

Readings and Resources on Climate for Creativity: An Annotated Bibliography

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The Creativity Research Unit of the Creative Problem Solving Group, Inc. assembled the following readings and resources with particular help from Hans Akkermans (Belgium), Erik Isaksen (CPSB), and Jeff Fajans (Claremont Graduate University).

The focus of this selected bibliography is on the concept of organizational climate for creativity and change with particular emphasis on the Creative Climate Questionnaire (CCQ, the precursor to the SOQ) and the Situational Outlook Questionnaire® (SOQ) both of which were designed to assess organizational climate and have been used as tools to promote and direct organizational change initiatives.

The references are divided into four sections:

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Theses/Dissertations

Aerts, W. (2008). *Exploring the relationships between problem-solving style and climates in best and worst-case work experiences.* Unpublished Master's Thesis. Vlekho, Brussels.

This study looked at person-environment fit within the field of innovation and creativity, specifically examining the relationship between problem-solving style and organizational climate. How do people of different problem-solving styles view their environments differently? Aerts found that there were significant differences between individuals of stronger contrasting problem-solving styles and the climate in best- and worst-case work environments.

Akkermans, H. (2008). *Organizational climate as an intervening variable between leadership behavior and innovative productivity: An exploratory study.* Unpublished Master's Thesis. Vlekho, Brussels.

This thesis examined what specific leader behaviors help or hinder the creation of an innovatively productive climate. Using qualitative analysis, eight categories of leader behavior were classified, and specific behaviors were identified that helped or hindered innovation. Climate was also found to be a significant intervening variable. Leaders affect the organizational climate through their behaviors, which in turn affects innovative productivity.

Argona, C. A. (2001). *Identifying Ekvall's creative climate dimensions in an aesthetic education setting.* Unpublished Master's Project. International Center for Studies in Creativity, State University College at Buffalo.

The questions that guided this study were: (1) How do Ekvall's climate dimensions manifest themselves in an aesthetic education setting? (2) What descriptions of creative climate in aesthetic education exist in the literature? (3) What observed behaviors are indicative of creative behavior in aesthetic education classes? And (4) How does aesthetic education help to enhance creative climate in the classroom? Nine classes from grades K-2 were observed in an urban elementary school setting. Classes were observed using a personal observation protocol and teacher observation protocols. These data were collected, examined and sorted into characteristics similar and different to Ekvall's definitions. Each dimension was summarized and identified considerations for further research. In addition, a literature review presented key behaviors of creative climate in education and the importance of aesthetics in education. Ultimately, both the data and literature demonstrated the benefits and behaviors of aesthetic education. However, further research is needed to solidify the importance and benefits of aesthetics in the academic setting.

Bakkar, A. A. (2003). *Creativity-enhancement in media organizations: A study of the perception of journalists and media managers in Saudi Arabia*. Unpublished Ph.D. Dissertation. University of Oklahoma Graduate College.

This dissertation examines how creativity can be enhanced in Saudi Arabian media organizations. In the study, managers and employees from seven Saudi media organizations were asked to complete an Arabic translation of the Situational Outlook Questionnaire® (SOQ). The sample included a total of 209 participants (43 managers and 166 employees). The data was then used to address research questions focused on understanding how managers and employees differ in their perceptions of the climate in their organizations. In addition, the research questions focused on the effect of demographic factors on the participants' perception. Results show that there is a statistically significant difference between males and females in Saudi media organizations and that gender is a statistically significant factor in defining differences between managers and employees on the SOQ dimensions of challenge, trust, and freedom. The author suggests that this finding reflects a unique situation in Saudi media organizations when compared to results reported in other international organizations. This study also uses an extensive literature review of factors that lead to creative climates in organizations as a means to introduce a model of building a creative organization. This model includes three major factors: a) the management system of the organization, b) daily work activities, and c) organizational life. An exploration of the model's strengths and weaknesses is offered.

Boney, P. K. (2009). *Predicting team-level climate for innovation productivity through the Tilt 360 LP multi-rater assessment of balanced character strengths in transcendent leadership*. Unpublished Master's Thesis. North Carolina State University, Raleigh, North Carolina.

This study found a positive correlation between Tilt results and a team-level application of climate for innovation (SOQ). Implications for leadership and organizational climate are discussed.

Britz, A. (1995). *The assessment of climate for innovation in organizations*. Unpublished Master's Thesis. Technische Hochschule Darmstadt, Germany.

The purpose of this master's thesis was two fold. The first was to examine the relationship of the concept of climate to Creative Problem Solving (CPS) in organizational settings through a literature review. The second was to determine if there was a difference in the way individuals responded to the Situational Outlook Questionnaire® (SOQ) when they were asked to reflect on their perception of a work environment they were in that was most conducive to their creativity and then an environment that was least conducive. The study suggested that climate has a large impact on creativity and that there were significant differences between an individual's perception of their 'best' and 'worst' experiences. The study further suggested that even in the best-case scores on the climate dimensions, seldom did people attain an absolute high score of 300, and inversely, in the worst case an absolute low score of 0 is seldom achieved.

Brossing, M. (2010). *Leadership, organizational climate and work-related sense of coherence*. Unpublished Master's Thesis. Psychological Institute, Lund University, Sweden.

The main aim of this thesis was to examine the relationship between leadership style and creative organizational climate. The aim was also to examine the relationship between leadership style and work-related sense of coherence. The material for our study has been part of a project at the University of Lund, aimed to study organizational conditions for creativity and innovation. The information was gathered through a web-based survey. The sample consisted of 528 participants from the public sector in southern part of Sweden. Out of these, 224 questionnaires were returned. A random selection was done, consisting of 100 participants with a distribution of 51% women and 49% men. Three questionnaires were used for the study; the leadership style questionnaire CPE (Change, Production, Employee-centered leadership style), the creative organizational questionnaire CCQ (Creative Climate Questionnaire) and the WSOC questionnaire (Work-related Sense Of Coherence). The results of the study indicated that the employee-centered leadership style is highly correlated with the creative organizational climate. The employee-centered leadership style as well as the production-centered leadership style showed a high significant relation with the Work-related Sense Of Coherence. The result for the creative organizational climate indicated a high value, which was higher than the defined standard for a creative climate in general.

Cabra, J. F. (1996). *Examining the reliability and factor structure of the Climate for Innovation Questionnaire*. Unpublished Master's Thesis. State University College at Buffalo, New York.

The purpose of this study was to determine the extent to which the Situational Outlook Questionnaire® (SOQ) had improved on its reliability and internal factor structure in relation to earlier versions of the SOQ. A comparison was made across three previous versions -- the Climate for Innovation Questionnaire (CIQIVA), the CIQIIIA, and the Creative Climate Questionnaire (CCQIIA). The sample included 1841 respondents who were administered the CIQIIA, 1297 subjects who were administered the CIQIIIA, and 639 respondents who were administered the CIQIVA. The majority of the respondents participated in Creative Problem Solving training programs. All other subjects were students enrolled in Creative Studies courses at the State University College at Buffalo. Responses were subjected to inter-item correlations, exploratory factor analyses, and reliability studies. The results suggested that the CIQIVA operated as it was designed and did so in a consistent manner. The results also suggested that the questionnaire had been improved, but may need some minor refinements. Areas for future research with the measure are also suggested.

Dutcher, A. J. (1997). *Understanding the relationship of vision to creative climate and leadership practices*. Unpublished Master's Project. Center for Studies in Creativity, State University College at Buffalo.

This project examined the dynamics of psychological climate and the dynamics of leadership practices within the context of organizational vision. The four questions in these areas that guided this research were: (1) What were the dynamics of psychological climate operating in this data? (2) What leadership dynamics were in

this data? (3) How do these leadership dynamics relate to the leadership practices identified by Kouzes and Posner (1987)? And (4) What are the implications for organizational vision? Three of the six open-ended survey questions that related to the concepts of climate, leadership, and vision were analyzed. Qualitative methods were used in coding and sorting of data according to Ekvall's (1996) ten dimensions of creative climate. Then, the same themes were examined for evidence of Kouzes' and Posner's (1987) leadership practices. Participant comments from the vision survey clustered primarily within Ekvall's (1996) climate dimensions of Challenge, Dynamism & Liveliness, and Trust & Openness. Evidence of all Kouzes' and Pozner's (1987) leadership practices appeared, but the data clustered primarily within the process of Modeling The Way.

Erickson, D. R. (2010). *The climate for nursing creativity and risk-taking: A magnet environment versus non-magnet environment*. Unpublished Ph.D. Dissertation. University of Oklahoma Graduate College.

Using the Situational Outlook Questionnaire, a non-experimental, cross-sectional descriptive quantitative study was done to compare the perceived organizational support for creativity and risk-taking between nurses working in a Magnet hospital and a non-Magnet hospital. As predicted, the Magnet environment supported idea time, idea support, freedom, debate, and risk-taking. However, challenge and involvement, playfulness, and trust/openness were not supported and there was no difference in the perception of conflict between the two environments.

Gaulin, J. P. (1985). *Creativity: Unlocking the productive work environment*. Unpublished Master's Project. State University of New York College at Buffalo.

The purpose of this project was to determine what methods might be used to develop and maintain a work environment that supports creativity. The project puts forward a documented and theoretically supported argument that by developing and maintaining an environment conducive to creativity the organization can realize many benefits. These benefits include increased productivity, reduced absenteeism and improved morale. The study developed a survey and it was administered to 13 individuals. The quantitative and qualitative portions of the survey were analyzed. The results support the value of creativity in the work environment. Implications, limitations and areas for further research are discussed.

Geurts, M. (2009). *An examination of the model for organizational change, innovation and creativity*. Unpublished Master's Thesis. Hogeschool-Universiteit Brussel.

This study found strong support for the current elements of the climate-centric Model for Organizational Creativity (MOC) and the SOQ. A new element called "physical environment" was also identified. This study was the first to directly study the support for the elements depicted in the MOC.

Grivas, C. C. (1996). *An exploratory investigation of the relationship of cognitive style with perceptions of creative climate*. Unpublished Master's Thesis. State University of New York College at Buffalo.

This multi-method study explored the relationship of cognitive style with perceptions of creative climate. The theoretical background and relationship of these two constructs was presented. The analysis of this relationship was conducted using the Kirton Adaption-Innovation Inventory (KAI), a measure of creative style, and the Climate for Innovation Questionnaire (CIQ), a measure of creative climate. Participants (n=147), all from the research and development division of a large manufacturing company, were divided by KAI preference into two distinct groups consisting of the strongly adaptive (n=46) and the strongly innovative (n=49). Responses obtained from the open-ended questions on the CIQ by both adaptive and innovative groups were then contrasted with one another using qualitative analysis. Results from this analysis indicated that people of strongly different cognitive styles were similar in primarily two ways: both groups valued communication and desired to experiment with and conduct research. The latter finding may be due, in part, to the group's research and development role in the company. The groups also differed in three key ways: the groups valued the community differently, approached obstacles differently, and desired different types of relationships with management. Numerical data obtained from both measures was also analyzed, however few statistically significant results were found. Conclusions, implications, and recommendations for future research and development are presented and discussed.

Hohn, H. D. (1999). *Playing, leadership and team development in innovative teams: A reflection on theory confronted with the perspective of experienced leaders*. Unpublished Master's Thesis. Delft University of Technology, Delft, the Netherlands.

This thesis compares and contrasts theoretical reflections with the practical perspectives of experienced leaders (n=75) who completed a survey titled 'Leadership and Team Development in Innovative Teams'. The research is positioned in the domain of group processes and leadership on the relations-process level, which refers to the atmosphere in the team, leadership issues and the psychodynamic development of the group. As a conclusion, the author states that both the theoretical survey and, to a similar extent, the practitioners' perceptions indicate many keys to fostering a creative climate in small group settings that leads to successful innovation. These are: Play, Freedom to have destructive thoughts, Challenge and Risk-Taking. The author provides implications of the study and areas for future research.

Huisman, J. R. (2006). *What happened after the brainstorm?* Unpublished Master's Thesis, Department of Human Performance Management, Faculty of Technology Management, University of Technology, Eindhoven.

This thesis was conducted at Royal Phillips Electronics in the Netherlands and investigated 28 projects that made use of brainstorming. Intellectual property was created by those teams that came up with many ideas, and perceived high levels of Idea-Time, Debate, and Risk-Taking during their NPD project. Groups that contributed to end products were relatively small and perceived high levels of Debate and Risk-Taking during their NPD project.

Klop, C. (2007). *The "big idea:" Nowhere inside the business is there any factor as potentially valuable as the "big idea."* Unpublished Master's Thesis, Department Technology Management, Eindhoven, The Netherlands.

The major findings of the study were that the availability of creative skills of the participants, low accountability, and high multi-disciplinarity of the team leads to more idea generation during a workshop or a more effective workshop. This study also found a high level of idea-support, debate, and idea time was found to lead to a more effective workshop. Finally, high levels of challenge, freedom, idea-support, trust, playfulness, conflict, and risk taking at the organizational climate leads to more idea implementation or a more effective NPD process.

Knox, S. (2003). *Time travel and role maps: A pilot initiative in Creative Problem Solving.* Unpublished Master's Thesis. Royal Roads University, Victoria, British Columbia.

This thesis focused on trying to understand if experience in Creative Problem Solving has an influence on perceptions of organizational support for creativity in a health care setting. The researcher used the Situational Outlook Questionnaire® (SOQ) to understand the initial level of support for creativity so that training of Creative Problem Solving to the staff could be tailored. The hypothesis was that this training would improve perceptions of organizational support and assist the staff's ability to address day-to-day problems more effectively. This pilot study consisted of 37 occupational therapists of which 20 completed the SOQ prior to and following a three-hour training session. Multivariate analysis of covariance (MANCOVA) was conducted to analyze the differences between pre-intervention and post-intervention with the covariate, time in the organization, removed. Results suggested that the creative problem-solving intervention had a statistically significant effect on three SOQ dimensions: trust and openness, conflict and risk-taking. The researcher hypothesized that despite the organizational downsizing that was occurring during the study, which other researchers have found to decrease employee perceptions of the climate, the increase seen in this study was due to the training and use of CPS techniques to address climate issues derived from the first application of the SOQ. Implications, limitations and areas for further investigation are suggested.

Lauer, K. J. (1994). *The assessment of creative climate: An investigation of Ekvall's Creative Climate Questionnaire.* Unpublished Master's Thesis. State University College at Buffalo, New York.

The purpose of this multi-method study was to examine the validity of the first version of the Situational Outlook Questionnaire®, that at the time was known as the Creative Climate Questionnaire (CCQ). Creativity literature from the domain of Psychology, Sociology, Business, and Philosophy was examined for the existence of the ten dimensions of creative climate assessed by the CCQ. The results suggested that the ten dimensions are theoretically supported. The study also examined the psychometric properties of the instrument as derived from subject responses to its items. The sample included 434 subjects (196 males, 235 females, and 3 unidentified) who participated in Creative Problem-Solving training programs. The subjects represented six organizations that were classified as either educational

(n=248) or business (n=186). Responses were subjected to exploratory principle component analyses. The results suggest that this instrument tends to function as it was designed to and does so in a reliable manner. However, variations in the factor structure suggest the instrument should be used as a research tool pending further study and possible modification. Implications for future research and development are presented and discussed.

Parrish, E. L. (2004). *A comparative study of the organizational climate at the Army Materiel Command regarding creativity and change*. Unpublished Ph.D. Dissertation. Minneapolis, MN: North Central University.

The purpose of this study was to examine the climate for creativity and change at the Army Materiel Command (AMC), using the Situational Outlook Questionnaire® (SOQ), and to compare the results with those of other organizational data to determine the degree to which AMC supports or hinders creativity and change. Questionnaires were completed by 76 respondents (39.8%) of the 191 randomly selected personnel in AMC. The results indicated that AMC was consistently in the stagnated category for each of the nine climate dimensions assessed by the SOQ. Analysis of variance (ANOVA) did not reveal any statistically significant difference for age, gender, and experience in the present position. There were statistically significant differences for educational status and experience at AMC. The significant difference between climate and education was on the dimension of Conflicts. Exploration of this revealed that as the educational level of participants increased so did scores for the Conflicts dimension. The author's interpretation was that there was a direct correlation between the educational level of participants and their degree of personal and emotional tension within the organization. Implications, limitations, and areas for further investigation are put forward by the author.

Peters, R. G. (2002). *Identifying Ekvall's creative climate dimensions in elementary through high school settings*. Unpublished Master's Project. International Center for Studies in Creativity, State University College at Buffalo.

This project examined Ekvall's ten creative climate dimensions of an organizational setting and described how they appeared in classroom settings. Classroom observations were conducted at the elementary, middle school and high school levels. Notes were made on a standard protocol of occurrences that fit into each of Ekvall's dimensions. Observations that pertained to student conversations in the classroom were separated and examined for their similarities and differences to Ekvall's definitions of the ten dimensions (Lauer, 1994). Teacher interviews at the high school and elementary school settings were also conducted and sorted for similarities and differences to Ekvall's definitions. These data were summarized under each dimension heading according to findings that were similar to Ekvall's definition of that dimension; findings that were different from his definition; and a list of questions or ideas that deserve further consideration. The project contains literature on 15 general climate topics sorted by category from the Wilson Select Plus Index, and the ERIC database. Findings indicate that each of the ten creative climate dimensions as defined by Ekvall were present and observable in elementary through high school settings. Both teachers and students demonstrated behavior indicative of creative classroom climate. The literature that existed prior to this study was heavily unrelated to the topic of creative classroom environment, thus validating the need

for this project. While the observations support the consistent presence of Ekvall's dimensions in classroom settings, further research is recommended to elaborate and develop the educational implications.

Pureta, T. (2007). *Correlation between leadership styles and creative climate in working teams*. Unpublished Master's Thesis. Organizational and Industrial Psychology, Department of Psychology, Faculty of Philosophy, University of Zagreb, Croatia.

The objective of this thesis was to examine the link between managerial styles and creative climate within working groups. Pureta wished to examine whether there were gaps between employees' and managers' evaluations of creative climate, between employees' and managers' perceptions of managerial style, and how managerial style affects creative climate. Results showed that there were significant differences between employee and manager evaluations and perceptions. A discriminatory analysis of creative climate and managerial styles assessments resulted in a significant connection between creative climate and managerial style assessment, namely in a positive sense in the presence of a democratic/friendly style, and in a negative sense in the presence of an authoritarian/model style. The study also found that most managers are unaware of the impact their managerial behavior has on development of creative climate inside the teams.

