

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/247713050>

Models and Tools for Stability and Change in Human Systems

Article in *Reflections The SoL Journal* · December 2002

DOI: 10.1162/152417302762251327

CITATIONS

39

READS

3,219

1 author:



[Edgar H. Schein](#)

Massachusetts Institute of Technology

74 PUBLICATIONS 21,716 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Creative Social Change: Leadership for a Healthy World [View project](#)

Models and Tools for Stability and Change in Human Systems

Edgar H. Schein



Edgar H. Schein
Sloan Fellows Professor of
Management Emeritus
MIT Sloan School of Management
Schein@mit.edu

In this article, I will first differentiate types of change that occur in human systems and will then provide a model that makes it possible to understand not only the nature of change but, equally important, the nature of stability. Change and stability are two sides of the same coin. Hence, consultants and managers have to be concerned about the management of both processes. Within the framework of stability and change, I will then examine what we mean by learning, especially as we apply that term to groups, organizations, and larger social systems. As we will see, learning is a perpetual process and one of many types of change that occur in human systems all the time. If such learning did not occur, such systems would not survive. But the learning that creates stability and culture is different from the learning that enables organizations to innovate as they encounter changing conditions in both their external and internal environments.

Types of Change

As managers and consultants, we need to distinguish three basic types of change that occur in all human groups and organizations:

1. Natural evolutionary changes
2. Planned and managed changes
3. Unplanned revolutionary changes

The phrase “natural evolutionary changes” refers to all the myriad learning processes that occur throughout any given organization as its various parts adapt to its various environmental conditions. Every employee is learning all the time and is making changes to adjust to his or her local conditions. Some of those changes benefit the organization and would be called part of the organization’s capacity to learn. But as we have learned all too often, under many circumstances what the individual employees learn is not how to enhance what the organization is trying to do but, rather, to use ingenuity to make their own lot easier at the expense of the organization. Informal systems of “a fair day’s work for a fair day’s pay” evolve, or, if management is sufficiently repressive, more elaborate creative systems to sabotage or undermine management’s intentions evolve. In other words, as has been noted, evolution is not necessarily progress from the organization’s point of view.

It is managers’ discovery that natural evolution is not necessarily progressive or benign that leads them to think about planning and managing change, the second main category. Whether we think of that as steering the evolutionary processes or as more actively controlling the direction of change and learning, what is implied is the assumption that one can control to some degree what is learned and the direction that change will take. At the same time, it is implied that managers can stabilize those processes that need

to be preserved because they are working adequately. When managers speak of “changing the culture of their organization,” they typically mean they want to make some changes in what is currently going on, but then they want to *stabilize the new ways of working* if they produce better results for the organization. In this scenario, organizations experience “change programs” between periods of “stability.”

Human Systems as Quasi-Stationary Equilibria of Multiple Forces

In order to understand any kind of change, we must first have a model of a “system” in a steady state, what Kurt Lewin so aptly called a “quasi-stationary equilibrium” (Lewin, 1952; Schein, 1985, 1987). A “system” can be an individual, a group, or an entire organization, and any given system is usually composed of a number of subsystems. When any kind of change is being contemplated, it is helpful at the outset to decide what system we are focusing on. *Who* is to be changed?

Any living system is always in a state of some change (growth, metamorphosis, or decline), but all systems are homeostatic in that they always tend toward some kind of equilibrium, and all systems have some subsystems that change more slowly than other subsystems. We tend to call those that change at the slowest rate the “structure” of the system, such as the skeleton or the organization chart reflecting authority channels. But even those subsystems change, and they are subject to the same homeostatic forces. The tendency toward equilibrium is achieved by a balance of forces pushing in different directions. But, if some of these forces are altered and if no compensating forces arise, the equilibrium will move to a new level. In this sense, the equilibrium is only “quasi-stationary.”

Because all systems are always in some state of change, the change agent should locate those forces that are already acting to produce change.

Because all systems are always in some state of change, the change agent should locate those forces that are already acting to produce change. If those forces are not acting fast enough or are acting in a direction other than what the change agent desires, the first stage in the change process is to alter the force field, or what Lewin (1952) called “unfreezing.” Before we can unfreeze the system, we must first identify, with respect to our change goal, what the relevant forces are that are acting *on the target system*. This process, called “force-field analysis,” is then a first step in any managed change program. If the analysis reveals that the unit being changed is composed of a number of interconnected subsystems, then we have to analyze each subsystem. We cannot assume that the same forces apply across all the subsystems.

