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CONCEPTUALIZING THE CONTEXT OF ENVIRONMENT AND BEHAVIOR

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Abstract

Rapid technological change, global environmental concerns, and other dramatic ecological and societal changes are rendering previous conceptualizations of environments, and the relationships between environment and behavior, inadequate. Following a brief review of earlier conceptualizations of environments, distinctions between the terms context, environment, behavior setting and situation are drawn. A contextual model that focuses on the behaviors of individuals or groups in response to a prompt, and the personal, social or physical factors that might affect them, is developed. Two types of contextual change are explored: gradual, evolutionary contextual *shifts*, and sudden or dramatic contextual *transformations*. Application of a more fully contextual approach to the field of creativity is considered, and an example of organizational creativity focusing on developing and implementing customer service recommendations is used to illustrate the model. A concluding section considers the research implications of a more fully contextual approach to conceptualizing environments.

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Introduction

Authors in several fields, such as those represented in this special issue, are grappling with a need to conceptualize more completely environments that interest them (Altman & Rogoff, 1987; Amabile, 1988; Sternberg & Lubart, 1996; Wolfe, 1994; Woodman *et al.*, 1990). This should not be surprising — the environmental context of human behavior is not what it used to be. Dramatic, rapid changes in communication technology and organizational structures; the emergence of multi-locational options for work, family and leisure pursuits; sudden national reorganizations and cultural upheaval; and increasing awareness of and information about global environmental concerns are some of the factors rendering more static conceptualizations of environments inadequate (Stokols, 1995).

Although comprehensive, multi-faceted and multi-level conceptualizations of environmental context have been proposed before (Thomas, 1927; Cottrell, 1942; Rotter, 1955), most empirical work, consistent with the paradigm that continues to dominate social science research, has focused on limited, controlled, artificial definitions of context (Buchanan, 1992; Stein, 1987). Results of these investigations often have little explanatory power

(Wolfe, 1994) and are of limited use in explaining or accommodating desired behavior in the real world.

The following discussion reflects certain assumptions: (1) the phenomena of interest to environmental psychologists are human behavior, and the cognitive and affective processes that are fundamental to understanding the behavior of both individuals and groups; (2) all behavior occurs within a context that has the potential to affect it; (3) a description of a given context ideally should include all those factors that might in some way affect the behavior of an individual or group in that context; (4) research results in one field should be able to be effectively shared with, and should contribute to progress in, other academic and professional fields; and (5) as environmental psychologists, we are concerned with the ways in which physical and social features of the environment influence people's transactions with their everyday surroundings.

Previous Conceptualizations of Environment and Behavior

During the past three decades, several theoretical perspectives on environment and behavior have been proposed. In general, these conceptualizations

reflect a progression toward more integrative, complex, and dynamic perspectives on the transactions between people and their everyday settings. A starting point for many of these analyses is Lewin's (1936) conceptualization of the psychological life space, or the psychological situation as perceived by the individual. This is a highly subjectivist view of people–environment relationships which proposes that the aspects of context that are most influential as determinants of human behavior are those that are consciously perceived and interpreted by individuals.

Barker (1968) eschewed this subjectivist view of environments and offered an alternative, objectivist perspective on people–environment relations through his theory of behavior settings—places associated with particular behavioral and organizational programs that are directly (objectively) observable and recur at regular, specified intervals. Barker's conceptualization of behavior settings reflected the view that '... environments are not in the head' (Wohlwill, 1973) and that subjectivist views of people–environment relationships are psychologically 'encapsulated' (Brunswik, 1943)—that is, the environment is defined in the same subjective terms as are the self-report measures used to assess subjective reactions to that environment.

Wicker (1987) contributed a theoretical analysis focusing on the lifecycles of behavior settings that effectively integrated subjectivist and objectivist views of people–environment transactions. Wicker's theory places equal emphasis on both the subjective goals and motivations of setting founders and members as they consciously decide to establish, participate in, or withdraw from environmental settings, as well as more objective forces (for example, under- and overstaffing of settings), which govern the relationships between the environmental and human resources available within particular settings.

