

Atmosphere and Stage Development in the Workplace

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This chapter presents a method for characterizing the relationship between individuals and their workplace environment with respect to individual moral development. We hypothesize that this is a dynamic, two-way relationship and that connections exist between individual development and the stage of development embodied in the workplace environment. We construe development in terms of the stage of response that people give to moral dilemmas. Using a scoring scheme derived from the General Stage Model (Commons & Richards, 1984a, 1984b), we score individual responses to moral dilemmas and compare the stage of individual responses to the stage of response embodied in organizational decision making, both formal and informal. We are particularly interested in identifying the contingencies by which this relationship is governed and the reinforcement mechanisms (Skinner, 1938) through which they are enforced. This chapter describes a nonarbitrary and highly precise method for investigating and characterizing these relations.

Institutional atmosphere refers to the dynamic relationship between an institution and those individuals who comprise it. Atmosphere includes the contingencies that affect individual behavior within an organization and the methods by which contingencies are set. We define a *contingency* as a relationship between events (i.e., behaviors or responses) and outcomes. Consequences that increase the likelihood of the event that they

follow are termed *reinforcers*. Consequences that decrease the likelihood of the event that they follow are termed *punishers*. What the environment contributes to behavior, we suggest, can be described in terms of contingent relations among events. We also maintain that the reasoning of individual members within any workplace has significant bearing upon organizational atmosphere. As reasoning develops in complexity, individuals are increasingly capable of understanding the perspectives of others, and of evaluating and integrating competing perspectives. These skills are integrated into the formal and informal policymaking and policy enforcement structures of the organization. The explicit statements of perceived organizational contingencies are referred to as *verbalized causal rules* or contingencies (Commons, Kantowitz, Buhlman, Ellis, & Grotzer, in preparation). The implicit perceptions of causality are the *perceived causal rules* or contingencies.

In order to characterize atmosphere at the level of organizational macrostructure, we believe that it is necessary to examine the individual contingencies embodied in atmosphere, which constitute the organizational microstructure (Goffman, 1967). Microstructure and macrostructure are inseparable. Atmosphere is, therefore, a characterization of the sum of individual contingencies operative within an organization and as Kohlberg (1985) emphasized, their justifications. Atmosphere, therefore, refers to the manner in which the institution and individuals either constrain or motivate the development of individuals and the development of the organization.

Background

Because human experience unfolds almost exclusively in fields of activity that are interpersonal, social forces both act upon persons and provide the conceptual frameworks through which people understand the world and themselves. For example, Damon and Hart (1988) characterized self-understanding as basically a social process. This notion is not idiosyncratic, but stands in a strong theoretical tradition. As Mead (1934) and other theorists of the self (e.g., Kohlberg, Hart, & Wertsch, 1987) emphasized, understanding one's self is a social communicative act. Similarly, Durkheim's contention (cited in Thompson, 1985) that social processes fundamentally characterize the individual has found a significant following in theorists who contend that "each kind of community is a thought world . . . penetrating the minds of its members, defining their experience, and setting the poles of their moral understanding" (Douglas, 1986, p. 128). As Foucault (1979) said, "the individual is carefully fabricated" (p. 217) in this interactive system of social structures.

Characterizing the interaction between individuals and their culture, however, has been a central problem. The problem is to account for the large variety of individual and cultural differences, while still providing a coherent framework that can be applied to many groups and individuals. Explanatory models have typically fallen into one of two camps; namely, positivistic versus process theories. Positivistic interpretations, in the tradition of British and U.S. analytic philosophy, offer reductionistic models of social processes and their impact on individuals. Such approaches attempt to find a single factor or group of factors to which learning can be reduced. The social world, in this view, is governed by fixed structures that exert a unidirectional force upon individuals. Because the locus of power is seated primarily within environmental factors, little attention is given to the ways in which individuals work a reciprocal influence upon social structures.

In contrast, process models (e.g., Barth, 1966; Moore, 1975) have rejected the notion of a strictly deterministic social world. Instead, they have offered generative models for interpreting the often unpredictable ways in which atmosphere and individuals reciprocally affect one another. Social systems are seen as grounded in the interpersonal interactions of concrete individuals, rather than in necessary, abstract social categories. Barth's (1966) model of transaction characterized this interaction as "the compounded effects which multiple independent actors, each seeking to pursue the transactional optimal course of behavior, have on each other" (p. 11), and social systems as "the gross frequentive patterns of behavior which will tend to emerge in such situations" (p. 11).