Analysis as Intervention

Though it is important to analyze and decipher the state of the system, it is even more important to recognize that if the change agent asks questions, observes, gives questionnaires, or in any other way engages members of the system, he or she is *intervening*. There is no such thing as pure diagnosis, but the change agent can do the diagnosis in a manner consistent with the change goals and with the full involvement of the target/client system. Change models that separate the diagnostic from the intervention stage are ignoring the powerful impact that different forms of diagnosis have on the system being diagnosed. Ignoring this step in the presumed interests of getting “valid” data by minimizing the “influencing” of the data is clearly unethical and borders on unprofessional when working with human systems.

Everything we do when we interact with any part of the target/client system is an intervention and must be guided by principles and ethics of intervention. Hence, the analytical tools I will suggest can be thought of as “diagnostic interventions,” unless they are done by the change agent alone as part of a planning process. However, as the philosophy of process consultation argues, it is more likely that the change goals will be reached if the target system becomes a client and begins to own the diagnostic interventions as well (Schein, 1999a).



© Emily Sper

Stages of the Change Process

Any change process can be conceptualized as consisting of three stages or phases, based on the model of quasi-stationary equilibria—a stage of unfreezing, a stage of changing, and a stage of refreezing. No change will occur unless the system is unfrozen, and no change will last unless the system is refrozen. Most change theories tend to focus only on the middle stage and then cannot account for inability to produce change in the first place, or inability to maintain the changes that have been achieved. The stages and the underlying processes that have to occur in each stage are outlined in table 1.

Unfreezing

By far the most difficult and important stage is that of unfreezing, the creation of a motivation to change. This is accomplished by changing the forces acting on the system such that: (1) the present state is somehow disconfirmed; (2) some anxiety or guilt is aroused because some goals will not be met or standards or ideals will not be maintained; (3) enough “psychological safety” is provided to make it unnecessary for the target individuals or groups to psychologically defend themselves because the disconfirming information is too threatening or the anxiety or guilt is too high.

The essence of an effective unfreezing process is a balancing of enough disconfirmation to arouse an optimal level of anxiety or guilt, without arousing so much learning anxiety as to cause denial, repression, projection, or some other defense mechanism. Most analyses of unfreezing

limit themselves to disconfirmation and the creation of pain, and fail to note that unless the pain is connected to something the members of the system care about, and unless they feel safe enough to do something about it, they have not really been unfrozen at all.

How the unfreezing occurs will vary with the circumstances. Often we find change easy to manage because we encounter a system that is already unfrozen. For example, the turnaround manager who takes over a company that knows it is in great economic difficulty unless it changes has a much easier time making changes than the farsighted company president who tries to initiate change in a successful company.

Systems can exist in a partially unfrozen state because they received disconfirming information at some earlier time in their history, but they will not have changed because there was not enough psychological safety to allow the individual or group to consciously

Table 1 Stages of the change process

Stage 1. Unfreezing: Creating the motivation to change
Disconfirmation
Creation of survival anxiety or guilt
Creation of psychological safety to overcome learning anxiety
Stage 2. Changing: Learning new concepts, new meanings, and new standards
Imitation of and identification with role models
Scanning for solutions and trial-and-error learning
Stage 3. Refreezing: Internalizing new concepts, meanings, and standards
Incorporating into self-concept and identity
Incorporating into ongoing relationships and groups

accept the necessity of change at that time. We see this most clearly in individual psychodynamics where, in adulthood, we “finally” deal with criticisms or feedback that we may have received from parents or peers as children but have repressed until we felt secure enough to change. The observer may be surprised at what seems to be a change without unfreezing, because he or she may be unaware of the prior disconfirmation that had taken place. When we speak of systems as being “ready to change,” we often mean that they have had strong disconfirmation in the past but have not felt secure enough to do something about their situation.

Managers as “Unfreezers”

If the system is not already unfrozen, the manager as change agent has to develop a way to surface disconfirming information, a process that is sometimes difficult and time consuming. And then the information has to be developed in a way that is not too threatening. The role of the change agent in unfreezing systems is, therefore, one of the most important and also one of the most difficult. When strong disconfirmation is needed, the person in authority is often in the best position to provide it but is often also the person most likely to be too threatening and thus arouse defensiveness. In such situations, managers often use outside consultants to provide the strong disconfirmation, on the theory that it is easier to accept negative information from a presumably objective outsider. But such outside information is often easy to discount on the grounds that the consultant “did not really understand our situation.”

What the effective manager acting as a change agent must try to convey *simultaneously* is: (1) your present behavior or attitude is unacceptable (disconfirmation); (2) it is violating some of our standards or is causing us to fail in getting the job done (induction of guilt and/or anxiety); but (3) I understand that learning something new is itself anxiety producing, so I will help you to change and make you feel safe while you learn a new behavior or attitude (creation of psychological safety).