Rasulzada, F. (2007). *Organizational creativity and psychological well-being: Contextual aspects of creativity and psychological well-being from an open systems perspective*. Unpublished Doctoral Dissertation. Department of Psychology – Work and Organizational Psychology Division, Lund University, Sweden.

This dissertation reported the results from three studies. The first study highlighted the joint contribution of contextual variables (organizational climate, team climate, change-oriented leadership style, work resources, and workload). It also pointed out that organizational creativity and innovation may be a means to increase psychological well-being. Study 2 illustrated that the better the climate for creativity the lower the stress. It also showed that relationship-oriented leadership as well as educational level were related to lower employee stress. Study 3 clearly illustrated that contextual aspects such as structure dependency, organizational defenses, collaboration difficulties, and political cannibalism, among other things, made it difficult for engineers to engage in creative work.

Retz, K. (2011). *Factors that affect the climate for creativity and innovation in an aerospace engineering organization*. Unpublished Ph.D. Dissertation. Apollos University.

This study examined what factors can affect the creative climate within an aerospace engineering organization from the perspective of the engineers and technical professionals. By utilizing the Situational Outlook Questionnaire, the study confirmed that leadership, time to reflect, and working climate significantly affect the ability of engineers to be creative and innovative.

Richards, T. M. (2002). *Identifying Ekvall's creative climate dimensions in gifted and talented enrichment programs*. Unpublished Master's Project. International Center for Studies in Creativity, State University College at Buffalo.

This project uses Ekvall's ten creative climate dimensions in the business setting as a baseline for identification of creative climate dimensions in a gifted and talented classroom. Socioeconomic background and age of the participating schools and classrooms are given. Data from eight gifted and talented classroom observations display the connection of behaviors indicating Ekvall's ten climate dimensions along with "other" behaviors that may indicate new dimensions appropriate for a classroom setting. Included are interviews with gifted and talented teachers reflecting their thoughts on creative classroom dimensions. Recommendations for further exploration are also included.

Santhridan, S. (2010). *Influences of employees' motivation and work environment on creative productivity in research and development*. Unpublished Doctoral Dissertation. University Malaya, Kuala Lumpur.

Applying '*Social Psychology Theory of Creativity*' (Amabile, 1996) in the Malaysian context, this study aims to measure employees' motivation, work environment for creativity and creative productivity among researchers in research and development (R&D) related public and private organizations in Klang Valley. The data collection of this study relies on three main research instruments namely *Work Preference Inventory* (WPI) (Amabile et al., 1994), *Situational Outlook Questionnaire* (SOQ) (Isaksen & Lauer, 2001) and *Creative Activities and Accomplishments Check List* (CAACL) (Runco & Okuda, 1988; Oldham and Cummings, 1996; Scott and Bruce, 1994; Tierney et al., 1999). Using a total of 202 samples, the data was analyzed with means of descriptive statistics and inferential statistics. The research finding shows that there is a significant difference in creative productivity between public and private sectors. The public sector is higher in creative productivity than the private sector. In contrast, for employees' motivation dimensions such as intrinsic motivation, extrinsic motivation, enjoyment, challenge, outward, findings indicate no significant difference between public and private sector. However in employees' motivation, compensation shows there is a significant difference between the public and private sectors. Additionally, for the work environment there are significant differences between the public and private sector on dimensions such as challenge in work, freedom, support, interpersonal conflict, risk, debate and time. Pearson r for overall sample shows there are significant correlations between creative productivity and challenge, challenge in work, freedom, support, openness, risk, debate and time. There are significant correlations between creative productivity and challenge, challenge in work, support, openness and time in the sample from the public sector. For the sample from the private sector there is a significant correlation between creative productivity and risk. Multiple linear regressions for the overall sample show three dimensions (risk, challenge and extrinsic motivation) explaining 14 % of variance in creative productivity. However extrinsic motivation is a negative predictor for creative productivity in the overall sample. For the sample from the public sector, two dimensions (challenge and challenge in work) explained 13 % of variance in creative productivity. In the sample from the private sector two dimensions (risk and humor) explained 12 % of variance in creative productivity. However humor is a negative predictor for creative productivity in the sample from the private sector.

Senekal, E. (2007). *The influence of organizational climate on creativity and innovation in a technology firm in South Africa.* Unpublished Master's Thesis. Faculty of Management, the University of Johannesburg.

The purpose of this study was to investigate creativity, innovation and certain determining factors, which have an influence on creativity and innovation in the micro business environment and specifically in an information technology firm. The information and communications technology (ICT) sector is very dynamic and very fast paced both in the world and in South Africa. Businesses in this sector have to adapt, almost constantly, to incessantly changing technology, customer demands and macro-environmental variables. A vast amount of research exists to suggest that businesses have to adapt to and embrace change in order to survive in this environment. Creativity and innovation are central to change in the organization. The study specifically focused on creative environment and in this case – the organizational climate. The goal of this study was to identify and measure organizational climate factors known to have a significant, determining influence on the work environment, conducive to creativity and innovation. The organizational climate of a firm in the South African ICT sector was measured and analyzed. The Situational Outlook Questionnaire® (SOQ) was used to measure the organizational climate observable in the organization. The results indicated the organization had a strong climate supportive of and conducive to creativity and innovation. The organization's SOQ results across all dimensions, except the freedom and debate dimensions, compared very well with other innovative organizations.

Sinnappan, S. (2010). *Influences of employee's motivation and work environment on creative productivity in research and development.* Unpublished Doctoral Dissertation. Institut Pengajian Siswazah, Universiti Malaya.

This study aimed to measure employees' motivation, work environment for creativity and creative productivity among researchers in research and development at public and private organizations in Malaysia. Results showed a significant difference in creative productivity between public and private sectors, with the public sector having higher creative productivity.

Ślusarczyk, A. (2005). *Środowisko pracy I cechy indywidualne pracownika jako wyznaczniki twórczości w organizacji (Work environment and individual characteristics as determinants of creativity in the organization)* Unpublished Doctoral Dissertation. Uniwersytet Jagielloński, Kraków, Poland.

This study provided evidence surrounding the Polish translation and validation of the SOQ. It also provided in-depth analysis of the relationship between the climate assessments from five Polish organizations and various personality characteristics. The dissertation is written in Polish.

Sobieck, M. A. (1996). *Examination of cross-site narrative responses on the CIQ and SOQ*. Unpublished Master's Thesis, State University of New York College at Buffalo.

This project focused on learning more about how the Situational Outlook Questionnaire® (SOQ) narratives related to the applied and theoretical purposes for assessment of organizational climate. The purpose of this qualitative project was to: (1) provide explicit baseline data on a purposefully selected sample of SOQ data for a future multi-method examination of the instrument; (2) maintain a researcher log to describe both content and process learning during the analysis in preparation for stronger triangulation on SOQ narrative development; (3) identify similarities, differences, and unique perceptions offered by the participants in the SOQ narratives; (4) determine if a relationship exists between the participants' comments and the SOQ dimensions; (5) determine what, if any, similarities, differences, and unique perceptions exist in the SOQ narratives between the ten dimensions (Version III) and the nine dimensions (Version IV) regarding Dynamism, Challenge and Freedom; and (6) determine how dynamism is demonstrated in the Version IV narratives of the SOQ. Findings of the qualitative analysis supported the works of Ekvall (1982, 1983, 1991, 1994), Lauer (1994), and Cabra (1996) regarding the internal reliability of the items of the SOQ. Results further supported Lauer and Cabra's analysis on the dimensions of Dynamism and Liveliness and Challenge and Freedom that led to another revision of Version III of the SOQ. Version IV emerged as a tighter instrument. The results of the changes made in Version IV appeared to strengthen the instrument. The analysis of Dynamism and Liveliness indicated a weak representation in Version III and is not represented in any obvious way in any of the other dimensions in Version IV. The analysis of the "Un-coded" category in Level II qualitative analysis indicated support for other influences on organizational climate identified by Ekvall (1991, 1996) and Amabile and Gyskiewicz (1988). Findings and observations from this project suggest further study and development to further strengthen the SOQ as a multi-method instrument by both the researcher and practitioner.

Speranzini, G. D. (1997). *Understanding the impact of a climate intervention: Debriefing the Situational Outlook Questionnaire® (SOQ)*. Unpublished Master's Thesis. State University of New York College at Buffalo.

This study examined the content and process contingencies for successfully debriefing the Situational Outlook Questionnaire® (SOQ). The focus was on the balance of theory with practice. Specifically, two questions guided this inquiry: "What impact does a debrief of the SOQ have on a single leader and his/her organization?" and "What are the implications of these data for developing debriefing skills when using the SOQ?" The method used was an action research study of a single leader within a single site. The design was qualitative and reflective in nature. Three triangulated data points were established consisting of the SOQ debrief session, the researcher's log, and a follow-up interview. Using the technique of constant comparison, all three data sets were examined in light of the study's questions. The results included guidelines for debriefing the SOQ; the impact of an SOQ intervention; applied theory and research considerations; and future considerations for practitioners and researchers.

Speranzini, G. D. (2004). *Cognitive style and climate for creativity and change*. Unpublished Ph.D. Dissertation. University of Manchester Institute of Science and Technology, Manchester School of Management, UK.

This exploratory study examined the relationships among cognitive style (KAI), the organizational climate for creativity and change (SOQ), and creative performance and job satisfaction. Contrary to other studies, there were some differences in climate between those who were clear adaptors and innovators. When considering the differences between current and preferred climate, when the discrepancies are small – job satisfaction increases.

Susa, A. M. (2002). *Humor type, organizational climate, and outcomes: The shortest distance between an organization's environment and the bottom line is laughter*. Unpublished Ph.D. Dissertation. University of Nebraska, Lincoln.

This study explored the relation between the three major classifications or types of humor (superiority, incongruity, and relief) and job satisfaction, organizational commitment, organizational creativity, perceived organizational support, absenteeism, and job performance. Humor's role relative to organizational climate was also investigated. Subjects who completed the battery of surveys were employed in a mid-sized financial service company (N=175). The surveys used included the Organizational Humor Scale and Situational Outlook Questionnaire® (SOQ). As hypothesized, correlations between scores on the organizational climate, organizational humor, and individual sense of humor measures, and job satisfaction, organizational commitment, organizational creativity, perceived organizational support, and overall job performance yielded distinct patterns based on humor type. Support was also found for the hypothesis that superiority humor would be negatively correlated to organizational climate and outcomes (low levels of satisfaction, commitment, creativity, and job performance and poor attendance). Findings also indicated that incongruity humor, and to a lesser extent relief humor, were more aligned with the positive organizational outcomes (high levels of satisfaction, commitment, creativity, and job performance). Overall the findings indicated that humor seems to be related to organizational climate. The results also suggest that the type of humor used and observed in an organizational setting is an important factor in the workplace. Limitations of this study and areas for future inquiry are discussed.

Swanevelder, S. M. (2000). *Die aard en wese van entrepreneurskap en die belangrikheid daarvan vir sukses*. Unpublished Master's Thesis. Randse Afrikaanse Universiteit, Johannesburg, South Africa.

The purpose of this study was to explore aspects of entrepreneurship and to highlight the relationships between entrepreneurship and business success. To explore this relationship the creative organizational climate of two branches of a paint manufacturer in South Africa were assessed and compared. Headquarters evaluated these two branches as successful and less successful based upon their standard evaluation tools. The Situational Outlook Questionnaire® (SOQ) was used to assess the branch employees perception of their organizational climate. The goal of the study was to support the hypothesis that there would be a correlation between the successful branch and the existence of a favorable creative organizational

climate, as well as a correlation between the less successful branch and the absence of a favorable creative organizational climate. The results did not support this hypothesis since it did not show any statistically significant differences between the two branches. Further investigation showed that both branches compared well with previous studies on innovated organizations. To understand why the expected relationships did not appear the author reviewed the tools the branch headquarters used to evaluate and rate the branches. It was found that some success factors were subjectively evaluated by the headquarters and that some were not in line with internationally accepted financial measurements. The researcher found that the branch originally judged as less successful, was not as unsuccessful as claimed by headquarters. The positive organizational climate of both these branches correlates with the success results of the two branches. The author concludes from the study and her study of relevant literature that a creative organizational climate is one of the most important prerequisites for entrepreneurship and business success. Limitations of the study and areas for future research are put forward.

Van den Beucken, R. (2006). *Validating the measurement of the organizational climate for creativity in a longitudinal design: A longitudinal study of the organizational climate for creativity of teams during the NPD project, to determine if the need for creativity always is high and if data collection is valid.* Unpublished Master's Thesis. Department of Human Performance Management. Faculty of Technology Management, University of Technology, Eindhoven.

This longitudinal study applied the SOQ to better understand the nature of the creative climate within NPD project teams within Phillips Electronics. The results supported the use of the SOQ as a worthwhile assessment in discriminating climates within teams with high rates of production relating to NPD.

Articles and Chapters on CCQ or SOQ

Al-Beraidi, A., & Rickards, T. (2003). Creative team climate in an international accounting office: an exploratory study in Saudi Arabia. *Managerial Auditing Journal*, 18, 7 – 18.

Conventional wisdom presumes that accounting professionals have little capability for creative thinking. An alternative view is that accountants display creativity when provided with organizational opportunities. This view has been tested in a comparative study of professionals drawn from similar educational backgrounds and allocated to consulting, audit and tax duties within the headquarters of a major international firm in Saudi Arabia. A benchmarking approach was adapted. Those professionals placed in the consulting department reported more positive climates and creative outputs. There was evidence that there was scope for increasing the creativity to organizational advantage within the audit, tax and related functions, through more transformational leadership interventions. In view of the educational similarities of the samples, it is concluded that any lack of creative performance within the audit and tax functions is not due to individual deficiencies. Team development and leadership interventions are suggested as promising means of addressing any “creativity gap” in audit and tax team processes.

Arvonen, J., & Ekvall, G. (1999). Effective Leadership Style: Both universal and contingent? *Creativity and Innovation Management*. 8(4), 242-250.

This study explores aspects of the universal and contingent models of leadership. The authors express the opinion that leadership should be linked to level of change in the workplace and their ability to adapt their leadership style to the environment where they work. This theory is tested by relating subordinates rating of their leaders in relation to this model. The correlational results support the hypothesis that subordinates in all environments studied judge high change leaders to be the most competent. The authors conclude that these correlations support adding a change orientation to the universal model that identifies leadership style as either production or people orientated.

Babij, B., & Lauer, K. (2000). The perfect client: Using the SOQ and KAI for organizational transformation. *Communiqué*, 11, 29-31.

This article recounts a situation where a client was ready, willing and able to fundamentally change his entire organization. As part of this process, climate was assessed and the notion of cognitive style as a foundation for change was incorporated. The SOQ was used to gauge the readiness for change in the company. After the results were reviewed it was clear that the areas of freedom and risk-taking needed improvement. The KAI was also used to address interpersonal relations. The development of interventions using this data led to an environment that underwent productive changes that enhanced employee commitment and involvement.

Bertels, H. M. J., Kleinschmidt, E. J., & Koen, P. A. (2011). Communities of practices versus organizational climate: Which one matters more to dispersed collaboration in the front end of innovation? *Journal of Product Innovation Management*, 28, 757-772.

The findings of this study suggest that managers should simultaneously invest in increasing proficiency in dispersed collaboration and supporting communities of practice. Either one by itself is insufficient. Dispersed collaboration has many benefits for organizations, such as enabling people with the appropriate skills, knowledge, and abilities to work together despite geographical constraints; however, workers must be proficient in communication tools and technology, as well as in understanding and dealing with cultural differences. This research also found strong support for the idea that an open climate favoring risk-taking, trust, and open interaction positively influences the front-end of innovation.

Bharadwaj, S., & Menon, A. (2000). Making innovation happen in organizations: Individual creativity mechanisms, organizational creativity mechanisms or both? *Journal of Product Innovation Management*, 17, 424-434.

Marketing managers increasingly face a product innovation dilemma. Managers will have to sell more with fewer new products in an environment where new products are providing lower revenue yields. Therefore, understanding what drives successful innovation is of paramount importance. This paper examines the organizational innovation hypothesis that innovation is a function of individual efforts and organizational systems to facilitate creativity. Our model formulates creativity as a property of thought process that can be acquired and improved through instruction and practice. In this context, individual creativity mechanisms refer to activities undertaken by individual employees within an organization to enhance their capability for developing something, which is meaningful and novel within their work environment. Organizational creativity mechanisms refer to the extent to which the organization has instituted formal approaches and tools, and provided resources to encourage meaningfully novel behaviors within the organization. Using data collected from 634 organizations, we find support for this hypothesis. The results suggest that the presence of both individual and organizational creativity mechanisms led to the highest level of innovation performance. The results also suggest that high levels of organizational creativity mechanisms (even in the presence of low levels of individual creativity) led to significantly superior innovation performance than low levels of organizational and individual creativity mechanisms. The paper also presents managerial and academic implications. This study suggests that it is not enough for organizations to hire creative people and expect the innovation performance of the firm to be superior. Similarly, it is not enough for firms to emphasize management practices to enhance creativity and ignore individual mechanisms. Although it is true that doing either will improve innovation performance, doing both should lead to higher innovation levels. Our understanding of what and how creativity influences innovation performance can be greatly enhanced by additional research that integrates the intrinsic and extrinsic drivers of creativity. Research that examines the role of team creativity efforts in enhancing innovation performance is also vital to an overall improved understanding of creativity, learning, and innovation within organizations.

Boström, A. M., Wallin, L. and Nordström, G. (2007), Evidence-based practice and determinants of research use in elderly care in Sweden. *Journal of Evaluation in Clinical Practice*, 13, 665–673.