Magnusson (1981) dealt directly with the problem of defining and describing environmental contexts. He argues strongly for an 'ongoing, reciprocal person-situation interaction process' (p. 10) as the most appropriate basis for understanding behavior (*cf.* also Stokols, 1981). Magnusson proposes several taxonomic distinctions for situations, such as the actual situation (as opposed to the perceived situation), which can be further described as stimuli (signals to situational participants) and events (specific parts of a total situation delimited by cause and effect occurrences). Magnusson described two types of situations, depending on whether specifi-

cation of time and place are required to define a situation: general and momentary. Magnusson also defined hierarchical sub-units of Lewin's (1936) concept of lifespace: behavioral settings, organizations, and institutions. Last, Magnusson proposed lists of situational properties (complexity, clarity, strength, promotion versus restriction, tasks, rules, roles, physical settings, and other persons) and person-bound properties (goals, perceived control, expectancies, needs and motivations, and affective tones or emotions). Magnusson concludes that his discussion reveals:

... a dire need for systematic knowledge ... about environments and especially about situations ... as a basis for effective temporary changes in undesirable environments as well as for the formation of physical, biological, cultural and psychosocial environments that can offer individuals and groups situations in which they can develop all their potentialities and use them in an active, constructive way. (p. 31)

The conceptualizations of environment–behavior relationships presented by Lewin, Barker, Wicker and Magnusson incorporate diverse units of analysis and contrasting theoretical approaches. For instance, Lewin emphasizes the behavioral significance of the subjective (perceived) environment whereas Barker underscores the direct links between the objective (observable) environment and behavior. The units of environmental analysis emphasized in each conceptualization also vary considerably, ranging from Lewin's *psychological lifespace* and Barker's *behavior setting* to Wicker's *lifecycle* of behavior settings and Magnusson's concepts of *general* and *momentary situations*. The theoretical and methodological diversity reflected in these analyses suggests that future efforts to develop more comprehensive models of people–environment transactions must not only encompass, but also successfully integrate, a wide array of environmental and behavioral units of analysis.

Furthermore, dynamic models of environment and behavior should identify those personal factors descriptive of the individual or group, and their interaction, relevant to the context under consideration. In addition, potentially relevant factors affecting the behavior(s) of interest must be explicitly considered by the model. And a temporal dimension should be included as an essential element of the model, even if the time period is of an unknown duration and can only be defined by recognizable beginning and ending points.

Theoretical Starting Points

To facilitate the development of more comprehensive, integrative models of contextual influences on behavior, it is essential to differentiate between the terms context, environment, behavior setting, and situation. Whereas some degree of conceptual overlap exists among these terms, we propose the following definitional distinctions.

As discussed above, the term environment has been used to refer to both objective and perceived relatively stable qualities of an individual's or group's physical and/or social surroundings. The terms behavior setting and situation refer to dynamic relationships that exist among contextual participants, for example, the understaffing of workers in a factory or office, or the interpersonal conflicts that arise among students in a particular classroom or on the playground. Dynamic relationships may also exist between participants and non-human components of a particular setting, for example musculoskeletal problems caused by ergonomically inappropriate furnishings, or increased stress due to noise or temperature levels. In the following discussion, the term 'environment' will be used to refer to the larger milieu which envelopes human behavior, the term 'behavior setting' will be used to indicate highly organized, consistent people-environment interaction regularly occurring at one or more specific locations, and the term 'situation' will be used to refer to less structured people-environment interaction that occurs in a given place for a given period of time, and which has definable and natural beginning and ending points. Thus in this discussion, 'behavior settings' are considered sub-sets of larger, less well-defined 'environments', and 'situations' are considered more time delimited sub-sets of 'behavior settings'.

Context is different from these other terms in that it refers to a particular kind of interdependence that exists between selected aspects of a given environment, setting, or situation. Context is used here to refer to a specific set of personal, physical and social aspects of environments, behavior settings and/or situations selected for consideration by a researcher or designer, and the relationships between them. These aspects can be generally referred to as contextual factors and focal (or target) variables. Focal variables directly affect the behaviors assumed to occur within the context, and include independent, dependent and mediating or moderating variables. Contextual factors are aspects of the surrounding environment that might significantly affect one or more focal variables.

According to the principles of contextual analysis outlined by Stokols (1982, 1987), the relationships among focal variables in a particular environment—for example, the effects of group size and spatial density on the productivity of a work team—are assumed to be qualified or moderated by contextual factors that are also present—for example, the degree to which the physical features of an office enable work team members to regulate their privacy over the course of the work day, or the extent to which the day-to-day social climate of a company or organization is either clearly positive or negative. A contextual theory might propose that a work team composed of six members will be more productive than a team of three members attempting to complete the same tasks in the same organization, provided individual workers have opportunities to regulate their privacy, or as long as the social climate of the workplace is positive rather than negative.