One reason it is important for people who become targets of change to be involved early in the change process is that we cannot assess whether and how they might be threatened by the disconfirmation or what problems they will have in making the change unless we explore what help they will need to make the change. Thus, paradoxically, in the process of unfreezing the system, we must often take a very open, inquiring role so as not to produce premature threat. Genuine inquiry in the service of helping the change target to accept and make the change is the most crucial aspect of creating psychological safety, and probably the most difficult to manage interpersonally (Schein, 1988, 1999a, 1999b). The manager as change agent can be quite open and blunt in the disconfirming information if he or she manages steps two and three adequately and sensitively.

Paradoxically, in the process of unfreezing the system, we must often take a very open, inquiring role so as not to produce premature threat.

An Information Technology (IT) Example

In a study of 76 CEOs, we found that a number concluded that executive workstations operated by the manager (not the secretary or staff assistant) could be a useful executive tool for e-mail, word processing, management information and control, and various kinds of spreadsheet analysis and modeling. The problem they faced was how to get their various subordinates to accept the workstations and learn to use them.

The disconfirmation typically came when the CEO announced to his subordinates that he would start to monitor some of their division or unit performance in terms of regular reports that appeared directly on the CEO’s terminal and would ask them questions about it. Past systems of reporting and monitoring would no longer be acceptable. Or he might say that he would start to communicate with them by means of e-mail *only* and would put important messages into the system by this means. The subordinates found out that their routine behavior would no longer work, and they clearly felt anxious about their boss either finding out things they did not themselves know or providing critical information that they might otherwise miss. We can also assume that many felt guilty about not using “modern” technologies and highly touted executive support systems.



© Emily Sper

How was psychological support handled? The most important message was to give the subordinates some freedom to determine how they wanted to learn the new system. They could not participate in setting the goal, but they could participate in controlling their own learning. So the effective CEOs not only provided the necessary terminals but, more important, created a variety of training programs and provided coaches to make it easy for the subordinates to learn and to help them overcome their insecurities. The CEOs set realistic time targets and supported what often turned out to be a very slow learning process. They were sympathetic to resistance but did not change the target of learning to use the system.

If the degree of threat or basis of the insecurity was more fundamental, which would have been revealed in a force-field analysis, then additional unfreezing would have to occur. For example, some managers were afraid that if they were forced to use the terminal themselves, the fact that they could not spell or used bad grammar would be revealed. The sensitive CEO in that instance would accept the rationalization that it was more “efficient” for the subordinate to dictate messages to a secretary as before and have the secretary enter it on the terminal. The trick is *simultaneously* to be supportive and to be inflexible on the change targets.

Changing through Cognitive Redefinition

What unfreezing does is to motivate the change target to look for new solutions that will bring things back into equilibrium and that will once again produce confirming information that things are “okay.” Once someone is unfrozen, he or she is more likely to pay attention to information, ideas, suggestions, or even orders that were previously ignored. Once unfrozen, people become active problem solvers because they are uncomfortable. They become motivated to change.

If the change is a simple behavioral one, people make the change. However, with complex attitudinal change or changes in shared basic assumptions (culture), there is the additional problem that the change targets may initially not even understand the *new* attitude or assumption. They know “something” is wrong with the way they are thinking, but they cannot conceive of any alternative way of thinking. For this kind of situation, either or both of two change mechanisms have to be considered:

1. *Scanning* the environment until a new formulation is found and trying out various kinds of new behavior until something that works is found.
2. Finding a role model and learning a new viewpoint through *psychological “identification”*—learning by seeing the world through the eyes of the role model.

In either case, the new information causes change by allowing “cognitive redefinition” to occur. For example, when PCs are introduced into the executive suite, some people will simply learn a new skill that will not require any cognitive redefinition. But for some managers, the dilemma will be that they see themselves as working primarily with and through people, that they gather complex multifaceted information through face-to-face contacts, that they rely on their gut feelings and intuition to process information, and that they trust their ability to be persuasive in interpersonal encounters only when they can see the other person’s immediate reactions. Working on a PC simply will not make sense unless they can redefine in their own heads the nature of managerial work. Some managers will have developed the assumption that numerical data of the sort processed in information systems are not good enough to act on in the first place, and that communicating via e-mail makes it impossible to determine what the other person is really thinking. It is therefore inconceivable to them that IT can be an executive tool.

Such managers may be partially unfrozen in that they have been strongly disconfirmed by their own bosses and feel ready to change, but they truly do not know what to do and feel very threatened because the assumptions on which they have built their self-image of effectiveness are being challenged. If the CEO presses hard enough, they may scan the environment for various kinds of partial solutions, looking for PCs and software that might be more versatile or user friendly, until they find something that seems to work.