Evidence-based practice is a strategic ingredient in today's health care. Despite extensive efforts to produce and disseminate clinical guidelines, research uptake is still a difficult task. In Sweden, elderly care (EC) has shifted from hospital care to community-based care, and the major nursing-staff group in EC has no university education. These and other factors make implementation of evidence-based care particularly challenging in EC settings. The purpose of this study was to identify determinants of research utilization in EC. Two questionnaires that cover research utilization and organizational climate were mailed to all staff ($n = 132$) working in seven EC units. The response rate was 67%. Of all respondents, 28% reported that they used research findings in daily practice (the RU group). Remaining respondents constituted the non-RU group. Significant differences existed between the RU group and the non-RU group as per six individual and six organizational factors. Using logistic regression models, four factors were significantly related to research utilization, namely: attitudes toward research (OR = 5.52, $P = 0.004$); seeking research that is related to clinical practice (OR = 5.56, $P = 0.019$); support from unit manager (OR = 4.03, $P = 0.044$) and access to research findings at work place (OR = 6.65, $P = 0.005$). Individual and organizational factors were associated with the use of research in EC. Despite distinguishing conditions in EC settings, identified factors reflect well-known determinants of research use that, as in many other health care contexts, should be considered in the endeavors of evidence-based practice.

Clapp, R. G., & Kirton, M. J. (1994). The relationship between cognitive style and psychological climate: Some comments on the article by Isaksen and Kaufmann. *Studia Psychologica*, 36, 129-134.

This article offered a critical commentary on the initial investigation into the relationship of the KAI as a measure of cognitive style and the SOQ as a measure of climate. This commentary prompted a response by Isaksen and Lauer (1999).

Ekvall, G. (1976). Creativity at the place of work: Studies of suggestors and suggestion systems in industry. *Journal of Creative Behavior*, 10(1), 52-54.

This study focused on factories and blue-collar workers only, it was comprised of four main aspects 1) psychological goals of the system and obstacles 2) the individual suggestors 3) the origin and aptitude of a suggestion and 4) the organization and administration of a suggestion. The findings indicated a large number of suggestors had their self-confidence rise from having their suggestions accepted and rewarded. Also the suggestors did not differ from other workers in ordinary intelligence tests however there were differences in divergent thinking tests i.e. they had a significantly higher mean score on intellectual fluency and flexibility of designed type by Guilford. Nearly all the suggestors received inspiration for their suggestion while on the job to include almost if not all of their conscious thinking and development of the solutions. This study also concluded the best climate for the suggestion systems was created by 1) unbiased methods of analysis 2) the presence of special personnel and 3) the reasonable compensation for the suggestions.

Ekvall, G. (1987). The climate metaphor in organization theory. In B. Bass & P. Drenth (Eds.), *Advances in organizational psychology* (pp. 177 - 190). Beverly Hills, CA: Sage.

This article talks about the concept of climate as it describes psychological conditions in a social "region." This concept is popular in our everyday language as well as in the social and behavioral sciences. "Organizational climate" has become a well-established subject of research in recent years. Addressed in this article are sections like: organizational climate as a scientific concept; research methods; organizational climate and "psychological climate"; the genesis of organizational climate; consequences of climate; total climate or sub-climate; climates for different contexts; and importance of the climate concept.

Ekvall, G. (1988). Change centered leaders: Empirical evidence of a third dimension of leadership. *Creativity & Innovation Yearbook*, 1, 36-46.

A report of an empirical study that supports the concept of a third style of leadership in addition to the classic styles. This leadership style is hypothesized to be adaptive when creating and supporting renewal in an organization as a means to keep pace with the internal and external change it encounters. This contrasts other studies and theories that stress a dualistic, bipolar concept of leadership that is described as task orientated or people orientated. The style put forth by this study as an addition to these two classic theories is described as "change-centered". This study of 130 employees from four divisions of one company provided initial support for the theory since a Principal Component Analysis of the data yielded the three hypothesized dimensions.

Ekvall, G. (1991). Change-centered leaders: Empirical evidence of a third dimension of leadership. *Leadership & Organization Development Journal*, 12(6), 18-23.

Qualitative data was gathered from a medium-sized Swedish chemical company. All the white-collar workers and supervisors (excluding the divisional managers) were asked to fill out a climate survey of 70 questions, leadership descriptions consisting of 50 statements on their leaders behavior, a structure scale consisting of 40 questions and a satisfaction questionnaire comprised of three items. The data collected was broken down into three leadership factors the first two were the "classic" factors (employee-centered and structure-centered), but the third factor that emerged was labeled change-centered by the author. The author went on to conclude this new factor is probably a by-product of the new changing business environment, also that the most effective leaders are a blend of the three factors.

Ekvall, G. (1991). The organizational culture of idea-management: A creative climate for the management of ideas. In J. Henry and D. Walker (Eds.), *Managing innovation*, (pp. 73-79). London: SAGE Publications Ltd.

This article deals with the concept and phenomenon of idea-management. It talks about the several forces of change in industrially developed societies which are said to cause the appearance of idea-management which include (1) the accelerating rate

of development in technical fields, (2) fast, world-wide commerce, (3) frequent fluctuation in the life-styles and preferences of customers due to media, communications, travel, secularization, affluent conditions, etc., and (4) new values, ambitions and attitudes. It also describes the relationship between climate and organization with the assistance of a chart in addition to the author's descriptions.

Ekvall, G. (1993). Creativity in Project Work: A Longitudinal Study of a Product Development Project. *Creativity and Innovation Management*, 4(3), 152-159.

This study was conducted to view the effects of control versus a creative environment in a long-term technology project. The projects team was comprised of thirty engineers, certain consultants at different stages and a management team of one section manager supported by three section leaders, the group's climate was measured eleven times through-out the three-year project. The climate throughout the project was highly creative however lowered some at the end, the management was loose and structure weak. Due to poor communication the out come of the project differs depending on the views of the individual, this is because the final product did not fit the customer's goal, but another aspect of the of the project was to produce "spear head" technology that could be used in the future and this was accomplished. A follow-up study conducted three years later showed the product had been used several times in new defense projects.

Ekvall, G. (1995). Participation and Creativity: New Forms of Suggestion Schemes in Sweden. *Creativity and Innovation Management*, 4(3), 17-26.

In this article the current evolution of suggestion systems was reviewed as well as more specific research of two specific companies. The results showed the need for companies to treat the suggestion systems more as a tool of management, as well as a need to re-organize the systems to more of a local focus. The review of the suggestion should be done at or near the area of origin. The author also discussed the need for a more multi-functional committee for the adoption of new policy, on-going education of the rewards system, more dissemination of knowledge and a better appreciation of subordinates as a creative source of innovation.

Ekvall, G. (1996). Organizational climate for creativity and innovation. *European Journal of Work and Organizational Psychology*, 5 (1), 105-123.

This article describes an instrument for measuring organizational structure and climate for creativity and innovation called the Creative Climate Questionnaire or CCQ. The application and validation of this instrument in organizational settings is also described. Recommendations are made for using the CCQ to develop interventions to promote organizational innovation.

Ekvall, G. (1997). Organizational conditions and levels of creativity. *Creativity and Innovation Management*, 6 (4), 195-205.

Two levels of creativity can be identified whether we look at the concept from the product, the person, or the process point of view. The one is radical and

revolutionary, the other adaptive and confirmatory. Are there organizational structures and practices that support lower level creativity but hamper higher level, or vice versa? Some research results on organizational climate and structure variables are presented that indicate differing influences on higher and lower level creativity. It is argued that the issue of innovation in organizations harbors a couple basic dilemmas, the management of which requires understanding and taking into consideration the psychology of creativity.

Ekvall, G. (1999). Creative climate. In M. Runco, & S. R. Pritzker (Eds.), *Encyclopedia of creativity* (pp. 403-412). San Diego, CA: Academic Press.

This article shows that creative climate is an organizational phenomenon that has gained increasing attention and support from researchers and practitioners in many disciplines. The author reviews how child psychologists, historiographers, educational researchers, historians and cultural geographers have been engaged in research on climate's influences on creativity. The article highlights how organizational researchers have studied the factors that stimulate or block creativity and innovations in companies and public service organizations. He suggests that this line of research has been the most extensive since the early 1970's due to an accelerating demand on organizations for adaptations and innovations.

Ekvall, G. (2000). Management and organizational philosophies and practices as stimulants or blocks to creative behavior: A study of engineers. *Creativity and Innovation Management*, 9(2), 94-99.

This study was conducted with 242 engineers from Sweden, made up of 84 % male and 16 % female. The engineers filled out questionnaires made up of nine management practices and were asked how each affected their creativity. The nine practices were "just in time", "lean production", TQM, "concurrent engineering", ISO 9000, Kaizen, Project groups, CAD, and creative methods. The positives outweighed the negatives of all nine practices, however there were several differences when the data was further broken down. The two largest sub groups (R&D engineers and production engineers) were further analyzed finding production engineers had a larger percent of positive responses and the R&D engineers had a larger frequency of negative responses. The author then discussed possible variance due to cognitive style and personality.

Ekvall, G., & Arvonen, J. (1991). Change-centered leadership: An extension of the two-dimensional model. *Scandinavian Journal of Management*, 7(1), 17-26.

Three samples of people taking courses at staff training centers from Sweden, Finland and the USA were utilized to analyze leadership behavior. The subjects were given a thirty-six item questionnaire, the managers were also examined by competence and the respondents personal attitude toward the manager. Three strong factors emerged, the two "classic" factors (employee-centered and production-centered) but also a new factor emerged that dealt with promoting change. The authors went on to hypothesize that the new change oriented factor could be a derivative of the new and quickly changing business environment.

Ekvall, G., & Arvonen, J. (1994). Leadership profiles, situation and effectiveness. *Creativity and Innovation Management*, 3(3), 139-161.

This is a report on a study of leadership styles of approximately 4,000 supervisors and managers from 13 countries. Leadership style is described according to a model that contains three behavioral dimensions. These dimensions are labeled: a) Change/Development, b) Production/Task/Structure, c) Employee/Relations. The authors theorize that these three dimensions blend to create a personal style of a leader, marked by one of 10 profiles. Cluster analysis show that the 10 profiles correspond to the clusters in the data set and supported the authors' theory. The authors promote the belief that the results favor a universal versus contingency theory of leadership styles.

Ekvall, G., & Ryhammar, L. (1998). Leadership Style, Social, Climate and Organizational Outcomes: A study of a Swedish University College. *Creativity and Innovation Management*, 7(3), 126-130.

This study raises the question of the dual influence of leadership style on organizational outcomes - by way of climate and directly. Research material primarily collected for a study of a state university college in Sweden was utilized and further analyzed. Included is a brief history of the university that was utilized for this study. A sample of 130 teachers answered questionnaires about the creative climate in their departments, the department head's leadership style, and the performance of the department in terms of creativity and productivity. The results indicate that, in this organization, the behavioral style of the manager affects organizational results only through influencing the social climate. The implications of the results considering the kind of organization studied are also discussed.

Ekvall, G., & Ryhammar, L. (1999). The creative climate: Its determinants and effects at a Swedish university. *Creativity Research Journal*, 12(4), 303-310.

A study of the creative organizational and individual resources of a state university college in Sweden was initially carried out by Ryhammer (1996). A sample of 130 teachers answered several questionnaires on organizational parameters and went through creativity and personality tests. One of the questionnaires is a measure of the creativity aspects of the social climate. This study consisted of further analyses, according to a causal model, of the climate dimension and its relations to other organizational dimensions and to outcomes in terms of creative achievements of the different departments. Some of the results are logical, expected and easy to interpret. Others are more puzzling and can be tentatively explained only in view of the special character of the academic milieu and its inhabitants. The main and clear finding is that climate and resources seem to exert the strongest influence on the creative outcome and that climate operates in the organization as a lever for leadership and as a manifestation on the behavioral level of the organization's culture, defined as basic values. The more confusing results are that some organizational parameters with positive influences on climate, nevertheless, seem to have suppressing effects on creativity, and other parameters with a negative impact on climate seem to support creativity.

Ekvall, G., & Tångeberg-Andersson, Y. (1986). Working climate and creativity: A study of an innovative newspaper office. *Journal of Creative Behavior*, 20(3), 215-225.

This article focuses on strategies for measuring a creative working climate in an organizational setting. The authors reference a newspaper office they worked with in Sweden. The case study shows how successful and productive an office can be when the conditions are favorable for employee creativity. The 10 dimensions of the creative climate assessed by the Creative Climate Questionnaire (CCQ) are explored with references to specific practices in the newspaper office.

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

This article presents the results of a meta-analysis of 42 prior climate studies designed to assess the extent to which certain climate dimensions were predictive of creative performance. Climate dimensions were effective predictors of creative performance in turbulent, high-pressure, competitive environments.

Isaksen, S. G. (2007). The Situational Outlook Questionnaire®: Assessing the context for change. *Psychological Reports*, 100, 455-466.

This article presents a summary of the psychometric properties of the current version of the SOQ. The article includes an overview of the questionnaire and its foundations as well as a summary of its factor structure, item performance, etc. on a sample of 4,730 subjects.

Isaksen, S. G. (2007). The climate for transformation: Lessons for leaders. *Creativity and Innovation Management*, 16, 3-15.

This article reports insights for organizational leaders based on a series of case studies describing the use of the Situational Outlook Questionnaire® as a tool to assist them with their transformation efforts. Leaders often assert the need to change their organizational cultures. This article seeks to clarify and differentiate culture from climate, and then focus on what leaders can do to transform their climate by applying a deliberate assessment tool.

As the case studies illustrate, making organizational transformation happen is best approached through a systemic or ecological approach. This approach includes considering the people involved, the methods deployed, the desired outcome of the change as well as the context within which the transformation occurs. The broadest concept within this framework is context, which includes both culture and climate, among other things. Since context is key to initiating and sustaining transformation, emphasis on the leader's role in climate creation will be emphasized.

Isaksen, S. G. (2009). Exploring the relationships between problem-solving style and creative psychological climate. In P. Meusbarger, J. Funke, & E. Wunder (Eds.) *Milieus of creativity: An interdisciplinary approach to spatiality of creativity*, Knowledge and Space 2. (pp. 169-188). Springer Science.

This chapter explores the issue of person-environment fit through an operational framework of creativity and innovation, specifically how problem-solving style relates to creative psychological climate.

Isaksen, S. G. (2009). Creative organizational climate. In B. Kerr (Ed.). *Encyclopedia of Giftedness, Creativity and Talent* (pp. 183-185). Thousand Oaks, CA: SAGE Publications.

This short entry within the encyclopedia provides definitions of climate and outlines some general suggestions for establishing a creative environment.

Isaksen, S. G. (in press). Managing for innovation: Examination of a climate-centric model for organizational creativity. *Kindai Management Review*, 1, xx-xx.

This article deeply examines why the need for a new model for organizational creativity is necessary to understand and account for the many factors that interact and affect innovation. It also presents a new model that more exhaustively takes into account the various antecedents and elements that affect climate and creativity.

Isaksen, S. G., & Kaufmann, G. (1990). Adaptors and innovators: A discriminant analysis of the perceptions of the psychological climate for creativity. *Studia Psychologica: The Journal for Basic Research in Psychological Sciences*, 32, 129-141.

The purpose of this paper is to share some preliminary findings of research into the relationship of two assessment approaches, creative style and creative climate. Because these two approaches have remained somewhat independent of each other in prior research, this study sought to determine whether the styles of Adaptor and Innovator as measured by the Kirton Adaptor-Innovator Inventory (KAI) had a relationship with the dimensions of creative climate as assessed by the Creative Climate Questionnaire (CCQ). The 634 subjects were selected and divided into groups identified as either having a strong innovator orientation or a strong adaptor orientation. The study found that some statistically significant differences did exist, specifically in the areas of challenge and conflict. The authors discuss the results, strengths and weaknesses of both creative style and creative climate in respect to the individual, team and organization.

Isaksen, S. G., & Lauer, K. J. (1999). Relationship between cognitive style and individual psychological climate: Reflections on a previous study. *Studia Psychologica*, 41, 177-191.

This article reviews an earlier study that explored the relationship between cognitive style and individual perceptions of creative climate (Isaksen & Kaufmann, 1990). Clapp and Kirton (1994) questioned the theoretical constructs and methodology used in the original study, therefore this secondary study was done to address those issues. The authors re-evaluate the aspects of the exploratory study and remark on its strengths and weaknesses.

Isaksen, S. G., & Lauer, K. J. (2001). Convergent validity of the Situational Outlook Questionnaire®: Discriminating levels of perceived support for creativity. *North American Journal of Psychology*, 3, 31-40.

The purpose of this study was to continue examining the validity of the Situational Outlook Questionnaire® (SOQ) by evaluating the relationship between an individual's perceptions of the degree of support for their personal creativity and the climate for creativity and change at their particular workplace. The relationship between mean ratings of the SOQ's nine dimensions and the self-perception of the organizational climate as conducive to creativity was tested. 1,830 individuals were separated into categories based on their level of perceived support for creativity. Results indicated that the means of all nine dimensions of the Situational Outlook Questionnaire® were different, and statistically significant for each level of perceived support for creativity in the work environment. These results indicated that the Situational Outlook Questionnaire® may be capable of discriminating effectively among different levels of perceived support for creativity in the immediate work environment. Limitations and areas for future research are discussed.

Isaksen, S. G., & Lauer, K. J. (2002). The climate for creativity in teams. In J. Buijs, R. Van der Lugt, & H. Van der Meer (Eds.), *Idea Safari: Proceedings of the Seventh European Conference on Creativity and Innovation* (pp. 151-168). Enschede, The Netherlands: Twente University Press.

This chapter examines the ability of the SOQ to differentiate between climates that encourage or discourage creativity, and the ability to initiate change in a team setting. The chapter evaluates those characteristics, which are thought to promote teamwork and conversely those aspects that pose challenges for team development and productivity. The nine dimensions that have been found to effectively assess the degree to which a climate supports creativity were then defined in terms of teams. The results of this empirical study (N = 154) are consistent with previous research with the SOQ both on an individual and organizational basis. The study showed that when individuals are asked to complete the SOQ regarding their best and worst experience in team situations that the SOQ is able to consistently and significantly discriminate climates that support from those that hinder a team's ability to implement change and creativity. Implications and areas for further research on team climate are explored.

Isaksen, S. G., & Lauer, K. J. (2002). The climate for creativity and change in teams. *Creativity and Innovation Management Journal*, 11, 74-86.

