Part Three

Developing Skills for Useful Research and Effective Intervention

One criticism of action science is that it is more an art than a science. According to this view, it requires skills only a handful have mastered, and since these cannot be made explicit or taught to others, the mystery of this mastery can never be solved. If this is so, then at best action science is a form only a few can produce; at worst it is an idea that will remain just that: an idea. We take such a possibility seriously. By itself its premise is compelling. There *is* a good deal of artistry in the practice of action science, a kind of tacit expertise that tells its practitioners what to look for, how to view a situation, and how to transform what they see. But we believe this is true of competence or expertise in many areas. Certainly, the practice of any science involves the skillful enactment of both explicit and tacit rules in a way that might similarly be considered a form of artistry. At the same time, we do not want to dismiss too quickly the possibility that the acquisition of action science skills is so uniquely difficult that, unlike competencies in other methods, it will necessarily remain rare.

To consider this possibility, we have taken the process of

acquiring these skills as an object of inquiry, asking the dual question: What are the requisite skills of action science, and what does it take to learn and to teach them? We can answer the first part of this question here by extrapolating from the rules described in the previous chapter. One necessary set of skills is quite familiar, since it comprises those required to carry out other scientific methods. For instance, just as experimentalists should be well versed in the logic of experimentation, so should action scientists display a grasp of what it takes to construct falsifiable hypotheses and to design valid ways of ruling out alternative explanations. And just as ethnographers should be adept at observational techniques, so should action scientists evidence an ability to manage very large amounts of data without becoming overwhelmed by them and to systematically draw inferences from these data.

But another set of skills is unique to action science, stemming from the way action scientists engage with participants in the research process. In an action science project, the logic behind the researcher's methods, the actions used to produce them, and the methods themselves all become as much an object of inquiry as the interactions of particpants. In the passivity experiment, for instance, the participants turned the experiment itself into the focus of inquiry by pursuing the possibility that the logic the interventionist used to design it was inconsistent and that the actions he used to produce it might create a self-fulfilling prophecy (see Chapter Four). As noted then, the interventionist encouraged this inquiry. He asked for views from other participants, made his reasoning explicit, and invited the group to critique it as he did their reasoning. As this suggests, the participants exerted considerable control over the design and direction of the inquiry and over the inferences drawn from the data. But most important the interventionist designed the experiment to directly contribute to participants' learning, and he held himself accountable to them for doing so, seeking to know when he was not carrying out his intention and turning to participants to learn about this.

Taken together, these features add up to a fundamentally different role relationship between participant and researcher,

one that demands a new set of skills. Researchers must be willing to make themselves vulnerable and to put their own reasoning and actions on the line, subjecting them to the same scrutiny to which they subject the reasoning and actions of participants. They must be able to contend with their own defensive reactions and remain open when their views and actions are called into question, often without much compassion or skill. And they must do all this while simultaneously negotiating a dilemma faced by researcher and participant alike. On the one hand, the process is intended to be jointly controlled, with participants taking responsibility for their own learning; while on the other hand, the process necessarily starts out under conditions of inequity. At the outset participants are largely unaware of their theories-in-use and only vaguely aware or able to envision the alternatives posed by the action scientist.

Participants therefore enter the process in a position of dependence on the interventionist. They discover in an explicit sense that they know their own theories-in-use less well than the interventionist does, and they have scarcely any idea about how to remedy the gaps they uncover in them. Understandably this discovery triggers experiences of distress and anxiety that themselves evoke reactions that can get in the way of working through the dilemma that triggers them. Participants may conceal, even from themselves, the inconsistencies of their actions. They may resist the help of the interventionist in discovering these inconsistencies or the alternatives that might reduce them. Or they may grow hostile toward the interventionist for what they construe as his unnecessary exertion of power. The action scientist must be able to contend with such reactions, not by becoming defensive, but by inquiring into what leads to these reactions in order to move beyond them.

So the question now becomes: What does it take to learn and to teach these skills, given what participant and interventionist are up against? In a nine-month seminar that spanned two semesters, we had the opportunity to study this question by researching the process involved in teaching action science skills to graduate students at a professional school who were interested in research and consulting. In the following chapters

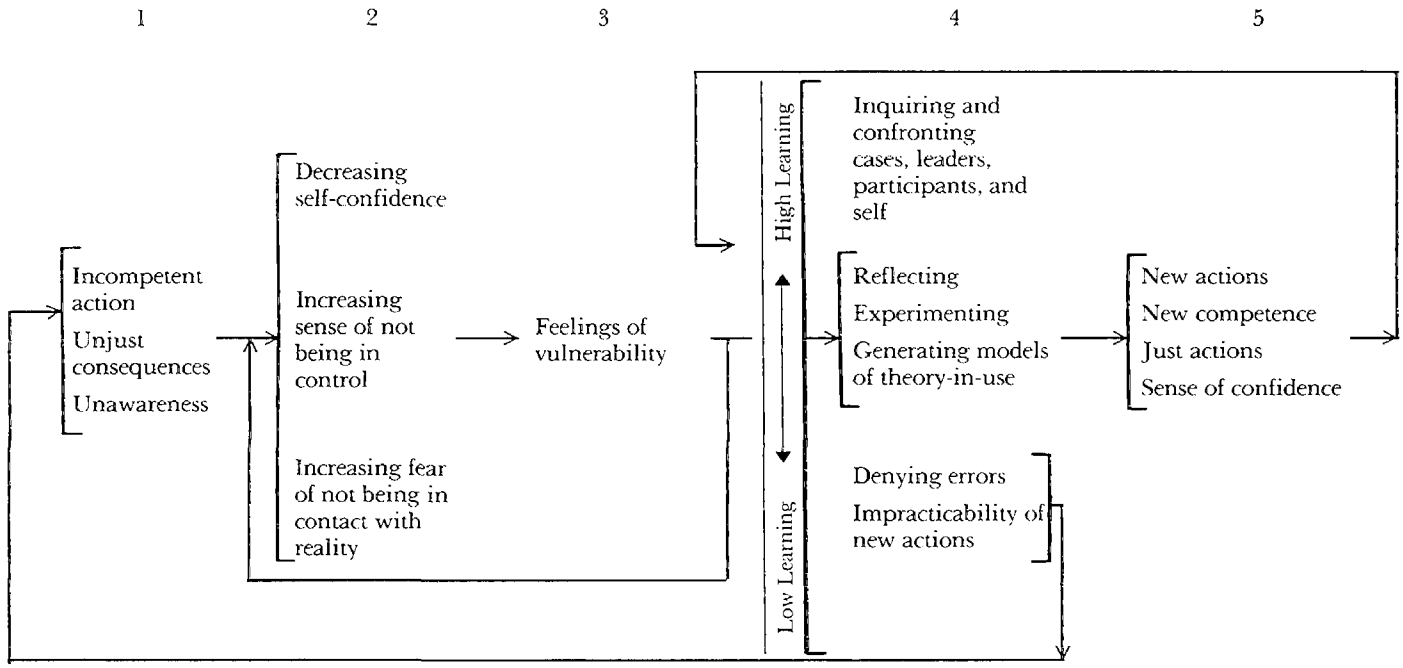
we will describe this research project because in so doing we can serve a dual purpose. First, the project will help us see what is involved in learning and teaching the skills necessary to conduct an action science project. But second and equally important, it will permit us to describe the process by which action science seeks to enact a community of inquiry in a community of practice. Since this process is a complex one, involving the continual unfolding of new actions on the part of participant and instructor alike, we present an overview of the project in this introduction. In subsequent chapters we will dig more deeply into what this process of learning requires and involves.

Unfreezing

During the fall semester approximately sixty participants attended a weekly lecture class, and in the first three weeks they all went through what we call the initial unfreezing process. This process, typically initiated at the start of an action science project, interrupts participants' unawareness of their theory-in-use while testing the hypothesis that this theory-in-use is Model I. The notion of unfreezing was itself first developed by Lewin (1964), and it is predicated on the idea that existing theories or skills must be brought to awareness and unlearned before new ones can be learned. To achieve this, the interventionist first generates data that participants recognize as a valid sample of their behavior. This is accomplished by using the X-Y case described in the previous chapter. Participants are asked to make a diagnosis of Y and then to role play how they would help him. Once these data are generated, the interventionist then makes and publicly tests a series of low-level inferences about the nature of participants' theories-in-use, inquiring into his responsibility for the results (see Argyris, 1982, for a full description of this phase).

As participants engaged in the unfreezing process, they became aware of their theories-in-use for the first time, and this triggered a range of reactions. In previous research a model was developed to describe this initial process and the reactions it elicits. Since it continues to represent well the earliest phase of the project, we include it here as Figure 7.

Figure 7. Unfreezing Process.



Source: Argyris, 1982.

As the model indicates, participants first become aware through their own evaluations that they are acting inconsistently and unfairly, but they remain unaware of what leads them to do so (column 1). As the process continues, their self-confidence begins to decrease, and they start to feel less in control of themselves and less in touch with reality (column 2), evoking feelings of vulnerability (column 3). Efforts to manage this vulnerability vary, depending on the individual and the actions of the interventionist (column 4). Some participants may act defensively but remain open to learning—for example, by confronting the interventionist while examining their own actions. Alternatively, other participants may act in ways that inhibit learning, rejecting efforts to examine their own errors or holding others responsible for them. Notice that, as the feedback loops indicate, those who actively inquire into and reflect on their actions tend to get glimmers of new actions and to feel increased competence, as well as a new sense of confidence. In contrast, those who avoid such moves and resist looking at their errors tend to reinforce their present actions and their unawareness.

After these first three weeks of the unfreezing process, participants joined smaller discussion sections with ten to fifteen students in addition to attending the larger lecture class. At this point the focus shifted somewhat. Once aware that they had been unaware of their theories-in-use, participants now became intent on discovering and mapping out these tacit theories. The remainder of the fall seminar was thus devoted mainly, but not exclusively, to helping participants develop skills of reflection, so that they might become increasingly aware of their existing theories-in-use. For the most part the media used for this purpose were participant-generated cases and transcripts of seminar interactions. The cases were usually what we called "button-pushing" cases, that is, descriptions of actual dialogue and unspoken reactions in situations that were difficult or threatening and that thus triggered the case writer's most automatic responses. These then became the subject of inquiry in both discussion sections and lecture classes, and participants tried to help the case writer to reflect on the problems in the case and to generate alternatives. While the group did this, the

interventionist consulted to the group on how well it was doing, and the group consulted to the interventionist on how well he or she was doing. The sources of reflection were thus multiple: the written case, participants' efforts to help the case writer, the interventionist's efforts to help the participants, and their efforts to help the interventionist be of help. It should not be difficult to imagine how complex and at times confusing this reflective hall of mirrors became.