Or, more likely, they will find a fellow executive who is enough like them to be a role model and who has learned to use the IT tools. They will identify with that person and try to learn to see the world through his or her eyes. As they do this, they will *cognitively redefine* the managerial job, gradually changing some of their assumptions about their own intuitive style and learning some of the new assumptions underlying the IT solutions.

Most likely, this will involve cognitive *broadening* in the sense that they will learn how to use IT to *enhance* their intuitive style and how to use e-mail to *supplement* their face-to-face encounters. The nature of managerial work will be gradually redefined and broadened in their heads. Cognitive redefinition will also involve a change in the scale on which things are evaluated and the standards or anchors that define the scale. For example, the executive who thought that working on the computer was “beneath” him or her and not executive work at all may find that not only does such work fit into the executive-work category, but that it is of higher value than he or she may have thought.

When a learner chooses a role model, there are several possible choices with different consequences. A “parent figure” is someone much older and more advanced occupationally or in status. An “older sibling” has more recently gone through what the learner is about to go through. The parent figure may provide more accurate data on what ultimately is to be learned but may be too removed to identify with; the older sibling figure may be less accurate but more accessible and easier to learn from. Change managers should consider this issue when they provide role models for the learners and not simply choose the most expert person as teacher or coach.

Refreezing

Once the person or group has achieved a new set of cognitions and attitudes, and has begun to express these in new daily behavior, there remains the stage of refreezing. For the new behaviors to last, they must first fit into the personality of the individual or the culture of the group that is being changed. Otherwise, the behavior will be only a temporary adaptation to the pressures of the change situation and will erode once the change agent has ceased to disconfirm the old behavior. Refreezing at this level can be thought of as “personal integration.”

Even if such personal integration has taken place, new behaviors may not remain stable unless they also fit into the ongoing relationships and the work context of the person

Change Management Process

1. Why change?

Is there really a need?

Is change really possible? Do we have a choice? Do we see insurmountable constraints?

What is our *motivation* for wanting a change?

What is the system's *need* for change: What problems or goals require change?

What is the system's *readiness* for change—degree of unfrozenness, amount of energy available for change, location of energy for change?

How can we gather information through "diagnostic" interventions so as to support our change goals? How can we gather information without arousing resistance?

2. What is the desired future state?

What new way of working do we envision?

What values are needed for the new way of working?

Do we need analytical tools to specify a desired future state?

- Scenario analysis

- Open systems planning

- Future search

3. What is the present state? How do we determine it?

What is the present way of working?

What values does the present way rest on?

What cultural assumptions support the present state and what cultural assumptions would facilitate or support the desired future state?

Given what we have learned about the present state, is the desired future state feasible? What kind of change program will be needed to achieve it? Do we need to reexamine the original change goals?

4. Gap analysis

What is the gap between the present state and the desired future state?

What kind of change program would begin to close that gap?

or group that has changed. We see this most clearly when changes that have occurred during "off-site" training programs do not last once the trainees are back in their work context. The trainees come back full of enthusiasm only to find that their reference group culture does not support the new attitudes and behavior. They are now being disconfirmed all over again and thus will start a new change process that may well lead back to the original behavior.

One reason for on-site training and for change programs that involve the entire system, such as "team building," is that whatever changes occur will be acceptable to the whole system and are thus more likely to last. In other words, for change to stick, it has to be integrated into the

total psychic framework or personality and has to be supported by others whose opinions and perceptions the person cares about.

In the example of the CEO and his subordinates, if a given manager learns to use the terminal and finds himself transferred to a new group that disdains such use, he will likely unlearn and revert to his old attitude. Or, if he finds that his thinking style is genuinely incompatible with what the IT systems require of him, he will make a surface adaptation that will last only as long as the boss coerces him. In the extreme, he may leave the group rather than make the change. Early-user involvement is so critical in the introduction of IT systems because it insures that only behaviors that are personally and culturally acceptable will be learned and thus will remain stable, once learned.

Scanning versus Identification

For any change to be managed effectively, the change agent must plan for all three stages and must insure that each stage is successfully traversed. Of particular relevance is the choice of change strategy, once the target has been unfrozen. If we provide role models and thereby increase the likelihood of rapid new learning through imitation and identifi-

For the new behaviors to last, they must first fit into the personality of the individual or the culture of the group that is being changed.