Such models contrast sharply with positivistic ones in that the former have located the foundations of social systems in the interactions of concrete individuals and in the shifting contingencies through which individuals impact one another. Social categories, in this view, emerge from particular sets of transactions rather than governing such transactions externally. Process theories have also assumed that change within social systems is both continuous and necessary. Change is construed as a natural feature of social systems with a twofold character. On the one hand, change arises as society responds to the actions of individuals. On the other hand, individuals change as they interact with others and with social institutions. The two sorts of change influence one another. These models, however, provide few resources for understanding the precise nature of this relationship at the microstructural level of individual development.

Positivistic theories tend to reduce complex interactions between society and individuals to a deterministic model. Process theories often lack sufficiently clear explication of the microstructural mechanisms that govern this interaction. Both positivistic and process models of social

processes remain incomplete so long as they lack the conceptual resources to justify particular nonarbitrary links between the complexity of responses by individuals and the complexity of the atmosphere in which they function. Also, they must account for the real and unpredictable developmental variance observable among individuals at the same time.

The General Stage Model (GSM) when combined with contingency analysis provides just such resources. The GSM orders both individual and organizational processes in a nonarbitrary sequence. This sequence both affects and is affected by the contingencies in atmosphere. Further, the model describes formal processes through which individuals and atmosphere interact whether in the workplace, the family, or the state. The GSM also allows for a precise, microstructural analysis of these processes as they impact individual behavior. Moreover, the GSM accounts for a wide variety of individual behaviors and for the creativity and dynamism of organizational behavior as a continuous collective process. At the same time, it provides means for interpreting this relation in a non-reductionistic, nonarbitrary way.

General Stage Model

The GSM is a universal stage system that classifies development in terms of the task-required hierarchical organization of response. Commons and Richards (1984a) suggested that developmental theory should address two conceptually different but related issues: (a) the hierarchical complexity of the task to be solved; and (b) the psychology, sociology, and anthropology of how such task performance develops.

Scoring by stage is related to the first issue because the GSM uses the hierarchical complexity of tasks as the basis for the definition of stage. An action is at a given *stage* when it successfully completes a task of a given hierarchical order of complexity. *Hierarchical complexity* refers to the number of recursions that the coordinating actions must perform on a set of primary elements. Actions at a *higher order of hierarchical complexity*: (a) are defined in terms of the actions at the next lower order of hierarchical complexity, (b) organize and transform the lower order actions, (c) produce organizations of lower order actions that are new and not arbitrary, and (d) cannot be accomplished by these lower order actions alone.

The discussion of atmosphere and its contingencies relates to the second issue. The two are interrelated insofar as reinforcement contingencies determine stage of response. The GSM provides a means for identifying how contingencies are set and transferred within organizations. Therefore, it gives a measure of the sensitivity of individuals to the reinforcement contingencies that shape social systems and individual

development. To counter the possible objection of arbitrariness in the definition of stages, the GSM stages are grounded in the hierarchical-complexity stage criteria of mathematical models (Coombs, Dawes, & Tversky, 1970) and information science (Commons & Richards, 1984a, 1984b; Lindsay & Norman, 1977; Rodriguez, 1989). The GSM also posits that individuals perceive the world through conceptual frameworks. These frameworks embody the individual's cultural, educational, religious, political, and social background (as well as many other factors). Such a framework is referred to as one's perspective. Perspectives differ in terms of hierarchical complexity. As the hierarchical complexity of an individual's response to task demands increases (i.e., as stage of development goes up), the individual is increasingly able to take many such perspectives into account (Commons & Rodriguez, 1990; Rodriguez, 1989).

In adult development, and consequently in professional-level workplace interactions, three developmental stages predominate: formal operational (GSM Stage 4b, Kohlberg Stage 3/4), systematic (GSM Stage 5a, Kohlberg Stage 4), and metacognitive (GSM Stage 5b, Kohlberg Stages 5 and 6). Following are GSM descriptions of these stages.