This article reports the results of a study conducted to examine the ability of the Situational Outlook Questionnaire® (SOQ) to effectively discern climates that either encourage or discourage creativity and the ability to initiate change in a team setting. Characteristics that promote teamwork were identified and clearly defined followed by descriptions of challenges that may threaten teamwork. Nine dimensions have been found to effectively discriminate the degree to which a climate supports creativity as measured by the SOQ. The 154 subjects completed the SOQ, based on their recollection of a best- and worst-case team experience. Results show that the individuals responses to the SOQ consistently and significantly discriminated between the two types of experiences. The authors discuss the results and suggest productive areas for further inquiry.

Isaksen, S. G., & Ekvall, G. (2010). Managing for innovation: The two faces of tension in creative climate. *Creativity and Innovation Management*, 19(2), 73-88.

This article points out the distinction between two forms of tension that appear within the research on organizational climates for creativity as well as the conflict management literature. A practical model for the constructive use of differences is shared, along with a few strategies for reducing the negative tensions associated with Conflict and increasing the positive aspects associated with Debate.

Isaksen, S. G., & Aerts, W. S. (2011). Linking problem-solving style and creative organizational climate: As exploratory interactionist study. *The International Journal of Creativity & Problem Solving*, 21(2), 7-38.

People, organizations, and societies benefit when there is an appropriate fit between individuals and their environments. The study aims to see how problem-solving style and organizational climate are related through an interactionist approach. Findings suggest that problem-solving styles make a difference for some of the dimensions of creative climate.

Isaksen, S. G., & Akkermans, H. J. (2011). Creative climate: A leadership lever for innovation. *Journal of Creative Behavior*, 45(3), 161-187.

This study examines the effects leadership has on climate, which in turn affects innovative productivity. Those who perceived more leadership support for innovation had significantly better creative climate scores. Those who perceived higher levels of innovative productivity also had better climate scores. Organizational climate as an intervening variable between leadership behavior and innovation was confirmed, supporting the pivotal role that creative climate plays between leadership behavior and innovative productivity.

Isaksen, S. G., Lauer, K. J., & Ekvall, G. (1999). Situational Outlook Questionnaire®: A measure of the climate for creativity and change. *Psychological Reports, 85*, 665-674.

The purpose of this study was to examine the internal consistency and factor structure of the Situational Outlook Questionnaire® (SOQ), a measure designed to assess the climate for creativity and change. A sample of 1,111 subjects was used. Cronbach alphas and exploratory factor analysis supported the reliability and construct validity, providing sound psychometric evidence of the Situational Outlook Questionnaire's internal structure. The authors discuss the importance of research on other forms of the measure's validity as well as noting specific strengths and weaknesses of the study.

Isaksen, S. G., Lauer, K. J., Ekvall, G., & Britz, A. (2001). Perceptions of the best and worst climates for creativity: Preliminary validation evidence for the Situational Outlook Questionnaire®. *Creativity Research Journal, 13*(2), 171-184.

The purpose of this article is to share the results of two studies that examine the concurrent criterion-related validity of the Situational Outlook Questionnaire® (SOQ), and its ability to discern climates that either encourage or discourage creativity and the ability to initiate change. Climate for creativity and change is defined as well as the domain within which the instrument is expected to operate. The context for the use of the measure in organizational settings is established through the development of a model for organizational change. Background information for the development of the SOQ is discussed and a description of the questionnaire is given. The methodology and results of both studies are reported. Findings show that when individuals completed the SOQ, based on their recollection of a best- and worst-case work experience, the measure was able to consistently and significantly discriminate between the two types of experiences. This proved to be the case for both studies and the patterns were consistent across the studies. Conclusions are discussed and the authors point out areas of future interest and advise further examination of the validity of the SOQ.

Ismail, M. (2005). Creative climate and learning organization factors: Their contribution towards innovation. *Leadership & Organization Development Journal, 26*, 639 – 654.

The purpose of this study is to explore the effects of two independent variables, creative climate and learning organization, on innovation separately and simultaneously. The methodology used was multiple regression analysis executed on the data collected. Apart from that, the study also used T-tests to compare the means of variables between the randomly selected local organization and MNCs. ANOVA was also conducted to compare the means of the variables between three different employee categories of job levels, namely the top, middle/lower management and supporting staff. The results indicated that both learning culture and creative climate contributed 58.5 percent to the explanation of the observed variances in the innovation construct. The learning organization culture separately was found to have a significantly stronger relationship with innovation ($r=0.733$) than did the organizational creative climate ($r=0.473$). This implied a larger

contribution from the learning organization variable towards innovation. The findings also showed that there were no significant differences in the mean scores ($P>0.05$) among the three organizational job levels included, in the members' perceptions of innovation, creative climate and learning culture. The study also found no significant differences in the mean scores ($P>0.05$) among the small, medium, large and very large organizational population sizes in the members' perceptions on innovation, creative climate and learning culture. The study involved a sample of 18 private organizations selected at random from a list of 165 organizations across various core businesses. The instrument used for innovation was developed by the researcher and validated by post hoc factor analysis involving 259 respondents.

Jensen, M. B., & Beckmann, S. C. (2009). Determinants of innovation and creativity in corporate branding: Findings from Denmark. *Journal of Brand Management*, 16, 468-479.

Recent innovation literature describes a move from purely technical innovations towards more strategic innovations based upon social relations, a concept at the core of newer brand management and relationship marketing theories. Organizations that depend on innovation and have also adopted corporate branding as their management philosophy are therefore suggested to rely on a brand management philosophy characterized by a high innovation and creativity climate. Using the Creative Climate Questionnaire, the study presented here compares the climate measured in the corporate branding departments of two large Danish companies with existing empirical reference material for very creative and innovative companies. The study results reveal that the climate in the corporate branding departments is at the same high level as the reference material. Further, by use of structural equation modeling the main driver for improving the overall perceived climate is identified as the organization's capability of creating debates such as discussions about different viewpoints, ideas, experiences and knowledge.

Jurcova, M., & Stubnova, L. (2004). Creative climate: To whom does it fit best and who might feel threatened by it? *Studia Psychologica*, 46, 3-19.

This is a synthesis of research data on three essential sources of a person's perception of creative climate, original thinking, and personality traits and social skills. The sample comprised 227 adolescents in whom all the three components were compared in extreme groups of high ($n = 32$) and low originality ($n = 37$). The methods employed included: The Torrance Figural Test of Creative Thinking - TTCT, Riggio's Social Skills Inventory - SSI, Cattell's 16PF - Fifth Edition, and The Creative Climate Questionnaire - CCK (Isaksen, Kaufmann). The findings permitted a deeper insight into the interaction of the personality-environment fit issue as follows: 1) original thinking is an effective mediator for perceiving the characteristics of creative climate. 2) A key role is played by climate's bonds with pro-social traits that are the components of extroversion, independence and receptivity. The most

conspicuous source of social skills in relation to creative climate is empathy. A mutual interplay between high originality, pro-social traits and empathy permits not only to positively reflect, but also to generate a climate that stimulates creativity and promotes it - where precisely subjects with these particular traits can draw most profit from it. On the other hand, climate dimensions need not suit introverts and those with lower social skills and originality, with whom they are not compatible. For persons with lower originality (in its relations with anxiety and excessive self-control), creative climate may spell uncertainty and subjective threat that becomes reflected in a higher rating of the dimensions representing emotional safety.

Klimoviene, G., Urboniene, J., & Barzdzikiene, R. (2010). Creative classroom assessment for the advancement of foreign language acquisition. *Studies About Languages, 16, 114-121.*

The study at the Lithuanian University of Agriculture investigated the students' studying perceptions of their classroom climate with regard to creativity.

Lauer, K., Isaksen, S. G., & Dorval, K. B. (1996). Exploring the relationship between creative climate and leadership: A preliminary report. *Communiqué, 2, 10-12.*

This article discusses two of the questionnaires often used to assess leadership practices and dimensions of creative climate. These are the Leadership Practices Inventory (LPI) and the Situational Outlook Questionnaire® (SOQ). In November 1995, both questionnaires were given to a manager and his small work group of 20 individuals. A pattern emerged suggesting that as you get higher up in an organization, people tend to have a more positive perception of organizational life than those in lower positions.

Lauer, K. J., & Isaksen, S. G. (2001). Managing the organizational climate for creativity and change: What you should be considering. In L. van Geoffen, H. van der Meer, & T. Rickards (Eds.) *Fit for the future: Proceedings of the sixth European conference on creativity and innovation* (pp. 132-141). Enschede, Netherlands: Twente University Press.

The goal of this paper was to bring focus to the climate for creativity and change and add further information about sub-climate differences to the literature in an effort to influence further research and more focused practice. Empirical data was collected from five international companies by means of the Situational Outlook Questionnaire® (SOQ). The SOQ's demographic profile was used to sort the results on the SOQ for an exploratory analysis focused on how gender, age, educational level, years of service, and time in current position may create sub-climates. Results showed some statistically significant relationships between demographic groupings and dimensions of the SOQ. As hypothesized, the relationships varied across the companies in the sample depending on situation, context and the dimension of climate for creativity and change. The authors illustrate implications of this study and demonstrate areas of focus for future research.

Lauer, K. J., & Isaksen, S. G. (2002). Driving through changing climates: Using the SOQ to direct organizational change. In J. Buijs, R. Van der Lugt, & H. Van der Meer (Eds.), *Idea Safari: Proceedings of the Seventh European Conference on Creativity and Innovation* (pp. 231-238). Enschede, The Netherlands: Twente University Press.

This paper presents empirical data from two organizations in the USA that have implemented aggressive organizational change initiatives. Both organizations used the Situational Outlook Questionnaire® (SOQ) to gauge the current status of their employees' perceptions of the organizational climate to support creativity and change. The data obtained from the SOQ was then used to develop interventions to promote change. After a minimum of nineteen months, the employees in both organizations completed the SOQ a second time. Organization One had a statistically significant change on the dimension of Conflict. Organization Two had statistically significant changes on all the dimensions except the dimension of Trust. These results propose that it is possible to use previous results of the SOQ to design initiatives that have a positive effect on perceptions of climate. The authors discuss some of the study's limitations and potential areas for further research.

McLellan R., & Nicholl, B. (2009). Creativity in crisis in D&T: Are classrooms conducive for creativity in English secondary schools? Paper presented at the British Educational Research Association Annual Conference, Heriot-Watt University, Edinburgh, UK.

Creativity is acknowledged to be important in education both for economic growth and as an everyday life-skill. The National Curriculum for Design & Technology (D&T) stipulates that students should 'think and intervene creatively' but this hasn't been seen in practice or in student work leading commentators to suggest that creativity is in 'crisis' within the subject. Research has indicated that organisational climate, defined as 'the recurring patterns of behaviour, attitudes and feelings that characterise life in the organisation', can help or hinder creativity. Hence 'climate' is a potential explanatory factor for the lack of creativity documented in student outcomes. This paper, therefore, explores whether the classroom climate experienced by secondary students (aged 11-16 years) in D&T lessons is conducive for creativity. Data are drawn from a number of sources including student (N=126) and teacher (N=14) interviews and student (N=4996) and teacher (N=69) questionnaires gathered across a total of 15 schools, as part of an on going Gatsby-funded research and intervention project. Coded data and survey questions relating to the nine climate dimensions outlined in Ekvall and Isaksen's climate model were identified. The paper focuses on three of these dimensions; Challenge, Freedom and Idea-Support. The analysis revealed that students felt much of the work they do lacks challenge and freedom. They also perceived a lack of support for their design ideas. Hence students do not perceive the climate in their classrooms as conducive for creativity. Teachers' perceptions differed somewhat and this is discussed with reference to the performativity culture in which they are located. Whilst acknowledging the difficulties this poses, it is argued that, as the literature indicates climate is 'in the hands of the manager', teachers can change their practice to enable creativity to flourish. Tentative suggestions for ways forward are suggested.

Moultrie, J. and Young, A. (2009). Exploratory study of organizational creativity in creative organizations. *Creativity and Innovation Management*, 18, 299–314.

The creative industries represent an important and growing sector of the UK economy. This paper explores organizational creativity in firms within the creative industries. A questionnaire based on both Amabile's 'Organizational Creativity' model and Ekvall's 'Creative Climate' model was completed in ten firms in different sectors of the creative industries. Follow-up interviews with five firms were also conducted, to compare the outputs from each model as well as the variation in responses from firms in different sectors. The results indicate that both models of organizational creativity are complementary, although not necessarily fully applicable in the creative industries. Specific differences between firms in the graphic design/branding sector and firms in product design were also observed.

Mohamed, M. Z., & Rickards, T. (1999). Assessing and comparing the innovativeness and creative climate of firms. *Scandinavian Journal of Management*, 12, 109-121.

The innovativeness of eight manufacturing firms (or four matched pairs of firms) in Malaysia was measured and compared using certain criteria. Initially, we selected the four matched pairs of firms (each pair is comprise of a more innovative and a less innovative firm) from various manufacturing sectors based on whether or not the firms in each pair have implemented computerized manufacturing systems. Further assessments of the innovativeness of the firms were based on: changes/continuous improvements carried out; introduction and implementation of technologies (machines, processes, etc.); interactions of the firms with their external environments; and number of training programs organized by the firms to stimulate innovation and creativity among its employees. In addition to assessing the innovativeness of the firms, the creative climate questionnaire (CCQ) developed by Ekvall et al. was utilized to assess their creative climates. As expected, the results obtained demonstrate that the more innovative firms were found to have introduced more computerized systems and incremental and technological changes, to have more interactions with their external environments, to have organized more training programs aimed at encouraging creativity and innovation, and to have more creative climates when compared to the less innovative ones. The results of this study indicate that in order for a firm to be innovative, it needs to continuously implement many types of changes and technologies in response to environmental needs. Furthermore, the results also confirm in a different culture (i.e. a developing country) earlier Scandinavian studies which have been used to justify the international use of the Ekvall's CCQ. However, it appears that, although the CCQ is a good predictor of higher and lower innovative performance of firms, the instrument on its own is unable to indicate the extent of innovative strengths/weaknesses without using additional criteria or benchmarking.

Montes, F. J., Moreno, A. R., & Fernández, L. M. (2004) Assessing the organizational climate and contractual relationship for perceptions of support for innovation. *International Journal of Manpower, 25*, 167 - 180

The aim of this paper is to study the relationship between organizational climate and perceptions of support for innovation, considering that the relationship may be moderated by the type of labor contract the employees have. This moderating effect may have its origins in the perception of reality and the type of knowledge applied on the job. The results drawn from empirical research among 312 observations of the employees in 80 offices of a Spanish financial company enable us to verify, on the one hand, that an organizational climate characterized by support, cohesion and intrinsic recognition favors perceptions of support for innovation. On the other hand, that there are differences in the dimensions of climate that favor perceptions of support for innovation depending on the employees' contractual relationship with the organization.

Norbergh, K-G., Sandman, P-O., & Asplun, K. (2002). The relationship between organizational climate and the content of daily life for people with dementia living in a group dwelling. *Journal of Clinical Nursing, 11*, 237-246.

One factor influencing the outcome of care may be nursing staff's experience of the organizational work climate. The aim of the study was to investigate how people with dementia spend their time in group-dwelling units (GD) with either a creative or less creative organizational climate. For the study, two GD units assessed as having a creative organizational climate and two units assessed as having a less creative climate were selected. Eighteen residents living in the units assessed as creative and 20 residents living in the units assessed as less creative participated in the study. For measuring the organizational climate the Creative Climate Questionnaire was used. Observations of residents' activities were classified according to the Patient Activity Classification. For measuring residents' functional ability the Multi-Dimensional Dementia Assessment Scale was used. Their cognitive capacity was measured with the Mini Mental State Examination. Residents living in the units assessed as having a creative organizational climate spent 45.2% of the time with nursing staff, while those in the less creative climate spent 25.6% ($P < 0.001$). Time spent with fellow residents in the creative climate was 13.9% and in the less creative climate 31.3% ($P < 0.001$). There was no significant difference between the units according to time spent with relatives and time spent alone. Since the purpose of GD is to offer care adapted to the abilities and psychosocial needs of people suffering from dementia, a less creative climate can be a threat to the aims of GD. In order to maintain these, it is important for managers to be aware of the work climate and its impact on care for people with dementia.

O'Shea, D. & Buckley, F. (2007). Towards an integrative model of creativity and innovation in organizations: A psychological perspective. *The Irish Journal of Psychology, 28* (3-4), 101-128.

This article addresses the value that research into creativity, primarily investigated by psychologists, has to the field of innovation, more commonly researched in business, science, and technology arenas. It takes a look at the multiple factors that

influence innovation, including how problem-solving style and creative climate contribute to innovation in organizations.

Porter, J. (2010). Review of Situational Outlook Questionnaire. In R. A. Spies, J. F. Carlson & K. F. Geisinger (Eds.), *The eighteenth mental measurements yearbook* (pp. 546-548). Lincoln, NE: Buros Institute of Mental Measurements.

A technical review of the Situational Outlook Questionnaire conducted by an independent reviewer selected by Buros.

Rasulzada, F., & Dackert, I. (2009). Organizational creativity and innovation in relation to psychological well-being and organizational factors. *Creativity Research Journal*, 21, 191-198.

This study investigated the relationship between organizational creativity and innovation and the psychological well-being of 95 employees within the high-tech field. Organizational climate and work resources were found to be significantly related to perceived creativity and innovation of the organization.

Sample, J. (2010). Review of Situational Outlook Questionnaire. In R. A. Spies, J. F. Carlson & K. F. Geisinger (Eds.), *The eighteenth mental measurements yearbook* (pp. 548-550). Lincoln, NE: Buros Institute of Mental Measurements.

A technical review of the Situational Outlook Questionnaire conducted by an independent reviewer selected by Buros.

Sellgren, S. F., Ekvall, G. & Tomson, G. (2008), Leadership behaviour of nurse managers in relation to job satisfaction and work climate. *Journal of Nursing Management*, 16, 578-587.

This study examines how nurse managers' leadership behavior relates to job satisfaction and a creative work climate. The nursing shortage is a challenge for managers all over the world. Leadership is a core element of management and it is important to elucidate leadership behavior in order to increase knowledge about attracting and retaining talented staff. We studied 770 subordinates at a large university hospital. Three questionnaires for assessing perceived leadership behavior, creative work climate and job satisfaction were used. Subordinates with a manager perceived as 'super' have the highest rates on job satisfaction. The correlation between leadership and creative work climate is stronger than between leadership and job satisfaction. Between job satisfaction and work climate the correlation is strong. The study shows that the relationship between a creative work climate and job satisfaction is strong. A manager's ability to lead has a major affect on work climate.

