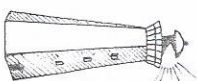


33 Strategies for Working with Mental Models



A man visits a therapist and says, "I've just gotten fired, for the seventh time in the last five years. I'm having trouble with my wife, and I've already been divorced three times. I desperately need you to help me understand: Why are there so many screwed-up people out there in the world?"

Imagine that instead of a therapist, this man came to you. And you genuinely wanted to help him. What would you say? You might find yourself speaking empathetically: "Yes, a lot of bad bosses exist, and I'm sure there are some unpleasant spouses out there." But if you wanted to do any good in the long run, sooner or later you would have to show him how his problems were not created "out there." They stemmed, at least in part, from his own assumptions and beliefs about other people. Unless you found a way to help him see this, all your other attempts to help would be short-lived and probably doomed to failure.

Mental models are the images, assumptions, and stories which we carry in our minds of ourselves, other people, institutions, and every aspect of the world. Like a pane of glass framing and subtly distorting our vision, mental models determine what we see. Human beings cannot navigate through the complex environments of our world without cognitive "mental maps"; and all of these mental maps, by definition, are flawed in some way.

A common workshop exercise involves asking people to arm wrestle with a neighbor. We tell them that “winning” means bringing their opponent’s arm to the table, and we ask them to “win” as many times as they can in fifteen seconds. Most people pit themselves against their opponent, struggling to push the other person’s arm down. But a few partners look at each other, and then spend the fifteen seconds flipping their arms back and forth, without any resistance, a dozen or more times. They are not held back by the mental model that only one person can “win.”

Differences between mental models explain why two people can observe the same event and describe it differently; they are paying attention to different details. Mental models also shape how we act. For example, if we believe people are basically trustworthy, we may talk to new acquaintances far more freely than if we believe most people can't be trusted.

But because mental models are usually *tacit*, existing below the level of awareness, they are often untested and unexamined. They are generally invisible to us—until we look for them. The core task of this discipline is bringing mental models to the surface, to explore and talk about them with minimal defensiveness—to help us see the pane of glass, see its impact on our lives, and find ways to re-form the glass by creating new mental models that serve us better in the world.

Experts are particularly susceptible to difficulties with mental models. Among educators, there is a widespread tacit assumption that "parents don't really know much about what their children need." As a result, well-intentioned school reform efforts have alienated parent groups. The health professionals' mental model that "hospitals are foremost repositories of scientific knowledge for healing the seriously ill" has diminished opportunities for hospitals to serve as community health centers. In manufacturing companies, the deep-seated mental model that "poor quality is caused by laziness or sabotage by hourly workers" endures even among managers who espouse the principles of the quality movement. In work with systems thinking, many insights directly confront our mental models; unless we can suspend and test our attitudes, we will tend to react by saying, "That's interesting . . . but not really relevant to us," with no deeper consideration of the implications.

MENTAL MODELS

The concept of mental models goes back to antiquity (our knowledge) was coined by Scottish psychologists in the 1940s. It has since been used by cognitive psychologists (Johnson-Laird of Princeton University), by cognitive scientists (Marvin Minsky and Seymour Papert of MIT), and by engineers. In cognition, the term refers to both the semipermanent representations in the world which people hold in their long-term memory, and the term perceptions which people build up as part of their ongoing processes. According to some cognitive theorists, mental models are term everyday mental models, accumulating over time and reflected in changes in long-term deep-seated beliefs.

Reflection and inquiry

TWO TYPES OF SKILLS ARE CENTRAL TO THIS WORK: (slowing down our thinking processes to become reformed our mental models) and inquiry (holding ourselves open to share views and develop knowledge about them). The techniques we most favor for learning from "action science," a field of inquiry developed by Chris Argyris and Donald Schön, aimed at changing and attitudes which underlie human action, effective learning in organizations and other social.

The tools of action science are deceptively simple: ladder of inference (see page 242), which shows how to knee-jerk conclusions with no intermediate thought; climbing up a ladder in our minds, is a mode of pouring it into everyday conversation, so that we can see the ladder, has proven to be a pivotal organizational work.

The value of these skills is perhaps most apparent for individuals who are undisciplined in reflective thinking. They hear what others actually say. Instead, they hear what others think they should hear. They have little tolerance for multivoicedness. They have little tolerance for multiple perspectives. They have little tolerance for multiple events because they often "see" only their own in

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is susceptible to difficulties with mental models. There is a widespread tacit assumption that "parenting" is about what their children need. As a result, the efforts of parents have alienated parent groups. The mental model that "hospitals are foremost responsible for healing the seriously ill" has diminished the role of the hospital as a community health center. In the deep-seated mental model that "poor people are sabotaged by hourly workers" endures to espouse the principles of the quality movement, many insights directly confront our assumptions. We can suspend and test our attitudes, we will find that's interesting... but not really relevant to the implications.

MENTAL MODELS

The concept of mental models goes back to antiquity, but the phrase (to our knowledge) was coined by Scottish psychologist Kenneth Craik in the 1940s. It has since been used by cognitive psychologists (notably Philip Johnson-Laird of Princeton University), by cognitive scientists (notably Marvin Minsky and Seymour Papert of MIT), and gradually by managers. In cognition, the term refers to both the semipermanent tacit "maps" of the world which people hold in their long-term memory, and the short-term perceptions which people build up as part of their everyday reasoning processes. According to some cognitive theorists, changes in short-term everyday mental models, accumulating over time, will gradually be reflected in changes in long-term deep-seated beliefs. —AK

Reflection and inquiry

TWO TYPES OF SKILLS ARE CENTRAL TO THIS WORK: THEY ARE REFLECTION (slowing down our thinking processes to become more aware of how we form our mental models) and inquiry (holding conversations where we openly share views and develop knowledge about each other's assumptions). The techniques we most favor for learning these skills emerged from "action science," a field of inquiry developed by theorists and educators Chris Argyris and Donald Schön, aimed at exploring the reasoning and attitudes which underlie human action, and producing more effective learning in organizations and other social systems.