Thus, a contextual theory specifies a pattern of variation in the relationships among selected focal variables, behaviors, and related contextual factors. For any given environment, behavior setting or situation, an unlimited array of contextual factors that might influence the relationships among focal variables could be identified. The key challenge in developing comprehensive yet powerful and parsimonious theories of environment and behavior is to identify, from among the myriad of potentially relevant contextual factors, those that are most crucial for understanding the form and occurrence of a target behavioral phenomenon. This subset of highly influential contextual factors is referred to as the *effective context* of the target phenomenon (Stokols, 1987).

A model of context

The contextual model proposed here is consistent with the preceding definitional discussion, and describes the interaction of individual or group behaviors with the socio-physical-temporal settings in which they occur.

We propose that a useful model of context begins with one or more 'prompts' that initiate a response by an individual or group. The model assumes that prompts are the starting point of an intentional or unintentional psychological and/or behavioral process. Prompts may come from social or physical features of the context; from individuals participating in the context; or from a wide array of extra-contextual sources such as published research results, news media, or the internet. The process may be

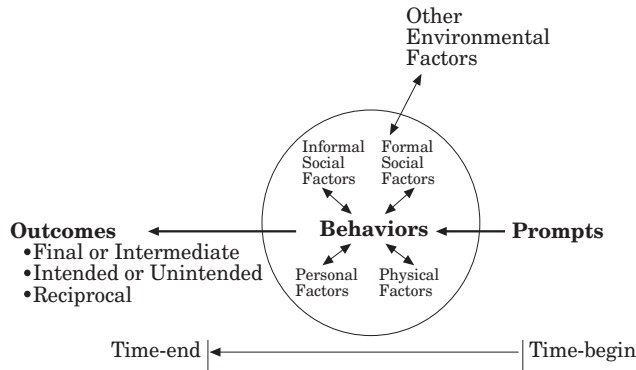


FIGURE 1. Context.

guided by an unstated sense of purpose, or by explicit goals, objectives and timelines. The process may be successfully completed — that is, an appropriate response to the prompts is developed and implemented — or it may be terminated before completion. The process occurs over a specific time interval and involves interaction between personal, social and physical aspects of the context relevant to the behaviors exhibited by context participants. During this period of time, the context may change, either subtly or dramatically.

The personal, social, and physical factors that are relevant to a specific application of the model are suggested by the prompts and the individual's or group's response to them. Personal Factors relevant to a particular situation could include personality traits, interpersonal dynamics, attitudes, and communication processes. Formal Social Factors relevant to a particular situation could include relatively stable relationships between individuals or groups (such as those described by a company's operational policies), a group's standard approach to solving problems, or a hierarchical authority structure. Informal Social Factors, such as relationships between individuals or groups (for example, family, friends, and community) are often subtle, but can also affect contextual behavior. Examples of Informal Social Factors include the status of each individual's relationships with spouse, family or friends, the local community's economy as it impacts each individual's financial stability, and minor or major health concerns of contextual participants. Physical Factors could include aspects of the natural setting, manmade structures, objects, surfaces, materials, and ambient conditions that are presumed to affect the focal variables of interest, and their inherent symbolic meanings to the individuals participating in the context. Examples include general site characteristics, dimensions of

rooms, temperature, and locations or objects deemed 'sacred'.

Three attributes of outcomes can be defined. First, Intended Outcomes are those results of the behaviors engaged in by the individual or group that are intentional responses to the prompt that initiated action. Unintended Outcomes are results of behaviors that are not intentionally related to the prompts, or to the intended outcomes, but which nevertheless may occur during the process. Second, Reciprocal Outcomes are results that affect or change the current status of the context. And third, outcomes may be classified as Final Outcomes if they relate to the original prompts and the purpose of the individual or group in responding to the prompts, or Intermediate Outcomes if they represent results that occur before the process of responding to the prompts is completed. Specification of each of these attributes of outcomes contributes to a more completely understood context, and more effective and efficient research.