Speranzini, G. (1998). Competencies and guidelines for Situational Outlook Questionnaire® practitioners – Part One. *Communiqué*, 6, 13-16.

The purpose of this paper is to outline the specific tasks of a practitioner of the Situational Outlook Questionnaire®. Each activity is thoroughly defined, its time requirement is noted and its intent is explained. The activities include: 1) Task appraisal with the client, 2) A choice determining whether or not to conduct the SOQ intervention, 3) Order of the SOQ forms, 4) Preparation of the cover letter, 5) Analyzing the data, and 6) Planning the debriefing process. The practitioner tasks will take upwards of thirteen hours, but the result will be a quality SOQ feedback event.

Speranzini, G. (1999). Competencies and guidelines for Situational Outlook Questionnaire® practitioners – Part Two. *Communiqué*, 6, 4-7.

The goal of this paper is to thoroughly explain the role of the practitioner of the Situational Outlook Questionnaire® pertaining to full engagement in the content and process of the feedback activity. The article further emphasizes the need for specific knowledge and skills required of the practitioner, including all aspects of the SOQ, ability to judge and listen, and the importance of continuous learning. The role of the SOQ practitioner is complex and multi-faceted.

Talbot, R., Cooper, C., & Barrow, S. (1992). Creativity and stress. *Creativity and Innovation Management*, 1(4), 183-193

An organizational change program in a UK service division of a multinational equipment and systems company provided an opportunity to study the correlation between stress and creativity. The study was comprised of 1,083 people from five levels of the company hierarchy. Although the overall stress level of the company was comparable to the popular norms, the creativity level was close to a stagnated company as provided by the Creative Climate Questionnaire (Ekvall, 1988). A strong negative association between stress and the Creative Climate Questionnaire scores was found especially from relationships with others and organizational structure and climate. It was also found the higher a person was in the hierarchy the less stress was felt and the better creative climate was perceived.

Turnipseed, D. (1994). The relationship between the social environment of organizations and the climate for innovation and creativity. *Creativity and Innovation Management*, 3, 184 - 195.

This study investigated the influences of social environment factors, both personal and organizational, on organizational climate for innovation. A large sample (n=375) from a single automotive related company was given the Climate for Innovation Questionnaire (CIQ), Work Environment Scale (WES), and a Likert-scale type questionnaire for personal and job satisfaction. Results indicate many statistically significant correlations between personal job satisfaction items and dimensions of the CIQ.

Wikström, B., Ekvall, G., & Sandström, S. (1994). Stimulating the creativity of elderly institutionalized women through works of art. *Creativity Research Journal*, 7(2), 171-182.

Forty women were featured in this study, ages 70-97 with a mean of 82.6 years of age. All of which were located at an assisted living apartment building, twenty were selected for the intervention group and twenty for the control group. After the intervention the intervention group showed significant improvement with regards to being more open and flexible with a stronger disposition to creative behavior than subjects in the control group. The intervention group also showed greater freedom and variation in drawing circles and making pictures. In the puzzle tests the intervention group created increasingly imaginative, irregular, and open alternatives with colored patterns while the control group constructed closed and black forms. Despite these findings both the control group and the intervention group described themselves as rational and cautious personalities on the Assessment of Personality Qualities questionnaire (Ekvall, 1986).

Wilkins, A. (1999). Developing creativity in a company whose business is creativity. *Communiqué*, 6, 12-15.

This article is a personal account of Wilkins' experiences with a large advertising company's Thailand branch. A conference was held where the Kirton Adaption-Innovation Inventory (KAI) was given to many of the attendees. The results showed a very homogenous group. The workshop concluded with an exploration of ideas to improve the climate, based on leadership practices by Kouzes and Posner.

Other Related Articles and Chapters

Abbey, A., & Dickson, J. W. (1983). R&D work climate and innovation in semiconductors. *Academy of Management Journal*, 26(2), 362-368.

The work climate in the R&D departments of 8 semiconductor companies is examined. Subjects consisted of 200 R&D managers. Results suggest that climate is an enduring quality of the work environment that has influence on the behavior, attitudes, work performance and innovation found in these departments.

Abetti, P. A. (1986). Fostering a climate for creativity and innovation in business-orientated R&D organizations: An historical project. *Creativity & Innovation Network*, 12(1), 4-16.

Historical evidence is provided on how to foster creativity and innovation in business orientated R&D organizations. Definitions of science and technology are given with emphasis on technology because of its dependency on people. It is suggested that technology is a slow and difficult process that must be managed for success. Technical freedom must be given to R&D researchers, but there must be a high visibility of management in order for creativity to flourish and success to occur for the department.

Agars, M. D., Kaufman, J. C., Deane, A., & Smith, B. (2012). Fostering individual creativity through organizational context: A review of recent research and recommendation for organizational leaders. In M. Mumford (Ed.). *Handbook of organizational creativity* (pp. 271-291). New York: Academic Press.

Although much attention in the creativity literature has been paid to individual characteristics related to creative potential the business world necessarily requires an understanding of creativity that is both more considerate of organizational context and which focuses more directly on domain specific behavioral outcomes. The purpose of this chapter is to highlight the role of organizational context in the development of individual creativity, to discuss the impact of leader and organizational-level factors, and to identify key steps in advancing our understanding of context so that organizations may benefit more directly from the research on individual creativity and context.

Amabile, T. M. (1988). From individual creativity to organizational innovation. In K. Grønhaug, & G. Kaufman (Eds.), *Innovation: A cross disciplinary perspective* (pp. 136- 166). Oslo, Norway: Norwegian University Press.

An overview of a study that attempts to understand the creative process within an organization and the important influences upon it through personal interviews with 120 research and development scientists. Obstacles and stimulants mentioned

included: 1) organizational climate, 2) managerial style, and 3) availability of resources. It is suggested that the work climate seemed to have had a greater impact on organizational innovation than do personality characteristics. It also argues that the processes of individual creativity and organizational innovation tend to influence each other.

Amabile, T. M., & Gryskiewicz, S. S. (1988). Creative resources in the R & D laboratory: How environment and personality affect innovation. In R. L. Kuhn (Ed.), *Handbook for creative and innovative managers* (pp. 501-524). New York: McGraw-Hill Book Company.

An empirical study which investigates the major factors of environment and personality that influence creativity in Research and Development (R & D). One hundred twenty-nine subjects were tested and interviewed on-site. The results revealed major environmental stimulants and obstacles to creativity. Also discussed were favorable and unfavorable personal characteristics. Some implications for managing creativity are cited.

Amabile, T. M., Schatzel, E. A., Moneta, G. B., & Kramer, S. J. (2004). Leader behaviors and the work environment for creativity: Perceived leader support. *The Leadership Quarterly*, 15, 5-32.

This exploratory study investigated leader behaviors related to perceived leader support, encompassing both instrumental and socio-emotional support. The study first established that leader support, proposed to be a key feature of the work environment for creativity, was positively related to the peer-rated creativity of subordinates working on creative projects in seven different companies. Then, to identify the specific leader behaviors that might give rise to perceived support, two qualitative analyses were conducted on daily diary narratives written by these subordinates. The first, which focused on specific leader behaviors that had significantly predicted leader support in a preliminary quantitative analysis, illuminated both effective and ineffective forms of leader behavior. In addition, it revealed not only subordinate perceptual reactions to this behavior (their perceptions of leader support), but affective reactions as well. The second qualitative analysis focused on the behavior of two extreme team leaders in context over time, revealing both positive and negative spirals of leader behavior, subordinate reactions, and subordinate creativity.

Bretz, R. D., Jr., Ash, R. A., & Dreher, G. F. (1989). Do people make the place? An examination of the attraction selection attrition hypothesis. *Personnel Psychology*, 42, 561-581.

An experimental study to see if: (1) a matching of needs of the individual and qualities of the organization determines the choice of organization, and (2) if those attracted to a single organization are a more homogeneous group than the total experimental group. Subjects were shown tapes of interviews in which the company philosophies were made clear and were asked to choose which company they preferred. Some degree of support was found for hypothesis 2.

Burnside, R. M., Amabile, T. M., & Gyskiewicz, S. S. (1988). Assessing organizational climates for creativity and innovation: Methodological review of large company audits. In Y. Ijiri, & R. L. Kuhn (Eds.), *New directions in creative and innovative management: Bridging theory and practice* (pp. 169-186). Cambridge, MA: Ballinger Publishing Company.

A methodological approach is presented that should be useful to study creativity and innovation in many different contexts. Creativity interviews and Work Environment Inventory (WEI) can be used to pinpoint specific climate factors that aid or block employee creativity. Further research is needed to more fully develop the WEI.

Brown, S. P., & Leigh, T. W. (1996). A new look at psychological climate and its relationship to job involvement, effort and performance. *Journal of Applied Psychology, 81*, 358-368.

This study investigated the process by which employee perceptions of the organizational environment are related to job involvement, effort, and performance. The researchers developed an operational definition of psychological climate that was based on how employees perceive aspects of the organizational environment and interpret them in relation to their own well-being. Perceived psychological climate was then related to job involvement, effort, and performance in a path-analytic framework. Results showed that perceptions of a motivating and involving psychological climate were related to job involvement, which in turn was related to effort. Effort was also related to work performance. Results revealed that a modest, but statistically significant effect of job involvement on performance became non-significant when effort was inserted into the model, indicating the mediating effect of effort on the relationship. The results cross-validated well across two samples of outside salespeople, indicating that relationships are generalizable across these different sales contexts.

Christie, T. (1970). Environmental factors in creativity. *Journal of Creative Behavior, 4*(1), 13-31.

Environmental factors that influence creativity, the concept of having to choose criteria to judge the creativity that a person demonstrates and the lack of encouragement our society gives to support creative behavior are discussed. Environmental factors in the home and in educational settings that affect creativity are mentioned in detail.

Csoka, L. S. (1975). Relationship between organizational climate and the situational favorableness dimension of Fiedler's contingency model. *Journal of Applied Psychology, 60*(2), 273-277.

A research study that investigated the link between mechanistic-organic dimensions and Fiedler's situational favorableness. A hypothesis is presented which links these two research areas through leadership and organizational theory.

Cullen, J. B., Victor, B., & Bronson, J. W. (1993). The ethical climate questionnaire: An assessment of its development and validity. *Psychological Reports, 73*, 667-674.

An example of the Ethical Climate Questionnaire is presented and analyzed. A synopsis of the brief history of the questionnaire is also presented. This study shows the questionnaire to demonstrate significant validity and reliability. A discussion of factors contributing to self-reports of climate perceptions is presented and discussed. Special attention is given to developing the questionnaire with the variables contributing to differing perceptions in mind.

Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal, 34*, 555-590.

A meta-analysis of the relationships between organizational innovation and 13 of its potential determinants resulted in statistically significant associations for specialization, functional differentiation, professionalism, centralization, managerial attitude toward change, technical knowledge resources, administrative intensity, slack resources, and external and internal communication. Results suggest that the relations between the determinants and innovation are stable, casting doubt on previous assertions of their instability. Moderator analyses indicated that the type of organization adopting innovations and their scope are more effective moderators of the focal relationships than the type of innovation and the stage of adoption. Several theories of innovation are examined in terms of the aggregated data.

Denison, D. R. (1998). What is the difference between organizational culture and organizational climate? – A native's point of view on a decade of paradigm wars. *Academy of Management Review, 21*, 619-654.

This article outlines these two major concepts, related research and reviews, as well as methodological differences in how they have been approached. Denison also provides an analysis of the similarities and differences in the conceptual foundations and implications of these differences.

Downey, H. K., Hellriegel, D., Phelps, M., & Slocum, J. W., Jr. (1974). Organizational climate and job satisfaction: A comparative analysis. *Journal of Business Research, 2*, 233-247.

Results of analysis between climate factors (decision making, warmth, openness, rewards, structure) and satisfaction with job (work, supervision, pay co-workers promotion) show that they are significantly related. However, the results show that climate and job satisfaction are not the same and the existence of a third variable must be studied at greater length. Concludes that the nature of the relationships at organizational level and of job performance must be considered.

Drazin, R., Glynn, M. A., & Kazanjian, R. K. (1999). Multilevel theorizing about creativity in organizations: A sense-making perspective. *Academy of Management Review, 24*, 286-307.

This article explores assumptions about the levels of analysis embedded in the extant literature on creativity in organizations. Uncovering and then relaxing these assumptions allow us to extend the literature with an alternative but complementary model of how creativity unfolds in complex, large-scale, and long-duration organizational projects. We build on the paradigm of sense-making and propose a multilevel model of creativity that, as its defining feature, examines how periodic organizational crises reframe the negotiated order of belief structures about creativity.

Faber, A. M. (1982). Elements essential in setting a creative climate: A case study. In S. S. Grysiewicz, & J. T. Shields (Eds.), *Creativity Week 4, 1981 Proceedings* (pp. 140-145). Greensboro, NC: Center for Creative Leadership.

This is a case study assessing the impact of environmental factors on a group's creativity. Research and observation identified six elements believed to be essential in setting a creative climate: People selection, early developmental experiences, providing time-outs, providing structures, trusting intuition, and providing buffering.

Fiedler, F. E. (1962). Leadership attitudes, group climate and group creativity. *Journal of Abnormal and Social Psychology, 65*(5), 305-318.

Four controlled studies of the leader's interpersonal attitudes on the efficacy of his group's creativity yielded similar results. The research evidenced that leaders who perceived their least preferred co-worker favorably were most effective under relaxed, pleasant group dynamics. Conversely, those leaders who perceived their least preferred co-worker negatively were more effective under stressful, unpleasant conditions. Further investigation on the leader's tolerance for differing interpersonal dynamics is indicated.

Ford, C. M. (1996). A theory of individual creative action in multiple social domains. *Academy of Management Review, 21*, 1112-1142.

Creative and habitual actions represent competing behavioral options that may be simultaneously influenced by multiple domains of social action. This article integrates psychological and sociological descriptions of creativity and conformity to present a theory of individual creative action within organizational settings composed of intertwined group, organizational, institutional and market domains. This theory contributes to the innovation literature by illustrating how intentional action and evolutionary processes that legitimize action interact to facilitate creativity and innovation.

Ford, C. M. (1999). Corporate culture. In M. Runco, & S. R. Pritzker (Eds.), *Encyclopedia of creativity* (pp. 385-393). San Diego, CA: Academic Press.

This article reports corporate culture as a pattern of shared meanings (concepts, beliefs, expectations, values, etc.) that evoke normative thought and behavior from organizational members. It is suggested that these shared meanings constitute a corporation's culture that varies on three dimensions: content, intensity, and degree of integration. Content refers to the specific ideas encompassed by a culture. Intensity refers to the expected consequences associated with conforming to or violating shared understandings. The degree of integration refers to the extent to which meanings are shared throughout the organization. The article concludes by describing a configuration of shared meanings that promote the usefulness of individual creative actions without sacrificing focused collective efforts.

Forehand, G. A., & Gilmer, B. H. (1964). Environmental variation in studies of organizational behavior. *Psychological Bulletin*, 62, 361-382.

This is about research of person and climate variables in organizations. Topics discussed include perceptions of participants, objective indices and experimental manipulation of climate. Definition of stimuli and constraints upon freedom are surveyed as to their effects on climate. Dimensions of organizational variation are discussed which include size, structure, systems complexity, leadership style, and goal direction. Suggestions are offered for further research strategies.

Friedlander, F., & Margulies, N. (1969). Multiple impacts of organizational climate and individual value systems on job satisfaction. *Personnel Psychology*, 22(1), 171-183.

A correlational study that focuses on different organizational climates as predictors of different job satisfactions. Three separate measuring instruments were used: (a) one to measure dimensions of climate, (b) one for the values of workers, and (c) individual satisfaction. Results showed that satisfaction with task management is maximized in climates high in management trust, and satisfaction with interpersonal is heightened in climates high in management trust and intimacy and low in burdensome duties.

Gavin, J. F. (1975). Organizational climate as a function of personal and organizational variables. *Journal of Applied Psychology*, 60, 135-139.

A study of bankers to investigate the issue of climate. Three variables were addressed: personal biographies, organizational climate perceptions and organizational variables. Differences in work environment and functions are observed to make a difference in the way persons perceived the climate of the organization.

Gavin, J. F., & Howe, J. G. (1975). Psychological climate: Some theoretical and empirical considerations. *Behavioral Science*, 20, 228-240.

A model for psychological climate is presented along with some hypotheses that were developed and tested with four large organizations. The model was used to

understand psychological climate as it relates to individual and organizational functioning and the distinctions between them. It is suggested that further research is needed to provide meaning to the operational distinctions between the two types of climate.

Gibb, J. R. (1966). Managing for creativity in the organization. In C. W. Taylor (Ed.), *Climate for creativity* (pp. 23-32). New York: Pergamon Press.

A paper in which the author discusses "management" conditions that tend to depress creativity in organizations. Four basic organizational factors are discussed: 1) emotional climate, 2) communication flow, 3) goal formation, and 4) control. Managing for the "constraints of creativity" are contrasted against the potentials of managing for the "release of creativity". Concludes that the organizational determinants of creativity are: 1) trust, 2) openness, 3) self-determination, and 4) interdependence.

Harter, J. K., Schmidt, F. L., & Keyes, C. L. (2002). Well-being in the workplace and its relationship to business outcomes: A Review of the Gallup studies. In C. L. Keyes & J. Haidt (Eds.), *Flourishing: The positive person and the good life* (pp. 205-224). Washington, DC: American Psychological Association.

This chapter focuses on summarizing the results from a meta-analysis of the relationships between employee workplace perceptions and business unit outcomes. The link is supported between positive workplace perceptions and higher business unit customer loyalty, higher profitability, higher productivity, and lower rates of turnover.

Hunter, S. T., Bedell, K. E., & Mumford, M. D. (2005). Dimensions of creative climate: A general taxonomy. *The Korean Journal of Thinking and Problem Solving*, 15, 97-116.

Creative climate stands as a significant contributor to what makes an organization innovative. Fourteen creative climate dimensions were derived based on a review of the literature. The taxonomy is proposed as a useful framework.

