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OF THE CLIMATE FOR CREATIVITY AND CHANGE

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SITUATIONAL OUTLOOK QUESTIONNAIRE: A MEASURE OF THE CLIMATE FOR CREATIVITY AND CHANGE^{1,2}

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Summary.—The foundations of a multidimensional measure designed to assess creativity and change are presented. The reliability and construct validity of the Situational Outlook Questionnaire were tested using a sample of 1,111 subjects. Cronbach alpha and exploratory factor analysis supported reliability and construct validity. The study identified areas where the Situational Outlook Questionnaire can be improved and areas for further study with the questionnaire.

One of the most important topics facing organizations in the new millennium will be increasing a company's ability to be highly creative in a constantly changing global economy. According to Bennis (1997), "In today's Darwinian economy, only organizations that find ways to tap the creativity of their members are likely to survive" (p. xvi). The time has come to recognize that organizations are more than a machine or economic entity for, as Drucker (1997) has pointed out, they are a social entity composed of people. Combined with the knowledge that the question is not who is creative (Kirton, 1999) but rather how to support an individual's creativity, understanding the conditions in the organization that influence creativity is necessary. Some progress is being made by researchers such as Amabile, Conti, Coon, Lazenby, and Herron (1996) in the USA and Ekvall (1996) in Sweden. The purpose of this study was to examine some basic psychometric properties of a measure designed specifically to assess the climate for creativity and change.

Studies using more generic measures of organizational climate variables have supported the importance of climate in a variety of organizational dynamics. Gunter and Furnham (1996) have shown that climate perceptions are highly predictive of individual feelings of job satisfaction and pride in

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organizations. Climate has also been evaluated to improve operations and performance and has had a significant effect on the financial performance of an organization (Ekvall & Rykhammer, 1998; Schuster, Dunning, Morden, Hagan, Baker, & McKay, 1997). Climate has been a factor in the retention of employees when the ethical work climate matches those of the employee (Sims & Keon, 1997). Since the importance of organizational creativity is growing, we need corresponding improvement in measures to assess more precisely the climate for creativity and change.

One such measure is the Situational Outlook Questionnaire of 50 items constructed to assess how much any particular context will support creativity and change. The measure is an English translation of the Creative Climate Questionnaire originally developed by Ekvall (1983) and used as a tool for organizational diagnosis and development. The Situational Outlook Questionnaire is conceptually grounded in the research and applications of Ekvall and his colleagues (Ekvall, 1996; Ekvall & Arvonen, 1984; Ekvall, Arvonen, & Waldenstrom-Lindblad, 1983).

Similar to other organizational psychologists (Pettigrew, 1990; Schneider & Gunnarson, 1991), Ekvall has differentiated the concepts of climate and culture. Ekvall (1991) defined climate as the observed and recurring patterns of behavior, attitudes, and feelings that characterize life in the organization. Culture reflects the deeper foundations of the organization. Culture includes values, beliefs, history, and traditions. According to this distinction, culture provides the foundation for patterns of behavior that are more readily observed, described, and changed. These patterns of observed behavior along with many other variables, e.g., management, leadership, organizational size and structure, etc., help to establish the climate within the organization.

The concept of climate may be separated into two distinct, but complementary, constructs commonly referred to as psychological and organizational climate depending on the unit of analysis and the aggregation of individual perceptions utilized (James, James, & Ashe, 1990). Psychological climate is the cognitive appraisal by an individual of environmental attributes in terms of their acquired meaning and personal values to the individual. When individual appraisals are aggregated, based on the belief that individuals in an organization have a sense of shared meaning, the result is often referred to as organizational climate. As an attribute of an organization, organizational climate has been identified as a productive construct in preliminary and sustained organizational diagnosis for development or improvement efforts.

Climate is an intervening variable that affects organizational and psychological processes which, in turn, affect the over-all productivity and well-being of an organization. A number of factors influence climate, e.g., the larger external environment within which the organization operates, the resources available within the organization, its strategic positioning and archi-

ture as well as its culture and leadership practices. As such, climate is an important variable in understanding organizational performance and change (Burke & Litwin, 1992; Schneider, Brief, & Guzzo, 1996).

