential advantages of blogs.

As mentioned previously, it is of some interest that the expected relationship between climate perceptions and creative problem-solving performance did not emerge. In real-world organizations, climate is so pervasive as to influence employee performance in a nearly constant fashion; the low-fidelity simulation utilized in the present effort may simply not have led to perceptions salient enough to influence performance. However, in an organization in which story-based communication methods are used to influence organizational climate perceptions – a more effective way to do this than fact-based communication methods as per the results of the present effort – these perceptions are likely to have a greater impact on performance, as indicated in prior research (Hunter, Bedell, & Mumford, 2007). Further research in an organizational setting is once again needed to determine whether the observed effectiveness of story-based communication interventions holds true – and whether subsequent effects on performance occur.

Future research is also needed to investigate the potential negative ramifications of the effectiveness of storytelling as an organizational communication mechanism. The tendency of individuals to overemphasize anecdotal evidence provides storytelling with much of its communicative power. When used by organizations in order to increase perceptions of desirable climate conditions in order to improve performance, taking advantage of this tendency appears to have virtue. However, if stories were used to communicate untruthful information, or information that would otherwise negatively impact an organizational audience, they might prove to be harmful in the extreme.

Future research should explore the potential dark side uses of storytelling as a communication strategy.

These findings imply a number of practical considerations for organizations wishing to influence climate perceptions via organizational communication. It would appear that storytelling represents an effective approach to such communication and that climate-related information is far more salient when such an approach is used than when information is presented more analytically. Given the lack of impact of storyteller level on the effectiveness of story-based interventions, organizations appear to be free to use accounts of events relevant to desired climate perceptions regardless of the level of the source of those stories within the organization.

In addition, while more research is needed on this topic, it would appear that a blog post format is more effective than a newsletter article format for at least some climate variables. Until more is known about reasons for the differential effects of this formatting choice, organizations would be wise to consider presenting stories in a continuous, journal-style context than in an interrupted, interview-style one.

In conclusion, storytelling appears to represent a feasible mechanism for influencing organizational climate perceptions, particularly regarding variables influential in the creative problem-solving space. Future research is needed to explore additional climate variables, as well as non-climate-related targets for organizational communication, from a storytelling perspective. We hope that the present effort will serve as a springboard for future research further exploring the use of stories as a method for conveying information in an organizational communication context.

HOME MOBILE RSS Search

Roots Music

John – February 5, 2013

I want to take a moment to share how much I enjoyed the lunch meeting I just had with the rest of my team. When Amanda, our manager for the project we're currently working on, initially proposed the idea of working over lunch, I couldn't help but groan. The idea of spending my free hour working on our advertising project, which is complicated enough to make my head spin just didn't appeal to me. Granted, the work is interesting. I enjoy picking apart the problems and challenges it presents. However, I'm already spending plenty of time thinking about this project. I didn't think another meeting would do any good – especially one over lunch. Looking back on my hesitation, I feel pretty silly. Jake drove us all to Landry's up the street. We kept up pleasant conversation all the way there about things totally unrelated to work. I feel as if everyone was really interested in what's going on in my life outside of the office. Once we got to the restaurant, we basically had to pull ourselves away from our conversation in order to get down to work.

However, once we started discussing plans for the next stage of our project, the ideas started flying like crazy. Amanda suggested something similar to the direction we'd been planning to go with the project. Alex jumped right in with a different idea. This would never have flown at my old job. Surprisingly, Amanda didn't even get ruffled. Our discussion veered off in the direction of Alex's idea. We debated the pros and cons of her general plan. The back and forth of the conversation was so exciting that I don't even remember what I ate for lunch. I couldn't believe it when I realized that we'd been there for an hour and needed to head back to the office.

Now, I'm back at my desk. I feel totally energized and ready to tackle the challenges of the next stage of our new project. Working with Amanda's team has been a great experience so far. I look forward to taking on the challenge of this and other projects with the group.

© Roots Music. All Rights Reserved.
Powered by Tumblr. Lightweight Theme by Artur Kim

Figure 1. Example blog post with high climate for creativity manipulation



"It just feels like a job really well done."



Working Lunch

Edgar: John, thanks so much for sharing your story with us!