The tools of action science are deceptively simple. For example, the ladder of inference (see page 242), which shows how rapidly we can leap to knee-jerk conclusions with no intermediate thought process, as if rapidly climbing up a ladder in our minds, is a modest metaphor. Yet incorporating it into everyday conversation, so that we internalize the principles of the ladder, has proven to be a pivotal component of learning organization work.

The value of these skills is perhaps most apparent in their absence. Individuals who are undisciplined in reflective thinking have difficulty hearing what others actually say. Instead, they hear what they expect others to say. They have little tolerance for multiple interpretations of events because they often "see" only their own interpretation. In teams



Research by Faith L. Florer and Thomas Fritsch of Miami University and conversation with Professor Johnson-Laird contributed to this lexicon.



and groups, people who have not mastered a threshold level of inquiry skills will spend hours arguing their ideas. Eventually, in frustration and exhaustion, they end up with some kind of compromise, in which no one wins—or they defer to the most senior person in the room, who wins through authority: “This is the strategy. Thank you for your input.” The strategy turns out to be far less than it could be.

And what of people who have learned to reflect, talk more openly, and make their assumptions explicit? As you might expect, they have more penetrating conversations, in which talk of strategy always considers their mental models of (for example) where the world is going, what customers want, what competitors will do, how the marketplace is evolving, and what technologies will exist. Moreover, their conversations tend to be more naturally suffused with openness and humor. This makes working with mental models a natural antidote for the typical political gamesmanship bred by conventional “command-and-control” hierarchies. People find ways to diffuse defensiveness by laughing good-naturedly at themselves. At GS Technologies, whose work with labor-management dialogue is described on page 364, the union members went out and bought one of the plant managers a stepladder. He keeps it in his office, and jokes with visitors, “They tell me I live my whole life up on the top rung.”



Scenarios and Learning Laboratories

THE FRONTIER OF THIS DISCIPLINE LIES WITH CREATING INNOVATIONS IN infrastructure where work with mental models can take place. One of the most influential such innovations, scenario planning, has become increasingly widespread and diverse in the last few years. Scenario work, which emerged in the “nonintrospective” culture of Royal Dutch/Shell, traditionally encouraged people to look outward, using stories of the future to surface assumptions about the business and political forces of the present. Gradually, this work seems to be embracing more of an ability to increase interpersonal understanding. For example, former Shell planner Adam Kahane has adapted the scenario approach to work with political leaders in South Africa. He has found that diverse, even antagonistic participants could safely talk about even the most emotionally charged issues. By describing plausible futures, they developed a better understanding of each other’s tacit beliefs. The scenario, when used this way, becomes a shared “memory of the future”: as people rehearse their

views of what will happen, they reveal the different current views of the world. Says Kahane:

You may wonder what keeps people, in the mornings, from walking out. Conservatives and radicals because they felt they were learning a great deal for themselves. The advantage of scenarios is that, unlike people don’t have to commit their constituents, in a common language—a common way of understanding emerging fairly early in the process. Once the common language should make subsequent conclusions successfully.”

Mental models work is also very central to laboratories. When the reflection and inquiry, then, laboratories become mental model practices, develop the skills to talk about their assumptive moment that they are dealing with an issue. attitudes and beliefs, to allow others to point them about them with involvement but without it clearly at the sources of our own actions—these with practice, and particularly with well-structured practice.

See, for example, the Ford Learning Lab cameo on page 364.

34 What You Can ... in Working Mental Models

Charlotte Roberts

This discipline offers the highest leverage seems to some, at first glance, to be strict with little relevance to the “real world,” it is precisely

have not mastered a threshold level of inquiry using their ideas. Eventually, in frustration and with some kind of compromise, in which no one is the most senior person in the room, who wins the strategy. Thank you for your input." The less than it could be.

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Learning Laboratories

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You may wonder what keeps people, in these highly charged meetings, from walking out. Conservatives and radicals kept coming back because they felt they were learning a great deal—and enjoying themselves. The advantage of scenarios is that, unlike in a negotiation, people don't have to commit their constituents, but they can see a common language—a common way of understanding the world—emerging fairly early in the process. Once the scenario process is over, that common language should make subsequent negotiations easier to conclude successfully.*

Mental models work is also very central to the design of learning laboratories. When the reflection and inquiry exercises are built into them, laboratories become mental model practice fields, where people develop the skills to talk about their assumptions in "real time"—in the moment that they are dealing with an issue. To talk coherently about attitudes and beliefs, to allow others to point them out, to hear comment about them with involvement but without rancor, and to look more clearly at the sources of our own actions—these capabilities all improve with practice, and particularly with well-structured, supported team practice.

See, for example, the Ford Learning Lab cameo on page 554.

34 What You Can Expect ... in Working with Mental Models

Charlotte Roberts

This discipline offers the highest leverage for change. Though it seems to some, at first glance, to be strictly an intellectual exercise, with little relevance to the "real world," it is probably the most practical

* 66 Scenarios for Building
Community," by Adam Kahane
(1994), Emeryville, Ca., Global Business
Network).

of the five disciplines. As teams which incorporate this work into their practice will attest, it directly enhances the ability to navigate through changing times.

Unfortunately, it is also the most difficult place from which to *start* building a learning organization. It takes a great deal of perseverance to master this discipline, perhaps because very few of us have learned how to build the skills of inquiry and reflection into our thoughts, emotions, and everyday behavior. When we begin practicing those skills, we bring to the surface some of our unconscious, automatic responses. We see, perhaps for the first time, what we have done to ourselves and others through automatic or incomplete thinking. Even after we get glimpses of our mental models, knowing how to act differently is not obvious.

Practice together over time

THE MOST PRODUCTIVE WAY TO LEARN THESE NEW SKILLS IS WHILE TRYING to get to the bottom of the mental models which have created chronic business problems. Hold regular sessions with the same team, perhaps for a period of months. Be prepared to have someone who is skilled in this discipline assist the team for the first few sessions.