Ekvall has accumulated a great deal of support for his approach to measuring climate through his own field research with colleagues and doctoral students as well as his consulting experiences in organizational psychology. As a result of this sustained program of research and practice, Ekvall has demonstrated that his method of assessing climate clearly discriminated "stagnated" from "innovative" organizations (Ekvall, 1996). Ekvall's colleagues and students were able to make independent assessments of how innovative each of the 30 international organizations was. The organizations in the studies were assessed on their ability to bring novel products or services to the marketplace. This included both technical and market novelty. Those that were able to put many new products and services through their systems were labeled innovative. Those that had extreme difficulty or simply could not produce new products were called stagnated. Clear and significant differences on the climate scores were observable between the stagnated and innovative organizations.

The Creative Climate Questionnaire was chosen to be translated from the original Swedish given its psychometric properties, its conceptual clarity and approach, multidimensionality, and its discrimination of creative productivity of international organizations. The initial translation of the questionnaire from Swedish to English began in 1986, with a collaboration between individuals from the Center for Studies in Creativity at Buffalo State College, Lund University, and the Swedish Council for Worklife Issues. After the initial translation two independent Swedish translators used a process known as back translation with decentering (Bontempo, 1993) to adjust the initial translation.

Since 1986, the translation process has included the development, testing, and refinement of the Situational Outlook Questionnaire in four different versions of the measure and is described in more detail in the technical manual (Isaksen, Lauer, Murdock, Dorval, & Puccio, 1995). The Situational Outlook Questionnaire was made available for use with groups and organizations in 1996; however, given the multidimensional nature and intended use of the questionnaire, it must be administered and debriefed by individuals who are qualified and trained to use the theory and measure for effective interventions.

THE SITUATIONAL OUTLOOK QUESTIONNAIRE SCALES

Items on the Situational Outlook Questionnaire represent nine dimensions, each of which relates to a collection of characteristics of climate that influence creativity and change at the individual, group, and organizational

levels. A study by Lauer (1994) provided evidence of the conceptual validity of the Situational Outlook Questionnaire and these dimensions of creativity and change. Brief descriptions of each dimension and a sample question used are provided in Table 1.

TABLE 1
DIMENSIONS OF CREATIVE CLIMATE ASSESSED BY SITUATIONAL OUTLOOK QUESTIONNAIRE

Dimension	Description	Sample Item
Challenge/Involvement	The degree of emotional involvement, commitment, and motivation in the operations and goals.	The work atmosphere here is filled with energy.
Freedom	The level of autonomy, discretion, and initiative in behavior exerted by individuals to acquire information, make decisions, etc.	People here make choices about their own work.
Trust/Openness	The degree of emotional safety, and openness found in relationships.	People here do not steal each others' ideas.
Idea Time	The amount of time people can use (and do) for elaborating new ideas.	Time is available to explore new ideas.
Playfulness/Humor	The display of spontaneity, ease, good natured joking, and laughter that is displayed.	People here exhibit a sense of humor.
Conflict	The presence of personal and emotional tensions or hostilities.	There are power and territory struggles here.
Idea Support	The degree to which new ideas and suggestions are attended to and treated in a kindly manner.	People usually feel welcome when presenting new ideas here.
Debate	The expressing and considering of many different view-points, ideas and experiences.	A wide variety of viewpoints are expressed here.
Risk-taking	The tolerance of ambiguity and uncertainty.	People here often venture into unknown territory.

Items are designed to help the respondent make observations about behaviors and interactions among the individuals. Respondents answer the items on a 4-point scale in which 0 = Not at all applicable; 1 = Applicable to some extent; 2 = Fairly applicable; 3 = Applicable to a high extent. Each of the nine dimensions of the Situational Outlook Questionnaire has three to seven items. The over-all scores for each dimension are calculated by taking the average (total score divided by number of items) of the respondent's scores for each dimension and multiplying this by 100. This procedure allows for ease of comparison across dimensions.

Eight of the nine scales of the Situational Outlook Questionnaire describe dimensions that have a positive relationship to creativity and change: (a) Challenge and Involvement, (b) Freedom, (c) Trust/Openness, (d) Idea Time, (e) Playfulness/Humor, (f) Idea Support, (g) Debate, and (h) Risk-tak-

ing. The remaining scale, Conflict, has a negative relation to creativity and change.

The purpose of the current study was to examine the internal consistency and factor structure of the Situational Outlook Questionnaire. This type of study was performed on the first version by Lauer (1994) and on the second and third versions of the Situational Outlook Questionnaire by Cabra (1996). Studies such as these are necessary to understand the psychometric properties of the questionnaire and for practitioners to utilize the Situational Outlook Questionnaire with any confidence. This study also provides a base for later work with the questionnaire.