Contextual change

The model of context proposed here assumes that contexts are constantly changing (Stokols, 1987). Contextual change can be initiated by prompts from the environment, by an individual's or group's own behavior, or by the outcomes of that behavior. Change may be subtle and slow or sudden and dramatic. Contextual changes that do not substantially inhibit the behavior of an individual or group may be considered 'evolutionary'. Changes that significantly alter one or more personal, social, or physical contextual factors, or changes that significantly inhibit or facilitate individual or group behavior may be considered 'transformative'. Generally, an evolving context is more constant, enduring, stable, and predictable, whereas contextual transformation results in a significantly different or 'new' context.

Contextual shift. We define contextual 'shift' as the subtle evolutionary contextual change that occurs when personal, social, or physical contextual factors incrementally change in predictable or understandable ways that do not significantly disrupt the context (the relationships between focal variables and contextual factors) under consideration. Contextual shifts can be the result of individual or group adaptation to, or adjustment of, specific aspects of the context. Contextual shifts also can result from the growth of individuals or groups due to increasing experience, education, insight, or personal abilities, or decline due to decreasing mental,

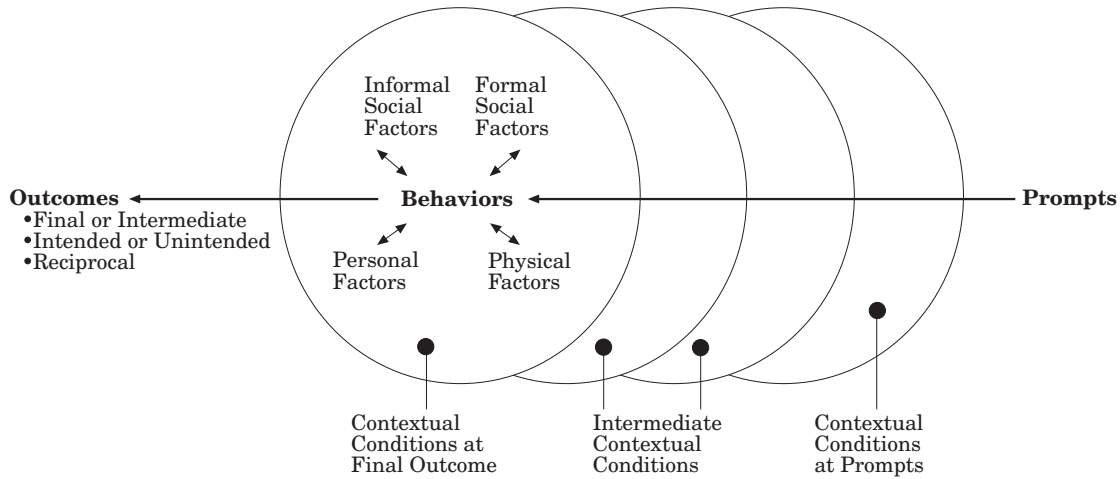


FIGURE 2. Contextual shift.

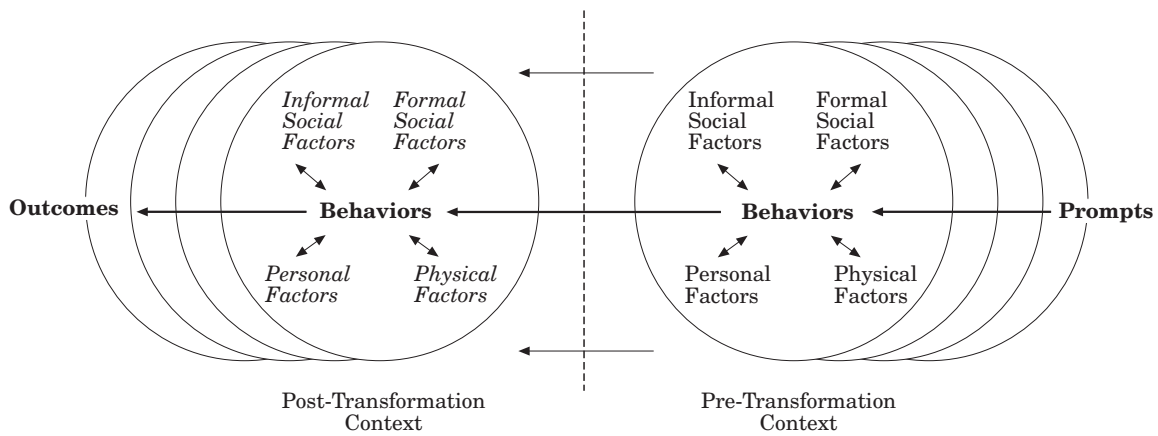


FIGURE 3. Contextual transformation.

intellectual, perceptual, or physical abilities. Minor temporary or permanent changes due to personal health or stress, fluctuation in a larger organizational context (for example, political, economic, or ecological changes on a neighborhood, community, regional or societal scale), or environmental conditions (seasons, climatic events) also can cause contextual shifts.