5. Making the transition plan

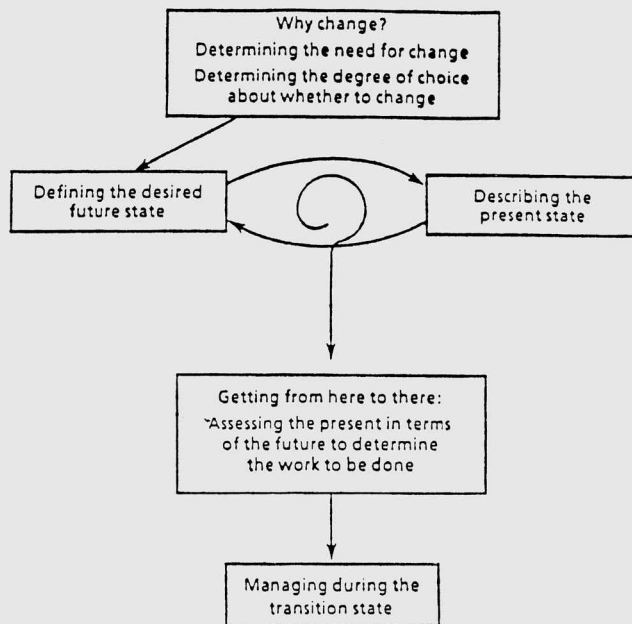
Who will manage what?

How will we assess progress? Establish timetable and criteria for progress.

Who will take what action, bearing in mind that diagnostic inquiry is itself an intervention?

Therefore, such inquiry should be viewed as part of the implementation plan, not the diagnostic phase.

How often will the team meet to check signals, share information, and retool the plan?



A map of the change management process

Adapted from R. Beckhard and R.T. Harris, *Organizational Transitions: Managing Complex Change*, 2nd ed. (Reading, MA: Addison-Wesley, 1987).

cation, we also risk that people will learn things that do not really fit their personality and will give them up once the role models are no longer available. In other words, imitation and identification provide a quick but not necessarily lasting solution.

Scanning that leads to trial and error is a much slower method of learning that can be stimulated by the change agent's deliberate withholding of advice, suggestion, role models, or other cues of what to do. But by forcing the learners to develop their own solutions, the change agent insures that whatever is learned will, by definition, fit into the personality and the group. Scanning is thus a slower and possibly more painful way to learn, but it increases the probability of successful refreezing.

The choice of whether or not to "model" behavior is especially relevant in situations where the boss is the change agent, because there are already predispositions operating to identify with him or her. Superiors who want lasting learning must, therefore, learn how to force the learners to develop their own solutions to the change dilemma and must make themselves relatively unavailable as role models.

Change as a Perpetual Process

I have depicted the change process as a set of stages that imply a kind of orderly chronological progression. In reality, we are constantly bombarded by various kinds of unfreezing forces, are scanning and imitating in areas where we are already unfrozen, and are experiencing the new confirmations or disconfirmations that will determine what gets refrozen. This is a perpetual process and can be analyzed into discrete stages only for purposes of planning a change program. Once into the change process, the change agent finds himself or herself working simultaneously on all the stages, reconceptualizing what is going on as new data surface, discovering areas that are not unfrozen, and so on. The analytical tools provided in this article thus should be used to sort out what is going on, but they are not an accurate model of what is happening in real time, moment to moment.

Role Set (Stakeholder) Analysis

The purpose of role set analysis is not only to better understand the target system and its interconnections but also to develop insight and empathy for the people who are your change targets. This exercise should help you figure out their world so that you do not make premature assumptions about what is or is not possible for them to change.

1. **Select the person or system that will be your change target.** This person may not eventually be your target, but for analytical purposes, start where you think the key change has to occur. Put this person or system in the center of a flipchart page.
2. **Brainstorm about who has expectations of this target system.** You can think of these as stakeholders or as "role senders" who have expectations of what this person or system will do in the future.
 As you think of various role senders such as superiors, subordinates, family, peers, and so on, draw each on the flipchart page with an arrow between the role sender and the target. The size or thickness of the arrow can represent how strong you think the expectations are.
 In identifying stakeholders or role senders, think broadly in terms of (1) members of the organization, (2) family, (3) community, and (4) self (we have expectations of ourselves in a given role). The chart is likely to become quite complicated as you try to fit in all the role senders, but try to be as complete as possible.
3. **Identify the relevant role dynamics.** As you examine the role map, you will realize several things. Most of us deal with multiple expectations, forcing us to set priorities and deal with potential conflicts. Such "role dynamics" can be broken down into three main categories:
 - **Role ambiguity**—with respect to some of the arrows, you may conclude that what the target expects is not clear. In other words, some stakeholders may have clear expectations of the target but what those expectations actually are may be unclear or ambiguous. You will be unable to infer this without gathering some data, but it is important to recognize that you will sometimes not know exactly what is expected of you.
 - **Role overload**—it will become obvious to you that everyone suffers from role overload. The sum total of the expectations of all the stakeholders and role senders exceeds what anyone in the target position could possibly do. That leads to the question of how role recipients handle their overload: Whose expectations do they respond to?
 - **Role conflict**—it will also become obvious to you that what one set of role senders expects may differ from what another set expects. The most common version of such conflict is between some stakeholder expectations and what the role occupant expects of him- or herself. How does the target person/system then respond?
4. **Identify linkages between the stakeholders or role senders to get even more insight into the dynamics of the whole role system in which you will have to work.** Analyze what you think might be some of the interconnections between role senders. For example, a given professor might be expected to do certain things by her department chair and dean. What might be the connection between the chair and the dean, and how might this influence expectations? The dean might be a close friend of the target's spouse. How might this influence expectations?
 The importance of analyzing all the linkages in the total system is to reassess whether or not the target you chose is, in fact, the best target to work on. Once you see the linkages, you may identify other possible targets that are more accessible, more amenable to change, and yet linked to your original target in such a way that change will occur there. The linkage analysis tool helps you to analyze the different criteria for choosing an initial change target and, in the process, also alerts you to the complexity of the choices that change agents have to make in planning their change.