John: Absolutely, my pleasure! I appreciate you showing an interest in our work.

E: It sounds like you've had an experience worth sharing. What makes your current project so special?

J: Well, for one thing, Amanda has done a great job organizing the work. She's our manager, and she definitely knows her stuff. She was really effective at communicating with us.

E: So you guys pretty much knew exactly what was going on?

J: Definitely! It made some of our staff meetings and events kind of redundant.

E: How so?

J: For example, Amanda suggested one time that we should go out for a working lunch so that we could all get on the same page. She wanted to go to Landry's and talk over the project we were all working on.

E: That's always a good idea.

J: Yeah, most of the time. For our team, though, we already knew we were all on the same page. We knew exactly what was going on. We all went along with Amanda's lunch plan, though.

E: How did lunch go?

J: It was fine. Just as I suspected going in, everyone already knew what was going on with our project, so we didn't have much to say over lunch.

E: It sounds like your project is pretty straightforward. No need for extra communication?

J: That's right. I mean, Amanda did a great job of laying out everything that would be necessary going forward. Our team is pretty good at following orders once they're set out in front of us. We don't necessarily talk much … *(laughs)* … but we know our stuff, that's for sure!

E: So now that you've finished the project, do you have any thoughts looking back?

J: It just really feels like a job well done. Amanda communicated clearly what was required, we all understood her expectations. We got right down to work and churned that sucker out in record time. It's nice to be able to execute like that.

E: So that lunch didn't set you back too far?

J: No, far from it! We were already so far ahead that we could have gone on an unnecessary work lunch every afternoon and still gotten the project finished on time.

E: Sounds like you know your stuff!

J: *(smiles)* We sure do like to think so.

E: Well, congratulations, and keep up the good work!

Figure 2. Example newsletter article with low climate for creativity manipulation

Table 1. Effects of Culture, Context, and Level Manipulations on Positive Interpersonal Exchange Perceptions

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	53.065[a]	10	5.306	19.700	.000	.501
Intercept	74.282	1	74.282	275.760	.000	.585
Extraversion	.603	1	.603	2.237	.136	.011
Culture	31.488	1	31.488	116.895	.000	.374
Context	.325	1	.325	1.207	.273	.006
Level	.610	1	.610	2.264	.134	.011
Culture * Context	.138	1	.138	.511	.475	.003
Culture * Level	.033	1	.033	.121	.728	.001
Context * Level	.087	1	.087	.322	.571	.002
Culture * Context * Level	.044	1	.044	.162	.687	.001
Error	52.797	196	.269			
Total	3125.609	207				
Corrected Total	105.861	206				

a. R Squared = .501 (Adjusted R Squared = .476)

Table 2. Effects of Culture, Context, and Level Manipulations on Intellectual Stimulation Perceptions

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	42.962[a]	9	4.774	19.782	.000	.476
Intercept	2499.122	1	2499.122	10356.706	.000	.981
Culture	22.410	1	22.410	92.870	.000	.321
Format	.961	1	.961	3.982	.047	.020
Level	.990	1	.990	4.102	.044	.020
Culture * Context	.042	1	.042	.175	.676	.001
Culture * Level	.356	1	.356	1.477	.226	.007
Context * Level	.006	1	.006	.026	.872	.000
Culture * Context * Level	.037	1	.037	.154	.695	.001
Error	47.296	196	.241			
Total	2641.836	206				
Corrected Total	90.258	205				

a. R Squared = .476 (Adjusted R Squared = .452)

Table 3. Effects of Culture, Context, and Level Manipulations on Challenge Perceptions

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	29.198[a]	10	2.920	10.934	.000	.357
Intercept	145.436	1	145.436	544.646	.000	.734
CovEAS	1.570	1	1.570	5.878	.016	.029
Culture	9.246	1	9.246	34.624	.000	.149
Format	1.512	1	1.512	5.663	.018	.028
Level	.005	1	.005	.019	.892	.000
Culture * Context	2.723	1	2.723	10.199	.002	.049
Culture * Level	.006	1	.006	.022	.882	.000
Context * Level	.321	1	.321	1.201	.274	.006
Culture * Context * Level	.011	1	.011	.041	.841	.000
Error	52.605	197	.267			
Total	2797.680	208				
Corrected Total	81.802	207				

a. R Squared = .357 (Adjusted R Squared = .324)

References

Allen, J., Jimmieson, N. L., Bordia, P., & Irmer, B. E. (2007) Uncertainty during organizational change: Managing perceptions through communication. *Journal of Change Management, 7*(2), 187–210.