Learning a New Theory-in-Use

A smaller group of participants enrolled for the spring semester. The selection process for this seminar was twofold. First, participants interested in continuing stated their interest. Following that, the top twenty students from this group, judged by grades received during the previous semester, were accepted. Of the twenty students selected, eighteen chose to attend and stayed for the entire semester. While this second semester built on and continued the previous semester's learning, in several respects the transition between semesters was not continuous. The senior interventionist, who had conducted the lecture class but not a smaller section, was now the senior instructor of the smaller seminar. Participants did not know the senior instructor as well as they had known their previous section leaders and were therefore confronted with forming a new relationship with a new small-group leader. In addition, participants from the different small groups came together to form what in many respects was a new group composed of individuals who did not all know one another. But the use of cases and transcripts and the process of reflective experimentation remained the staples of learning.

Only now the stakes were higher. Increasingly, participants took as their goals the learning of a new theory-in-use and the competence to manage the learning process on their own. While participants held these goals from the outset, the interventionists initially tried to calibrate such aspirations, since participants had to first develop an awareness of their existing theories and a competence in reflecting on them. But by this second

semester, it became more realistic for participants to work toward consistently enacting new rules and eventually stringing them together in sequences that could yield new consequences. As aspirations were raised, new impediments to them were also uncovered. Basic assumptions or frames about what it meant and took to learn new skills and manage the learning process became more evident, and a process of reframing the learning process gradually began to emerge.

As the year unfolded, most participants evidenced a greater ability to use these new rules and to manage their own learning, both by their own evaluation and that of the instructors. More and more often the puzzles that their actions generated became a source of curiosity rather than anxiety; they evidenced a greater willingness to explore their own and others' defenses; and they began to take a stance toward those they helped that allowed them to critique the others' actions while maintaining a sense of empathy for the dilemmas they experienced. Along with this and reinforcing it, participants also developed a greater conceptual and tacit understanding of the rules and values embedded in a Model II theory-in-use. They could now enact a wider range of rules; they had a better grasp of the conditions under which certain rules should be applied; and they could more readily identify and interrupt on-line the use of problematic rules.

What follows in the subsequent chapters is a description of this year-long seminar and the learning that occurred in the course of it. Because action science skills are required to teach these skills, the seminar provides the opportunity to see such skills in action and to consider what it takes to learn them. Most important, it gives a window onto the process by which action science seeks to enact a community of inquiry in a community of practice, the obstacles that must be negotiated, and the ways in which instructor and participant alike try to do this. We therefore begin our discussion of the seminar as the action scientist and the participant emerge from the unfreezing process, and we describe the dilemmas they both must contend with if learning is to go forward (Chapter Nine). We then describe the way in which the interventionist seeks to establish a context

conducive to reflective experimentation in light of the dilemmas described in the previous chapter (Chapter Ten). We then describe the process by which individuals learn the rules for action science as they redesign their theories-in-use (Chapter Eleven). Finally, we show how the interventionist seeks to break the frames that inhibit experimentation in action and how he helps participants to experiment with new frames (Chapter Twelve).

9

Engaging the Learning Process

Learning any new skill is necessarily fraught with dilemmas. It depends on practice, but the learner cannot practice what she does not yet know. The intent is to develop competence, but initially the learner faces repeated failure. The goal is to add to one's present skills, but at times these may get in the way of learning new ones and may need to be interrupted. So while the aim is to become more skillful, at first the learner becomes less so: She must slow down what was quick, pay attention to what was automatic, and make awkward what was smooth.

Learning to skillfully enact the rules of action science is no exception, yet it is complicated still further by participants' unawareness. As they enter the unfreezing process, they assume they hold one set of skills when they actually hold another; they are unaware of this gap; and, once aware, they still do not recognize what it will take to fill it in or that the skills that they are now using are inadequate. As one student reflected (Higgins, 1985): "I had entered the class with this theory of learning: If I read the required books and listen to all lectures and section discussions, I will learn the skills that will make me a better practi-

tioner. Put more succinctly, by reading and listening, I'll learn. This theory informed my behavior which was to read and listen, but not participate. I felt comfortable with this learning strategy, as it had worked well in past learning situations—or so I thought." To learn the skills of action science, it is not sufficient to just read and listen. It is necessary to act and to reflect publicly on that action in order to discover existing theories-in-use and to experiment with new ones. Yet this entails risk and discomfort. It requires that participants design learning experiments that will yield unexpected failures. As this becomes more and more evident, a bind arises. As the same student again reflected, "I felt very uncomfortable and reluctant to carry out the behaviors designed to expand and deepen learning. It meant moving out of my silent comfortable niche and plunging into vulnerability, insecurity, and self-doubt. [But] I could see that without risks, I wouldn't learn much." If participants are to learn the rules of action science, they must learn how to work through such learning dilemmas. This chapter describes the nature of these dilemmas, what leads to them, and how they can be either reinforced or renegotiated in the service of learning.

Orientations Toward Learning

Throughout the learning process, participants want to simultaneously move in two different directions. On the one hand, they want to discover their theories-in-use so they can learn; while on the other hand, they want to cover them up so they can protect themselves from the pain and vulnerability that learning involves. This finding is not unique to our work. Such ambivalence seems to be generic to all growth and learning that is central to one's sense of self (Diamond, 1983; Sullivan, 1953). But we have found that *how* individuals manage this ambivalence is critical. Some participants take a protective stance. They approach the learning process afraid to make mistakes for fear of appearing foolish or stupid; they shy away from experimentation and withdraw in the face of reflection; and they resent those who appear to be learning and blame

them for their own experience of failure. Others take a different stance. They approach learning with some of the same fears but also with the confidence that the way through these fears is to jump in, to make mistakes, and to reflect on them; they embrace experimentation and grow excited over the possibilities for reflection; and they appreciate their peers' contributions and mistakes, seeking to learn from them.

What follows is a map that describes these two orientations and their implications for working through dilemmas of learning. As the map shows (see Figure 8), these orientations are conceptualized along a continuum to emphasize that individuals actually draw from aspects of both orientations. At the same time, we have found that early in the seminar individuals tend to draw most heavily on the understandings and rules embedded in a more protective orientation. It is not until they become aware of its limits that they begin to experiment with those characteristic of a more reflective orientation. As this suggests, in the course of learning individuals can and do renegotiate how they engage in the learning process, traveling up the continuum from a protective to a reflective orientation. Subsequent chapters describe what the instructors do to stimulate this movement, while this chapter maps out the understandings and strategies that make up the two orientations.

This map begins where participants begin: with the conditions they all must face as they engage in the learning process (column 1). It then goes on to distinguish between the ways in which individuals with each orientation frame and experience this process (columns 2 and 3), the learning strategies and dilemmas that the two orientations evoke (columns 4, 5, and 6), and the consequences that they each yield for the learning context (column 7).

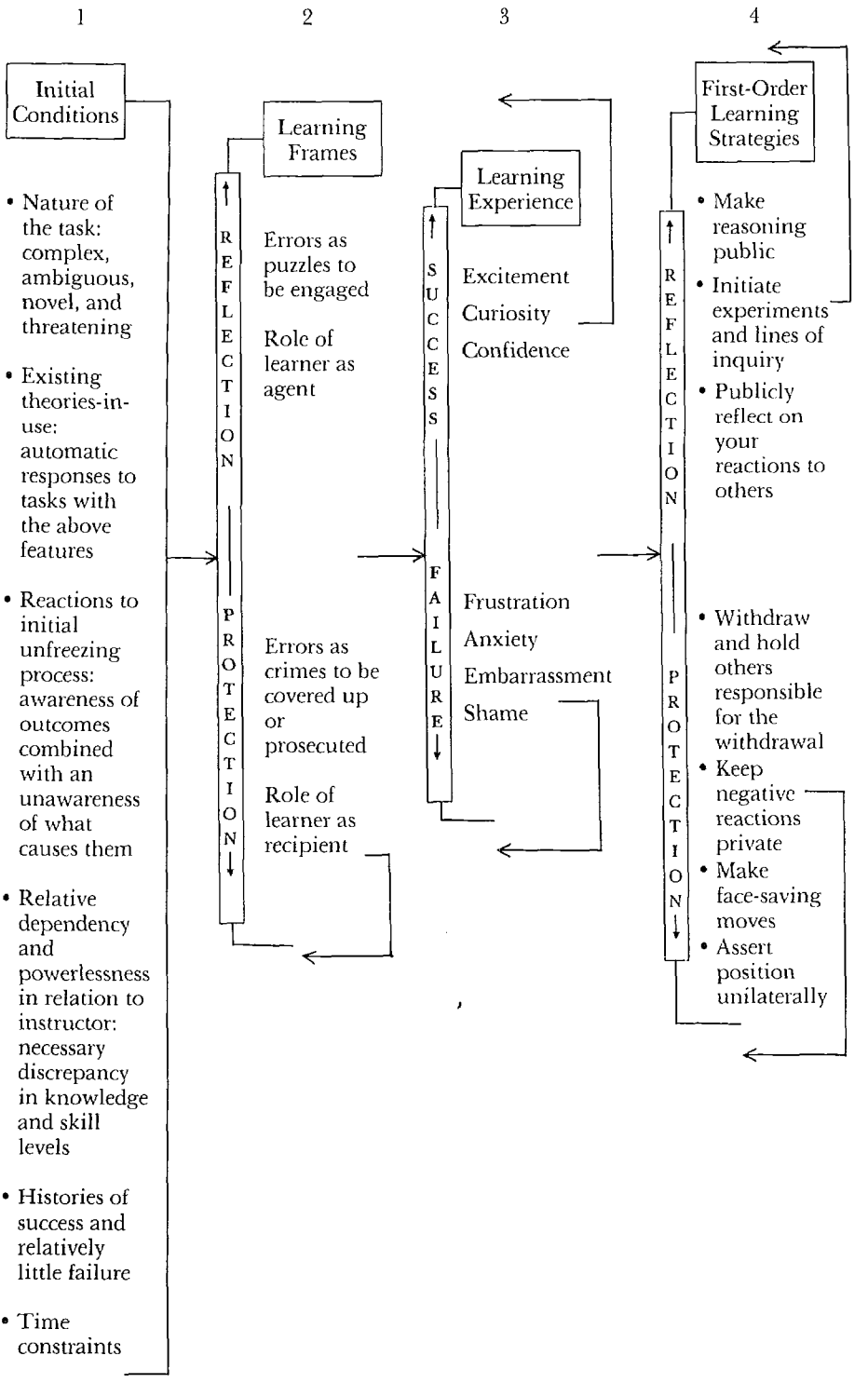
Initial Conditions (Column 1). The tasks that individuals face in life are a key source of uncertainty and anxiety, since they place requirements on us that we fear we cannot meet (Hirschhorn, 1982). The more complex, novel, and ambiguous the task, the higher the demands and the greater our uncertainty over whether or not we can accomplish it. Each of these features characterizes the task of learning a new theory-in-use.