During contextual shifts, the same or very similar behaviors remain appropriate responses to the prompts that initiated individual or collective action. Contextual shifts in a work context might be caused by a routine job task assignment (prompt); an individual or group attending a relevant training session (personal factor); normal cost-of-living pay increases or scheduled vacations (formal social factor); marriage or divorce of a setting participant (informal social factor); the acquisition of updated equipment or furnishings (physical factor); reco-

gnizing a need to adjust working relationships or procedures (behavior); and receipt by an individual or group of expected bonuses based on performance (reciprocity of outcomes).

Contextual transformation. Contextual transformation, that is, sudden and/or dramatic contextual change, is the result of significant change in one or more personal, social or physical factors comprising the context, or in the individual's or group's behavior (Stokols, 1988). Contextual transformations can be caused by significant change in one or more personal, social or physical factors; unique or unexpected prompts that elicit dramatically different individual or group behavior; or a creative insight during the process that leads to significant changes in the relationships between contextual factors and focal variables that must be accommo-

dated before the process of responding to the original prompts can continue.

Contextual transformation involves a fundamental change in the behavior of participants, either self-initiated or in reaction to changes in the context. In terms of self-initiated behavior changes, participants may decide that the behaviors they are presently engaged in are not likely to be an effective response to the prompts that initiated them, and may adopt very different behaviors. Or the individual or group may decide that the only realistic option is to cease attempts to respond to the prompts, resulting in a premature termination of the context. Continuing to respond to the prompts at a later time would constitute a 'new' context — that is, a different time period, possibly a different set of participants, probably altered behaviors, and probably one or more significantly different contextual factors. Contextual transformation also can result from a reciprocal change induced by the intermediate success or failure of individual or group behavior.

Contextual transformations can be caused by an unusual job task assignment (prompt); an individual unable to complete an important task, or a change in group leadership (personal factors); changes in an organization's operating policies (formal social factor) or significant intra-group conflict caused by a local ethnic or political situation (informal social factor); office or home relocation (physical factor); a new task process, or a significantly shortened or lengthened project timeline (behavior); or the promotion or termination of one or more group members based on the group's performance (reciprocity of outcomes).

Conceptual Application: Organizational Creativity

Since its inception, the field of creativity has focused almost exclusively on understanding the individual as the sole determinant of creativity (Amabile, 1983; Woodman *et al.*, 1993). Although extensive bodies of research on intelligence, personality, developmental conditions, and the life histories of geniuses have been developed, these do not provide an adequate basis for predicting creative performance (Barron & Harrington, 1981; Treffinger, 1987). Several authors have called for broader theoretical approaches to guide more inclusive and realistic future research efforts (Clitheroe, 1995; Ford, 1996; Isaksen, 1987). Recent research has begun to explore extra-individual fac-

tors affecting creativity (Eysenck, 1994), including organization-social factors such as supervision style and compensation (Amabile, 1988), organizational climate (Bunce & West, 1995; Stokols *et al.*, 1996), and larger cultural conditions (Csikszentmihalyi, 1988). Similarly, factors affecting the successful adoption of technological, management, process, and other innovations in organizational settings are the focus of a growing number of studies (Mumford & Gustafson, 1988; Sternberg & Lubart, 1996; West & Farr, 1989).

A more fully contextual approach to organizational creativity would consider both generation of a creative product and its application within an organizational setting.¹ At least four distinct phases or steps of a creativity-innovation process can be identified: (1) recognition of and initial response to prompts; (2) generation of a creative product (process, idea, object, etc.); (3) adoption of the product by organizational decision-makers; and (4) operational diffusion of the product throughout the organization. Different sets of personal, social or physical contextual factors might be emphasized at each phase, and the outcomes of a particular phase may influence behaviors and outcomes during subsequent phases.