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

Creativity is commonly held to emerge from an interaction of the person and the situation. In studies of creativity, situational influences are commonly assessed by using climate measures. In the present effort, a meta-analysis was conducted to examine 42 prior studies in which the relationships between climate dimensions, such as support and autonomy, and various indices of creative performance were assessed. These climate dimensions were found to be effective predictors of creative performance across criteria, samples, and settings. It was found, moreover, that these dimensions were especially effective predictors of creative performance in turbulent, high-pressure, competitive environments. The implications of these

findings for understanding environmental influences on creativity and innovation are discussed.

James, L. R. (1982). Aggregation bias in estimates of perceptual agreement. *Journal of Applied Psychology, 67*(2), 219-229.

An evaluation of climate data handling approaches, specifically regarding the theoretical justification for the aggregation of climate scores. The author states that to the extent climate is individually perceived, a measure of perceptual agreement should be based on individual data, not group means. A review of published theory and statistical methods is given as support.

James, L. R., Choi, C. C., Ko, C-H., McNeil, P. K., Minton, M. K., Wright, M. A., & Kim, K. (2007). Organizational and psychological climate: A review of theory and research. *European Journal of Work and Organizational Psychology, 17*, 5-32.

This article offers a brief history of psychological climate and the products of aggregates of psychological climate, typically referred to as "organizational climate". The article begins with a synopsis of psychological climate. Discussion proceeds to organizational climate, where attention is given to what it means to form within-group aggregates of psychological climate, and what conditions these aggregates need to satisfy in order to qualify as measures of organizational climate. The relationship between climate and culture is next, where we build on prior theorizing and empirical research to argue that the two are distinct constructs. Finally, recent research in climate is briefly summarized.

James, L. R., & Jones, A. P. (1974). Organizational climate: A review of theory and research. *Psychological Bulletin, 81*(12), 1096-1112.

A discussion of similarities and differences between three approaches to the study of climate. Included are multiple measurement-organizational attribute approach, perceptual measurement-individual attribute approach, and perceptual measurement-organizational attribute approach. Recommendations are offered for future research with respect to organizational and psychological climate. It is suggested that organizational and psychological climate should be differentiated and that theoretical and conceptual issues should serve to guide measurement.

James, L., Joyce, W., & Slocum, J. W. (1988). Comment: Organizations do not cognize. *Academy of Management Review, 13*(1), 129-132.

An argument is shared that emphasizes the importance of including psychological climate research in the assessment of organizational climates. The comment is a response to a theory put forth by Glick (1985) that stated that psychological climate has no value to organizational climate research. The argument demonstrates the strong difference between subjective and objective perspectives of climate research.

Jones, A. P., & James, L. R. (1979). Psychological climate: Dimensions and relationships of individual and aggregated work environment perceptions. *Organizational Behavior and Human Performance*, 23, 201-250.

A study that attempts to create a test to measure the work climate perceptions and to examine the appropriateness of using aggregated perceptual scores to explicate sub-unit or organizational conditions. A sample of 315 US Navy enlisted men, 398 firemen, and 504 health care managers were used. Results show: (a) aggregate scores were predictors of division performance, (b) aggregated scores to describe work conditions were only generalizable for divisions, (c) scores were related to personnel composition, structure, and context, and (d) that 5 out of the 6 underlying dimensions were generalizable among the groups.

Joyce, W. F., & Slocum, J. (1982). Climate discrepancy: Refining the concepts of psychological and organizational climate. *Human Relations*, 35(11), 951-972.

An empirical study to determine the relationship between psychological and organizational climate and job performance and satisfaction. Specifically the discrepancies between individuals' psychological climates and the multiple aggregate organizational climates was tested first against satisfaction then performance using regression analysis. Climate discrepancy was found to be significantly related to job satisfaction but not to job performance. Additional analysis indicated that membership in aggregate organizational climates better predicted job performance.

King, E. B., de Chermont, K., West, M., Dawson, J. F., & Hebl, M. R. (2007). How innovation can alleviate negative consequences of demanding work contexts: The influence of climate for innovation on organizational outcomes. *Journal of Occupational and Organizational Psychology*, 80, 631-645.

This study examines climate for innovation as a method by which negative organizational consequences of demanding work may be lessened. It was expected that a climate for innovation would enable employees to develop coping mechanisms or improved work-related processes that counteract negative consequences of work demands. Extending the job demands–resource model the authors predicted and found that among the sample of 22,696 respondents from 131 healthcare organizations, organizational climate for innovation alleviated the negative effects of work demands on organizational performance. Thus, this study informs climate theories and guides practitioners' efforts to support the employees.

Kuenzi, M., & Schminke, M. (2009). Assembling fragments into a lens: A review, critique, and proposed research agenda for the organizational work climate literature. *Journal of Management*, 35, 634-717.

Work climates exert an important influence on organizations and the people who work in them. For more than half a century, scholars have sought to understand their antecedents and consequences. However, in recent years, this literature has become fragmented and somewhat adrift. This article attempts to remedy this by reviewing existing research related to organizational work climates and providing a

review and critique of the current state of knowledge. Furthermore, the authors seek to assemble the individual pieces into a unified lens capable of identifying overarching themes and challenges facing researchers. Finally, the authors turn this lens to the future, so as to provide a clearer view of some promising avenues for research opportunities and potential for reintegrating the field.

Lewin, K. (1947). Frontiers in group dynamics. 1. Concept, method and reality in social science. *Human Relations, 1, 5-40.*

The first of two articles which survey ideas and theories concerning: 1) the integration of the social sciences, 2) the dynamic problems of changing group life, and 3) developing new social research techniques. The realities of social phenomena are explored in an attempt to answer two questions 1) why does the process under present circumstances proceed at a particular level?, and 2) what are the conditions for change under present circumstances? The discussion suggests that successful change includes unfreezing the present level of group life, moving to a new level, and freezing at it. In this theory, motivation does not necessarily mean action because of the intervening complexities group and individual behavior impart on the process of change.

Lewin, K. (1947). Frontiers in group dynamics. 2. Channels of group life; Social planning and action research. *Human Relations, 2, 143-153.*

A presentation of an analysis focused on some general problems of social planning including the questions of whether all members of a group have equal importance. Suggests that the social scientist, as a change agent, needs to keep asking where are we now and how has the situation changed. It is proposed that all group members do not have equal importance and that in most instances a 'gate keeper' can be found who primarily defines the goals of the group and the strategies it utilizes to meet them.

Lewin, K., Lippit, R., & White, R. K. (1939). Patterns of aggressive behavior in experimentally created "social climates". *Journal of Social Psychology, 10(10), 271-299.*

A report on differing patterns of group life is presented. The two studies asked the questions: 1) what underlies differing patterns of behavior within a group? and 2) How might differences in subgroup structure be used to predict social resultants in different atmospheres? Aggressive behavior was studied among groups of boys under autocratic, democratic, and laissez-faire styles of leadership. Findings show the autocratic leadership style leads to aggressive behavior in some groups while apathy is displayed in others. Four factors identified as contributing to such behavior are: 1) tension, 2) restricted movement, 3) rigidity of group structure, and 4) style of living. The studies suggested that predictions of group behaviors must take into account many factors of the group's environment.

Litwin, G. H. (1971). Climate and motivation: An experimental study. In D. A. Kolb, I. M. Rubin, & J. M. McIntyre (Eds.), *Organizational psychology: A book of readings* (pp. 109-122). Englewood Cliffs, NJ: Prentice-Hall, Inc.

Report of an experimental study that tested the influence of leadership style and organizational climate on the motivation and behavior of organization members. Three simulated business organizations each with 15 members and a president were studied. Major conclusion was that distinct organizational climates can be created by varying leadership style.

Martins, E. C., & Terblanche, F. (2003). Building organizational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6, 64-74.

The purpose of this article is to present by means of a model, the determinants of organizational culture that influence creativity and innovation. A literature study showed that a model, based on the open systems theory and the work of Schein, can offer a holistic approach in describing organizational culture. The relationship between creativity, innovation and culture is discussed in this context. Against the background of this model, the determinants of organizational culture were identified. The determinants are strategy, structure, support mechanisms, behavior that encourages innovation, and open communication. The influence of each determinant on creativity and innovation is discussed. Values, norms and beliefs that play a role in creativity and innovation can either support or inhibit creativity and innovation depending on how they influence individual and group behavior.

Mathisen, G. E., & Einarsen, S. (2004). A review of instruments assessing creative and innovative work environments within organizations. *Creativity Research Journal*, 16, 119-140.

This article provides a review of the available instruments for measuring work environments conducive to creativity and innovation. The following instruments were assessed: KEYS: Assessing the Climate for Creativity, Creative Climate Questionnaire, Situational Outlook Questionnaire, Team Climate Inventory, and Siegel Scale of Support for Innovation. Each instrument was described, including details about the research on the measure's norms, factor structure, reliability, and validity. The authors conducted an incomplete review of the literature and their findings are rather subjective.

McLellan, R., & Nicholl, B. (2008). *Creativity in crisis in D&T: Are classroom climates conducive for creativity in English secondary schools?* Unpublished paper presented at the British Educational Research Association Annual Conference.

This paper, therefore, explores whether the classroom climate experienced by secondary students (aged 11-16 years) in Design and Technology lessons is conducive for creativity. The analysis revealed that students felt much of the work they do lacks challenge and freedom. They also perceived a lack of support for their design ideas. Hence students do not perceive the climate in their classrooms as conducive for creativity.

Moran, E. T., & Volkwein, F. (1988). Examining organizational climate in institutions of higher education. *Research in Higher Education*, 28(4), 367-383.

A study that explores the organizational climates of four-year public universities in terms of relevance organization-wide or sub-unit level. The study also examines differences between positive and negative climates. Data was drawn from a sample of nine institutions containing 2937 respondents. Results provided relevance for climate at the organizational level, however, sub-units provided the largest proportion of variance. The study also shows that administrators have more positive perceptions of climate than do faculty.

Moran, E. T., & Volkwein, J. F. (1992). The cultural approach to the formation of organizational climate. *Human Relations*, 45(1), 19-47.

An examination of the most common theoretical approaches to organizational climate (structural, perceptual and interactive) is presented. An additional cultural approach is then offered and developed. The cultural approach distinguishes itself by theorizing that organizational climate is the result of the interaction of organizational members who share a common perception of the organizational culture. Distinctions between organizational climate and culture are examined as support for the new cultural approach.

Mumford, M. D., & Gustafson, S. B. (1988). Creativity syndrome: Integration, application, and innovation. *Psychological Bulletin*, 103, 27-43.

The present article is concerned with certain conceptual issues embodied in the description and understanding of creative behavior. Initially, the authors argue that although creativity has been defined in many ways, the ultimate concern in studies of creativity is the production of novel, socially valued products. Subsequently, they review the literature pertaining to the development of innovative occupational achievement. They suggest that the integration and reorganization of cognitive structures is likely to underlie major creative contributions and that the application of existing cognitive structures is likely to underlie minor contributions. They then extend this interpretation to the processes traditionally held to underlie individual differences in creativity and note that both the major and minor forms of creativity will require a number of different knowledge, skills, and abilities. Further, they suggest that the effective translation of ideas into action will depend on a variety of individual and situational attributes. On the basis of these observations, we concluded that enhanced understanding and prediction will require a more sophisticated multivariate approach.

Oldham, G. R., & Baer, M. (2012). Creativity and the work context. In M. D. Mumford (Ed.), *Handbook of organizational creativity* (pp. 387-420). New York: Academic Press.

The purpose of this chapter was to summarize and integrate the literature that has addressed the effects of contextual conditions on employee creativity. Since other

chapters in this handbook focused on employees' personal characteristics (e.g., abilities and personality) the authors discuss such characteristics only to the extent that they combine or interact with contextual conditions to affect employee creativity. In addition, they discuss the effects of the context on the creativity of employees who work in both team and individual, non-team settings. They provide a synthesis of what we currently know about the effects of contextual conditions on the creativity of employees in both settings, and then suggest a number of new directions for future research.

Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *The Academy of Management Journal*, 39, 607-634.

This study examined the independent and joint contributions of employees' creativity-relevant personal characteristics and three characteristics of the organizational context – job complexity, supportive supervision, and controlling supervision – to three indicators of employees' creative performance: patent disclosures written, contributions to an organizational suggestion system, and supervisory ratings of creativity. One hundred seventy-one participants produced the most creative work when they had appropriate creativity-relevant characteristics, worked on complex, challenging jobs, and were supervised in a supportive, non-controlling fashion.

O'Shea, D., & Buckley, F. (2007). Towards an integrative model of creativity and innovation in organizations: A psychological perspective. *The Irish Journal of Psychology*, 28, 101-128.

Work and organizational psychologists have much to offer the world of business. This article addresses the value that research into creativity, primarily investigated by psychologists, has to the field of innovation, more commonly researched in business, science, and technology arenas. Firstly, the article provides a framework to compare previous research in both areas. Secondly, it highlights clear gaps in prior research, and generates a model, alongside a series of propositions, to guide future investigators. These propositions include suggestions regarding (i) creativity and innovation as concurrent processes engaged in at multiple levels, (ii) the shift in focus from creativity at the individual level, to innovation as one moves through meso and macro levels, (iii) the potential of the organizational level for studying creativity and innovation in tandem, and (iv) the multiple factors that influence the processes of innovation and creativity at all levels. Finally, this paper highlights the need for multidisciplinary research that spans the domains of psychology, business, science, and technology, and serves as a call for work and organizational psychologists to engage in such research so as to provide value to organizations.

Ostroff, C., Kinicki, A. J., & Tamkins, M. M. (2003). Organizational culture and climate. In W. C. Borman, D. R. Ilgen, & R. J. Klimoski (Eds.), *Handbook of psychology: Volume 12 – Industrial and organizational psychology* (pp. 565-593). Hoboken, NJ: Wiley.

The authors present an integrated model of organizational culture and climate based on a review of both the climate and culture literatures. They provide a rather thorough review of the distinctions and similarities of the two constructs.

Ornstein, S. (1986). Organizational symbols: A study of their meanings and influences on perceived psychological climate. *Organizational Behavior and Human Decision Processes*, 38(2), 207-229.

A laboratory study that examines the perceptions of organizational climates. Organizational symbols such as pictures of organizational leaders, and artwork in three reception area settings were used to examine how they influence perceptions of climate. The investigators' findings support the hypotheses that organizational symbols connote specific meanings to individuals that they can identify.

Parker, C. P., Baltes, B. B., Young, S. A., Huff, J. W., Altmann, R. A., LaCost, H. A., & Roberts, J. E. (2003). Relationships between psychological climate perceptions and work outcomes: A meta-analysis. *Journal of Organizational Behavior*, 24, 389-416.

In this study, meta-analytic procedures were used to examine the relationships between individual-level (psychological) climate perceptions and work outcomes such as employee attitudes, psychological well-being, motivation, and performance. The review of the literature generated 121 independent samples in which climate perceptions were measured and analyzed at the individual level. These studies document considerable confusion regarding the constructs of psychological climate, organizational climate, and organizational culture and reveal a need for researchers to use terminology that is consistent with their level of measurement, theory, and analysis. Our meta-analytic findings indicate that psychological climate, operationalized as individuals' perceptions of their work environment, does have significant relationships with individuals' work attitudes, motivation, and performance. Structural equation modeling analyses of the meta-analytic correlation matrix indicated that the relationships of psychological climate with employee motivation and performance are fully mediated by employees' work attitudes. We also found that the James and James (1989) PCg model could be extended to predict the impact of work environment perceptions on employee attitudes, motivation, and performance. Despite the number of published individual-level climate studies that we found, there is a need for more research using standardized measures so as to enable analyses of the organizational and contextual factors that might moderate the effects of psychological climate perceptions. Finally, we argue for a molar theory of psychological climate that is rooted in the psychological processes by which individuals make meaning of their work experiences.

Payne, R. L., Fineman, S., & Wall, T. D. (1976). Organizational climate and job satisfaction: A conceptual synthesis. *Organizational Behavior and Human Performance*, 16, 45-62.

A study which uses facet analysis to examine the relationships and distinctions of eight conceptual types - job satisfaction, job characteristics, satisfaction with organization, perceived organizational characteristics, role morale, role climate, organizational morale, and organizational climate. Concludes that facet analysis appears to be a useful method for conceptually and empirically revealing relationships between conceptual types.

Payne, R. L., & Mansfield, R. (1973). Relationships of perceptions of organizational climate to organizational structure, context, and hierarchical position. *Administrative Science Quarterly*, 18, 515-526.

Three hundred eighty-seven respondents reported on their view of the organizational climate. Significant differences in perceptions were found for different hierarchical levels. The article concludes that it is important to redefine hypotheses for different subgroups if the views of the climate are different.

Payne, R., & Pugh, D. (1976). Organizational structure and climate. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1125-1175). Chicago: Rand McNally.

A review of concepts focused on organizational structure and organizational climate is presented. It examines the structural aspects of organizations, and probes the behaviors and attitudes of the individuals in the organization, using both objective and subjective methods. It is suggested that climate variables supported perceptual measures of centralization. These perceptions were probably influenced by individual perceptions of the climate. Cross sectional surveys and process studies must complement each other to allow theories of organizational behavior to emerge.

Peterson, M. F., & Fischer, R. (2004). Organizational culture and climate. In C. Spielberger (Ed.), *Encyclopedia of applied psychology – Volume 2* (pp. 715-721). Amsterdam: Elsevier.

The authors provide a thorough review of the literature relating to both organizational culture and climate. They review the history of organizational culture and climate analysis and place these constructs within the larger ideas of national culture.

Pettigrew, A. M. (1979). On studying organizational cultures. *Administrative Science Quarterly*, 24(4), 570-581.

It is observed that the longitudinal approach to the study of organizations has been neglected. Suggests that by studying a sequence of social dramas in an organization (i.e. growth, evolution, transformation, and decay) the underlying culture can be observed. The concepts of symbol, language, ideology, belief, ritual, and myth have been used as approaches to understand the creation of organizational culture. This

kind of analysis is potentially useful to better understand the creation of organizational cultures, leadership, and the problems of commitment in organizations.

Raudsepp, E. (1987). Establishing a creative climate. *Training and Development Journal*, 41(4), 50-53.