Amabile, T. M. & Gryskiewicz, N. D. (1989). The creative environment scales: Work environment inventory. *Creativity Research Journal, 2,* 231–253.

Bal, M. (1997). *Narratology.* 2nd Ed. Toronto: University of Toronto Press.

Barthes, R. (1988). *Image, music, text.* New York: Noonday Press.

Besemer, S. P., & O'Quin, K. (1999). Confirming the three-factor creative product analysis matrix model in an American sample. *Creativity Research Journal, 12,* 287–296.

Boje, D. M. (1991). Consulting and change in the storytelling organization. *Journal of Organizational Change Management, 4,* 7–17.

Cacioppo, J.T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology, 42,* 116–131.

Center for Creative Leadership (2010). KEYS to Creativity and Innovation.

Christensen, P.R., Merrifield, P.R, & Gilford, J.P. (1953). *Consequences Form A-1.* Beverly Hills, CA: Sheridan Supply.

Christiaans, H. H. C. M. (2002). Creativity as a design criterion. *Creativity Research Journal, 14,* 41–54.

Dailey and Mumford (2006). Evaluative aspects of creative thought: Errors in appraising the implications of new ideas. *Creativity Research Journal, 18,* 367–384.

Denning, S. (2001). *The Springboard: How Storytelling Ignites Action in Knowledge-Era Organizations.* Boston: Elsevier.

Elliot, B. J. (2005). *Using narrative in social research: Qualitative and quantitative approaches.* London: Sage.

Goldberg, L. R. (1972). Parameters of personality inventory construction and utilization: A comparison of prediction strategies and tactics. *Multivariate Behavior Research Monograph, 7,* 1–59.

Hunter, S. T., Bedell, K. E., & Mumford, M. D. (2007). Climate for creativity: A quantitative review. *Creativity Research Journal, 19,* 69–90.

Lonergan, D. C., Scott, G. M., & Mumford, M. D. (2004). Evaluative aspects of creative thought: Effects of idea appraisal and revision standards. *Creativity Research Journal, 16,* 231–246.

Maitlis, S. (2005). The social process of organizational sensemaking. *Academy of Management Journal, 48,* 21–49.

Merrifield, P. R., Guilford, J. P., Christensen, P. R., & Frick, J. W. (1962). The role of intellectual factors in problem-solving. *Psychological Mongographs, 76,* 1–21.

Mitlis, S., & Christianson, M. (2014). Sensemaking in organizations: Taking stock and moving forward. *The Academy of Management Annals, 8,* 57–125.

Ostroff, C., Kinicki, A. J., & Tamkins, M. M. (2004). Organizational culture and climate. In Weiner, I. B., Borman, W. C., Ilgen, D. R., & Klimoski, R. J. (Eds.) *Handbook of Psychology, Volume 12* (565–594). Hoboken, NJ: John Wiley & Sons, Inc.

Redmond, M.R., Mumford, M.D., & Teach, R. (1993). Putting creativity to work: Effects of leader behavior on subordinate creativity. *Organizational Behavior and Human Decision Processes, 55,* 120–151.

Ruch, F. L., & Ruch, w. W., (1980) *Employee Aptitude Survey.* Los Angeles, CA: Psychological Services.

Scott, G. M., Lonergan, D. C., & Mumford, M. D. (2005). Contractual combination: Alternative knowledge structures, alternative heuristics. *Creativity Research Journal, 17,* 21–36.

Shipman, A., & Mumford, M. D. (2011) *Leading for creativity: Competing leader influence tactics on creative engagement* (Unpublished doctoral dissertation). University of Oklahoma, Norman, OK.

Vincent, A. S., Decker, B. P., & Mumford, M. D. (2002). Divergent thinking, intelligence, and expertise: A test of alternative models. *Creativity Research Journal, 14,* 163–178.

Weick, K. E. (1995). *Sensemaking in Organizations.* Thousand Oaks, CA: Sage Publications.