A contextual approach to organizational creativity would lead to an expanded focus on the prompts that initiate creative behavior, including the role of prompts in suggesting appropriate goals and potential outcomes, and prompts as the basis for judgments about the creativeness of outcomes of the creative process. A contextual approach also would lead to awareness that organizational conditions change during the process of generating creative products and implementing innovations, and the need to understand the effect of these organizational changes on the creativity-innovation process. This approach also suggests an expanded and more realistic consideration of outcomes of the creative process, such as unintended outcomes, and the potential for outcomes to effect the contexts that generate them.

An example: customer service recommendations

The following example of organizational creativity begins with a prompt common to many organizations: the need to re-think their approach to customer service.² The precursors of this specific prompt may have included an industry-wide customer satisfaction survey, the recommendation of an external consultant, publication of an important book or article about customer service, or the con-

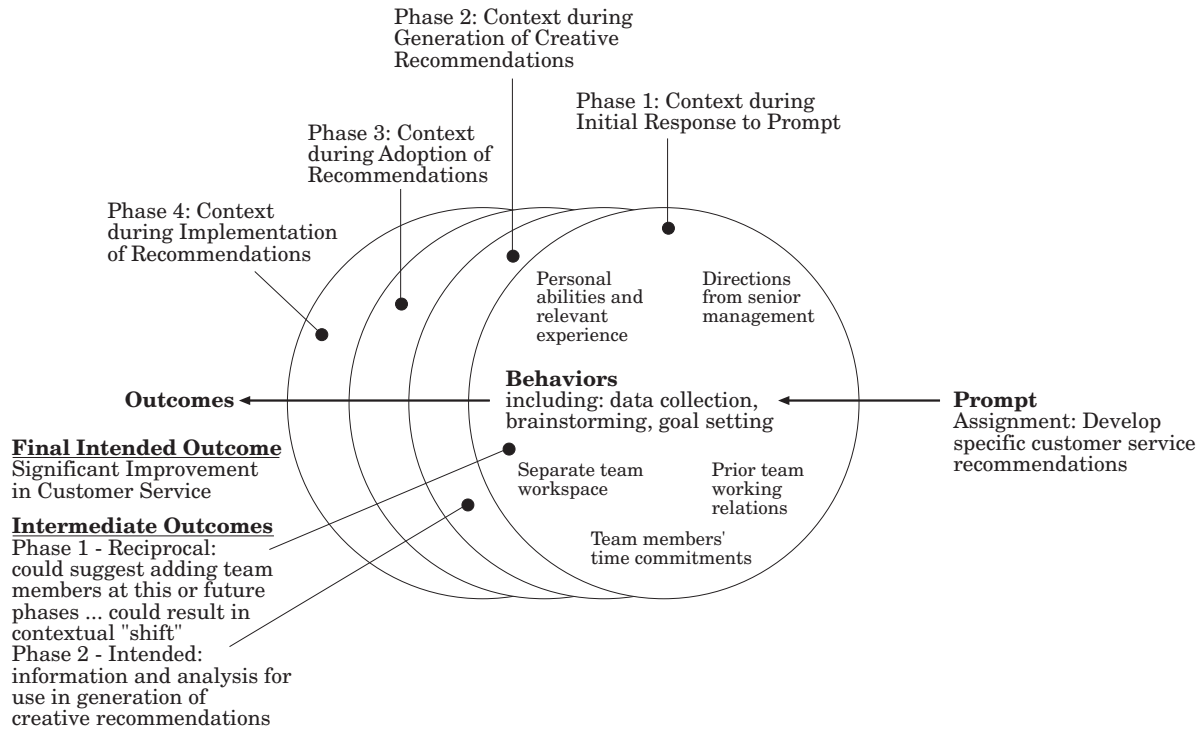


FIGURE 4. An example of organizational creativity. Customer service recommendations (with Phase I detail).

clusion of an internal organizational planning effort. The following example assumes that one of these environmental factors led to the decision by senior management to study possible revisions in the organization’s approach to customer service. The example assumes that the responsibility for developing specific recommendations has been delegated to a team composed of representatives of the marketing, sales, operations, and administration departments, and that part of their charge is to develop ‘new and better’ (that is novel and appropriate, or by definition creative) suggestions.