METHOD

Sample

The total sample comprised data collected from 1,111 individuals as part of the Creative Problem Solving Group–Buffalo's research efforts. The data were collected between February 1995 and June 1996. The sample includes 392 men and 299 women (420 individuals did not indicate their sex). Six U.S., one international, and one Canadian organization were included in this sample. A total of 148 individuals worked for a manufacturer of household goods located in the central USA (99% response rate); 164 worked for a food manufacturer located in Ontario, Canada (100% response rate); 172 came from a pharmaceutical company located on the northeast coast of the USA (95% response rate); 169 from a variety of agencies within a state government located on the northwest coast of the USA (90% response rate); 271 from a research and development laboratory within a consumer products manufacturer located on the west coast of the USA (99% response rate); 6 participants worked in the central office of a national USA telecommunications company (100% response rate); 172 worked for a direct mail company with offices in the USA, Great Britain, Germany, France, Australia, and Sweden (86% response rate); and 9 were students in a master's degree seminar course held at a northeastern college in the USA (100% response rate).

Procedure

The Situational Outlook Questionnaire is a paper-and-pencil self-report measure. It assesses nine of the 10 dimensions measured by Ekvall's Creative Climate Questionnaire. Factor analysis of earlier versions of the Situational Outlook Questionnaire showed that one of Ekvall's dimensions, Dynamism/Liveliness, did not clearly emerge as a separate dimension in English-speaking cultures. Many of the Dynamism/Liveliness items loaded on the Challenge dimension, while a small number loaded across a variety of scales. Therefore, some items were eliminated from the Situational Outlook Ques-

tionnaire, and the Challenge dimension was redefined and expanded to include information provided by the additional Dynamism items. This resulted in the renaming of the Challenge dimension to "Challenge and Involvement."

Respondents use a scale anchored by 0 (not at all applicable) and 3 (applicable to a high degree) to indicate the extent to which each statement describes their work situation. All items were developed to measure one of the nine dimensions and were randomly ordered. The dimensions, descriptions, and sample items are shown in Table 1.

The Situational Outlook Questionnaire was distributed through the various organizations' mail systems along with a memorandum describing the purpose of the measure. Completed questionnaires were then returned to the Creative Problem Solving Group—Buffalo for scoring. Steps were taken to ensure voluntary participation and confidentiality.

RESULTS AND DISCUSSION

The descriptive statistics and coefficients alpha are presented in Table 2. The climate dimension means range from 105.9 for Idea Time to 204.6 for Challenge and Involvement. The Cronbach coefficient alpha was computed using the items on the theoretical dimensions rather than the loadings observed in the exploratory factor analysis because the results were similar. The coefficients alpha ranged from .62 for Risk-taking to .90 for Idea Support, with seven of the nine dimensions yielding coefficients alpha greater than .80.

TABLE 2
MEANS, STANDARD DEVIATIONS, AND CRONBACH ALPHA ($N=1,111$) FOR
DIMENSIONS OF THE SITUATIONAL OUTLOOK QUESTIONNAIRE

Dimension	Items	<i>M</i>	<i>SD</i>	Range		α
				Minimum	Maximum	
Challenge/Involvement	7	204.6	54.2	29	300	.84
Freedom	7	152.2	60.2	0	300	.84
Trust/Openness	3	139.2	74.1	0	300	.64
Idea Time	6	105.9	63.9	0	300	.88
Playfulness/Humor	6	158.2	65.9	0	300	.89
Conflict	6	108.8	70.9	0	300	.86
Idea Support	5	158.8	67.1	0	300	.90
Debate	6	180.7	58.5	0	300	.88
Risk-taking	4	117.8	55.4	0	275	.62

The Cronbach coefficients alpha computed from the exploratory factor analysis were different for the dimensions of Freedom (.76), Idea Support (.91), Debate (.86), and Risk-taking (.63). It should be noted that the Risk-taking and Trust dimensions contain the smallest number of items, four and

three, respectively, which makes achieving a coefficient alpha of .70 or greater even more challenging. Research will involve improving the coefficients alpha for these scales by adding additional items and further testing the reliability of these scales.