Formal Operational Stage 4b. Stage 4b responses identify and isolate relations in complex sets of variables as well as label interactions of events abstractly in a linear fashion. For example, in discourse at this stage, the verbalized perceived causal rules are empirical statements of causality and analytic if-then propositions. Such formal-operational statements have the formal structure of an order relationship, " $A > B$," where A and B are both abstract-stage propositions (GSM Stage 4a). In forming justifications, the logical arguments at this stage usually have the form, " $A \rightarrow B$." That is, the relationship between A and B is made explicit through a causal statement with evidence, a logical statement or by some other clear coordination (e.g., of equivalence, proportionality) of at least two propositions or abstract-stage elements. Logical arguments are used to convince people of the soundness of a deduction from premises. Causal arguments are used to convince people of an empirical relationship between events and outcomes. For an empirical example, "A—If you hope to get a good academic job, then B—you must publish a good deal." Authority in the form of local norms, rules, and regulations is given pre-eminence, whereas particular individuals or situations play only a minor role. Reasons and justifications relate to expected behavior based on these bureaucratic rules or norms.

Systematic Stage 5a. A Stage 5a response is characterized by systematizing formal-operational relations into a network. Here, the products of the formal stage actions—coordinated abstract-stage propositions—

become the elements to be coordinated. The product of the more hierarchically complex Stage 5a statement is the coordination of the relations constructed by formal operational actions into a system. A suitable systematic-stage action coordinates two or more relations, for example, System₁: "A → C and A → B." This system could be "If you have a large number of publications, some teaching experience, a coherent research program then you might get a good academic job." This constitutes a single, unified system, which the subject takes to be comprehensive. For example, social interactions are seen as integrated systems of relationships. Yet the importance of the individuals is determined with respect to their relation to and/or role in the system. Norms, laws, rights, duties, rules, and regulations form a logically coherent system; reasoning centers around how action would impact one's individual role and status within the system and the functioning of the institution.

Metasystematic Stage 5b. A Stage 5b statement coordinates and transforms two or more systems according to a principle that is external to both systems. Such metasystematic principles take precedence over the concerns of any particular system. The concern is never to preserve a system or institution for its own sake. Rather, the needs and interests of a number of systems are taken into account without regard to the particular system or institution within which one finds oneself. Systems are compared and contrasted in terms of their properties. The focus is on the similarities and differences in each system's form as well as constituent causal relations and persons within it. At Stage 5b, perspective-taking skills are well developed. A wide range of perspectives can be taken into account and coordinated in a nonarbitrary manner. For example, a metasystematic Stage 5b statement might have the form, "A merit system, [S₁][—]in which having a large number of publications, some teaching experience, a coherent research program lead to a good academic job"[—]can be transformed into a discriminatory system, if "minority students are unable to work with faculty who have grants." The discriminatory system [S₂] entails that "Students who work with faculty who do not have grants have a lower likelihood of publishing and forming a coherent research program than students who work with funded faculty"; and "Minorities are less likely than nonminorities to have an equal opportunity to work with faculty who have grants." By adding these last two formal operational conditions, the system of merit [S₁] is transformed into a discriminatory system [S₂], written as T₁(S₁) → (S₂). In system [S₂] past discrimination influences one of the merit criteria. Likewise, a merit system is transformed into a merit system with politics if active support from an influential person is required, T₂(S₁) → (S₃). Taking all these transformations together, one can build a supersystem of these systems.

Because the purpose of this chapter is to illustrate a method and argument, only samples of data from a few subjects are presented here. The method characterizes the relationship between individuals and their workplace environments. The characterization consists of identifying some of the contingencies involved and scoring the stage of justification of those contingencies.

METHOD

Subjects

Twenty-eight subjects from the Harvard University community were interviewed. The subjects included students, faculty members, and administrators. All subjects were working, teaching, or studying in the field of ethics. Four subjects were women, and two were African-American.

Procedure

The study applies the GSM to an interview consisting of a series of open-ended questions and two dilemmas. The format is similar to those used by Armon (1984a, 1984b) in the Good Life Interview and by Perry (1970). The first section of the interview centers around the following questions: (a) What is a good university? (b) What is a good government? and (c) What is a good government for a university? The second section consists of a dilemma involving a conflict between students and administration on the issue of free speech and is followed by the standard Heinz Dilemma (Colby & Kohlberg, 1987; Kohlberg, 1969, 1984). Subjects were probed for responses in the domains of justice, epistemology, attachment, and the good. Interviews were conducted in person and recorded on audiotape for later transcription.