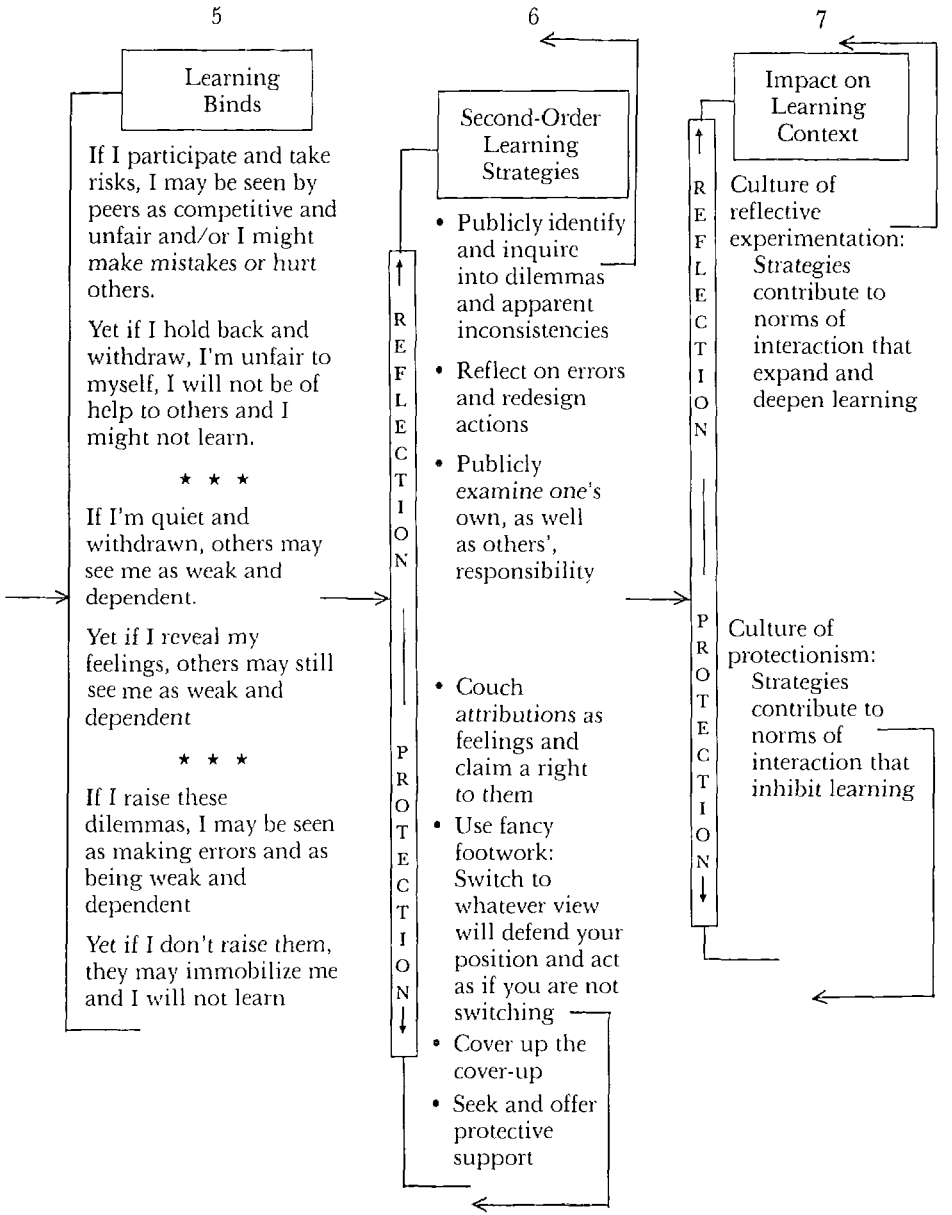
First, the task is complex in several respects. The theories-in-use that individuals wish to learn include a multitude of rules, some nested within others and each with its own range of usefulness. Some of these rules may conflict, and all of them are aimed at satisfying a different set of purposes that those participants follow. Moreover, processes of reflection are themselves the object of reflection, which in turn can become the object of reflection and so on, making the layers of reflective discussion multiple, complicated, and at times even circuitous. Finally, the web of reasoning that gets unraveled in action and examined in reflection is characterized by intricate and elaborate strands of logic, difficult to trace or to distinguish from one another.

Second, the task is at once novel and ambiguous. No clear criteria exist to specify what constitutes a mistake, and no definitive end point exists. Instead we speak of approximating new values, when these are themselves novel and ambiguous. Few individuals evidence them in action, and they cannot be observed directly but must be inferred from action, a process that is itself ambiguous. What's more, no single or explicit way of acquiring these new values or skills exists. There are multiple paths, and much of the knowledge about how to discover and negotiate them remains tacit.

These task-related features reinforce one another and multiply the risks of failure, posing clear and present dangers to individuals' self-esteem and bringing into play such defenses as withdrawal from the task, distortion of how well one is doing, the blaming of others, and so forth. Participants thus find that they must simultaneously contend with a threatening task and their own predisposition to undermine it. Compounding this, they have just emerged from the initial unfreezing process with a hybrid state of awareness. On the one hand, they are now aware of the outcomes that their actions yield, and they are committed to redesigning them. On the other hand, they remain unaware of what leads them to act as they do, and they are uncertain about whether or not they want to find out. This particular mixture of awareness of outcomes and unawareness of causes can raise the level of threat further: Individuals are no longer uncertain only about the task but are now uncertain

Figure 8. Dilemmas of Learning.




5
Learning Binds
If I participate and take risks, I may be seen by peers as competitive and unfair and/or I might make mistakes or hurt others.
Yet if I hold back and withdraw, I'm unfair to myself, I will not be of help to others and I might not learn.
* * *
If I'm quiet and withdrawn, others may see me as weak and dependent.
Yet if I reveal my feelings, others may still see me as weak and dependent
* * *
If I raise these dilemmas, I may be seen as making errors and as being weak and dependent
Yet if I don't raise them, they may immobilize me and I will not learn
6
Second-Order Learning Strategies
• Publicly identify and inquire into dilemmas and apparent inconsistencies
• Reflect on errors and redesign actions
• Publicly examine one's own, as well as others', responsibility
• Couch attributions as feelings and claim a right to them
• Use fancy footwork: Switch to whatever view will defend your position and act as if you are not switching
• Cover up the cover-up
• Seek and offer protective support
REFLECTION
PROTECTION
7
Impact on Learning Context
Culture of reflective experimentation: Strategies contribute to norms of interaction that expand and deepen learning
Culture of protectionism: Strategies contribute to norms of interaction that inhibit learning
REFLECTION
PROTECTION

about themselves as well. Because of this, they place themselves in a position of dependency on the interventionist, relying on what they perceive to be his or her ability to accurately predict outcomes, to offer compelling accounts of action, and to effortlessly enact alternative actions and consequences. But at the outset such mastery is a mystery, the mystery is a tough one to solve, and the participants' deductive powers are now suspect in their own minds.

Historically this particular group of participants had not experienced such threats of failure nor the need to depend to such a degree on another person. The majority of them had succeeded academically, and many had already begun successful professional careers. They were unaccustomed to discovering gaps in their skills that they could not fill in on their own. For some this provided a source of confidence in the face of failure, but for others the novelty made the hurdles only seem higher with little time to learn how to scale them, since the seminar would last only nine months. Participants knew that after this nine months, they would have to continue to develop their new expertise by themselves.

Early on these conditions are unavoidable. Everyone encounters them as they begin to engage in the learning process. They act as an interrelated set of factors that reinforce one another and that cannot be ignored. They are the "givens" in the problem of learning, and all participants must come to terms with them in some way.

Framing the Problem of Learning (Column 2). Even so, the way that participants come to terms with these conditions is not given. It involves choice, as tacit as such choice may be, and it begins with choosing how to frame the situation before them: what to pay attention to and what to ignore, how to name the facts they see, and how to organize these into a meaningful pattern (Schön, 1983). In this instance, participants must figure out what it means and takes to learn. In other words, they must frame the problem of learning. But in so doing, they do not start from scratch. Instead, as Schön (1983) writes, they begin to see the familiar in the unfamiliar: "When a practitioner makes sense of a situation he perceives to be unique, he *sees* it

as something already present in his repertoire. . . . The familiar situation functions as a precedent, or a metaphor, or—in Thomas Kuhn's phrase—an exemplar for the unfamiliar one" (p. 138).

Once in use, frames act as templets that we attempt to "fit over" situations in order to make sense of them (see Kelly, 1955, pp. 8-9). They serve to bracket off what is relevant, they give meaning to what we see, and they figure into our calculus of how to act. As Schön (1983) notes, "Seeing *this* situation as *that* one, one may also *do* in this situation *as* in that one" (p. 139). Schön (1979) uses the problem of urban slums to illustrate how this occurs. Urban slums might be framed either as blighted areas or as natural communities. But each frame implies different actions. "Blight" is a disease metaphor, and it suggests pockets of infection that should be cleaned out lest they infest healthy ones. In contrast, "natural communities" is a wildlife metaphor, and it suggests that urban slums should be preserved, protected, or helped.

Ordinarily such frames go unnoticed, so tacit and obvious is the reasoning behind them. But we have found that it is possible to bring them into awareness by interrupting interactions as they occur and directing individuals' attention to what they are doing, thinking, and feeling at the time (see Chapter Eight). From these data we can begin to reconstruct how individuals must have constructed the situations in which they acted.

As participants in the seminar reflected on how they engaged in the learning process, we began to gain access to how they were framing the problem of learning: both what it meant to make mistakes and how they were constructing their roles as learners. While these frames varied somewhat from person to person and from situation to situation, a gradual trend could be discerned over time, that is, participants tended to move from a protective framing to one more conducive to reflection and experimentation (see column 2).

- Role Frames. We already know that every participant encounters the same initial givens described in column 1: a complex and ambiguous task, existing theories-in-use that can hinder learning, dependence on instructors, and so on. But the way participants frame their roles as learners leads them to regard

and consequently manage these same givens quite differently. As the map illustrates, we conceptualize this variance along a reflection/protection continuum, depending on the frame's capacity to sustain the reflective inquiry necessary for learning. While these are continuous rather than discrete categories, persons who frame their role more as agents tend to regard the initial givens as formidable but alterable and to see themselves and their peers as responsible for working through them. Conversely, those who frame their role more as recipients tend to see these initial givens as outside their control and to assign responsibility for working through them to others.