Prepare for dealing with strong emotions

PEOPLE WHO ACCEPT DIFFERENT POINTS OF VIEW INTELLECTUALLY MAY have trouble with the emotions raised by this work. When the assumptions behind your models are exposed, they will often be shown to be flawed or incomplete. People will now know why you do the "stupid," "irritating," or "bureaucratic" things you do. You may be chagrined to discover (unfortunately, at the same time as everyone else), that your actions (or those of your team or organization) are based on erroneous data or incomplete assumptions. At the moment of discovery, feelings may rise to the surface: anger at the reasons you gave for your actions; embarrassment at an incorrect assumption; uncertainty about how to challenge someone else; reluctance to talk about a heretofore "undiscussable" concern; confusion about how to proceed; or fear of retaliation.

Because most management teams have little experience as a team at dealing with such fierce emotions, they often let the emotions escalate;

dismay and uncertainty turn into opposition instead of genuine inquiry and learning. Or, we reject and deny that these emotions exist, which the subject can be resurfaced and understood time aside for dialogue or skillful discussion have been raised.

Exercises that may help include "Moments of Awareness" page 404. Also see "Dialogue," page 357, and "Skillful Dialogue," page 357.

Use frustration as a source of

TEAMS STRUGGLE IN MENTAL MODELS WORK, to a business problem. Sometimes they sense communicate together is not yet up to the task, time to reflect, or time to build up a sense of to develop strategies for pacing itself—for me to pick up again, and how to deal with impass

An atmosphere should be established in brought up for inquiry. If people feel the gro to have an adequate mental model of (for needs, they can use questions to explore that What do we know as a fact about our cust What do we sense is true but cannot supp What don't we know? What are our quest What is unknowable? What limited experiments can we design to our customers?

Beware of excitement and

WHEN THE TEAM BREAKS THROUGH THE LIM themselves, and they feel that at last they "selves, their work, or their customers, they w action immediately. "No, our customers do care about prompt delivery!" They have a mental model which, without testing, will p might rush out to build speedy delivery sy

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dismay and uncertainty turn into opposition and feelings of betrayal, instead of genuine inquiry and learning. Or, worse, they change the subject and deny that these emotions exist; which paralyzes the group until the subject can be resurfaced and understood. The alternative is to set time aside for dialogue or skillful discussion about the emotions that have been raised.

}} Exercises that may help include "Moments of Awareness," page 216, and "Undiscussables,"
}} page 404. Also see "Dialogue," page 357, and "Skillful Discussion," page 385.

Use frustration as a source of new inquiry

TEAMS STRUGGLE IN MENTAL MODELS WORK, EVEN WHEN IT'S ORIENTED to a business problem. Sometimes they sense that their ability to communicate together is not yet up to the task. Sometimes members need time to reflect, or time to build up a sense of comfort. The team needs to develop strategies for pacing itself—for knowing when to pause, when to pick up again, and how to deal with impasses.

An atmosphere should be established in which frustrations can be brought up for inquiry. If people feel the group lacks enough knowledge to have an adequate mental model of (for example) their customers' needs, they can use questions to explore that perceived inadequacy:

What do we know as a fact about our customers?

What do we sense is true but cannot support with data?

What don't we know? What are our questions and ponderables?

What is unknowable?

What limited experiments can we design to test our current model of our customers?

Beware of excitement and unbridled action

WHEN THE TEAM BREAKS THROUGH THE LIMITATIONS THEY HAVE PUT ON themselves, and they feel that at last they "see" the truth about themselves, their work, or their customers, they will be tempted to take grand action immediately. "No, our customers don't buy on price! They only care about prompt delivery!" They have merely constructed another mental model which, without testing, will produce more blinders. They might rush out to build speedy delivery systems, when the customers

really cared about breakage and better packaging. This is the time to pause and reflect upon strategy. Design small experiences to test the new model before making it a standard part of the infrastructure of the organization.

You can create new mental models

MENTAL MODELS MAY BE GENERATIVE; YOU CAN SET ABOUT TO CREATE an attitude which you do not have. The scientists who created the space program (and who still provide that program with its successes) had to envision unimaginable futures. They conceived of changes in travel, in the ability to create environments, in research, and in energy use that have still not fully taken place.

Generating new mental models, if they are to hold, can take place only by linking imagination with action. Ask yourselves, "If we *did* hold a better model of our customers, how would we behave?" Then try the behavior; and over time see if the new view of the world feels closer to reality.



35 The Ladder of Inference *

Rick Ross

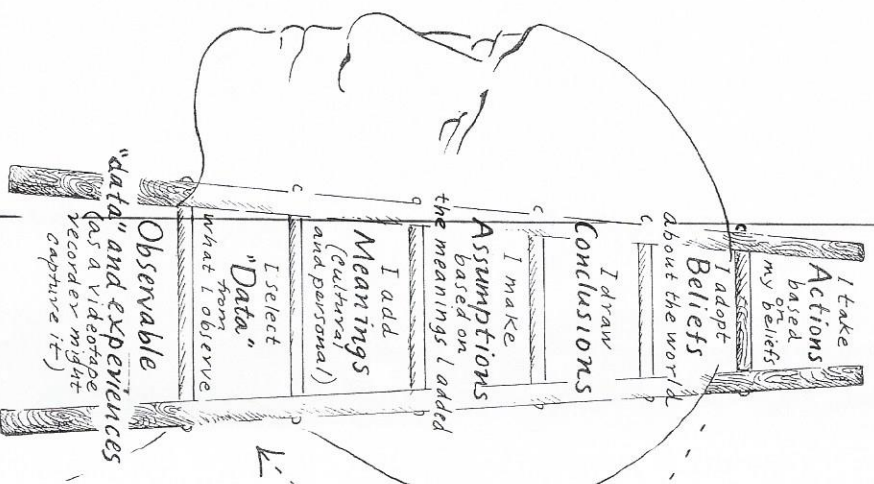
We live in a world of self-generating beliefs which remain largely untested. We adopt those beliefs because they are based on conclusions, which are inferred from what we observe, plus our past experience. Our ability to achieve the results we truly desire is eroded by our feelings that:

- Our beliefs are *the* truth.
- The truth is obvious.
- Our beliefs are based on real data.
- The data we select are the real data.