Applying the GSM

The General Stage Scoring System (GSSS), derived from the GSM, is used to determine the stage of subjects' responses to a given task demand. In GSSS, stage of behavior is regarded as a function of the hierarchical complexity of the actions required to solve a task. In distinction to other content-based scoring systems, GSSS scoring involves an analysis of the microstructure of subject responses, as embodied in specific statements. In applying GSSS, the stage score of responses is usually equivalent (Commons & Grotzer, 1990) to scores determined through other procedures

(Armon, 1984a, 1984b; Colby & Kohlberg, 1987; Perry, 1970, 1981). Fewer statements, however, require "guess-scoring" or are designated unscorable. A further advantage of GSSS is that, theoretically, any statement is scorable. Scoring can, therefore, be applied across a range of tasks and is not limited to standardized dilemmas.

Two types of scoring are used to determine stage: (a) signal-detection scoring and (b) dialectical scoring. Signal-detection scoring determines the stage of the basic elements that individuals coordinate in a given statement, or response. The stages of these responses are constrained by the atmosphere in which the individual is operating as well as by how good the individuals involved are in forming such coordinations. For example, an attorney may construct higher stage statements in addressing a judge's inquiry on legal principles, but not when speaking with her child at home. Lower stage responses, which are appropriate to the conversation with her young child, would be punished in the courtroom. Such lower stage arguments would fail to address the questions of legal principle. Yet, the atmosphere of the court requires attorneys to address legal principles. The punishments might include the judge's admonishing the attorney to address the question and ultimately finding against her client. Higher stage responses, which are appropriate when addressing a judge, may not be reinforced by her child. The attorney might prefer that her child respond positively to a high-stage argument. The child may also prefer to do so. Because her child would have a low proclivity for coordinating the elements in the attorney's higher stage response, her behavior would not be affected by the attorney's response in the way the attorney planned. The lack of the desired behavior would be a lack of reinforcement for addressing the child at too high a stage.

The hierarchical organization of stage, according to the GSM, entails that implicit in every response is a series of increasingly complex coordinations. The lowest order of complexity begins with the primary elements of the subjects' explanations (for these subjects, abstract Stage 4a or beginning-formal operations) and proceeds to the order of complexity signified by the assigned stage of response. Individual responses, however, tend to address those stages that the atmosphere rewards. Although the presence of lower stage elements is always implicit in higher stage statements, they are seldom made explicit. The task of signal-detection scoring, then, is to identify all of these basic, lower stage primary elements that are successfully used and assign stage scores to each of them. The highest is usually deemed the stage of the response.

Once the lower stage primary elements within a response are identified and staged, dialectical scoring can begin. Dialectical scoring determines the point of transition between stages of the coordinations of primary elements within a given statement.

In scoring interviews, the scores that are assigned apply to subject responses to particular task demands. Stage scores, then, should not be interpreted as indicators of fixed structures internal to the subject. As performance varies in response to reinforcement, subjects will construct statements at different stages.

ILLUSTRATIVE EXAMPLES

In the following examples, GSSS is applied to sample subject responses from the interview previously described in order to demonstrate how the GSM can be used to characterize the relationship between individuals and organizational atmosphere in the workplace. The examples are applications of the theory presented in this chapter. Additionally, they suggest an association between the stage of individual responses and the stage of organizational atmosphere. Example 1 is taken from a parallel study conducted at the Medical School at Universidad Autónoma de Baja California in Mexicali, México in 1989 by Galaz-Fontes called the "The Ethical Doctor" (as cited in Meaney, 1990; Galaz-Fontes, Pacheco-Sanchez, & Commons, 1989). Like snapshots, these examples "freeze" subject responses at a particular point in the performance of a task. This allows for closer scrutiny of the organization of the response, although it does not do justice to the dynamism of the typical subject performance in responding across a variety of tasks.

Example 1 (Stage 4b)

Subject: *The main office, the office of the dean, has a door by which all of the faculty enters, and beside the door there is a little window, and it says, "Students are attended here." I think that is significant. That way of dealing with students is telling them, "You are outside, you are a student. Your right is to knock on the window and tell us what your problem is and we will solve it for you. And don't get too close, you might be contagious." What has happened within the Medical School is that there is a lot of noninterest of the faculty in terms of the school. They are just interested in giving their classes, fulfilling the minimum requirements, but are not interested in discussing things more deeply. . . . [There is] no enthusiasm for the institution. People just stay there and keep working. Like, for example, the recently approved new curriculum. It was centrally done. They invited professors to participate but they did not participate in the discussion. So, for example, it is like a passive attitude. "This is the new curriculum, what do you think?" But they [the administration] did not want to really know. . . . A lot of professors are interested in improving things but more on a personal level than in terms of the program, or in terms of the institution.*