We can see this distinction in the case of two participants whom we will call Lee and Carol. The two of them construct qualitatively different problems and solutions out of the same initial givens. The first excerpt describes Lee's anger toward Carol, a reaction she expresses just after Carol has expressed anxiety about making errors:

Actual Dialogue	*Inferred Meaning*
Lee: I'd like to give you feedback, Carol. I have been angry at things you've said in previous weeks, because you were so involved in the process others didn't seem to matter. You were so eager to learn that it was blocking out other people. And I felt blocked out, angry, and jealous. I didn't say anything but I thought about it for two weeks.	I've been angry at you. You were so eager and involved that it prevents others from learning. I thought about this, but I chose to say nothing.

Shortly afterward Lee goes on to describe her reactions to the whole group:

Lee: I do resent the aggressiveness. I felt that at the be-	I resent the aggressiveness.

ginning of this course, people were competing and people were not hearing what people were saying and they were jumping in, and I didn't like that. So I agree and it would prevent one from speaking.

It prevents me from speaking.

Lee's reactions serve as clues to how she constructs her role and the situation before her. She starts out by saying that she sees her peers as competitive and aggressive: They are "jumping in" and "not hearing what people were saying." She then acts as if she assumes her perceptions to be true, and she builds on this assumption to take a third step: She attributes that her peers' aggressiveness prevents her from participating and presumably from learning. With the situation framed this way, she then chooses to keep silent for two weeks, she holds others responsible for her lack of participation, and she increasingly resents them for it. Finally when one of the more "aggressive" participants reveals her own vulnerabilities, Lee regards this as an opportunity to express her own reactions and does so.

The way Lee constructs this scenario—both how she understood it and how she acted in it—allows us to make out the role she frames for herself and the resulting problems she set out to solve. When Lee first saw her peers as competitive and aggressive, she faced a choice point; she might have understood and dealt with what she saw in any number of ways. She might have considered their actions mistakes and intervened in order to be of help. Alternatively, she might have focused on how their actions could hinder her learning, designing a move to prevent them from doing so. But the role that Lee framed for herself precluded her from acting in either of these ways. Such moves would require that she see herself as responsible for her learning, and Lee's actions and reactions suggest someone who regards herself as a passive recipient, someone who is "being blocked out" by others. With this role set, Lee is most apt to do what she in fact does do: withdraw at first and then, at a relatively safe moment, intervene to get others to create the

conditions that she believes she requires if she is to learn. The paradox is that this makes it more difficult for both her and others to learn. If her private attributions about her peers are right, they will not learn from them as long as they remain private; and if they are wrong, she is unlikely to discover it. Yet Lee acts as if she is unaware of these possibilities. It is as if while acting, her role leads her to focus only on what others are doing to constrain her, preventing her from seeing to what extent she may be designing her own constraints.

This is not to say that the conditions Lee and others are up against do not act as constraints. She and her peers do have only a limited amount of time, and they do compete for their fair share of air time, jumping in and jockeying for the floor. But during this same two-week period Carol regarded and managed these same conditions in ways that expanded and deepened her learning. Faced with the choice of whether or not to risk a role play, Carol spent a good deal of time privately designing an intervention but then decided to jump in and to test out her idea. Later on when a peer interrupted her as she was reflecting on her intervention, she said that she had not finished and defended her request for a "fair share" of time. At a still later point, she became mystified by the differences in how her peers and the interventionist handled a particular case, and she expressed her puzzlement, initiating a series of questions aimed at decoding the tacit logic that informed the interventionist's actions.

This sequence of moves suggests that Carol framed a very different problem and role for herself in face of the same constraints. As with Lee, Carol had a series of choice points: whether or not to role play, whether or not to concede the floor, and whether or not to leave it up to the instructor to demystify the knowledge embedded in his actions. Although we do not have direct access to how Carol understands the situation before her, as we did with Lee, we might infer from her actions that she understood herself to be facing the following problems: how she might reduce the risks of a role play (she takes great care in designing it); how she might maintain the floor (she explains she's not finished); and how she might get at the differences between the instructor's theories and the participants' theories

(she goes after the instructor's reasoning in an attempt to understand how their actions ended up with different results). The overall problem that these questions suggest is, How can *I* create the conditions necessary for learning, a problem set that implies that Carol regarded herself as the agent of her own learning and personally responsible for it.

It is not unusual for participants to assume this role early on, but it poses a conflictual situation. On the one hand, it puts them in a better position to learn: Carol discovered new mistakes and helped to bring to the surface the logic in the interventionist's actions. On the other hand, however, the discovery of mistakes can generate embarrassment and anxiety. Initially participants manage this conflict by oscillating between the two role frames, sustaining the role of agent for longer and longer periods of time and in the face of greater risks. But one of the key impediments to sustaining this role is a frame about errors that, to differing degrees, all participants bring to the learning process.

• Framing of errors. Errors are the raw material for any learning process. Curiously, this is a proposition that participants understand conceptually and advise others to follow but that virtually all of them discard in action. When participants discover errors, they act as if they believe that they are not only wrong but wrong for being wrong. We can see this in the following dialogue as a participant hesitates to role play and, when asked what stopped him, explains:

Actual Dialogue	*Inferred Meaning*
Participant: I know I won't be able to follow through, to make a complete intervention. And while I know that it's okay to just go part way, somehow I don't want to role play when I know I'll get stuck.	I recognize I will not be able to complete the intervention without making an error. I know this is okay. But when I know I am apt to make an error, I somehow do not want to act.

And in reflecting on her withdrawal in a different class, Carol communicates similar meanings:

Carol: It was just that the intervention had to be perfect. During the break I worked on it and talked to [one of the instructors] because I wanted it to be perfect enough that I wouldn't be totally embarrassed. Basically, I just didn't want to appear stupid.	I wanted the intervention to contain no errors. If it has too many errors, I will be totally embarrassed. If I made errors, I thought I would look stupid.

Such responses are typical. There is essentially no variance at the outset in how individuals frame mistakes; they simply regard them as wrong to make. We see this frame in use in the preceding dialogue as participants try to make sense of their own errors or potential errors. Errors are considered taboo, and the possibility of making one is sufficient to stop them in their tracks. Elsewhere this same frame operates as individuals react to others' mistakes, either growing angry at them for making the mistakes or rescuing them from owning up to them. This frame thus acts as the premise to the conclusion that errors should be either covered up or punished.

An alternative frame regards mistakes as puzzles to be engaged and solved, thereby making them opportunities for learning. A seminar graduate illustrates the reasoning that constitutes this frame, as he reflects on the errors he made during a meeting with colleagues:

Actual Dialogue	*Inferred Meaning*
Graduate: It was pretty depressing, but then I realized it is also a superb opportunity for learning, because this incident is almost an exact replay of an incident I never really resolved.	It was depressing at first, but then I realized it was an opportunity to learn.

In the same piece he then goes on to unravel what led to this pattern, and afterward he described that he was left with the following reaction:

Graduate: Ironically, I find all of this hopeful . . . because I know sooner or later, I will find myself in a similar situation and will not have to frame it in the same way. There is a way out of the dilemma.	What I have learned from error gives me hope. In reframing the situation, I have discovered a way out of the dilemma.

Seeing his errors as a kind of puzzle enabled this participant to dig into the pattern he had discovered, to pursue the question of what led him to "replay" such patterns, and to experiment on paper with different ways out of the dilemma he saw. What he learned ended up transforming his initial feelings of depression into hope, as he came to experience a sense of success in diagnosing the source of his dilemma and to discover new ways of framing the situation.

Early in the seminar such frames are rarely evidenced in action, no matter how frequently they might be espoused. One reason for this may be that our earliest exemplars for learning predispose us to look at errors in a protective light. As Sullivan (1953) suggested, we learn to learn as children in ways that are associated with disapproval and anxiety, and we develop strategies of avoidance to protect ourselves from these reactions so that we can develop and grow (Diamond, 1983). In adulthood this early learning returns to roost, as the learning frames and strategies we developed in childhood begin to jeopardize the very growth and learning they were initially designed to ensure.

In our seminars participants start out afraid to make mistakes, and they draw back from the risks of experimentation and reflection in order to avoid a sense of failure. As a result, they end up reinforcing the very conditions they face: Dependence on the instructors is increased rather than diminished, the complexity of learning a new theory goes unmanaged, and the failure they wish to avoid becomes more likely. If learning is to

go forward, it is necessary for participants to reframe what it means to make mistakes and what it takes to learn.

Psychological Success and Failure (Column 3). In early work on aspiration levels, Lewin and others (1944) studied the process by which individuals set goals and the implications of this process for experiences of success and failure. As summarized by Argyris (1970), they found that an individual experiences a sense of success when:

- he is able to define his own goals;
- the goals are related to his central needs, abilities, and values;
- he defines the paths to these goals; and
- the achievement of the goals represents a realistic level of aspiration for him. A goal is realistic to the extent that its achievement represents a challenge or a risk that requires hitherto unused, untested abilities.

In addition, they found that a sense of success led individuals to stay at tasks and to incrementally raise the levels of the goals they set, while a sense of failure led individuals to lower their goals. Repeated failure led to diminished confidence, defensive attributions, and eventual withdrawal from the task (Hoppe, 1976; Lewin and others, 1944). Similarly, in our research we have found that a repeated sense of failure tends to trigger fears of more failure, to reinforce a protective framing of errors and one's role, and to increase self-doubt, embarrassment, and dependence on others. Conversely we have also found that a sense of success tends to spark interest and curiosity, feelings of mastery, and a sense of excitement over the possibilities for learning. These experiences thus act like a kind of motor that can either supply or cut off the impetus for inquiry.

If this is so, the question of what governs these experiences of success and failure becomes critical. According to Lewin and others (1944) and Hoppe (1976), success depends on individuals' setting their aspiration levels high but not outside the "boundary of their ability": If the level is too low, they will experience little mastery or success in surpassing it; if it is

too high, they will experience repeated failure. But how do individuals determine this boundary? Ordinarily they look to past performance. Yet this is precisely where participants run into difficulty. Their perception of their performance is likely to be quite different from their actual performance. They have been unaware of their theories, the outcomes they produce, and the actions they inform. They are thus apt to believe that they already have the new skills or that these skills will be relatively easy to learn. As a result, each time they discover that this is not the case, they experience a sense of failure, and they continue to do so until they set more realistic goals.

If this is so, how can participants discover what more realistic levels are? Usually the way to do this is to act, to receive feedback about how well one is doing, and to readjust levels in light of this feedback. Yet here too participants can get into difficulty. When they experience failure, these are often the very actions that are the most difficult to produce, since a sense of failure triggers fears of more failure, feelings of humiliation, and defensive attributions. Under these conditions, it is less likely that one will elicit the feedback necessary to readjust one's level of aspiration to a more realistic level.