The temporal dimension of this example can be defined as four phases which sequentially respond to the prompt: (1) the task team’s initial response to the prompt; (2) generation of one or more creative recommendations concerning customer service; (3) adoption of these recommendations, with possible revisions, by senior management; and (4) the operational diffusion (implementation) of recommendations throughout the organization, again with possible revisions. Figure 4 defines the context at the beginning of the process, as the task group begins to work on the assignment, and schematically indicates the following three phases of the process.

The process of responding to the need to reconsider an organization’s approach to customer ser-

vice could result in understandable ‘shifts’ in an organization’s context. Or the process could provoke a more dramatic contextual ‘transformation’ (see Figure 5) — for example, the task group could discover that a key service demanded by customers is not offered, and recommend that the organization develop or acquire this service, significantly changing the way the organization does business, and the way it is perceived by customers and staff. Or the task group could decide that customer service should be the responsibility of the operations department, rather than the sales department, resulting in major organizational restructuring.

Either of these major contextual shifts would result in an interrupted process of responding to the initial prompt (that is, while the additional service is developed or the organization is re-structured).

Research Implications

The preceding discussion suggests an important researcher responsibility: clearly specifying, in as much detail as possible, the context being considered. We recognize that all contexts are ‘nested’ in more macro contexts, and probably subsume more micro contexts. Research contexts also can be located along a continuum ranging from those that

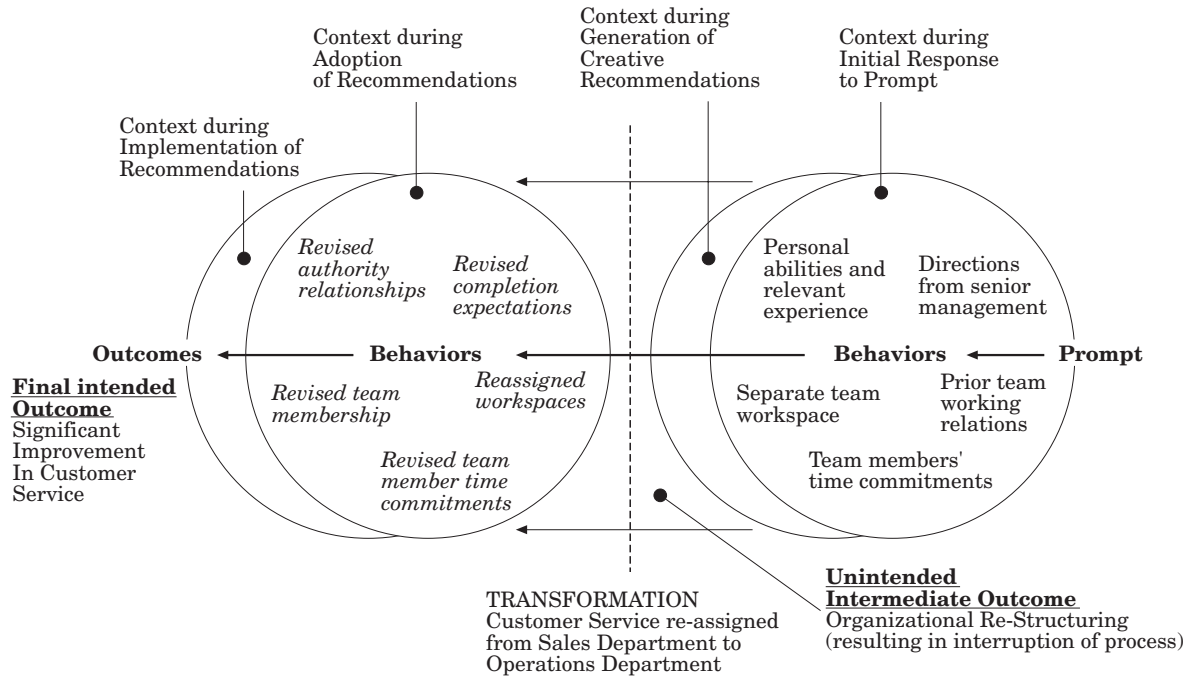


FIGURE 5. An example of organizational creativity. Customer service recommendations (with contextual transformation).

require broadly exploratory research to those that are able to accommodate focused empirical studies. Similarly, contexts that are in part defined by the prompts that initiate specific behaviors, and by the behaviors themselves, cannot be precisely circumscribed in an a priori fashion. Contexts also may be changed by the outcomes of behaviors, and may change either subtly or dramatically during the course of research. It thus becomes the researcher's responsibility to specify as clearly as possible each focal variable and contextual factor, and the relationships between and among those variables and factors, that have been or will be considered in the research program being undertaken or reported.