For example: I am standing before the executive team, making a presentation. They all seem engaged and alert, except for Larry, at the end of the table, who seems bored out of his mind. He turns his dark, morose

eyes away from me and puts his hand to his mouth. I ask him questions until I'm almost done, when he breathes a sigh and asks for a full report. "In this culture, that's typical," Larry obviously thinks that I'm incompetent—"I've never liked my ideas. Clearly, Larry is the time I've returned to my seat, I've made a mistake. I include anything in my report that Larry can't understand, or, worse still, he'd just use it against me. It's not who's so prominent in the company.

In those few seconds before I take my seat, Chris Argyris calls a "ladder of inference,"—a model of increasing abstraction, often leading to misinterpretation.



Our ladder of inference material includes concepts and examples adapted from *Systems*

Thinking: A Language for Learning and

Acting: The Innovation Associates

Systems Thinking Course Workbook

(1992, Framingham, Mass.: Innovation

Associates); suggestions from Philip

McArthur and Robert Putnam; material

from *Overcoming Organizational*

Defenses by Chris Argyris (1990).

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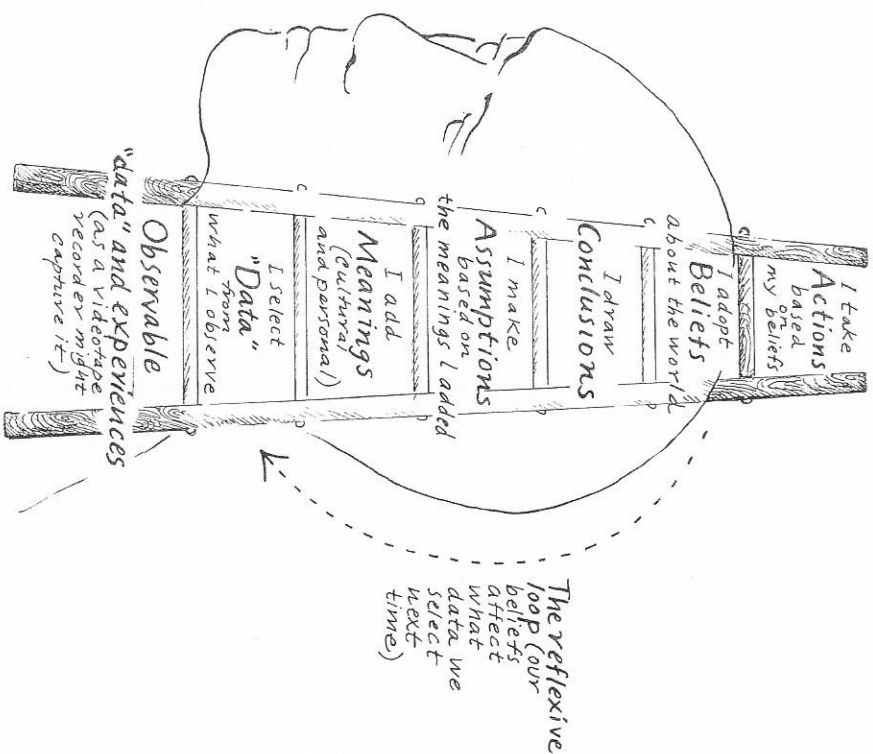
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eyes away from me and puts his hand to his mouth. He doesn't ask any questions until I'm almost done, when he breaks in: "I think we should ask for a full report." In this culture, that typically means, "Let's move on." Everyone starts to shuffle their papers and put their notes away. Larry obviously thinks that I'm incompetent—which is a shame, because these ideas are exactly what his department needs. Now that I think of it, he's never liked my ideas. Clearly, Larry is a power-hungry jerk. By the time I've returned to my seat, I've made a decision: I'm not going to include anything in my report that Larry can use. He wouldn't read it, or, worse still, he'd just use it against me. It's too bad I have an enemy who's so prominent in the company.

In those few seconds before I take my seat, I have climbed up what Chris Argyris calls a "ladder of inference,"—a common mental pathway of increasing abstraction, often leading to misguided beliefs:°



Needham, Mass.: Allyn and Bacon), pp. 88-89; *Reasoning, Learning, and Action* by Chris Argyris (1982, San Francisco: Jossey-Bass) pp. xvi-xviii, pp. 176-78; *Action Science* by Chris Argyris, Robert Putnam, and Diana McLean Smith (1985, San Francisco: Jossey-Bass), pp. 57-58. See *Fieldbook*, p. 264 for more on these books.

° See *Overcoming Organizational Defenses*, p. 87.

- I started with the observable data: Larry's comment, which is so self-evident that it would show up on a videotape recorder . . .
- . . . I selected some details about Larry's behavior: his glance away from me and apparent yawn. (I didn't notice him listening intently one moment before) . . .
- . . . I added some meanings of my own, based on the culture around me (that Larry wanted me to finish up) . . .
- . . . I moved rapidly up to assumptions about Larry's current state (he's bored) . . .
- . . . and I concluded that Larry, in general, thinks I'm incompetent. In fact, I now believe that Larry (and probably everyone whom I associate with Larry) is dangerously opposed to me . . .
- . . . thus, as I reach the top of the ladder, I'm plotting against him.

It all seems so reasonable, and it happens so quickly, that I'm not even aware I've done it. Moreover, all the rungs of the ladder take place in my head. The only parts visible to anyone else are the directly observable data at the bottom, and my own decision to take action at the top. The rest of the trip, the ladder where I spend most of my time, is unseen, unquestioned, not considered fit for discussion, and enormously abstract. (These leaps up the ladder are sometimes called "leaps of abstraction.")