So participants face a dilemma. To experience a sense of success, they need to set realistic levels of aspirations, yet they cannot do so as long as they automatically refuse to lower their sights in order to defend against feelings of failure. One way to manage this dilemma takes us back to how participants frame errors. To the extent that individuals consider it wrong to be wrong, they will aspire to avoid errors. As one participant put it, she wanted her intervention to be perfect. From her vantage point errors were evidence of failure and were to be avoided and covered up, thereby making a realistic assessment of abilities unlikely. But what if discovering errors was regarded as evidence of success? This reformulation transforms notions of success and failure in a way that enables participants to reflect on their errors.

What this analysis suggests is that the way individuals frame and experience the task before them is highly interactive. A protective framing of errors tends to make it difficult to set

realistic levels of aspiration, which in turn results in experiences of failure, which then reinforce a protective framing of errors, and so on. Similarly, the way individuals frame their roles in order to avoid failure makes it impossible to create conditions for psychological success: As recipients, they do not define their own goals or the paths to those goals but leave it up to others. So, paradoxically, the very ways in which participants seek to protect themselves from failure create failure and keep a sense of success out of reach. Alternatively, more reflective frames enable individuals to more accurately reflect on and assess their abilities, thereby increasing experiences of success. Using these frames, they can make their aspirations more realistic and acquire an increasing ability to see themselves more accurately.

First-Order Learning Strategies (Column 4). It is through acting that we can probe, understand, and change existing theories, yet some actions can sustain this inquiry better than others. It is on this basis that we distinguish between protective action strategies and reflective action strategies in the map. A second distinction is between first-order strategies and second-order strategies, a distinction meant to recognize that, once we act, we draw on backup strategies to manage the new situation that our initial actions created. The actions that constitute these first- and second-order strategies may overlap or vary from person to person or from situation to situation. One person's second-order strategy may become another's first-order strategy. What is important is not the particular action but the function of the strategy, with second-order strategies providing the opportunity either to reinforce or to reflect on our first-order strategies and the situations they yield.

Protective strategies flow from a protective framing of errors and the role of learner as recipient, each of them decreasing the vulnerability of the actor and thereby impeding the path of inquiry. Here we focus on four of the most prevalent strategies: (1) withdraw and hold others responsible for withdrawing, (2) keep reactions private, (3) make face-saving moves, and (4) assert reactions unilaterally.

1. Withdraw and hold others responsible for withdraw-

ing. This strategy is often evoked to avoid mistakes and the embarrassment that they generate. The participant who backed off from role playing in this chapter and those in the passivity experiment who drew back from participating (Chapter Four) illustrate how individuals either withdraw and say little or wait until others make mistakes before risking mistakes of their own. The logic behind this strategy is that by withdrawing, one avoids errors. But because this strategy renders experimentation and practice impossible, it is itself a kind of error. It prevents individuals from discovering the success that can be experienced in detecting errors and makes it easier to distort what one can and cannot do. Actors can privately hang on to the belief that if they only had the chance to participate, they would not make the same errors as their peers. As a result, aspiration levels remain unrealistically high, which in turn increases the potential for a sense of failure. At the same time, the strategy cannot create a sense of success. Instead, it increasingly generates feelings of guilt, as actors grow angry at themselves for violating their own principles of openness and their own wish to learn. To defend against these feelings, actors soon begin to blame others for their withdrawal, as we saw Lee do earlier. It is at this point that the strategy seals itself, and eventually its logic paints the actor into a corner. With their own standards unattainable and errors taboo, individuals come to feel and act as if they were immobilized, unable to take a step without experiencing a sense of failure or humiliation.

2. Keep negative reactions private. Ordinarily reactions that are kept private consist of negative feelings and defensive attributions that serve to legitimate one's actions and take on an assumed-to-be-true nature that in turn lays the basis for further reasoning and action. Recall Lee's feelings of resentment and her attribution that others' competitiveness prevented her from participating. Such reactions appealed to an ideology of noncompetitiveness and served to legitimate her remaining quiet in a way that made it bearable. Secure in her perceptions, she then acted on them as if they were true without testing them or raising them as a subject for inquiry.

Predictably, those who withdraw use Lee's strategy, but

more verbal participants use it as well, systematically censoring any negative emotional reactions or attributions made about themselves and others. In the passivity experiment in Chapter Four we discovered that both quiet and verbal participants had censored their reactions the previous week. As a result the group lost access to how its members saw and experienced the learning process, and they could no longer learn about the difficulties people faced.

3. Make face-saving moves. Since participants regard errors as taboo, they usually anticipate that they may embarrass or upset someone should they point out his mistakes. They thus try to mitigate the impact of doing so by making different face-saving moves (Goffman, 1967; Brown and Levinson, 1978). One such move is to criticize themselves while simultaneously criticizing someone else. This way they communicate that while they see problems in what the other is doing, they themselves are no better, thereby avoiding the possibility of also one-upping the other. The problem is that this approach can lead the recipient to think, "So why is he talking? He's got the same problem" —a thought recipients then keep to themselves in order to save the actor's face.

A second face-saving move is to couch criticisms in a shroud of ambiguity or to ease out of them altogether. An actor might say, "I'm just curious, but I think you and I may be sort of missing each other slightly--but then it may just be me." The actor in this excerpt is disagreeing with the other's view, but there are so many qualifiers that it becomes quite ambiguous: "I'm just curious," "sort of missing each other," and "it may just be me." As Goffman described the actor using such strategies: "He employs circumlocutions and deceptions, phrasing his replies with careful ambiguity so that other's face is preserved even if their welfare is not" (1967, pp. 16-17).

As these examples suggest, face-saving moves carry with them multiple messages. Because they are informed by rules of polite discourse, because such rules are shared, and because we know that they are shared and that everyone else knows it too, it communicates that we wish the other would not get upset, that he would follow the same rules of politeness, and that he

would be a good sport and help out in averting an embarrassing moment. This multiple message serves to put the recipient in a bind. On the one hand, he may want to be a good sport; while on the other hand, he may be perplexed by the critique or even see it as inaccurate and unfair, but feel he will violate the rules in saying so. To manage this bind, he may begin to draw on the same face-saving strategies himself, making it even harder to get at what has led to the critique in the first place. A second message is embedded in the rule's purpose. Because face saving is designed to mitigate the impact of a criticism and we all know that that is the intention, it may communicate that the error is so bad or the recipient so brittle that the criticism must be served up carefully. Although enacted to support the recipient, the rule can therefore end up adding insult to anticipated injury and make it difficult to learn of one's mistakes.

4. Assert your position unilaterally. This strategy involves making views public but doing so in a way that minimizes one's vulnerability, often by stating them at high levels of inference while acting as if they are concrete and obvious. To illustrate, we give a collage of statements made by one participant, Paul, to a consultant who had just brought a case to class for help:

> "I found myself frustrated by your approach."
> "I felt it was demeaning of her."
> "You communicated she needed to be made okay."
> "You elicited her first statement from her" [*quotes statement*].
> "I have a very strong reaction to her statement."
> "You let it evolve."
> "You guided it."

Unlike the views described so far, Paul's are public and direct. But he keeps them at a high level of inference, making attributions such as "it was demeaning" and "you guided it." At no point does he include the data of what the consultant did so that she might offer an alternative explanation for her actions or point out gaps in his reasoning. Moreover, he does not

put his views forth as if they are inferences, but as if they are obvious and concrete. He acts as if he assumes them to be true. He invites no inquiry into them, and he uses them as the basis for both his intervention and his feelings, saying that he is "frustrated" and had a "very strong reaction." It is in this sense that we think of the strategy as protective. By regarding his views as facts and not inviting inquiry into them, he makes himself less vulnerable. Nevertheless it is also true that Paul's strategy makes him more vulnerable than the strategies of withdrawal and self-censorship would. At least we know his reaction; that is a start. From here we might ask that he illustrate his views, we might point out that others could see the situation differently, and we might inquire into what leads him to be frustrated with another's mistake. With more passive variants of protection, it is more difficult to initiate such processes.

To summarize, protective strategies, particularly the more passive variants, feed back to reinforce the initial conditions participants face: First, the less vulnerable they make their reasoning, the less likely it is that participants can become aware of and redesign their existing theories-in-use; and, second, the longer this is the case, the longer it will take to close the gap in competence and control between instructor and participant. Similarly, the strategies serve to reinforce a protective framing of errors and the role of learner: First, the less experimentation and experience with errors, the less likely it is that one will reframe what it means to make them; and, second, the less one takes responsibility and initiative, the less responsibility and commitment one will feel for the learning process. Finally, the strategies make it unlikely that aspiration levels can be revised or a sense of success experienced, so that avoidance of failure is bought at the price of experiencing no success. Over time the pressures to perform mount, errors remain untenable, goals stay unattainable, and time becomes scarcer. Eventually, efforts to avoid a sense of failure escalate these very feelings and people come to feel immobilized and hopeless.

In contrast, reflective strategies stem from the role of learner as agent. They involve greater risk taking than protective strategies in that they are characterized by a high degree of ini-

tiative coupled with a greater degree of vulnerability. Here we look at three such strategies: (1) make reasoning public, (2) initiate experiments and lines of inquiry, and (3) publicly reflect on reactions to others.

1. Make reasoning public. This strategy involves bringing one's views to the surface, while recognizing and trying to make explicit the inferential steps that led to them. Although this reasoning may contain gaps and inconsistencies, this strategy puts participants in a better position to discover and probe them. For instance, when one participant, Vince, thought that the interventionist had interrupted someone, he intervened, first describing what had occurred and then saying that this led him to "infer" that the interventionist had "stopped" her from finishing. Unlike more protective strategies, these moves made Vince vulnerable. By providing the data on which his inferences were based, he not only made his view public but also made it easier to disconfirm. And by admitting that his conclusion was an inference, not a fact, he recognized and communicated that he might be wrong, that other views might better account for the data, or that the data themselves might be incomplete. As it turned out, the interventionist cited data that Vince had missed, offering an alternative interpretation to account for these new data. But it was because he illustrated his view that the group was able to discover that Vince had overlooked data when framing the situation. And once having discovered this, the group was then able to explore whether Vince's omission was systematic, hypothesizing for the first time that Vince and others might be predisposed to frame the actions of people in positions of power in a particular light and to then selectively attend to those data that fit that frame.

This strategy of making one's reasoning public is often adopted by participants as they emerge from the unfreezing process. At that time they recognize that their theories-in-use lead them to make inferences at high levels of abstraction, to disconnect these from the data of what occurred, and to be so skillful at both that they lose sight of the inferential nature of the process, regarding their views as facts on which to act or to build further inferences. Once aware of all this, many try to

slow the process down, begin to differentiate between fact and inference, and start to provide the data that led to their views. But such a process is not a purely cognitive one. It is not just a matter of slowing down, retracing steps, and retrieving data. At a conceptual level most participants recognize the importance of making their reasoning public right away, but it usually takes a longer period of time to skillfully and consistently produce it. One reason for this is that it is difficult to interrupt and slow down what is highly automatic behavior. But another reason is that this strategy brings to awareness important gaps in how participants understand and take action in the world. While such discoveries offer opportunities for learning, they can disrupt participants' confidence in their ability to make their way in the world. Vince's strategy put him in a position where he not only discovered an error in this particular instance but a frame about persons in positions of power that predisposed him to make such errors. The strategy thus requires more than the cognitive skills of retracing one's inferential steps and of retrieving data. It requires being able to risk being wrong.