Planning the Change Process

The most useful model for planning any change process is the "map" provided by Beckhard and Harris (1987). Before the change agent intervenes in any way, the change team should go through as many of the steps outlined in the figure and sidebar, "Change Management Process," as feasible, and identify what additional information is needed and how to get it. It is especially important to have credible answers to the various questions in step one, even if one has to guess at the answer because gathering information is premature.

Planning the Diagnostic Interventions

The answer to many of the questions in the process map will require getting information from the target/client system. Therefore, before launching a major change intervention, you can often interview or survey members of the target system in order to gather infor-

Linkage Analysis

The purpose of this analysis is to determine which of a number of possible change targets/clients will give you the best chance of making a connection that would lead to the kind of change you ultimately desire. This analysis builds directly on the stakeholder/role sender analysis you have just done. It highlights the fact that there are many possible targets for launching the change project, not just the one you initially chose as your target for the role analysis. The essence of this analysis is to weigh various criteria against each other so that you make a wise choice of where to begin and how to proceed with your change project.

Criteria for Analyzing Whom to Target

1. **Accessibility.** You will want to develop a relationship with your change target, so you must initially pick someone in the role set to whom you have access or to whom you can gain access. For example, in an academic setting, you, as a student change team, might decide to create some changes in some portion of the curriculum. You might have easy access to the current professor teaching it but might not have access to the department chair or head of the curriculum committee.
2. **Leverage.** You will want to pick as a target someone or some system where you believe you have some leverage in the sense that they will at least pay attention to you initially. That often means starting with someone who is lower in the hierarchy or in status or who is motivated to listen to you. In the curriculum example, you might decide to start by influencing student attitudes toward the curriculum because you believe you have more leverage with the students. Or you might go to the accessible professor if you think he or she would listen to you, but avoid the curriculum committee chair because you believe you would have less leverage there.
3. **Linkage.** You will want to make a change in some part of the system that is well linked to other parts of the system so that any change you succeed in making is likely to proliferate. Note that this criterion is, in a sense, the opposite of the "leverage" and "accessibility" criteria because the people to whom you have most access and who are lower in status are often less well linked than people higher in the hierarchy or more powerful by virtue of their status. It then becomes a complex planning issue of whether it is better to aim for an accessible target with whom you have leverage but is less well linked or to try to gain access to a better linked target.

In the curriculum change example, you would have to weigh whether it is better to change student attitudes, knowing this might have less ultimate impact on the larger system, or to change the attitude of the curriculum committee, where you have less access, but if you succeeded their linkage would automatically make the change more stable.

4. **Vulnerability.** You will want to consider how vulnerable a given target is to being influenced and changed. You may have identified a target that is accessible, with whom you have leverage, and who is well linked in the system, but that person or system may be known for resistance to change. That resistance may, in fact, be the result of the placement of that system in relation to other systems, so you may need to draw another role map for each possible target system to examine how vulnerable to change it might be.

For example, in the curriculum change case, you might identify the department chair as someone accessible, well linked, and with whom you have some leverage, only to discover when you map that role that his or her connection to the dean's office and his or her position on the critical curriculum committee would make the person unable to change. You would then have to rethink possible targets to find some potential vulnerability to change.

5. **Appropriateness.** You have to examine from both a practical and an ethical point of view to determine whether the change you want to make in a given target is ultimately appropriate. Suppose you had the power and influence to change the department chair's attitude toward the curriculum, but you also knew that the faculty in that department would oppose it vehemently, causing the chair to lose credibility and power. Not only would this undermine the longer range success of your change program, but it might cause some unnecessary damage to the change target that you initially selected.