Here, authority is construed in terms of linear chains of causality where the administration makes decisions without input from other sources. No participatory network is present. Logically justified bureaucratic solutions by the administrators in this atmosphere are characteristic of formal-operational Stage 4b. Decisions such as curriculum development are "centrally done." The evidence for the linear contingencies is illustrated next. Because central authority dominates so thoroughly, invitations to participate in the decision-making processes go unheeded. There was a history of the administration appearing to ask questions of the faculty, but punishing or at least not reinforcing responses to those questions. As a result of these contingencies, professors "are interested in improving things . . . more on a personal level than in terms of the program or in terms of the institution." Individual interests are not integrated with the systematic interests of a larger whole.

Even the personal problems of students are solved by appeal to this logical chain of authority indicative of Stage 4b. This may be contrasted with a higher stage dialogical process in which the students themselves take part. Rather demeaning contingencies control student-administration interaction. The respondent states that "the office of the dean, has a door by which all of the faculty enters, and beside the door there is a little window, and it says, 'Students are attended here.'" The verbalizations of faculty who enter the door are responded to at least verbally, but the verbalizations of students who enter the door are not. Students are responded to only if they go to the little window. The administration places students into a different category, not even afforded a door but "a little window." Faculty may enjoy the appearance of interaction, but students are "attended to." The linear logic of Stage 4b is, If faculty, use the door; if student, use the little window.

Example 2 (Stage 5a Transition to Stage 5b)

Subject: If the university says this to the student [that students should always lend their support to university goals], why would this be bad, you were saying? Why should we? The question is what is the argument for all rallying behind anyone within an institution. It denies the sense of social responsibility if we're always to rally around institutions; it makes us not critics, but ralliers, followers, enthusiasts. For what? For the university, that abstraction? Why should I rally around it . . . ? I'll rally around it insofar as it represents things that I think important. And one of the things that I think important is the students saying this would be, that it would stimulate independent and critical thought, and doesn't try to rally around a notion except in the notion in those who want to rally

around this flag and without threatening those who don't in some official way.

The university's injunction to students to rally around the institution typifies a Stage 5a "conventional" response in which a single, closed system predominates. The administrative contingencies identify individuals strictly in terms of their place in the system rather than just within a hierarchy. They also make clear that deviations may be punished or not reinforced. These reinforcement contingencies are described as "threatening those who don't [support the university goals] in some official way." These contingencies place a ceiling on individual development, which the subject identifies by saying "it makes us not critics, but ralliers, followers, enthusiasts."

The subject, however, sees beyond the single system of the institution. This places the response at a transitional step between Systematic Stage 5a and Metasystematic Stage 5b. The subject identifies an alternative system. This alternative system is characterized by "independent and critical thought" where individuals are not defined strictly in terms of their position within a single system. The subject has not articulated relationships between the system of critics and system of ralliers. In the system of critics, various critiques of the current system are discussed and in the system of ralliers enthusiastic support of the present system is given. The subject's behavior can be seen as a struggle against the Stage 5a expectations of his workplace atmosphere. At the metasystematic stage, the critiques and the rallying would all be part of a supersystem of appraisal and evaluation from multiple perspectives.

Example 3 (Stage 5b)

Interviewer: *What is a good government for the university?*

Subject: *I don't think of a university as having a government. It's more like a company. It's not like a state. In this case it's a business . . .*

Interviewer: *How should it run itself then? As a business?*

Subject: *As a modern business which would be pretty much participatory, and people that work in the business, etc., etc. I mean a business today has lots of stakeholders, and serves a lot of people so . . . like in the lumbering business you have to consider your employees, your clients, your suppliers, the ecology of the land you work on, etc., etc., etc. The communities you work in, all these sort of things. These are all stakeholders in the organization as well as your stockholders. The problem with businesses in this country is we have a rather myopic view, in the sense that businesses are too beholden to their stockholders, and they're too much involved in their quarterly profits. Take companies, countries which do most of their equity raising through, uh banks, like Japan, they take a much longer term*

perspective because their banks . . . you know, they have lifetime employees and banks with a long-term perspective, they serve their community in a different kind of way. And there's a balance of constituencies here. . .