I've probably leaped up that ladder of inference many times before. The more I believe that Larry is an evil guy, the more I reinforce my tendency to notice his malevolent behavior in the future. This phenomenon is known as the "reflexive loop": our beliefs influence what data we select next time. And there is a counterpart reflexive loop in Larry's mind: as he reacts to my strangely antagonistic behavior, he's probably jumping up some rungs on his own ladder. For no apparent reason, before too long, we could find ourselves becoming bitter enemies.⁹

Larry might indeed have been bored by my presentation—or he might have been eager to read the report on paper. He might think I'm incompetent, he might be shy, or he might be afraid to embarrass me. More likely than not, he has inferred that I think *he's* incompetent. We can't know, until we find a way to check our conclusions.

Unfortunately, assumptions and conclusions are particularly difficult to test. For instance, suppose I wanted to find out if Larry *really* thought I was incompetent. I would have to pull him aside and ask him, "Larry, do you think I'm an idiot?" Even if I could find a way to phrase the question, how could I believe the answer? Would I answer *him* honestly?

No, I'd tell him I thought he was a terrific thinking worse of him for asking me.

Now imagine me, Larry, and three other team, with our untested assumptions and beliefs with a concrete problem, the air is filled with communication breakdowns, and feeble comprovidual IQs average 140, our team has a colleague

The ladder of inference explains why a member where their deepest attitudes came lost to memory, after years of inferential lea arguing that "The Republicans are so-and why I believe that. My immediate, intuitive I've believed it for years." In the meantime "The Democrats are so-and-so," and they cstead, they may dredge up an old platitude tion. Before long, we come to think of our data ("Well, I know the Republicans are suc so-and-so"), but we're several steps removed

Using the ladder of inference

YOU CAN'T LIVE YOUR LIFE WITHOUT ADDING conclusions. It would be an inefficient, tedious improve your communications through reflection of inference in three ways:

- Becoming more aware of your own thinking (ton);
- Making your thinking and reasoning more effective;
- Inquiring into others' thinking and reasoning. Once Larry and I understand the conclusion inference, we have a safe way to stop and ask several questions:
 - What is the observable data behind that?
 - Does everyone agree on what the data is?
 - Can you run me through your reasoning?
 - How did we get from that data to these assumptions?
 - When you said "[your inference]," did you

⁹ The "reflexive loop" was first published in William Isaacs's 1992 working paper, *The Ladder of Inference*, published by the MIT Center for Organizational Learning.

No, I'd tell him I thought he was a terrific colleague, while privately thinking worse of him for asking me.

Now imagine me, Larry, and three others in a senior management team, with our untested assumptions and beliefs. When we meet to deal with a concrete problem, the air is filled with misunderstandings, communication breakdowns, and feeble compromises. Thus, while our individual IQs average 140, our team has a collective IQ of 85.

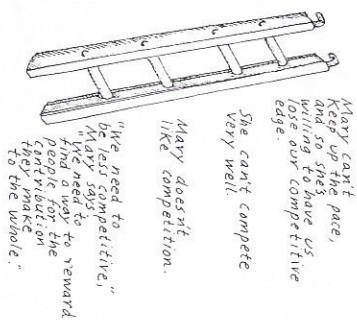
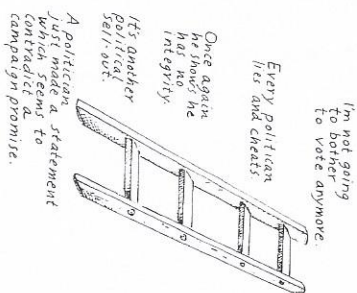
The ladder of inference explains why most people don't usually remember where their deepest attitudes came from. The data is long since lost to memory, after years of inferential leaps. Sometimes I find myself arguing that "The Republicans are so-and-so," and someone asks me why I believe that. My immediate, intuitive answer is, "I don't know. But but why I believe it for years." In the meantime, other people are saying, "I've believed it for years."

“The Democrats are so-and-so,” and they can’t tell you why, either. Instead, they may dredge up an old platitude which once was an assumption. Before long, we come to think of our longstanding assumptions as data (“Well, I know the Republicans are such-and-such because they’re data”), but we’re several steps removed from the data.

- 
- This boss shouldn't
be supervising
women.
- He picks on Jane
because she's
a woman.

The boss thinks
Jane's work is
unacceptable.

- 
- "Take your
day, because it is not
up to standard,"
says the boss.



I can ask for data in an open-ended way: "Larry, what was your reaction to this presentation?" I can test my assumptions: "Larry, are you bored?" Or I can simply test the observable data: "You've been quiet, Larry." To which he might reply: "Yeah, I'm taking notes; I love this stuff."

Note that I don't say, "Larry, I think you've moved way up the ladder of inference. Here's what you need to do to get down." The point of this method is not to nail Larry (or even to diagnose Larry), but to make our thinking processes visible, to see what the differences are in our perceptions and what we have in common. (You might say, "I notice I'm moving up the ladder of inference, and maybe we all are. What's the data here?")

This type of conversation is not easy. For example, as Chris Argyris cautions people, when a fact seems especially self-evident, be careful. If your manner suggests that it must be equally self-evident to everyone else, you may cut off the chance to test it. A fact, no matter how obvious it seems, isn't really substantiated until it's verified independently—by more than one person's observation, or by a technological record (a tape recording or photograph).

Embedded into team practice, the ladder becomes a very healthy tool. There's something exhilarating about showing other people the links of your reasoning. They may or may not agree with you, but they can see how you got there. And you're often surprised yourself to see how you got there, once you trace out the links.

The Left-Hand Column

Rick Ross, Art Kleiner

STEP 1: CHOOSING A PROBLEM

Select a difficult problem you've been involved with during the last month or two, the kind of tough, interpersonal difficulty that many of us try to ignore.

- You can't reach agreement with your close associates.
- Someone else is not pulling his or her weight.

- You believe you are being treated unfair.
- You believe your point of view is being resisted.
- The rest of the organization is resisting—a change you want to implement.
- You believe your team is not paying mutual attention.