These five criteria need to be considered at many stages in a change program. In the preceding example, I have focused on the "ultimate" change target, but it is equally important to apply these criteria to the initial targets you select at the start. Everything you do is an intervention, so when you start making inquiries, getting connected with someone in the target system, choose that person carefully to build relationships and connections that will help you in the long run in achieving your goals.

mation critical to the planning of the later "major" interventions. It is critical that the change agent be aware that this process of inquiry is itself already an intervention and should be conducted to enhance the change goals (Schein, 1987, 1988, 1999a).

For example, whom you choose to interview and what questions you ask should be determined both by your diagnostic needs and by considering who should become

Force-Field Analysis

The essence of this diagnostic technique is to analyze, for any given system, what forces are keeping that system in its quasi-stationary equilibrium. The assumption is that all human systems tend toward equilibrium, but that it is achieved only through the multiple actions of many forces, some of which push toward change and some of which constrain or resist change. And these forces are not linear or aligned in terms of any given direction of change. As the role map should have revealed to you, any given person or system is subject to expectations (forces) from many role senders, and these may push in many different directions.

Once you have identified through the Beckhard-Harris change map the direction of your change effort, you can use force-field analysis to help you understand the forces that would help or hinder your change effort. Using a blank piece of paper or a flipchart page, follow these steps (see the figure for a sample):

1. Draw a vertical line down the center of the page representing the present state of the system.
2. On the top of the upper right-hand side, describe the desired state.
3. On the left-hand side of the line, using brainstorming, begin to identify the *driving forces*, those forces that are already pushing the system in the direction you desire. Think about all kinds of forces—economic, technological, organizational, political, interpersonal, structural, cultural, social, psychological, and so on. For each force you identify, draw an arrow that hits the center line, and make the arrow as thick or as thin as you want to represent your view of how strong this force is. Above the arrow, write what the force is. You may end up with a long list of such forces that are already working in your favor.
4. Now, on the right-hand side, begin to identify forces that oppose the direction of change you desire, the *restraining forces*. In some cases, these will be directly related to the *driving forces*. For example, if a driving force is "supervisory pressure to increase production," that might immediately be countered by a *restraining force*, "group norms against rate busting." Use the same categories for identifying various types of restraining forces as you used in identifying the driving forces.
5. Now examine the force field and ask yourself which forces can be altered to "unfreeze" the system—to cause a disequilibrium that will create motivation to change. You will discover that you have three basic options:
 - Increase one or more of the driving forces.
 - Decrease one or more of the restraining forces.
 - Do both.

Increasing driving forces is generally easier because you are likely to have more access to them than to the restraining forces. However, if increasing the driving forces also increases comparable restraining forces, all you have accomplished is to increase the total tension in the system. For example, if management tries to increase production just by increasing supervisory pressure, which causes

involved in thinking about the change issues at the earliest stages. Diagnostic interventions are the best way to involve members of the target system in the change program. By asking them relevant questions about the present state of the system, you not only learn relevant facts about possible resistance to change, but you also begin to influence their thinking and get them involved in the planning.

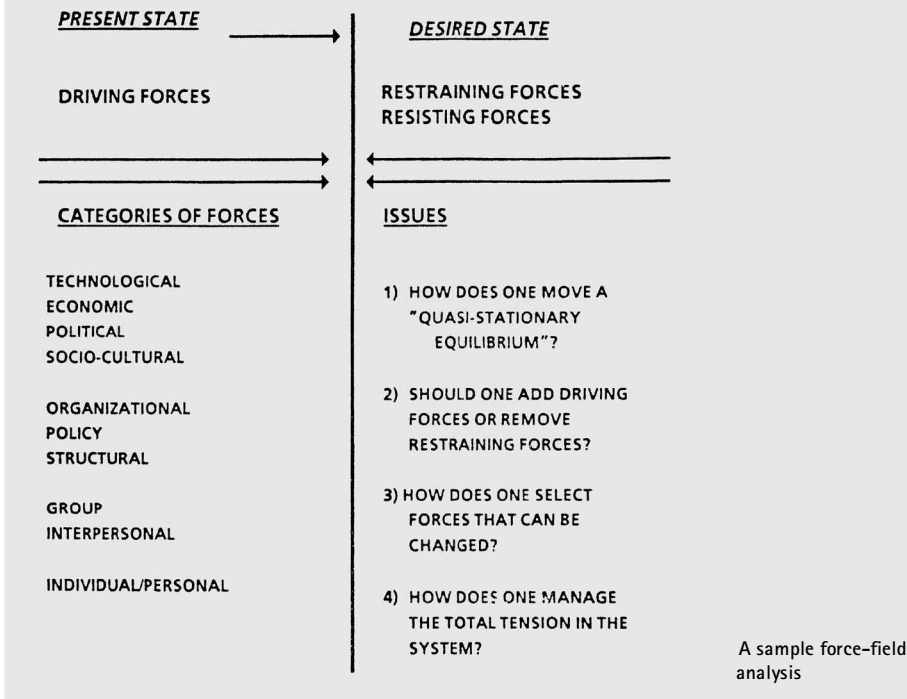
Diagnostic interventions should focus on "inquiry"—on finding out what is really going on—and should deemphasize confrontation, making suggestions, discussing possible solutions, or in other ways putting pressure on the target. At the same time, the change agent must recognize that no matter how neutral and innocent the questions may be, they will influence the thinking of the target and will, therefore, be an intervention whose consequences must be considered. You cannot launch a survey to decide whether or not to start a change program. Once you are conducting the survey, you have launched the program because you have influenced the thinking and expectations of the people you are surveying.