2. Initiate experiments and lines of inquiry. Earlier when we considered the two role frames constructed by participants, we described how one role frame emphasized taking responsibility for designing and creating opportunities for learning (column 2). Here we take a look at one of the action strategies that logically follows from such a frame: the initiating of experiments and lines of inquiry. To illustrate, consider an impromptu experiment initiated by several participants in order to figure out how to help their peers take more responsibility. It began when a few participants held others responsible for the physical and psychological space they experienced in the seminar. As one person put it, she felt the group was "keeping them out." In response to this problem, four approaches or strategies were put forth as a way to solve it, and each one was tried out and became the object of reflection.

The first approach was suggested by Paul. He said that he could see how people might feel cut out but that he wanted to trust that they could take care of themselves. He ended by "inviting" them to jump in. We might call such a strategy: "Affirm

the other's reactions but invite them to take responsibility for them." This strategy thus asks participants to act differently (to take more responsibility), but it empathizes with rather than confronts their passivity.

One participant, Lee, responded to this by repeating the assertion she had made previously: It was the competitiveness of her peers that prevented her from participating. The instructor then put forth a second strategy that differed from Paul's: "Confront the student's passivity by pointing out its consequences for her." In enacting this strategy, the instructor first noted that Lee's assertions were untested and that others might not confirm them. He then added that as long as she left it up to others to provide the space she required, she would have trouble in life. With some flair, he then ended by saying: "If I went into every meeting wondering how they felt about me, I think I could be as immobilized as Lee is." In response, several people winced; Lee said she felt nailed.

Building on these reactions, another participant, George, predicted that the instructor's approach could backfire. He thought it might make people withdraw more for fear of ridicule. He thus suggested yet a third strategy: "Confront passive actions without singling out any one individual." He then tested out his suggestion by roleplaying, "If I worried about what everyone said, I'd be immobilized." This new approach then led the instructor to reflect back on the reasoning that had led him to intervene as he had. Afterward Paul came back in to suggest yet a fourth approach: If the instructor had stated in his intervention the reasoning he had just made public, would that have been more useful?

We now have four competing approaches on the table. Or put as the students might frame it, we have three approaches put forth as alternatives to what the group ended up calling the instructor's "zap" approach with Lee. The inquiry from here led to some paradoxical findings. On the one hand, several people winced and felt a "sinking feeling" in response to this approach; yet on the other hand, these same people said that they immediately wanted to go back and listen to the tape and that they would think about it for a while—that what the instructor

said would stay with them. The other approaches, while warmer and in some sense even more accurate, did not stimulate the same defensiveness nor the same impetus for further inquiry.

Without doubt such experimentation does not approximate the control and precision of the laboratory. But what it does do is sustain a process by which people can dig into different possibilities and consider their consequences, breaking new ground by asking—"What if we did this?" and "What about that?"—and then stepping back to see what they've got and where it may lead. In this experiment the group asked: "What did we get?" "Is it what we intended?" "Do we like what we got?" As Schön (1983) explains and as we have noted previously, such experiments involve the testing of different moves and either affirming or negating them depending on the results they produce. Equally important, this experimentation was designed by participants to take the inquiry in directions that were important to them. Without their initiative in designing such tests, learning would have been limited to an examination of one alternative on the terms of the one advocating it. Strategies that initiate these kinds of experiments thus expand the domain of inquiry and keep it moving in directions determined by instructor and participants alike.

A second variant of this strategy involves initiating lines of inquiry into different actions to tease out the web of reasoning embedded in them. We described earlier how Carol did this by asking a series of questions that helped to uncover the tacit reasoning informing the instructor's moves. Elsewhere participants probed one another's actions, trying to solve the same mystery on the basis of the same clues, namely, the actions they observed. In either case this strategy helped them to get at the way actors made sense of the situations before them, at the rules they followed, and at the purposes they pursued.

3. Publicly reflect on your reactions to others. Previously we saw how protective strategies involve either withholding one's reactions or asserting them unilaterally, while a more reflective strategy involved making one's reasoning public by retrieving the data that led to a particular view. However, while this latter strategy is one that people grasp early, they

may not be able to consistently produce it, particularly when they are upset. Participants may thus decide to simply remain quiet. An alternative to withdrawal, however, is to make one's reactions public but to regard them as a source of one's own learning, thereby making them the object of inquiry and inviting others to help solve the puzzle of what triggered them in the first place.

One participant, George, did this after he found himself getting angry when his role play with a participant-as-client (Mary) came to a halt and two of his peers intervened. Perplexed by his anger, he waded in:

Actual Dialogue	*Inferred Meaning*
George: I want to explore my angry reaction to feeling manipulated by my client, to see if others felt manipulated, and if so, if they felt angry.	I want to explore my reactions: Did others see the situation as I did? And if so, did they feel the same about it?
(And soon after): First, I was angry at Mary and then Dave and Paul came in. But why angry at Mary?	I found myself also getting angry at others. How come?

At this point his peers came in to help. As they went over what had happened, they found that others had also seen his "client" as manipulative but that not everyone had felt angry toward her, as George had. It was this observation in part that led the group to hypothesize that it may not have been his client's defenses, but perhaps his own inability to deal with them, that triggered his reactions. If he had been able to deal more effectively with her defenses, perhaps he would not have responded as angrily. It may be that her defenses served to reveal upsetting gaps in his skills, thus triggering his own defenses.

George's attempt to reflect on his own reactions put him in the role of a client, and his reactions became the data to be explained. This is quite different from what we saw in the case of the more protective strategies used by Paul and Lee, who simply assumed that their reactions told us more about others

than about themselves. This is not to say that George's reactions tell us nothing of use about his client. His client could learn from them that others might react to her defenses by either becoming angry and frustrated or by distancing themselves and withdrawing. But here George is the client, and he does not want to react this way toward others' defenses because he recognizes that such reactions could limit his ability to deal with his clients' defenses. As George came to see this, his learning became an exemplar for others. Other participants learned from his particular case and discovered a generalizable heuristic that they too could use: One's anger may say at least as much about one's own incompetence as about anyone else's, so examine the reasons for it first.

To summarize, reflective strategies make the actor vulnerable, emphasize his own responsibility for events, require him to take initiative, and contribute to and sustain learning in the group. While they do not require fundamentally new theories-in-use, they do put participants in a better position to learn them by reinforcing conditions conducive to learning and by eliminating those that thwart it. The more participants experimented and made their reasoning public, the more they became aware of the causal factors that led to the unexpected and often bewildering outcomes discovered during the unfreezing process. In the same vein, complexity became easier to manage, as these strategies provided a way to incrementally unravel it by reflecting on action and inferring the rules that inform it. And, finally, as the group mapped out more domains and tried out more alternatives, it began to develop what we call *hybrids*: skills that incrementally depart from existing theories and move toward new ones by combining features from both, thereby narrowing the gap in competence between instructor and participant.

These same strategies also helped the group to break out of the frames that can cut off the impetus for learning, while reinforcing those that fuel it. By making errors public, the strategies provided tests of the two competing frames about errors. To the extent that these experiments generated more learning than feelings of humiliation, they began to break the frame of errors that says it is wrong to be wrong and to affirm the frame that regards errors as the basis for further inquiry. And by influ-

encing the direction of inquiry, these strategies reinforced feelings of commitment, control, and responsibility toward the learning process in participants, thereby creating conditions conducive to a sense of success.

Learning Dilemmas (Column 5). As soon as participants begin to engage in the learning process through their actions, dilemmas come to life. Picture for a moment the well-intentioned learner. Right from the start his actions are confronted and explored as he is asked: What led you to do this? Can you say what prevented you from doing that? What is it that you were feeling or thinking? From the beginning, his actions yield puzzles and surprises as he discovers that what he intended is not what he produced, that what he wanted to avoid he created, and that what he believed others should not do, he himself did. And, finally, just when he is trying his best to be helpful, a peer with the same theory-in-use becomes defensive, attributes nasty motives to him, and says he is not only being unhelpful but unfair and hurtful. Through acting and reflecting on his actions, he soon comes to learn just how tenuous his previous grasp of reality was.

It is at this point that numerous dilemmas come to life. A more talkative and forthright participant experiences the following dilemma:

> "If I'm active and forthright, my more quiet peers see me as competitive and unfair."
> "Yet if I hold back, I begin to act passively, I'm unfair to myself, and I may not learn."

A quieter participant experiences a different but equally difficult dilemma:

> "If I'm quiet and withdrawn, others may see me as weak and dependent."
> "Yet if I reveal my feelings, they may still see me as weak and dependent."

And at one time or another, everyone felt caught in the dilemma of:

"If I participate, I may not contribute anything, I'm apt to make errors, and I might even hurt others, since I'm not yet skillful."

"Yet if I remain or become quiet, I still won't contribute anything, this itself is a kind of error, I won't help my peers, and I will never become skillful."

Compounding them all, each participant saw himself or herself in the bind of:

"If I raise these dilemmas, I trigger the ones noted earlier: It may not contribute anything, it may be seen as an error, and it will take up precious time."

"Yet if I don't raise them, they will immobilize me, so again I won't contribute anything and I won't learn."

These dilemmas are framed in the light of participants' existing theories-in-use and the frames embedded in them. It is their automatic response to errors and vulnerabilities that lead them to frame the dilemma as if they are damned if they do and damned if they don't. Even those who frame their roles as agents and thus take a more active stance may fear the results of taking risks. Since they are bound to make mistakes and since they look upon mistakes as taboo, they are stuck. If these dilemmas remain private and go unresolved, they can become immobilizing, as the last statement suggests. Yet as it also suggests, such dilemmas are as difficult to live with as they are to raise, leaving participants with the problem of how to manage them. And it is to strategies for managing them that we turn next.

Second-Order Action Strategies (Column 6). As noted earlier, second-order strategies help us to manage the situations our initial actions create. This means that any of the strategies described as first-order strategies may be used as second-order strategies, and vice versa. Once confronted, someone who has previously made her reasoning public may feel, "I tried being direct and got clobbered. I might as well withdraw." Conversely, someone who has been quiet may begin to see this as an error and decide to publicly reflect on her withdrawal. In plotting these second-order strategies, the map continues to distin-

guish between protective strategies and reflective strategies. Whereas the former reinforce first-order actions and impede the learning process, the latter reexamine first-order actions and keep the process of reflection moving (compare defense type A and B in Argyris, 1982).