Table 3 presents the results of the exploratory factor analysis of the Situational Outlook Questionnaire items. The presentation of the oblique rotation of the Principal Axis factor analysis extraction shown here was performed on SPSS® for the Macintosh, Version 4.0. A loading of .25 was used as the criterion for the oblique rotated solution. Nine dimensions were extracted using an eigenvalue equal to or greater than 1.0. The majority of items loaded on their theoretical dimension. Three items showed multiple loadings across dimensions; one of these items (Item 18) had its highest loading on its respective theoretical dimension. The remaining two, Items 49 and 42, loaded on their theoretical dimensions; however, their highest loading appeared on another factor. This may necessitate the refinement or possible replacement of these items. The nine factors yielded by this analysis accounted for 62.3% of the variance when combined. The lower portion of Table 3 details the percentage of variance accounted for by each dimension and the respective eigenvalues.

These results presented evidence that the psychometric properties of the Situational Outlook Questionnaire are acceptable. A strength of the study was that these results were consistent across groups and contexts. One limitation of the study was that the sample of organizations or individuals in organizations was not random. A further limitation was the number of items used to assess the dimensions of Risk-taking and Trust/Openness. In this respect, refinements to these dimensions will be initiated to strengthen their internal consistency. Another potential concern is that the measurement scales do not have a sufficient range of possible scores. Increasing the scale increments is an issue for further inquiry.

This study has provided preliminary psychometric evidence of the Situational Outlook Questionnaire's internal structure. It is now necessary to explore other forms of the measure's validity in addition to providing further evidence of construct validity. Further investigations must compare the Situational Outlook Questionnaire with other established measures of organizational climate and environment, such as KEYS (Amabile, *et al.*, 1996). Turnipseed (1994) has already begun this process by comparing this measure with the Work Environment Scale. Other studies of relations of the Situational Outlook Questionnaire to other important organizational variables, such as Talbot, Cooper, and Barrow's (1992) study of the relationship between the climate for creativity and job-related stress should be undertaken. Another important line of research should focus on the relationship of the climate for creativity and change with personality variables, such as Isaksen

TABLE 3
 PRINCIPAL AXIS FACTOR ANALYSIS (OBLIQUE ROTATION) OF
 SITUATIONAL OUTLOOK QUESTIONNAIRE ITEMS (N = 1,111)

Item	Theoretic Scale	Rotated Factor Loading								
		1	2	3	4	5	6	7	8	9
9	Idea Support	.742								
14	Idea Support	.705								
47	Idea Support	.638								
37	Idea Support	.528								
26	Idea Support	.481								
49	Debate	.369				-.277				
42	Freedom	.341					-.335			
24	Conflicts		.698							
30	Conflicts		.694							
44	Conflicts		.690							
46	Conflicts		.684							
4	Conflicts		.598							
8	Conflicts		.597							
39	Challenge & Involvement			.755						
16	Challenge & Involvement			.650						
23	Challenge & Involvement			.612						
11	Challenge & Involvement			.548						
27	Challenge & Involvement			.512						
2	Challenge & Involvement			.486						
18	Challenge & Involvement			.321						-.267
20	Playfulness/Humor				-.801					
36	Playfulness/Humor				-.736					
29	Playfulness/Humor				-.710					
7	Playfulness/Humor				-.691					
43	Playfulness/Humor				-.556					
13	Playfulness/Humor				-.506					
21	Debate					-.804				
10	Debate					-.751				
31	Debate					-.704				
38	Debate					-.631				
5	Debate					-.537				
32	Risk-taking					-.280				
40	Freedom						-.645			
17	Freedom						-.578			
22	Freedom						-.561			
6	Freedom						-.483			
33	Freedom						-.474			
41	Risk-taking									
50	Idea Time								-.811	
19	Idea Time								-.801	
28	Idea Time								-.764	
35	Idea Time								-.717	
3	Idea Time								-.564	

(continued on next page)

TABLE 3 (CONT'D)
 PRINCIPAL AXIS FACTOR ANALYSIS (OBLIQUE ROTATION) OF
 SITUATIONAL OUTLOOK QUESTIONNAIRE ITEMS (N = 1,111)

Item	Theoretic Scale	Rotated Factor Loading								
		1	2	3	4	5	6	7	8	9
12	Idea Time									-0.470
48	Trust								.526	
45	Trust								.471	
34	Trust								.437	
25	Risk-taking									-.350
15	Risk-taking									-.297
	% of Variance	33.4	6.7	5.2	4.1	3.3	2.8	2.6	2.2	2.0
	Eigenvalue	16.4	3.3	2.6	2.0	1.6	1.4	1.3	1.1	1.0

and Kaufmann's (1990) investigation of the relationship of the Situational Outlook Questionnaire to the Kirton Adaption-Innovation Inventory. Such studies can assist in further understanding of the Situational Outlook Questionnaire and the construct of climate for creativity and change.

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