Analytical Tools for Planning

The several planning tools presented here are designed to help the change team analyze the components of complex human systems (see the sidebars on role set analysis, linkage analysis, and force-field analysis). Each introduction explains when and how to use the tool. The first diagnostic dilemma is to sense how the target system is embedded in other systems. Before we can diagnose the forces acting on the target system, we need to know

more group resistance, one ultimate outcome of the increasing tension may be a strike. Decreasing restraining forces is more likely to work because there are already driving forces in the system, but such forces are often more difficult to manage. For example, you may realize that productivity will increase if you can change the group norm of a fair day's work for a fair day's pay but realize how hard it is to change such norms. Analysis of the force field makes you aware of the complexity of change dynamics and of the many choices for proceeding.

The most likely outcome of this analysis will be some further diagnostic interventions that will reveal the strength of some of the forces. A second outcome may be the discovery that there are one or more critical forces that require a new analysis. For example, if group norms are the key restraining force, draw a new force-field diagram with the present state of those norms as your center line and the direction of change on the right-hand side, and identify all the driving and restraining forces pertaining to those group norms.



what other systems connect to the target system and how they in turn are interconnected. For this purpose, an adaptation of open systems planning called "role set" or "stakeholder analysis" is essential.

None of the tools described will by themselves answer all the change questions. Once the change group has identified its broad change goals and targets, it is highly desirable to do each analysis quickly to identify broad insights and then recycle through them with more refined questions and goals. Alternatively, any one of the tools may reveal the need for diagnostic interventions, which will then lead to further analysis by the change team.

These tools in combination also help a team in getting "unstuck." Inevitably, the change team will find itself not knowing what to do next in relation to some change goal. At that point, doing another role-map, force-field, or linkage analysis often clarifies how to proceed.

The Change Process in Perspective

All the processes and tools described are to be used in a given project, most of them simultaneously. It is desirable at the beginning of the change project to take the time to diagnose as much as possible without involving the client, so that you can make the initial interventions in the most helpful way; but often the change agent must involve the client in order to get the most basic diagnostic information.

Again, Lewin, in his wisdom, had it right. He said, "In order to understand a system, you should try to change it." The implication is that you cannot fully understand all the

forces acting until you elicit some of them through diagnostic interventions. What you then learn should encourage you to reask the fundamental questions: Why change? How appropriate is this change? Am I approaching it in the right way? What do I need to do differently based on what I learned in the last round?

Even if the change is being induced from a position of power, it is essential for the change agent to learn the even greater power of being helpful and supportive. People must be unfrozen to change; they must hurt somewhere. But that is not enough. Equally important is their sense of psychological safety that it is okay to try something new and to give up something old and familiar. The smart change agent will make targets feel secure by finding a way to turn them into clients. Only then will their resistance genuinely give way.

References

- Beckhard, R. and R.T. Harris. *Organizational Transitions: Managing Complex Change*, 2nd ed. (Reading, MA: Addison-Wesley, 1987).
- Kahn, R.L., D.M. Wolfe, R.P. Quinn, et al. *Organization Stress: Studies in Role Conflict and Ambiguity* (New York: Wiley, 1964).
- Lewin, K. "Group Decision and Social Change," in *Readings in Social Psychology*, rev. ed., eds. G.E. Swanson, T.N. Newcomb, and E.L. Hartley (New York: Holt, 1952).
- Schein, E.H. *Organizational Culture and Leadership* (San Francisco: Jossey-Bass, 1985, 2nd ed., 1992).
- Schein, E.H. *Process Consultation Vol. 2: Lessons for Managers and Consultants* (Reading, MA: Addison-Wesley, 1987).
- Schein, E.H. *Process Consultation Vol. 1 (Rev.): Its Role in Organization Development* (Reading, MA: Addison-Wesley, 1988).
- Schein, E.H. *Process Consultation Revisited* (Reading, MA: Addison-Wesley, 1999a).
- Schein, E.H. *The Corporate Culture Survival Guide* (San Francisco: Jossey-Bass, 1999b).

Copyright of Reflections is the property of Society for Organizational Learning and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.