Write a brief paragraph describing the situation and what is blocking you from accomplishing it. Who or what is blocking you?

STEP 2: THE RIGHT-HAND COLUMN (WHAT WAS SAID)

Now recall a frustrating conversation you had. Imagine the conversation that you *would* have had if the problem were solved.

Take several pieces of paper and draw a grid. (You can also enter this in a word processor. Use side-by-side columns, or "table" paper or "snaking" columns.)

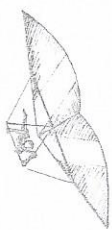
In the right-hand column, write out the dialogue. Or write the dialogue you're pretty sure you would have had if the problem were solved. To raise this issue. The dialogue may go on in the left-hand column blank until you're finished.

STEP 3: THE LEFT-HAND COLUMN (WHAT YOU WERE THINKING)

Now in the left-hand column, write out what you were thinking, but not saying.

A SAMPLE CASE

Here is an example of the format. An R&I assumes his supervisor (Todd) feels harshly at him, Jim writes down his last conversation with Todd and recalls his own thoughts.



This exercise is based upon the two-column research method developed by Chris Argyris and Donald Schön. The research method was first presented in their book *Theory in Practice* (1974, San Francisco: Jossey-Bass).

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Hand Column *

you've been involved with during the last ough, interpersonal difficulty that many of us

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ling his or her weight.

- You believe you are being treated unfairly.
- You believe your point of view is being ignored or discounted.
- The rest of the organization is resisting—or you believe they will resist—a change you want to implement.
- You believe your team is not paying much attention to the most crucial problem.

Write a brief paragraph describing the situation. What are you trying to accomplish? Who or what is blocking you? What might happen?

STEP 2: THE RIGHT-HAND COLUMN (WHAT WAS SAID)

Now recall a frustrating conversation you had over this situation—or imagine the conversation that you *would* have if you brought up the problem.

Take several pieces of paper and draw a line down the center:

(You can also enter this in a word processor with a two-column feature. Use side-by-side columns, or "table" columns, rather than newspaper or "snaking" columns.)

In the right-hand column, write out the dialogue that actually occurred. Or write the dialogue you're pretty sure *would* occur if you were to raise this issue. The dialogue may go on for several pages. Leave the left-hand column blank until you're finished.

STEP 3: THE LEFT-HAND COLUMN (WHAT YOU WERE THINKING)

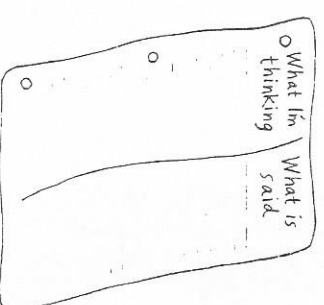
Now in the left-hand column, write out what you were thinking and feeling, but not saying.

A SAMPLE CASE

Here is an example of the format. An R&D project manager (Jim) assumes his supervisor (Todd) feels harshly about him. In the right-hand column, Jim writes down his last conversation with Todd. In the left, Jim recalls his own thoughts.

PURPOSE

To become aware of the tacit assumptions which govern our conversation and contribute to blocking our purpose in real-life situations, and to develop a way of talking about those tacit assumptions more effectively.



OVERVIEW

Analysis of a transcript of a real exchange—probably recalled, possibly tape-recorded.

TIME

One and one-half to two hours.

What I was thinking

We're two months late, and I didn't think he knew. I was hoping we could catch up.

I need to make it clear that I'm willing to take responsibility for this, but I don't want to volunteer for more work.

He never offers this help in the planning stages, when I could really use it. It's too late now to bring that up.

The changes he keeps making are the real reason we're late. He must have another one.

It's a shame I can't tell him that he's the cause of the delays. If I can hold him off two more weeks, I think we'll be ready.

STEP 4: REFLECTION: USING YOUR LEFT-HAND COLUMN AS A RESOURCE
You can learn a great deal just from the act of writing out a case, putting it away for a week, and then looking at it again. The case becomes an artifact through which you can examine your own thinking, as if you were looking at the thinking of someone else.

As you reflect, ask yourself:

- What has really led me to think and feel this way?
- What was your intention? What were you trying to accomplish?
- Did you achieve the results you intended?

What we said

TODD: Jim, I'd like to come down there next week. We're a few weeks behind, and I think we might all benefit from a meeting at your office.

ME: I've been very concerned about these deadlines. As you know, we've had some tough luck here, and we're working around the clock. But of course, we'll squeeze in a meeting at your convenience.

TODD: Well, it's occurred to me that we could use better coordination between us. There are probably some ways I could help.

ME: Well, I'm happy to talk through any changes you have in mind.

TODD: I don't have anything specific in mind.

ME: I'd like to have a prototype finished to show you before you come down. What if we set up something for the twenty-seventh?

- How might your comments have contributed?
- Why didn't you say what was in your left hand column?
- What assumptions are you making about the costs of operating this way?
- What prevented you from acting differently?
- How can I use my left-hand column communications?

For example, I (Rick) have developed hand column to others in a nonaccusatory language like this: "Look, I feel like I'm being squeezed out of the project. The rock is our conversation, my right-hand column, my left-hand column, say I want to move ahead with this project ray own thoughts, my left-hand column, say I we're likely to lose Joe's and Bill's participation with you because in the past, when I've asked reasons, you've gotten upset with me."

In group meetings, when you feel any column is particularly valuable. You can stop we've got important work to do, but once causing on the real issue. Can we check so we go any further? Let me tell you what column . . ."

In other cases, leverage lies with the rewriting the previous conversation as you your right-hand column (what you said) I left-hand column thinking to the surface? your thoughts in a way that would contribute the way you wanted? What could you have inquire into the other person's left-hand column?

For a reality check, show the revised column partner; see page 74).

You can also show selected parts of it had the original conversation. If handled care, that might be a way to break through making some assumptions about our last check them with you." Sometimes you may same conversation completely differently. I you have said, you may have been thorough invoiced concerns.