Interviewer: *What do you think would be a bad way to run the University?*

Subject: *Bureaucracy is your biggest problem.*

Interviewer: *Why is that bad?*

Subject: *Well it stifles creativity.*

In this example, the subject describes a metasystematic ideal for the workplace. The subject also identifies ways in which his own university workplace falls short of this ideal by remaining entrenched in systematic stage action. The subject compares a Japanese model of business management to the U.S. model and implicitly equates this with the university. A key feature of the metasystematic, Stage 5b, business is that it is participatory in the sense that it considers the interests of employees, clients, suppliers, the environment, and the stockholders. The setting of contingencies takes place in such a manner that all the constituencies are represented. The subject considers each of these groups as systems in themselves and sees the company as a synthesis of these systems. Doing so involves being able to see things in terms of "a long-term perspective." The reinforcement associated with these contingencies is considered from the perspectives of all the participants, not just one or two, which is metasystematic Stage 5b perspective-taking. The possible repercussions or side effects from various actions are also considered. For example, gross harm to relatively disadvantaged persons is seen as demoralizing. The government requires that companies not pollute because the citizens have no direct control over company policy in the area. Such a perspective, the subject suggests, will not arise in the absence of "a balance of constituencies." With such a balance, there might be some cooperative contingencies within the community as well as competitive ones outside of the community. To the extent that the subject calls for respect for the universal persons, the "stakeholders" in and around the institution, and an integration of their perspectives, the subject is making metasystematic Stage 5b responses consistent with what Kohlberg termed "postconventional" reasoning.

In contrast, the university workplace in which the subject actually exists is characterized by the "myopic" view of an institution that cannot see beyond the limits of a single system. In his case, the single dominant system is that determined by the stockholders. The subject describes his workplace, then, as entrenched in some systematic stage acts such as maximizing short-term profits for the managers and stockholders. He sees the "bureaucracy," typical of Stage 4b and Stage 5a, as directly impacting upon individual creativity. This observation is consistent with what Kohlberg labeled "conventional" stages.

DISCUSSION

Social forces impact individuals in different combinations and with varying degrees of intensity. Because the variables are numerous and frequently unperceived, the character of this interaction between atmosphere and individual is often obscure. Nevertheless, we would argue that reinforcement contingencies are the immediate controlling relationships for both individual and organizational behavior. In their work on education, for example, Commons and Hallinan (1989) demonstrated that reinforcement helps people form strategies and representations that include both the implicit perceived causal rules and the explicit verbalized rules. Reinforcement also leads them to select the more successful strategies and causes them to continue actively solving the problems. By reinforcing more (vs. less) developed strategies during students' progression to formal operations, a teacher can reinforce students' more complex reasoning (Commons, Handel, Richard, & Grotzer, in preparation; Richard, Unger, & Commons, 1988).

Commons, Grotzer, and Davidson (1991) recently demonstrated this in a study of a large number of young students from mixed socioeconomic backgrounds. All students were asked to solve a series of adult-stage problems requiring them to detect causes. One group of students received no feedback about their performance, a second group received feedback alone, and a third group received both feedback and points for correct answers. They were told that their team could accumulate these points to win a prize. A fourth, control group of students took only the pretest and posttest without undergoing the problem-solving task series. Only students in the reinforcement (i.e., in this case, points leading to possible prizes) group improved their proficiency in detecting causal relations from the pretest to the posttest. Students who received no feedback and those who received feedback without reinforcement did not demonstrate this stage development. These students did not learn any more than the control students. The study implies that, even when academic achievement does not motivate some students, all students' reasoning can develop when success receives the appropriate reinforcers.

We suspect that the hierarchical complexity of the contingencies that constitute a particular workplace atmosphere affects the patterns of individual choice making within that organization. As the hierarchical complexity of an individual's response to task demands increases (i.e., as stage of development goes up), the individual is increasingly able to take the perspectives of others into account (Commons & Rodriguez, 1990; Rodriguez, 1989). Successful decision making in the workplace demands proficiency in taking a variety of perspectives into account, particularly

the perspectives of those individuals whom one's decision may affect. In situations involving conflicting viewpoints, individuals need to understand both the perspectives of other people and the frameworks that shape those perspectives. The better one's perspective-taking skills, the better one's managing skills (see Weathersby, this volume). When the perspective of an individual or group is excluded from the decision-making process, unresolved tensions often dominate the workplace and may hinder productivity.