Second-order protective strategies decrease the vulnerability of actors, thereby reducing the possibility for reflection on action. The four most typical strategies are to (1) couch attributions as feelings and claim a right to them; (2) use fancy footwork, that is, switch to whatever view will defend your position and act as if you are not switching; (3) cover up the cover-up; and (4) seek and offer rescuing moves.

1. Couch attributions as feelings and claim a right to them. In our culture, feelings are like sacred cows. It is as though it were against some eternal law to call them into question. Of course, when the sacred cow wanders into our own backyard, we may regret that this is so. Consider the following interchange as a case in point. It occurred as a group of counselors gave feedback to Mary:

Karen: I feel like you [Mary] haven't been really committed to the group. I feel like you have one foot in and one foot out, and I don't feel like you have exposed yourself here.	Karen makes a series of attributions. She frames them as feelings.
Jane: I disagree. I feel that Mary has taken lots of risks in this group.	Jane makes a different attribution. She too frames it as a feeling.
Karen: Well, but you can't disagree with my feelings.	Karen evokes the unspoken rule to defend her view.
Jane: Okay, I realize that's how you feel. I'm saying that I feel differently.	Jane recognizes the rule and evokes it to defend her view.

What is Mary to do? Two sacred cows in her backyard,

eyeball to eyeball, and neither one willing to budge an inch. Both Karen and Jane couch their attributions as feelings, claim a right to them, and evoke a rule that makes them off limits for disagreement or exploration. By agreeing to disagree this way, Jane and Karen feel civilized and sensitive. After all, they are both abiding by the same rule to respect the rights of others to their feelings. But Mary doesn't know why one person sees her one way and the other another way. Implicit in Karen's view is an evaluation that Mary has been uncommitted and a prescription to change. If this is an accurate analysis, it is important for Mary to learn it. If it is not an accurate analysis, it is important for Karen to become aware of that because she may be misreading Mary's actions and not know it. But given the way that Karen and Jane regard their reactions, they will not be able to get at this question. Their reactions act as barriers beyond which others cannot move in order to discover what led to them, because to do so would risk evoking the maxim that this invalidates one's feelings: "How can you question how I feel? They're *my* feelings. I have a right to them and they're valid." Of course, individuals do have a right to their reactions, but the question is whether the inferences embedded in them are accurate descriptions of others and whether individuals have a right to impose them as if they were. In this instance we do not know whether Karen and Jane's reactions tell us more about them or about Mary, and we are stymied by this strategy from finding out. Since Mary cannot just disregard their feedback, she is left puzzled and with no means of resolving her puzzlement.

But expressing one's reactions does not have to yield this predicament. In fact, we regard the ability to express and explore one's reactions as essential to learning. Yet it is necessary to express them in ways that trigger rather than close off a process of inquiry. George illustrated this earlier when he described his reactions toward his client and asked that they be explored. He thus acted as if he saw his feelings as important clues that might suggest possible lines of inquiry into how he understood and experienced the situation before him.

2. Use fancy footwork, that is, switch to whatever view will defend your position and act as if you are not switching. This strategy is the Muhammed Ali of the action strategy set.

As an individual inquires into one view, the actor switches to another; the individual begins to dig in there, and yet a third position emerges, sometimes contradicting the first, and so on. To illustrate, we turn to an instance in which Paul expressed concern that the class was restricting itself to an overly cognitive approach and that it should be open to more intuitive approaches. Others said they would be glad to look at any approach that he thought would be helpful but that they needed an example. Paul agreed to provide one by role playing with a "client" in one of the cases, and he described the approach he would create as "helping her get in touch with her feelings, so she will reduce her fears of losing control."

When Paul role played, he used an easing-in strategy. He asked a series of questions designed to lead his client to the insight that she feared losing control. His client responded by curtly answering his questions but did not express any feelings or fears of losing control. Afterward his "client" said that at first she felt that he was withholding something but that after a while, she gradually came to think he was simply confused and could easily be intimidated. Both responses suggested that he would not be able to develop the trust necessary for his client to experience or express the feelings he believed she needed to acknowledge. Certainly no data existed to suggest that she had reduced her fears of losing control or had gotten more in touch with her feelings. We might therefore conclude that the approach he was experimenting with was negated in that it failed to bring about the outcomes he had intended. Yet when his client and others pointed this out, Paul defended his approach by arguing: "How do you know my approach didn't work? I didn't say it was going to work immediately. At this point, we do not have conclusive evidence that she is either more or less effective because of my approach. It might take two weeks, or it might take six months." When others then noted that this made his approach untestable, he argued that ultimately it is not clear that you can test this kind of approach, because you cannot design an experiment with human beings as you can with bowling balls, and you cannot control for all the variables that might have emerged six months later.

When his peers gave their reactions, Paul switched his

position. He no longer was an advocate of less restrictive, intuitive approaches; just the opposite, he now defended his position by calling on the most restrictive, cognitive approach to knowledge in existence: traditional experimental methods. He thus made his own approach untestable in the name of rigorous standards of testing, when it was the nonrigorous, intuitive form of knowing that he wished to defend.

What this case also illustrates is the oscillation possible between reflective and protective strategies. When Paul began his intervention, he publicly questioned the norms of the course and designed an experiment to test out an alternative approach. As we saw before, such strategies can open up new domains of inquiry; and, because of this, we have referred to them as reflective strategies. But once these initial actions were questioned and confronted, Paul drew on a second-order strategy of protection that decreased his vulnerability. He used the view he opposed to defend the one he favored, this former view made his approach untestable, and he acted as if this were not the case. Since he cannot receive the "conclusive evidence" he required, his view would remain airtight and his approach protected.

3. Cover up the cover-up. Earlier we described two first-order strategies that involved covering up one's reactions: withdrawing and keeping one's reactions private. Both are designed to minimize errors, and both result from a protective frame of errors, unrealistic aspiration levels, and a resulting fear of failure and humiliation. As the learning process unfolded and individuals reflected on their strategies, they began to realize that these strategies were themselves a kind of error, that is, the protective moves restricted their own and others' learning. For some this realization helped provide the impetus to change, and they began to make their reactions public. For others, however, it just compounded the problem. These strategies themselves were now experienced as an embarrassing error to be concealed. It is as if the participants reasoned: "At first I was afraid of appearing stupid so I said nothing. Now I certainly can't say that I said nothing for fear of appearing stupid. I'd just feel more stupid than if I had simply spoken up and said something stupid in the first place!" This suggests that gaining insight into with-

drawal as a kind of error may not be sufficient to alter such behavior. If the actor continues to consider errors taboo, this insight may only serve to generate deeper fears and the impetus to cover up the cover-up. The dilemma is that this strategy makes it virtually impossible to ever break out of this frame of errors, because it precludes attempts to test whether in fact errors might be regarded differently.

4. Seek and give protective support. A strategy similar to the first-order one of saving face involves the seeking and giving of support in a way that reinforces protective responses. With face saving, we saw how individuals recruited others and were easily recruited into following rules that precluded disagreements or critical feedback. By means of this strategy both quiet and active participants cooperate in managing the dilemmas of their uneven participation and the failure and guilt feelings that they can trigger. But first recall the two dilemmas: Active participants feared being seen as competitive and unfair, yet did not want to withdraw for fear of not learning; while quiet participants feared being seen as weak, yet did not want to say this for fear of appearing even weaker. As we saw earlier, one way quiet participants managed this dilemma was to privately reason: "I could participate if I wanted to, but who wants to sink to their level—they're so competitive." Or: "If others weren't so competitive and stopped cutting me off, I would say more."

When quieter participants then made their attributions public, they expressed them in a way that made the following claim: Others ought to make room for me, make sure I can participate, and anticipate when I need them to slow down without my having to say so. Their more active counterparts, feeling guilty because of their own participation and afraid of alienating their peers, were only too glad to cooperate. Many did not need to be explicitly asked; their peers' strategy of withdrawal was sufficient. They willingly jumped in and took control of the process to ensure that their peers "got the chance" they claimed was theirs. Some lobbied for structures that would automatically give everyone a turn. Others closely monitored the flow of conversation, making statements such as, "You didn't get back to her question" and "Let's give X a chance to

speak." One person even began acting like a traffic cop, pointing silently to people who looked as though they were trying to enter the conversation and giving them the okay to proceed.

That last approach, however, led the quiet participants to become quite angry, since they saw this person's actions as condescending, patronizing, and controlling. It is as if they felt: "Come on, we're not kids! Don't tell us when to come in!" The verbal monitoring approach, in contrast, was usually welcomed. It was considered appropriately supportive and considerate. So why the difference? One possibility is that the verbal approach is more subtle than the other. The "traffic cop" approach includes a rather obvious insult along with the support it gives. It communicates that the "cop" sees his peers as helpless, and it makes no effort at mitigating the directives used to monitor the traffic of their actions. The verbal approach, however, abides by rules of politeness that mitigate any implicit insult in the directives and make them less noticeable (Garfinkel, 1967; Brown and Levinson, 1978). But the purpose and implications of the two approaches are the same. The persons using them intend to be supportive; both take control and responsibility for creating the chances for participation; both therefore must assume that their peers are unable to do so; and neither helps their peers to develop this ability on their own. Whether subtle or direct, both monitoring moves thus serve to reinforce their peers' dependence, need for protection, and fears of appearing weak, creating conditions more conducive to a sense of failure than of success. In fact, the paradox is that the more subtle approach may be just as problematic as the more direct one but even more difficult to manage: How can you criticize or fault someone for simply being supportive?

In this particular student culture it can be terribly hard to do that. Counselors and consultants share an ideology of support that itself is almost impenetrable. Put most simply it goes something like this:

- People feel vulnerable in the face of errors, and this vulnerability can trigger protective responses that hinder learning;
- therefore, in order to create conditions conducive to learning, we must create conditions of safety and trust;

- in order to create conditions of safety and trust, we should be "supportive";
- and in order to produce support, we should emphasize the positive, minimize criticism, and unilaterally see that the other's needs are met.

The problem with this ideology is that to question or criticize it is to violate it, since it requires uncritical acceptance. This is not to say that this ideology has no merit. In fact, our own research confirms three of the propositions embedded in it: People do feel vulnerable in the face of errors, these feelings can trigger protective responses, and conditions of safety and trust are conducive to learning. But our research has a different answer to the question of what creates conditions of safety and trust and what constitutes the kind of support that can produce them. Our theory and data suggest that notions of support that emphasize praise and minimize criticism can actually undermine trust. To illustrate this seeming contradiction by way of parody, imagine someone saying to a group: "I propose that the way to build trust and safety in this group is to withhold our negative reactions to each other and to act as if we were not withholding them, and to amplify our positive reactions to each other and to act as if we were not amplifying them."