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- How might your comments have contributed to the difficulties?
- Why didn't you say what was in your left-hand column?
- What assumptions are you making about the other person or people?
- What were the costs of operating this way? What were the payoffs?
- What prevented you from acting differently?
- How can I use my left-hand column as a resource to improve our communications?

For example, I (Rick) have developed a way of describing my left-hand column to others in a nonaccusatory, nonjudgmental way. I'll use language like this: "Look, I feel like I'm between a rock and a hard spot. The rock is our conversation, my right-hand column. You're saying you want to move ahead with this project rapidly. On the other hand, my own thoughts, my left-hand column, say that if we move ahead with it, we're likely to lose Joe's and Bill's participation. I'm leery of raising this with you because in the past, when I've asked you to slow down for other reasons, you've gotten upset with me."

In group meetings, when you feel angry or frustrated, the left-hand column is particularly valuable. You can stop the action and say, "I realize we've got important work to do, but once again I don't think we're focusing on the real issue. Can we check some of our assumptions before we go any further? Let me tell you what I've got in my left-hand column..."

In other cases, leverage lies with the conversation itself. Begin by rewriting the previous conversation as you *might* have held it. How could your right-hand column (what you said) bring some of your important left-hand column thinking to the surface? How could you have revealed your thoughts in a way that would contribute to the situation turning out the way you wanted? What could you have said that would effectively inquire into the other person's left-hand column?

For a reality check, show the revised case to a third party (such as a partner; see page 74).

You can also show selected parts of it to the person with whom you had the original conversation. If handled with a sense of inquiry and care, that might be a way to break through your impasse: "I have been making some assumptions about our last conversation, and I wanted to check them with you." Sometimes you may find you both remember the same conversation completely differently. Even when you agree on what you have said, you may have been thoroughly unaware of each other's unvoiced concerns.



When you show your case to the other person, don't approach it as a way to finally clear the air and get your points out in the open. Nor is your purpose to "prettify" your left-hand column by redefining your thoughts in a cosmetically kinder, gentler context. As Robert Putnam notes, some of your left-hand thoughts probably *should* stay hidden. Our internal censors often have a good chunk of wisdom; sometimes these comments would wreak havoc if voiced. Your purpose is to raise the assumptions and mutual misunderstandings whose resolution will most contribute to more fruitful future conversations.

Two good points to continue from here are "Opening Lines" (see page 263) and "Recipes" (see page 260).

Risks and opportunities with "the left-hand column" Robert Putnam

Robert Putnam is a long-standing associate of Chris Argyris, and a partner in Action Design, a consulting firm that helps organizations incorporate and implement reflection and inquiry skills. He helped us quite a bit in articulating this chapter. When he read over this material, he said that we should emphasize that achieving the learning potential of this exercise, in particular, requires a skilled facilitator. Because we think the exercise is both conceptually and practically significant, we asked Bob to expand upon his comment. For Bob's insights on using "recipes" to promote learning, see page 260.

When left-hand column cases are discussed in pairs, the learning potential is limited by the abilities of the partners to coach each other effectively. Fundamental learning often requires talking about issues that are difficult to face without being defensive. There are three ways that a coach's ability to help may be limited:

- The coach may share the assumptions and blind spots that limit the case presenter's effectiveness;
- The coach may join in commiserating with the case presenter; "Look how screwed up those other people are." That establishes a sense of good feeling, but it distracts attention from the case presenter's tacit assumptions.
- The coach may not know how to raise the subject of the case presenter's "shortcomings" in a way that promotes inquiry. Imagine that

you are a case presenter, and your coach I think you really screwed it up. You say *this* is not honest." You might feel self-had revealed too much. If you felt mistakenly stop yourself from saying so (there query), for fear that the coach would see

In groups of six to eight people, there is having a valuable insight into the way case difficulties. But most groups are even worse coming in ways that promote inquiry. A barrage of comments that are abstract, attacked. The danger of a poor learning experience only one or two members of a group have may feel unfairly singled out or ganged up on

Discussing cases in an intact team creates impact, but also poses difficulties. As one man "You want me to lay out my real left-hand column that's like my secret sauce. It's helped me others know what it is, it might not work any

More serious problems can occur if temptation to "let each other have it" with unvoiced judgments that have been built in There is often good reason that people have in their left-hand columns. Getting unexpected on the table may be an essential first step,

At a recent meeting of a business unit, a man up and said, "Our biggest problem is market they're doing. I've been saying this for years. At this moment, Bill's left-hand column is one who's responsible around here for raising problem. But I'm not from headquarters, so me.

The others, meanwhile, might have had left-hand columns: Here goes Bill ranting a take responsibility. Demanding we hire no real-world; we are under pressure to cut expenses this ranting to get something useful done?

Suppose that this team decided everyone

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you are a case presenter, and your coach says, "In a spirit of learning, I think you really screwed it up. You say you want to be honest, but *this* is not honest." You might feel self-conscious, or wonder if you had revealed too much. If you felt misunderstood, you would proba- bly stop yourself from saying so (thereby further diminishing in- quiry), for fear that the coach would see you as defensive.

In groups of six to eight people, there is more chance of someone having a valuable insight into the way case presenters create their own difficulties. But most groups are even worse than pairs at raising short- comings in ways that promote inquiry. A case presenter may receive a barrage of comments that are abstract, attributive, and bluntly advo- cated. The danger of a poor learning experience is especially high when only one or two members of a group have their cases discussed. They may feel unfairly singled out or ganged up on.

Discussing cases in an intact team creates opportunities for greater impact, but also poses difficulties. As one manager said to me privately, "You want me to lay out my real left-hand column before the group? But that's like my secret sauce. It's helped me survive all these years. If others know what it is, it might not work anymore!"

More serious problems can occur if members of a team give in to the temptation to "let each other have it" with resentments and hitherto- unvoiced judgments that have been building up for months or years. There is often good reason that people have not told each other what is in their left-hand columns. Getting unexpressed thoughts and feelings on the table may be an essential first step, but few teams have the ca- pacity to turn these lemons into lemonade on their own.