Organizations in which decision making is grounded in lower stage perspective-taking may perpetuate an atmosphere in which individuals' higher stages of perspective-taking are not reinforced. These individuals are likely to demonstrate interest only in how decisions affect themselves. Consequently, organizational decision making that excludes the perspectives of constituent groups may ultimately produce constituent decision makers who exclude the perspective (and interests) of the organization. At the higher stages of perspective-taking, by contrast, organizations reinforce individual behavior that takes the perspectives of others into account. This may include other members of the organization, the organization itself, and even individuals and groups that lie beyond its boundaries.

Development and Propagation of Atmosphere

So although individuals are constrained by the stage of atmosphere, at the same time the stage of individual response continually reproduces and may revise the stage of atmosphere. This interactive relationship requires the effective transfer of information regarding the operative contingencies in any given situation. The transference of cultural information (Boyd & Richerson, 1982, 1985; Cavalli-Sforza & Feldman, 1981; Cavalli-Sforza, Feldman, Chen, & Dornbusch, 1982) carried by contingencies can be described analogously as *infection by memes*. A *meme* is a unit of sociocultural information. It is defined by a single individual dichotomous choice (Dawkins, 1989). Memes are released from the atmosphere and carried by particular sets of operative contingencies. Atmosphere constitutes the source of memes insofar as it specifies contingencies. In detecting a set of contingencies that apply in a particular situation, an individual is thereby infected with the meme carried by those contingencies. In executing a behavior that is controlled by that set of contingencies, the individual is further infected. Thus, there are degrees of infection by memes. Moreover, because any contingency selects behavior, it can represent one or more memes.

The infecting meme can be identified in the subject's resulting behavior. Because new behaviors set new contingencies, memes are continually

being transferred. All effective educating, training, and communicating results in a transmission of memes. If such infection did not exist, individual choices would be random or unperformed. The identification and tracking of memes brings precision to the task of describing social conditioning so that it becomes possible to trace the evolution of behaviors. Moreover, because memes may be characterized in terms of stage, they aid in identifying stage development of individuals within interactive frameworks such as the workplace.

The atmosphere of the workplace is sustained and transferred through communication networks. These networks distribute information about the contingencies that affect individuals (e.g., individual advancement) within the organization. The complexity of the reasoning used to justify these contingencies embodies the stage of atmosphere of the workplace. The detection of contingencies by individuals occurs primarily during acquisition or reacquisition of the stage reinforced by the atmosphere. Contingencies tend to go undetected once the individual and the atmosphere are functioning at the same stage. Contingencies are clearly revealed only when the individual is struggling against the atmosphere from the point of view of another stage or when the individual is excluded from power.

Reciprocal Effect of Stage and Atmosphere

It is our contention that the stage of the behavior that sets contingencies has a reciprocal effect on the atmosphere of an organization. For example, when U.S. policymakers have to raise millions of dollars to be elected, the power of the individual relative to the power of the dollar is small. In such circumstances, incumbents—because of access to large amounts of funds—have a great advantage over challengers. Such incumbents set the rules or contingencies for how elections are to be conducted.

Likewise, within the workplace of the university, the transmission of knowledge and values is controlled by a network of contingencies that begins with the persons who pay for the university and with the structure of the channels through which funds are allocated to universities and then distributed within them. The stage of the justifications given for accreditation and for form of governance partly determines the stage of the institutional atmosphere. This includes a ceiling on the stage of development of the institution's top decision makers. The transmission of knowledge and values to students within the university can be traced through a series of steps: (a) through the contingencies that describe how the top decision makers are chosen and how a ceiling is set on the developmental complexity of their behavior; (b) through the contingencies that describe how money is distributed to the various sections of the

university, how staff are chosen in those areas, and how power is distributed within them; and (c) the contingencies that establish the rules (both implicit and explicit) themselves that govern how future contingencies develop. We believe that similar processes govern the transmission of knowledge and values as well as influence the developmental stage of individuals within any workplace.