A list of 24 guidelines for developing an organizational climate conducive to creativity is put forward. These guidelines suggest that by developing a creative climate within an organization one could expect employees to have a higher level of job satisfaction, to be more open to change, and to be able to achieve higher levels of innovation. Two suggestions to achieve a creative climate as suggested by the guidelines are: 1) to allow more employee involvement in decision making; and 2) to promote maturity and individuality.

Romano, C. A. (1990, January). Identifying factors that influence product innovation: A case study approach. *Journal of Management Studies*, 27, 0022-2380.

Factors affecting the level of product innovation in a small enterprise setting are examined. The areas specifically examined included the interaction of management and environmental factors and its impact on product innovation and how factors interrelate to influence small business success (growth). Twelve case studies were examined.

Sarros, J. C., Cooper, B. K., & Santora, J. C. (2008). Building a climate for innovation through transformational leadership and organizational culture. *Journal of Leadership and Organizational Studies*, 15, 145-158.

Research has called for organizations to be more flexible, adaptive, entrepreneurial, and innovative in meeting the changing demands of today's environment. Appropriate leadership to effect such change is required; however, there has been little empirical analysis of the theoretical relationships among the key components that make up such change strategy, including transformational leadership, organizational culture, and organizational innovation. This study examines these linkages in terms of their relationships with climate for organizational innovation in Australian private sector organizations. Structural equation modeling based on responses to a survey of 1,158 managers explores the relationship between transformational leadership and climate for organizational innovation and the extent to which a competitive, performance-oriented organizational culture mediates this relationship. Strategies for building innovative organizations are discussed.

Schein, E. H. (1984, December). Coming to a new awareness of organizational culture. *Sloan Management Review*, 25, 3-15.

An article in which a formal definition of organizational culture is presented, dissected, and analyzed. The interaction of basic assumption and values: 1) within levels of culture, 2) around which cultural paradigms form, are discussed and graphed. Problems of external adaption and survival, and the problems of internal

integration, are also presented. Conclusion discusses the need to study large numbers of organizations using presented methods to relate cultural variables to other variables such as strategy and organizational effectiveness.

Schein, E. H. (2000). Sense and nonsense about culture and climate. In N. M. Ashkanasy, C. P. Wilderon, & M. F. Peterson (Eds.), *Handbook of organizational culture and climate* (pp. xxiii-xxx). Thousand Oaks, CA: Sage.

A commentary on the relationships between these two constructs.

Schepers, P. & van den Berg, P. T. (2007). Social factors of work environment creativity. *Journal of Business and Psychology*, 21, 407-428.

The aim of this study was to investigate how work-environment creativity is related to the social factors of: organizational-culture perceptions, employee participation, knowledge sharing, and procedural justice. Questionnaires were administered to 154 employees of a government organization. Because the employees within a department worked in diverse teams and their work environments may have varied, our analysis was conducted at the level of the individual. Hierarchical regression analyses showed that work-environment creativity was related to adhocracy-culture perceptions, employee participation, and knowledge sharing; that knowledge sharing was related to cooperative-team perceptions and procedural justice; and that knowledge sharing mediated the relationships of cooperative-team perceptions and procedural justice with work-environment creativity. Practical implications of the results are discussed.

Schneider, B. (1972). Organizational climate: Individual preferences and organizational realities. *Journal of Applied Psychology*, 56(3), 211-217.

An investigation which was made into the perceptions of long term managers, assistant managers and agents from two insurance companies about the climate in which they work. Their views were compared (on a six dimensional scale) to new agents that were recently hired into these companies. The perceptions and expectations of these new agents were shown to be congruent to those of the existing personnel.

Schneider, B. (1973). The perception of organizational climate: The customer's view. *Journal of Applied Psychology*, 57(3), 248-256.

Evidence was collected in making a strong point in favor of investigating customer behavior through identification of their climate perceptions. Individuals versus collective climate perceptions were discussed and used to show how customers can be influenced in open system or service related organizations.

Schneider, B. (1975). Organizational climate: Individual preferences and organizational realities revisited. *Journal of Applied Psychology*, 60(4), 459-465.

An empirical study which investigates the possibility of predicting success outcomes based on the fit of an individual's climate expectations and preferences for the perceived organizational climate. Subjects were 914 new life insurance agents whose tenure and sales were correlated after one year. Findings did not support hypothesis. Further in-depth analysis and discussion of findings is offered.

Schneider, B. (1975). Organizational climates: An essay. *Personnel Psychology*, 28(4), 447-479.

A review of evidence that shows the importance of the climate concept as an aid in understanding employee behavior. A framework is provided for guiding future climate research. Examinations and summaries are given on the nature and function of climate perceptions, the assessment of climate, and climate's relationship to job satisfaction.

Schneider, B. (1985). Organizational behavior. *Annual Review of Psychology*, 36, 573-611.

An overview of the field of Organizational Behavior, focusing on literature from 1983, with a reliance on historical works. The article uses the perspective of individual, group, and organization, to discuss the themes of: worker motivation, job satisfaction, role stress, commitment, socialization, turnover, leadership, management, inter-group theory, demographics, group structure, team performance, climate, and culture. The author advocates the use of cost-benefit research to validate the significance of the field to organizations by measuring productivity.

Schneider, B. (1987). $E=f(P,B)$: The road to radical approach to person-environment fit. *Journal of Vocational Behavior*, 31, 153-361.

The title suggests the thesis of this article: Environments are a function of the people behaving in them. The article begins with a brief review of the author's personal saga resulting in the idea that people cause environments to be what they are. A new conceptualization of organizational functioning based on the attraction-selection-attrition framework is then presented. Implications of this framework for various areas of study in I/O psychology and vocational behavior are then described.

Schneider, B. (1987). The people make the place. *Personnel Psychology*, 36, 573-611.

A framework for understanding the etiology of organizational behavior is presented on theory and research from interactional psychology, vocational psychology, I/O psychology, and organizational theory. The framework proposes that organizations are functions of the kinds of people they contain, and further, that the people there

are functions of an attraction-selection-attrition (ASA) cycle. The ASA cycle is proposed as an alternative model for understanding organizations and the causes of the structures, processes, and technology of organizations. First, the ASA framework is developed through a series of propositions. Then some implications of the model are outlined, including (1) the difficulty of bringing about change in organizations, (2) the utility of personality and interest measures for understanding organizational behavior, (3) the genesis of organizational climate and culture, (4) the importance of recruitment, and (5) the need for person-based theories of leadership and job attitudes. It is concluded that contemporary I/O psychology is overly dominated by situationalist theories of behavior of organizations and the people in them.

Schneider, B., Ehrhart, M. G., & Macey, W. H. (2011). Perspectives on organizational climate and culture. In S. Zednick (Ed.), *APA handbook of industrial and organizational psychology, Volume 1: Building and developing the organization* (pp. 373-414). Washington, DC: American Psychological Association.

The authors first review the history and current status of research and theory on organizational climate, the older sibling. Organizational climate inherited much of its psychological parents' heritage with a focus on psychological issues involving perception, affect, and attitudes. Organizational climate has been variously defined but for present purposes, climate concerns the policies, practices, and procedures as well as the behaviors that get rewarded, supported, and expected in a work setting and the meaning those imply for the setting's members (Schneider & Reichers, 1983; Schneider, White, & Paul, 1998). The younger sibling, organizational culture, arrived later than climate, having inherited characteristics associated more with sociology and anthropology and thus a focus on the collective rather than the individual. Organizational culture has also had a variety of definitions, as we see later, but for now we define culture as beliefs, ideologies, and values, and the ways these are transmitted through symbols, language, narratives (myths, stories), and practices (rituals and taboos) especially during socialization to the workplace (Trice & Beyer, 1993). This sibling is reviewed as well from both research and conceptual vantage points. As the chapter unfolds the authors suggest approaches to research and theory that could yield some rapprochement for the siblings. We do this because it is so clear to us that if there were more "sharedness" (to coin a term) across the boundaries that have been created, there is much to be gained for an understanding of the ways climate and culture define organizations for the people who work in them and determine organizational effectiveness.

Schneider, B., & Gunnarson, S. (1991). Organizational climate and culture: The psychology of the workplace. In J. W. Jones, B. D. Steffy, & D. W. Bray (Eds.), *Applying psychology in business: The handbook for managers and human resource professionals* (pp. 542-551). Lexington, MA: Lexington Books.

A review of the relationship of, and the differences between, climate and culture, as well as a listing of the various facets that contribute to, and make up, both. As support, the article presents three examples of types of climate and culture: safety, innovation and service. These examples serve to show how climate and culture can help to lead organizational effectiveness.

Schneider, B., & Hall, D. T. (1972). Toward specifying the concept of work climate: A study of Roman Catholic diocesan priests. *Journal of Applied Psychology, 56*(6), 447-455.

A research study to explore factors of climate perception and to relate them to measurable behaviors. Roman Catholic diocesan priests (N=373) were interviewed regarding the frequency and importance of their routine tasks, and their perception of climate. The findings showed that the amount of activities performed were more strongly related to perceived climate than the reported importance of the activities.

Schneider, B., & Reichers, A. E. (1983). On the etiology of climates. *Personnel Psychology, 36*, 19-39.

A review of some of the conceptual and methodological progress that has been made in the area of climate research is presented. A discussion of current thinking on the etiology of climates follows, and an integrative conceptual scheme is developed. This perspective is based on Mead's (1934) symbolic interactionism as the process through which individuals come to attach meaning to events. Implications of this approach to the etiology of climates are discussed with respect to measurement issues, the management of climate acquisition in organizations, and the change and development of climates over time.

Schneider, B., Brief, A. P. & Guzzo, R. A. (1996). Creating a climate and culture for sustainable organizational change. *Organizational Dynamics, 24*, (4) 7-19.

This is an article about how to create the correct environment for developing organizational change that is continuous. This article reviews literature on Total Organizational Change (TOC) that reveals some potentially powerful techniques to bring about sustainable change within organizations. It includes sections on thinking about prevailing conditions; organizational climate; organizational culture; models and methods of Total Organizational Change (TOC); change based on the human potential philosophy; change based on the socio-technical philosophy; change based on the TQM philosophy; and implementing TOC.

Schneider, B., & Snyder, R. A. (1975). Some relationships between job satisfaction and organizational climate. *Journal of Applied Psychology, 60*(3), 318- 328.

Data is presented from a measure of organizational climate and seven production and turnover indexes of organizational effectiveness. The implications of the research on climate and satisfaction, and organizational change are discussed.

Scott, S. G., & Bruce, R. A. (1994). Determinates of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, 137, 580-607.

This study integrated a number of streams of research on the antecedents of innovation to develop and test a model of individual innovative behavior. Hypothesizing that leadership, individual problem-solving style, and work group relations affect innovative behavior directly and indirectly through their influence on perceptions of the climate for innovation, the authors applied structural equation analysis to test the parameters of the proposed model. The model explained 37 percent of the variance in innovative behavior. Task type moderated the relationship between leader role expectations and innovative behavior.

Shalley, C. E., Zhou, J., & Oldham, G. R. (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here? *Journal of Management*, 30, 933-958.

This article systematically reviews and integrates empirical research that has examined the personal and contextual characteristics that enhance or stifle employee creativity in the workplace. Based on the review, the authors discuss possible determinants of employee creativity that have received little research attention, describe several areas where substantial challenges and unanswered questions remain, present a number of new research directions for theory building, and identify methodological improvements needed in future studies of creativity in organizations.

Siegel, S. M., & Kaemmerer, W. F. (1978). Measuring the perceived support for innovation in organizations. *Journal of Applied Psychology*, 63(5), 553-562.

A three-part quantitative research study that 1) postulated five climate dimensions of innovative organizations, 2) developed a questionnaire instrument - Siegel Scale of Support for Innovation (SSSI) - which was administered to teachers and students in an innovative and a traditional high school, and 3) conducted validity and reliability testing of SSSI. A factor analysis of the responses to the SSSI indicated significant differences between the two schools.

Stein, M. I. (1953). Creativity and culture. *Journal of Psychology*, 36, 311-322.

A series of hypotheses regarding the creative person, product, and process are discussed, with an emphasis on the relationships between them and culture. The creative person is said to be sensitive to both external and internal environments, and that a culture which provides opportunities or experiences to an individual, is said to be a creative environment. It is suggested that the creative person desires to communicate with others, especially critics, patrons, and the population at large.

Stein, M. I. (1963). A transactional approach to creativity. In C. W. Taylor, & F. Barron (Eds.), *Scientific creativity: Its recognition and development* (pp. 217-227). New York: John Wiley & Sons, Inc.

A summary of preliminary findings derived from a study of industrial research scientists. Of major focus is the bridging of the gap between sociological (focus on the environment) and psychological (focus on the individual) based studies. Environmental factors of the work setting and psychological variables of the scientists are described individually as a means to understand the overall dynamics that can foster or hinder the creative process in the organizations.

Taylor, C. W. (1972). Can organizations be creative, too? In C. W. Taylor (Ed.), *Climate for creativity* (pp. 1-22). Elmsford, NY: Pergamon Press Inc.

Report on the general findings from a number of research studies that focused on the type of climate research scientists working in U. S. military laboratories deal with. Through the use of interviewing techniques it was found that a majority of the scientists believed that their work environment stifled their creativity. These responses are generalized and then examined in relation to creative climates in education and business settings.

Terreberry, S. (1968). The evolution of organizational environments. *Administrative Science Quarterly*, 12(4), 590-613.

A discussion focused on concepts of organizational environments. Two hypotheses are examined: (a) organizational change is externally induced; and (b) organizational adaptability is a function of ability to learn and to perform according to changes in the environment. Author concludes by supporting the concept of evolutionary process of organizational environments as a requisite to organizational survival.

Torrance, E. P. (1963). Conditions for creative growth. In E. P. Torrance (Ed.), *Education and the creative potential* (pp. 16-33). Minneapolis, MN: The University of Minnesota Press.

Paper that examines the social and cultural factors that facilitate or inhibit creative thinking in elementary school children. A summary of ten separate studies focused on a number of these factors is given. This empirical proof validates the institution of changes in classroom environments and curriculum that are shown to lead to increases in the creative thinking abilities of students.

VanGundy, A. G. (1984). How to establish a creative climate in the work group. *Management Review*, 73(8), 24-38.

Discusses how creative climates must be carefully developed and nurtured in order to maintain a free and open environment that encourages innovation. He groups the factors that determine a group's creative climate into three categories: (1) the external environment, (2) the internal creative climate of individuals within a group

and, (3) the quality of interpersonal relationships among the group members. Includes an inventory that examines the three categories.

VanGundy, A. (1987). Organizational creativity and innovation. In S. G. Isaksen (Ed.), *Frontiers of creativity research* (pp. 358-379). Buffalo, NY: Bearly Limited.

A discussion of literature dealing with organizational creativity and innovation including definitions, barriers to innovation (organizational structure, social and political, procedural, resource availability, and individual attitudes and organizational climate), and the organization of innovation literature (input, output, and processes within organizations). Concludes by presenting possibilities for research in organizational innovation and behavior.

West, M. A. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology: An International Review*, 51, 355-387.

West synthesizes research and theory that advances the understanding of creativity and innovation implementation in groups at work. It is suggested that creativity occurs primarily at the early stages of innovation processes with innovation implementation later. The influences of task characteristics, group knowledge diversity and skill, external demands, integrating group processes and intragroup safety are explored. Creativity, it is proposed, is hindered whereas perceived threat, uncertainty, or other high levels of demands aid the implementation of innovation. Diversity of knowledge and skills is a powerful predictor of innovation, but integrating group processes and competencies are needed to enable the fruits of this diversity to be harvested. The implications for theory and practice are also explored.

West, M. A., & Sacramento, C. A. (2012). Creativity and innovation: The role of team and organizational climate. In M. Mumford (Ed.). *Handbook of organizational creativity* (pp. 359-385). New York: Academic Press.

The importance of context in creativity and innovation theory is introduced. The authors then turn to the concept of organizational climate, and provide a summary of different existent taxonomies of climate for creativity and innovation. After this overview, they summarize the literature looking at the impact of both team and organizational climates on individual, team, and organizational creativity and innovation. They discuss the role of climate in the successful implementation of top-management geared innovations. Finally some of the practical implications of creative climate research and possible avenues for future research are discussed.

Witt, L. A., & Beorkrem, M. N. (1989). Climate for creative productivity as a predictor of research usefulness and organizational effectiveness in an R & D organization. *Creativity Research Journal*, 2(1&2), 30-40.

Report of a study aimed at 1) assessing the creative climate of a military research and development laboratory; 2) examining the argument of whether it is more useful to look at an organizations referent or omnibus climate, and; 3) ascertaining the

validity of a measure of the referent climate. The instruments utilized in the study to measure climate were; 1) the Climate for Creative Productivity Index (CCPI) which measures the referent climate, and 2) the Organizational Climate Questionnaire (OCQ) which measures the omnibus climate. Results of the study are given and discussed in relation to the initial aims of the study.

Zohar, D. (1980). Safety climate in industrial organizations: Theoretical and applied implications. *Journal of Applied Psychology*, 65(1), 96-102.

A study was conducted of 20 industrial organizations in Israel to measure their organizational climate for safety. Prior to the study it was hypothesized that safety climate would be a characteristic of an industrial organization and that the safety climate is relative to the general safety level in the organization. After taking a 40-item questionnaire, both hypotheses were supported by the study.

Books and Monographs

Argyris, C. (1965). *Organization and innovation*. Homewood, IL: Richard D. Irwin, Inc., & The Dorsey Press.

The author studies the influence of the interpersonal competence and problem-solving effectiveness of top managers on innovation, willingness to take risks and problem-solving effectiveness within research organizations. He develops a theoretical model relating interpersonal competence and innovation. The findings suggest that low interpersonal competence results in less risk-taking, openness, trust and less innovation.

Ashansky, N., Wileron, C. P., & Peterson, M. F. (Eds.) (2011). *The Handbook of organizational culture and climate* (2nd ed.). Los Angeles: Sage.

Thirty-three chapters cover culture, climate and multilevel analysis, positive work cultures and climates, reviews of social-organizational processes and theory, as well as international trends.

Cooper, C. L., Cartwright, S., & Earley, P. C. (Eds.), (2001). *The international handbook of organizational culture and climate*. New York: Wiley.