Were someone actually to say this, the strategy would obviously backfire. The person explicitly communicates that the feedback will be distorted and that it therefore cannot be trusted. Of course, no one would ever come right out and state the rules of the game so explicitly. But such ideologies or notions can only be enacted if we all know the rules and know that we all know them. The effect is thus the same, even if the rules go unspoken: The feedback cannot be fully trusted. An experiment in Chapter Twelve examines data on participants' reactions toward this form of support, and there we consider an alternative form intended to produce trust without simultaneously producing mistrust.

To summarize, these second-order strategies are designed to make the dilemmas of the learning process more livable: Supportive moves make more active participants feel less guilty and make less active participants feel reassured that they are not

seen as weak; the cover-up of the cover-up conceals the error of withholding; and both the feelings strategy and fancy mental footwork allow active participants to avert an examination of their errors. At the same time these strategies reinforce the very dilemmas that they are supposed to mitigate. Persons using them continue to act on, rather than test, the assumption that it is wrong to be wrong. They therefore do not create opportunities to make and reflect on mistakes and what it means to make them. As a result the aspirations of participants remain unrealistic and their fears of failure intense. In this way the strategies they call forth to make life livable end up making it unlivable.

Second-order reflective strategies involve examining one's actions and reactions so that one can map and work toward redesigning one's theory-in-use. Like their first-order counterparts, they are characterized by a sense of responsibility and initiative and a stance of vulnerability. What follows is a description of three such strategies: (1) publicly identify and inquire into dilemmas and apparent inconsistencies; (2) reflect on actions and redesign them; and (3) publicly examine one's own, as well as others', responsibility for actions and outcomes.

1. Publicly identify and inquire into dilemmas and apparent inconsistencies. By now it should be clear to the reader that learning requires participants to be active and to make their reactions public. These reactions are the raw material of the learning process and without them the process shuts down. But when participants do become active and make their reasoning public, their actions are then confronted, their reasoning is probed, and their errors are examined. Often they understand these responses as inconsistencies; it is as if they thought: "Gee, you told me to speak up, so I did. But when I did, you said I was wrong, so I shut up. Now you tell me I'm wrong to be quiet. What's a person to do?" It was this kind of reasoning that constituted the dilemmas discussed earlier in which individuals felt damned if they spoke up and damned if they remained silent. To deal with this dilemma, some participants began to make it public and to identify the inconsistency they saw in it. Vince did this after oscillating briefly between participating and

withdrawing. Recall that earlier we described how Vince had confronted the interventionist and that as a result he and others discovered that they held a frame about persons in positions of power that led them to distort such persons' actions. After this, Vince withdrew a bit and began to privately examine his reactions toward the interventionist in an effort to correct the distortions.

But a few sessions later the interventionist confronted those who were withdrawing, stressing that they had to "try to make errors or confront me." This advice struck Vince as puzzling. He thought that he had done just what the interventionist was now suggesting that he do, only to be told that he was wrong. It was because of this, he explained, that he had decided that "rather than act on my reactions, I'd wait for more data." Now he was being told that this too was wrong. Vince had a choice here. He could have drawn on a more protective strategy and covered up these reactions, using this puzzle to justify his withdrawal. He could have thought, "He's so inconsistent. He says he wants to be confronted, but when you do confront him, he says you're wrong. I'm not going to risk confronting him." Instead, Vince publicly identified the inconsistency he saw and the dilemma he felt it generated, describing how he had understood the interventionist's two responses.

Because Vince made his dilemma public, the interventionist was able to help reframe the problem and how he expressed his views so that he might resume participating. To paraphrase, the interventionist first reformulated the purpose of participation: It is not to make sure you are right, but to create the opportunity for learning. He then went on to suggest a strategy that builds on this reformulation: Confront others in ways that evidence a readiness to learn. Such a reformulation implied both new actions and new criteria by which to evaluate them. With this reformulation, the logic underlying Vince's dilemma no longer holds.

2. Reflect on errors and redesign actions. Regardless of what strategies participants draw on, they will act in accord with the existing theory-in-use they wish to change. This dilemma can be transformed into an opportunity by using one's ac-

tions and defenses as material for reflection and one's reflection as the basis for redesigning. One way to do this is to bring a "button-pushing" case into the group, while another way is to interrupt incidents that spontaneously occur on-line. While the former has the advantage of providing some distance from a threatening issue, the latter allows easier access to individuals' reactions and often provides the most vivid and critical incidents in their learning. To illustrate each, we can turn to a session in which Carol brought a case to class that involved her interactions with a client, who happened to be the director of a political organization. Because the case included data on what they both actually said, it allowed the group to reflect on what strategies Carol used and the implications these held for her client and their interaction. As the group examined what she did, they began to build a diagnostic map of someone who had used a series of deflecting moves to avoid a direct confrontation over her errors and over a potentially explosive political issue. As they did so, Carol began to enact the same strategies on-line, deflecting criticisms of how she had deflected criticisms in the case. In order to better grasp and unfreeze her defenses, the group first described her actions and then turned to look at what conditions might have triggered them, probing her reactions in the present and during her interaction with her client to generate hunches. Such probes often took the form of asking Carol to reflect on what she thought might happen were she to move counter to her defenses; this allowed the group to get at the deeper logic behind such defenses. In the end the group was able to map what Carol would have to change if she wished to redesign her actions.

None of these moves requires Model II skills, but they are pivotal in developing them. The case allowed the group the time to slow down its reflections and gave Carol the opportunity to distance herself enough from her reactions, so that both could begin to map out the defensive strategies displayed in it. The on-line responses made the learning more compelling and vivid, as Carol found herself acting the same way in class and experiencing some of the same feelings as she had with her clients. At the same time, it also provided more immediate access to her re-

actions, while giving peers the chance to practice accessing such data and thinking on their feet with a tough client.

3. Publicly examine one's own, as well as others', responsibility for actions and outcomes. We have described already how attributions that are kept private often hold others or external factors responsible for one's own actions or outcomes, thereby distancing actors from their own causal responsibility. This strategy asks that actors examine their own responsibility, as well as that of others, and that they make such processes public. An example of this strategy can be found in how George reflected on his responses to the interventionist after the passivity experiment (Chapter Four). At the time of the experiment George had held the interventionist responsible for how he had acted, saying that he was "only doing what the interventionist had asked." But when George went back and listened to the tape, he came to realize how he had also "laid a trap" for himself by not being forthright earlier in the session. At the same time he took another look at the interventionist's actions; and pointed out that while the interventionist's inferences were probably true, his actions had not given him as much of an opportunity to explore them as he thought necessary for his own learning.

Consequences for the Learning Context (Column 7). So far we have described two orientations distinguished on the basis of their capacity to sustain processes of experimentation and reflection on action. In the beginning most participants assume a protective orientation toward learning. They frame the process in ways that evoke experiences of anxiety and failure, that cue strategies that impede processes of reflection, and that generate immobilizing binds. As the map illustrates, these processes are self-reinforcing and eventually create a culture of protectionism (column 7). Protective strategies become the norms for interactions. The notions about support that we have just described and the protective role for learner and teacher become the predominant ideologies. And the emotional experience of the group members becomes one of walking on eggshells for fear of distressing one another. Under these conditions, reflection on action remains mostly private, and it is lim-

ited to avoiding those actions that would violate the prevailing norms, ideologies, and defenses.

As long as this culture and the processes that maintain it go uninterrupted, the learning that participants seek will be significantly limited. Their theories-in-use will remain intact and new theories-in-use out of reach. But as we will show in subsequent chapters, over time participants begin to move incrementally toward a more reflective orientation as a result of experiments designed by the interventionist to help them see the limits of their learning. Increasingly, they come to regard their errors as puzzles; and, faced with dilemmas, they are more apt to admit to them and to inquire into the inconsistencies that might account for them. At the same time, they make their own reasoning and actions the object of inquiry, so that they might discover the constraints and dilemmas that they might have inadvertently created for themselves.

As more participants in the seminar adopted this orientation toward learning, the culture of the group slowly began to change. Strategies more conducive to reflection and experimentation started to become the norm, supplanting those of protectionism. New ideologies arose and these themselves became the object of inquiry. Participant experiments emerged with greater spontaneity and were experienced with excitement and curiosity. And processes of reflection began to dig deeper into participants' theories-in-use and into the process of learning new ones. Gradually most participants began to evidence hybrid theories-in-use that combined features of both existing and new theories. Skills of reflection became more sophisticated, and participants managed the learning process on their own with greater competence. As a result they developed a deeper awareness of their theories-in-use, started to try out new ones, and acquired the competencies in reflection and experimentation necessary for continuing to learn on their own.

Invisible Responses

What is described in the action map goes on all the time, and it is found everywhere—at home, in schools, and at the work place. Yet as ubiquitous as these responses are, they are

invisible. They comprise the deep structure of our social actions, and this structure itself has mechanisms built into it that keep us unaware. As the map illustrates, individuals act in ways that keep them blind to the consequences of their own actions and acutely aware of others'. They focus on the constraints others pose but not on those they pose for themselves. And they interact in accord with a tacit contract that states, "If you agree to overlook my inconsistencies, I will agree to overlook yours." As a result, they do not realize to what extent the actions they use yield consequences that they would consider unacceptable were they aware of them. Or in other words, they do not know that they are stuck in dilemmas of their own design. As one participant described it as she became increasingly aware (Higgins, 1985): "I was startled by the learning bind [described in the map]: 'If I'm quiet and withdrawn, others might see me as weak and dependent.' It had never occurred to me that others might see me as weak and dependent, even though I *was* dependent on others to ensure my learning. I didn't like that thought at all."

Individuals like this one start out unaware of their binds and the ways in which such binds limit their learning. As a first step, they must therefore come to *see* that they are "stuck" and responsible for it.

To help them do so, the interventionist designs opportunities for participants to hurry up and get stuck, so they can reflect on this "stuckness" and what leads to it. By drawing on the rules of action science, he enables participants to see what had once remained hidden: how they act, the logic informing this action, and the consequences these actions yield. In so doing these rules act as a kind of electron microscope that brings into focus the deep structure underneath action. At first, participants resist such examination, striving to hold the interventionist responsible for what they see. As the participant already quoted went on to reflect, "[Initially] I held the interventionist responsible for my not learning. I thought he's not doing his job. He's not giving me the answer. . . . It didn't occur to me that some of the responsibility for ensuring that I learned might be mine."

As the interventionist continues to design experiments

and to initiate reflection on them, participants increasingly see what the participant quoted here called "the potential outcomes of my current learning behaviors and none of them produced what I wanted." She was thus "propelled," as she put it, "toward taking a blind leap and deciding to give it a try." What this process of discovery and experimentation looks like is what the remainder of the book takes up.