Two other considerations, in addition to identifying all those focal variables and contextual factors that may be relevant to the behaviors of interest, affect research design and analysis. First, the researchers' goals (exploratory, empirical, etc.) may suggest very different levels of detail in data collection, measurement, and analysis. The nature of the prompts may also suggest appropriate and realistic goals for the research program. And second, practical research limitations need to be considered, especially available resources. While proposing fully contextual research as a goal, we recognize that this is not always possible (Sternberg & Lubart, 1996; Van de Ven & Rogers, 1988). An inability to fully conceptualize a context due to gaps in prior

research, lack of available funding or personnel, unavailable or inaccessible information or people, and a lack of appropriate research instruments or methods can all preclude a fully contextual research approach.

There are several things researchers can do to support more fully contextual research. Perhaps the most important contribution is to fully conceptualize and report all those factors that might influence the behaviors that are the focus of their research, whether or not they are able to investigate them. This would permit a more effective integration and comparison of research results within and across fields (Altman, 1997). Researchers also can incorporate an explicitly temporal dimension in their work. Measurements taken at the beginning and end of a research program, and at various appropriate time points in between, can help define contextual shifts and/or transformations that may have occurred, and which may have affected the relationships between focal variables and contextual factors, and hence the outcomes observed by the research team. Researchers also can consider investigating contextual factors at multiple levels, combining data and analyses of individual, group, organization, institutional, community, and larger socio-cultural units to understand better the personal, social, and physical factors affecting target variables in a particular context. In terms of

research design, an expanded use of time series analysis will more fully describe temporal and dynamic aspects of the contexts being considered, and appropriate use of compatible qualitative and quantitative methods and the use of more complex analytic methods, whether for exploratory or more definitive purposes, will result in a more complete and insightful description of the relationships that exist among the specified contextual factors.

Conclusion

A contextual approach to the conceptualization of environments requires clear delineation of: (1) the prompts that initiate the (2) behaviors that are the focus of the context under study; all those relevant (3) personal factors of the individual or group participating in the context, and if a group, the interaction of group members; all those (4) formal or (5) informal social factors and (6) physical factors that are relevant to the context; the presumed (7) time period during which the process of responding to the prompt occurs; and the effect, if any, of (8) outcomes of the process on the individual, the group, or the context. A contextual approach to the conceptualization of environments also recognizes that contexts change, either subtly or dramatically, over time.

Research conducted from a more fully contextual perspective will enable public policy makers and organizational managers to consider an expanded array of relevant factors as the basis for their decisions; adopt longer-term, more realistic time perspectives; demonstrate greater flexibility in organizational decision-making or in formulating regulations or legislation; develop better monitoring methods for tracking the effectiveness of prior decisions; and enable better prediction of and preparation for future events (Baum *et al.*, 1983). More fully contextual research will enable environmental designers and facility managers to make better use of research results; create and maintain healthier, more flexible, user-friendly, adaptable and adjustable environments; and design and maintain a wide array of environments that effectively support an increasingly complex range of human behaviors. Complete reports of the process, methods, and conclusions of such research will result in more useful and generalizable research results, enable greater interdisciplinary and academic-professional collaboration, and provide a broader theoretical base for effectively integrating a wider array of academic and professional perspectives.

Notes

(1) Two distinct and separate research 'camps' that focus on different pieces of the creativity puzzle have emerged: psychologists, who concentrate their efforts on the generation of creative products (idea, process, object), and organizational behaviorists, who focus on the adoption or implementation of organizational innovations (West & Farr, 1989; Sternberg & Lubart, 1996; Wehner *et al.*, 1991). Psychologists tend to be more interested in creative process, products and people; conducting studies at an individual level of analysis; and publishing results in psychological journals. Organizational behaviorists seem to be more interested in the selection, adoption, and effective implementation of organizational innovations; conducting studies at an organizational level of analysis; and publishing results in management and organizational journals.

(2) We recognize that not all responses to the need to rethink customer service will be 'creative', that is both novel and functional. Some responses may simply reinforce existing customer service guidelines, or be incremental extensions of current practices and operations.

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