In most universities, the control of funds is inaccessible to students, such that students can only influence decision making by attending or not attending school. Faculty members, on the other hand, represent long-lasting human capital who use and, indirectly, produce funds. Their power is derived from the fact that they exercise some control over these resources as well as influence the perceived value of the university experience. *Power*, from our viewpoint, is the behavioral control of contingencies that distribute reinforcement and reinforcement opportunity. To say that Person A "has power over" Person B in a given situation is, then, to say that Person A controls more reinforcing outcomes and punishers with respect to Person B's behavior than the reverse. If Person B behaves inappropriately according to Person A, reinforcement may be withdrawn from B by A. The implicit or explicit rule that A follows is contained within the network of contingencies operative within the organization. The sum total of such rules and the rules by which they are set constitutes the atmosphere.

In their empirical study of moral development in worker owned companies, Higgins and Gordon (1985) found that the organizational structure of a workplace (i.e., atmosphere) may facilitate the sociomoral development of its members. Similarly, in an exploratory study of atmosphere and moral development in the academic setting, researchers (Johnstone et al., 1991) found that the atmosphere of the university may constrain the developmental complexity with which its members respond to ethical dilemmas. For example, one subject in that study reported that the perceived compromise of values by administrators "very much tells the students that, well, this is all very interesting, but what really counts is big bucks, and what really counts is. . . . And kids get the message, and kids will go over exactly where they see the reward of the society as being exemplified." Similar processes set contingencies for faculty members, staff, and administrators as well. In fact, the study revealed that the reasoning of most ethics professors fails to achieve the highest developmental stage. Johnstone et al. explained this finding by arguing that the institutional atmosphere of the university fails to reward more complex reasoning that may challenge its norms.

There are multiple layers of contingencies for individual responses within such complex organizations as the modern workplace. The hierarchical structure of stages of development, as given by the GSM, suggests

that lower stage tasks and responses must be adequately integrated into the contingencies that constitute atmosphere in order for higher stage responses to develop. By the same token, some tasks do not require higher stage solutions yet are necessary for the functioning of the institution. Contingencies and stage of response will be perceived differently by individuals functioning at different stages within the same workplace. Yet, stage assignments can be made for the overall network of contingencies and responses that constitute the atmosphere of the organization. We believe that the reinforcement contingencies set by organizational activity play a vital role in the development of individuals within the workplace. We believe that the organizational atmosphere largely controls the reinforcement contingencies impacting upon individuals within a particular workplace. The setting of contingencies is the exercise of *power*. The atmosphere can either assist in the developmental process of individuals and the organization or impede it. Using the GSM, we can characterize this interaction with a high degree of precision.

CONCLUSIONS

The preliminary results of this research indicate that workplace atmosphere typically places a ceiling on individual moral development rather than encouraging development to the highest stages. The ceiling identified in the samples from the Mexicali Medical School study were at the formal stage. In the samples from the Harvard study, transitional reasoning between Stage 5a and Stage 5b predominated, at least in the social domains investigated. We suspect that, in less politically charged arenas, many reason at the fully metasystematic Stage 5b. This suggests that behavior beyond the systematic stage is reinforced in some domains and not in others. For instance, in the university, one's postconventional (metasystematic) thinking in one's research might be reinforced, but not one's postconventional thinking with regard to policy decisions involving the university itself. This theme was clearly brought out in many of the interviews.

At the metasystematic stage, individuals in the workplace are not simply defined in terms of their position or status within the organization. Individuals are considered in terms of a wide range of perspectives, all of which may be taken into account in the decision-making process. Metasystematic responses typically challenge the existing norms and policies of a workplace by integrating perspectives that fall outside of the organizational bureaucracy. For this reason, organizations tend not to reinforce responses at the metasystematic stage (see Rulon, this volume). We contend, however, that the failure of systematic stage reasoning to inte-

grate a range of workplace perspectives is contrary to organizational interests. An organization that reinforces higher stage responses to moral dilemmas, thereby, increases the perspective-taking abilities of its members. The better the perspective-taking skills of individuals within an organization, the more likely they will be to integrate the organization's perspectives into their own decisions. In practical terms, this may be called *loyalty* or *allegiance*. The company or business that reinforces higher stage responses, thereby, fosters allegiance to its own causes and interests.

This study has provided a framework for research on the interaction between workplace atmosphere and the development of individuals within it. The applications of this model extend far beyond the workplace. This model may be applied to forms of social interaction as various as families, religious groups, street gangs, and governments. We believe that contemporary challenges in all of these spheres increasingly call for post-conventional responses on the part of both individuals and organizations. The GSM provides a model for understanding the developmental processes through which these challenges may be met.

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