Forty-one contributors in 27 chapters provide a comprehensive overview of a variety of issues related to defining, assessing and intervening on both organizational culture and climate. The handbook includes work that is primarily focused on organizational culture.

Ekvall, G. (1966). *Industrial suggestion schemes: Studies concerning their psychological background*. Stockholm, Sweden: The Swedish Council for Personnel Administration.

Suggestion schemes provide an open and direct channel of communication between the employee and the planning and decision-making levels of the organization. This report includes an examination of the psychological and socio-psychological factors and the use of sociological research methods that were applied during 1959-1963 within three Swedish factories. The guidelines for suggestion systems were regulated by collective agreements with the Trade Union Federation and the Employers' Confederation.

Ekvall, G. (1971). *Creativity at the place of work: A study of suggestors and suggestion systems in the Swedish mechanical industry*. Stockholm, Sweden: The Swedish Council for Personnel Administration.

This pilot study focused on suggestors and suggestion systems in the Swedish mechanical industry. The investigators' findings generally support the hypotheses that: a) significantly higher averages should be observed for the suggestor groups than the non-suggestors in tests measuring certain divergent-production abilities and the tests measuring certain convergent-production abilities, b) the "big" suggestor group should show significantly higher averages than the "ordinary" suggestor group, and c) there should be no significant differences in averages between the groups in cognitive tests. This study laid the foundation for Ekvall's later work on climate and working atmosphere.

Ekvall, G. (1972). *A study of two creativity tests*. Stockholm, Sweden: Swedish Council for Personnel Administration.

A report that explores and compares two creativity tests designed to measure divergent thinking abilities. The tests were the Brick Uses Test and the Purdue Creativity Test. The report utilizes the tests in a study that provides reliability data. Additional comparisons of these two divergent thinking tests with three other tests designed to measure special intelligence, as well as the 'Plate models' test, the 'Figure rotation' test, and the 'Gottschalldt figures' test and a personality inventory called GW III yielded information related to the validity of the tests.

Ekvall, G. (1983). *Climate, structure and innovativeness of organizations: A theoretical framework and an experiment (Report 1)*. Stockholm, Sweden: FARådet - The Swedish Council for Management and Work Life Issues.

This report focuses on the theory and assessment of organizational climate. Following a review of previous theories centered on the concept of organizational climate, a study is conducted with 49 senior executives and training specialists. These subjects rated the organizations they had worked in on the variables of: 1) overall climate, 2) structure dimensions, and 3) personnel. Results of the study support the concept of organizational climate as an important variable related to the innovativeness one finds in an organization.

Ekvall, G. (1984). *Kreativitet pa bredden: En bok on förslagsverksamhet (A broad view of creativity: A book on proposed activities)*. Svenska Institute för Förslags Verksamhet, Sweden.

A book that provides a broad overview on the topic of creativity with numerous suggestions for actions to provide improved levels of organizational creativity. Written in Swedish.

Ekvall, G. (1988). Förnyelse och friction: Om organization, kreativitet och innovation (Renewal and friction: Organizational creativity and innovation). Sättning Fotosättarna, Borås, Sweden.

A book that provides a detailed discussion of the natural tension between creativity and organizational resistance to change. Written in Swedish.

Ekvall, G., & Arvonen, J. (1984). Leadership styles and organizational climate for creativity: Some findings in one company (Report 1). Stockholm, Sweden: FARådet - The Swedish Council for Management and Work Life Issues.

An investigation of the relations between the leadership styles of 25 managers in a large Swedish company and the climate perceptions of their subordinates is presented. Problem solving, decision-making, and achievement styles were studied. The results indicate strong multiple correlations between the leadership style variables and the different climate scales. It is also suggested that in this company, it is the analytical, cooperative, and non-competitive manager who generates the most creative climate.

Ekvall, G., Arvonen, J., & Waldenstrom-Lindblad, I. (1983). Creative organizational climate: Construction and validation of a measuring instrument (Report 2). Stockholm, Sweden: FARådet - The Swedish Council for Management and Work Life Issues.

A report focused on the development of a questionnaire designed to measure dimensions of organizational climate that are theorized to be vital to an organization's innovative abilities. The theories that were used to construct the instrument are reviewed, as are the three research projects that utilized the questionnaire as a means to assess and revise the instrument. Statistical analysis of the data obtained from these three projects indicates the Creative Climate Questionnaire (CCQ) is a reliable instrument and can be used to identify differences between productive and unproductive organizations.

Ekvall, G., & Parnes, S. J. (1989). Creative problem-solving methods in product development: A second experiment. In T. Rickards, & S. Moger (Eds.), Creativity and Innovation Yearbook 2 (pp. 122-142). Manchester, UK: Manchester Business School.

The authors test the effects of training in a variety of creativity techniques on the problem solving effectiveness of industrial engineers when real-life criteria are applied. Five groups of Swedish industrial engineers were trained in brainstorming, brainstorming with analogical thinking (Synectics), morphological analysis, creative group leadership (discussion format), and leaderless group discussion. Using each of the techniques, the groups worked on solutions to five technical problems during their three days of training. Solutions were rated on usefulness, originality and elegance. Results show that brainstorming with analogy produced higher total solution scores for all five problems. It was found that brainstorming alone and brainstorming with analogy produced highest scores on usefulness and the

combination of usefulness and elegance. The strengths and weaknesses of the study were discussed and the authors offer areas for further study.

Firenze, R. J. (1998). *A study of performance improvement strategies of manufacturing and service organizations*. Indianapolis, IN: The ILMC Center for Manufacturing and Service Excellence.

This monograph reports a study sponsored by the National Center for Manufacturing Sciences, The Chicago Manufacturing Center, The American Production Inventory Control Society, Ball State University, and the Maryland Productivity Center. Data was received from 145 companies, and included a number of important findings about the relationship of climate to productivity, leadership, and company performance. The strongest relationships were found between climate and profitability and between climate and productivity. The weakest linkages are between climate and the company's ability to meet customer cost requirements and penetrate new markets. Climate was also related to the company's ability to develop and sustain more complex work designs.

Isaksen, S. G., & Akkermans, H. (2007). *Introduction to climate*. Orchard Park, New York: The Creative Problem Solving Group.

This booklet is designed to introduce people to the importance of the concept of climate and defines the dimensions of the Situational Outlook Questionnaire (SOQ). It also provides a diagnostic to help those who completed the SOQ develop actions and initiatives to help improve their working environment.

Isaksen, S. G., & Ekvall, G., (with contributions from Akkermans, H., Wilson, G. V., & Gaulin, J. P.) (2007). *Assessing the context for change: A technical manual for the SOQ – Enhancing performance of organizations, leaders and teams for over 50 years* (2nd ed.). Orchard Park, New York: The Creative Problem Solving Group.

This is the most current technical manual available outlining the historical development of the SOQ. It provides detailed psychometric results for each of the versions of the SOQ as well as the conceptual and empirical background surrounding the development and application of the SOQ.

Isaksen, S. G., & Lauer, K. J. (1998). *The relationship between cognitive style and individual psychological climate: Reflections on a previous study* (Monograph No. 306). Buffalo, NY: The Creative Problem Solving Group, Inc.

In an earlier study Isaksen and Kaufmann (1990) conducted an exploratory study into the relationship between cognitive style and individual perceptions of creative climate. Clapp and Kirton (1994) raised questions regarding the theoretical constructs and methodology used in this study. This article reviews the original research, addresses the questions raised by Clapp and Kirton and makes recommendations for future research in understanding the relationship of climate and cognitive style.

Isaksen, S. G., Lauer, K. J., & Ekvall, G. (1998). *Perceptions of the best and worst climates for creativity: Preliminary validation evidence for the Situational Outlook Questionnaire®* (Monograph #305). Buffalo, NY: The Creative Problem Solving Group, Inc.

This monograph reports the results of two studies conducted to examine the ability of the Situational Outlook Questionnaire® (SOQ™) to effectively discern climates that either encourage or discourage creativity and the ability to initiate change. The climate for creativity and change is defined and the context for the use of the measure in organizational settings is established through the development of a Model for Organizational Change. The article presents the history of the SOQ's development and gives a description of the SOQ. The methodology and results of both studies, including three groups, are reported. The results of both studies show that when subjects complete the SOQ based on their recollection of a best- and worst-case work experience, the measure is able to consistently and significantly discriminate between the two types of experiences. Conclusions, implications, and areas for future research to examine the validity of the SOQ are explored.

Isaksen, S. G., Lauer, K. J., Murdock, M. C., Dorval, K. B., & Puccio, G. J. (1995). *Situational Outlook Questionnaire®: Understanding The Climate For Creativity And Change (SOQ™) - A Technical Manual*. Buffalo, NY: Creative Problem Solving Group, Inc.

A certification manual designed to assist individuals attending the Situational Outlook Questionnaire® (SOQ) Part 1 certification program and as a field manual for individuals using the SOQ for interventions. The manual is composed of six chapters. Chapter One focuses on the concept of climate in general. Chapter Two examines the development of the SOQ. Chapter Three explores the reliability of the questionnaire. Chapter Four introduces a number of studies that begin to establish the content and concurrent validity of the SOQ. Designing and using the SOQ in real world applications is the focus of Chapter Five. This chapter also includes descriptions of interventions that have been conducted in the past and used the SOQ as a driver for reorganization, recapitalization, downsizing, goal setting and leadership training. Chapter Six provides a variety of resources for individuals using the SOQ that includes a glossary of terms used in the manual. Presently this is a technical manual and it is not available for distribution beyond qualified SOQ practitioners. Note: this was the first version of the technical manual developed collaboratively by the faculty and staff of the International Center for Studies in Creativity.

Isaksen, S. G., & Tidd, J. (2006). *Meeting the innovation challenge: Leadership for transformation and growth*. Chichester, UK: Wiley.

This book outlines a systemic approach to creativity, innovation and change. It crosses the boundaries between two relatively independent areas of research and practice: those concerned with creativity and those focused on innovation. The systemic approach includes a focus on methods, results and outcomes, people, and place. The book contains an entire section on the context for change including case studies applying the SOQ.

Isaksen, S. G., Treffinger, D. J., & Dorval, K. B. (2000). *Climate for creativity and innovation: Educational Implications – Idea Capsule Series*. Sarasota, FL: Center for Creative Learning.

This monograph outlines the importance of a creative climate for those involved in education. It defines and describes the environment for creativity and provides a series of practical suggestions to help educators establish a climate that encourages creativity within their classrooms.

Isaksen, S. G., Dorval, K. B., & Treffinger, D. J. (2011). *Creative approaches to problem solving: A framework for innovation and change*. Los Angeles: Sage.

This book includes the most current and comprehensive description of the Creative Problem Solving (CPS) framework, language, guidelines and tools. The CPS framework includes a focus on the context and situational factors that are important to consider when planning your approach. One chapter highlights the elements of context and climate and how they influence CPS.

Kotter, J. P., & Hesker, J. L. (1992). *Corporate culture and performance*. New York: The Free Press.

This book outlines the rationale for the importance of deliberately managing the context. It refers to context as culture, but includes useful information for those concerned about the climate as well.

Litwin, G. H., & Stringer, R. A. (1968). *Motivation and organizational climate*. Boston, MA: Harvard University Press.

One of the earliest books dealing with the concept of climate, this foundational work explains important aspects of the behavior of individuals in organizations in terms of a theory of motivation and climate. The stimulus was a series of studies illustrating the connection between environmental and situational factors in determining motivation.

Ott, J. S. (1989). *The essences and functions of organizational culture: The organizational culture perspective*. Chicago, IL: Dorsey Press.

This book examines the fundamental aspects of organizational culture. Suggests that culture is expressed at levels of artifacts and behaviors, values and beliefs, and underlying assumptions. Methodologies for culture research are examined.

Prather, C. W., & Gundry, L. K. (1985). *Blueprints for innovation: How creative processes can make you and your company more competitive*. New York: American Management Association.

The authors of this book explore tools and processes that can help organizations increase their potential for success by promoting creativity, change and innovation.

Chapters in the book focus on topics such as: tools and techniques for creativity and problem solving; understanding and establishing a creative climate; personal problem solving styles; and organizational structures that enhance and sustain innovation. Case examples from the authors experience and practice are used throughout the book to highlight how organizations actually use and benefit from the introduction and sustained use of creativity tools and processes. The book also provides an overview of the creative process, the creative climate based upon Ekvall's & Isaksen's work, and the three arenas of innovative organizations (Education, Application & Environment).

Prather, C. W. (2009). *A manager's guide to fostering creativity and innovation in teams*. New York: McGraw-Hill.

The practical book written for managers shares the author's learning from leading Du Pont's Center for Creativity and Innovation and provides tools and resources to help create innovation through teams. Includes lessons from experience from applying the SOQ.

Schneider, B. (Ed.). (1990). *Organizational climate and culture*. San Francisco: Jossey-Bass.

A collection of 11 chapters by leading researchers, theorists, and practitioners in the field of organizational climate and culture. The chapters are divided into three sections: 1) Conceptual issues, 2) methodological issues, 3) and applying climate and culture constructs. Section 1 presents an overview of climate and culture research and summarizes thinking about how climate and culture are learned. Section 2 reviews a number of considerations one should use in the collection and analysis of climate and culture data. Section 3 includes a collection of chapters that demonstrate the usefulness of climate and culture as constructs and approaches to understanding organizational behavior. Each section is preceded by an introduction and overview.

Schein, E. H. (1985). *Organizational culture and leadership*. San Francisco: Jossey-Bass Publishers. (Also available as second edition, 1992.)

A book by a leading theorist and practitioner in the field of organizational development. The book reflects on the first five years of study focused on organizational culture. It highlights many of the problems and issues related to the study of organizational culture, and attempts to clarify them. The book also examines how organizational culture and leadership are intertwined. The book suggests that understanding organizational culture can help individuals explain and deal with a variety of organizational phenomena. It is also suggested that leadership is the process by which organizational culture is developed and changed.

Models for Organizational Creativity

Amabile, T. M., (1988). A model of creativity and innovation in organizations. *Research in Organizational Behavior*, 10, 123-167.

A descriptive model, anchored at the individual level, includes 13 elements based on a study of work environment. Describes 5 stages each for individual and small-group creativity and the organizational innovation process. Key organizational factors influencing the innovation process include motivation to innovate, resources in the task domain, and skills in innovation management. Includes no distinction of context, culture or climate but work environment is the central construct.

Drazin, R., Glynn, M. A., & Kazanjian, R. K. (1999). Multilevel theorizing about creativity in organizations: A sense-making perspective. *Academy of Management Review*, 24, 286-307.

Presented a multi-level (intrasubjective, intersubjective, and collective) process-oriented dynamic model including 5 main stages. Asserted that engagement in the creative process differs among levels. Culture and climate mentioned once but main concept is context.

Ekvall, G. (1983). Climate, structure and innovativeness of organizations: A theoretical framework and an experiment. Stockholm: The Swedish Council for Management and Organizational Behavior.

Differentiated external environment (culture, political systems, legislation, markets) from the organizational model that included 9 individual and organizational antecedent variables affecting organizational climate as an intervening construct. Those factors affecting organizational and psychological processes and ultimately individual and organizational performance.

Ford, C. M. (1996). A theory of individual creative action in multiple social domains. *Academy of Management Review*, 21, 1112-1142.

A multi-level model that specifies how individual creative action occurs through sense making to goals that influence receptivity and capability beliefs and emotions as well as domain-related knowledge, behavioral and creative-thinking abilities resulting in creative action over habitual action. Individual creative action interacts with 4 social domains and 4 fields. No reference to culture or climate.

Martins, E. C., & Terblanche, F. (2003). Building organizational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6, 64-74.

Model at the organizational level that identified 5 major determinants of organizational culture influencing creativity and innovation. Focus is only on organizational culture.

O'Shea, D., & Buckley, F. (2007). Towards an integrative model of creativity and innovation in organizations: A psychological perspective. *The Irish Journal of Psychology*, 28, 101-128.

Present a dynamic, multi-level, interdisciplinary model including 3 individual factors, 6 team factors, and 2 task characteristics as well as 5 support factors, 6 organizational factors, and 5 external demands that influence organizational creativity and innovation. At the individual and team level the emphasis is on creativity. At the industry level the emphasis is on innovation. At the organizational level creativity and innovation are required. Climate and culture are not defined nor are distinctions made. The terms: team climate, organizational culture and context are included in the model.

Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *The Academy of Management Journal*, 39, 607-634.

Model presented to guide an empirical study that included both personal (creativity relevant) and contextual (job complexity, supervisory style) factors to predict creative outcomes (ratings of creative performance, patent disclosures, contributions to suggestion systems). Although focused on a few contextual factors no definitions or distinctions of climate or culture provided.

Schepers, P. & van den Berg, P. T. (2007). Social factors of work environment creativity. *Journal of Business and Psychology*, 21, 407-428.

Model anchored at the employee level of analysis and included 4 main determinants of organizational culture: adhocracy perceptions, employee participation, cooperative team perceptions, and procedural justice. Effects were determined on work-environment creativity and knowledge sharing.

Scott, S. G., & Bruce, R. A. (1994). Determinates of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, 137, 580-607.

A multi-level model anchored at the individual level of analysis in which individual attributes combine with team-member exchange and leadership behavior to affect psychological climate producing innovative behavior. Context was defined and assessed as individual psychological climate.

Tesluk, P. E., Farr, J. L., & Klein, S. R. (1997). Influences of organizational culture and climate on individual creativity. *Journal of Creative Behavior*, 31, 27-41.

Model presented at the individual level of analysis to illustrate the influence of both organizational culture and climate (as distinct variables) on individual creativity. Identified organizational culture as an antecedent to 4 structure and practices that then affect 5 elements of climate. Organizational climate is positioned as an intervening construct.

West, M. A. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology: An International Review*, 51, 355-387.

Model focused on group creativity identified four groups of factors: 6 Group task characteristics, 8 group processes, external demands, and integrating group processes. Asserts that external demands inhibit creativity at early stages, but facilitate innovation implementation at later stages. Focus is on work environment rather than climate or culture.

Woodman, R. A., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of Management Review*, 18, 293-321.

An interactionist multi-level model included 4 individual, 7 group, and 6 organizational characteristics. Distinctions made between antecedent, intervening, and dependent factors. Refers to contextual and situational influences rather than climate or culture and identified these as intervening.