At a recent meeting of a business unit, a regional sales manager stood up and said, "Our biggest problem is marketing. They don't know what they're doing. I've been saying this for years, and nothing happens!"

At this moment, Bill's left-hand column might have read: *I'm the only one who's responsible around here for raising this key organizational problem. But I'm not from headquarters, so they figure they can ignore me.*

The others, meanwhile, might have had something like this in their left-hand columns: *Here goes Bill ranting again. He's never willing to take responsibility. Demanding we hire more marketing people is not real-world, we are under pressure to cut expenses. How can we get past this ranting to get something useful done?*

Suppose that this team decided everyone should speak openly about

their left-hand columns. Bill would advocate his position, adding that the others were irresponsibly ignoring him because he was from out of town. Others would advocate the opposite position, adding that Bill was an irresponsible obstructionist, and would he please shut up? People would feel angry, tense, and hopeless about resolving the matter. In the best case, some might feel a sense of catharsis at expressing their feelings. Participants would have reason to decide this "left-hand column business" was unproductive.

A skilled facilitator might inquire into each party's reasoning: "Do others confirm Bill's view that too few leads is a major problem? What leads you to doubt that hiring a marketing person is the answer? Bill, when others say we don't have the money to hire someone, do you have any information to the contrary? If not, what leads you to keep arguing for it?" The facilitator might prompt Bill to consider if he is acting from a mental model that says: *My responsibility is fulfilled when I tell people about the problem*. Similarly, the others might consider if they are acting from the mental model: *When someone points out a problem, we can hold them responsible for telling us how to fix it*.

SHOULD YOU HAVE A TRAINED FACILITATOR?

Revealing left-hand columns creates enormous opportunities for learning. To take advantage of these opportunities, it is important that at least one participant has the willingness and skill to promote inquiry, the presence of mind to recognize subtle mental models at play (including his own), and an eminent enough position that everyone else in the room will listen to him. In many cases, this requires an outside facilitator.

Here is a way that I imagine a team could test itself to see if it has the necessary skills, before making the decision to go ahead on its own. Bring together some core members of the team, and ask yourselves: imagine what we think is really on the other team members' left-hand columns. Now imagine if everybody actually said those things in a room together. Could we handle it? Would it lead to good things, or would it just be a recipe for people blowing up at each other, or getting entrenched in their own positions? Are we sophisticated enough in the mental models concepts to recognize our own potential for prodding each other's defensiveness?

36 Balancing Inquiry Advocacy

Rick Ross, Charlotte Roberts

Managers in Western corporations have been in being forceful, articulate "solvers." They know how to present and argue. But as people rise in the organization, they face complex and interdependent issues where no answer, and where the only viable option is committed individuals to think together to a point, they need to learn to skillfully balance. When balancing advocacy and inquiry, we think, and then encourage others to challenge, and here is how I have arrived at it. How does it make sense to you and what doesn't? Do you prove it?

Balancing inquiry and advocacy is sometimes difficult, which is one reason why it is the payoff comes in the more creative and occur when people combine multiple perspectives. We don't recommend inquiry alone. It is a viewpoint to express, and it is important to encourage others to learn more about others' views.

Nor do we recommend that you swing the adamant assertion ("Here's what I say") to the other side ("Here's what I say") and back again. Balancing inquiry allows a variety of skills. It's as if all the "cards" be spread out on an imaginary palette. As the conversation, you should be able to incorporate the palette.

This palette chart, of course, is only the roles which people can play in conversation. There are more distinct combinations of varying levels of each with a different impact.

There are dysfunctional forms of both advocacy and inquiry, in organizations, and people can

36 Balancing Inquiry and

Advocacy

Rick Ross, Charlotte Roberts

Managers in Western corporations have received a lifetime of training in being forceful, articulate “advocates” and “problem solvers.” They know how to present and argue strongly for their views. But as people rise in the organization, they are forced to deal with more complex and interdependent issues where no one individual “knows the answer,” and where the only viable option is for groups of informed and committed individuals to think together to arrive at new insights. At this point, they need to learn to skillfully balance advocacy with inquiry.

When balancing advocacy and inquiry, we lay out our reasoning and thinking, and then encourage others to challenge us. “Here is my view and here is how I have arrived at it. How does it sound to you? What makes sense to you and what doesn’t? Do you see any ways I can improve it?”

Balancing inquiry and advocacy is sometimes hard on people’s cherished opinions, which is one reason why it is so difficult to master. But the payoff comes in the more creative and insightful realizations that occur when people combine multiple perspectives.

We don’t recommend inquiry alone. People almost always have a viewpoint to express, and it is important to express it—in a context which allows you to learn more about others’ views while they learn more about yours. Nor do we recommend that you switch in rote fashion from an adamant assertion (“Here’s what I say”) to a question (“Now what do you say?”) and back again. Balancing inquiry and advocacy means developing a variety of skills. It’s as if all the “colors” of conversation could be spread out on an imaginary palette. As the creator of your part of the conversation, you should be able to incorporate styles from all four quadrants of the palette.*

This palette chart, of course, is only the beginning of a taxonomy of roles which people can play in conversation. There are probably a dozen more distinct combinations of varying levels of inquiry and advocacy, each with a different impact.

There are dysfunctional forms of both advocacy and inquiry. For example, in organizations, adroit people can skew the inquiry process by

would advocate his position, adding that the honoring him because he was from out of town. opposite position, adding that Bill was an and would he please shut up? People would less about resolving the matter. In the best use of catharsis at expressing their feelings. son to decide this “left-hand column busi- it inquire into each party’s reasoning: “Do at too few leads is a major problem? What ing a marketing person is the answer? Bill, ive the money to hire someone, do you have rary? If not, what leads you to keep arguing t prompt Bill to consider if he is acting from y responsibility is fulfilled when I tell people , the others might consider if they are acting hen someone points out a problem, we can lling us how to fix it.

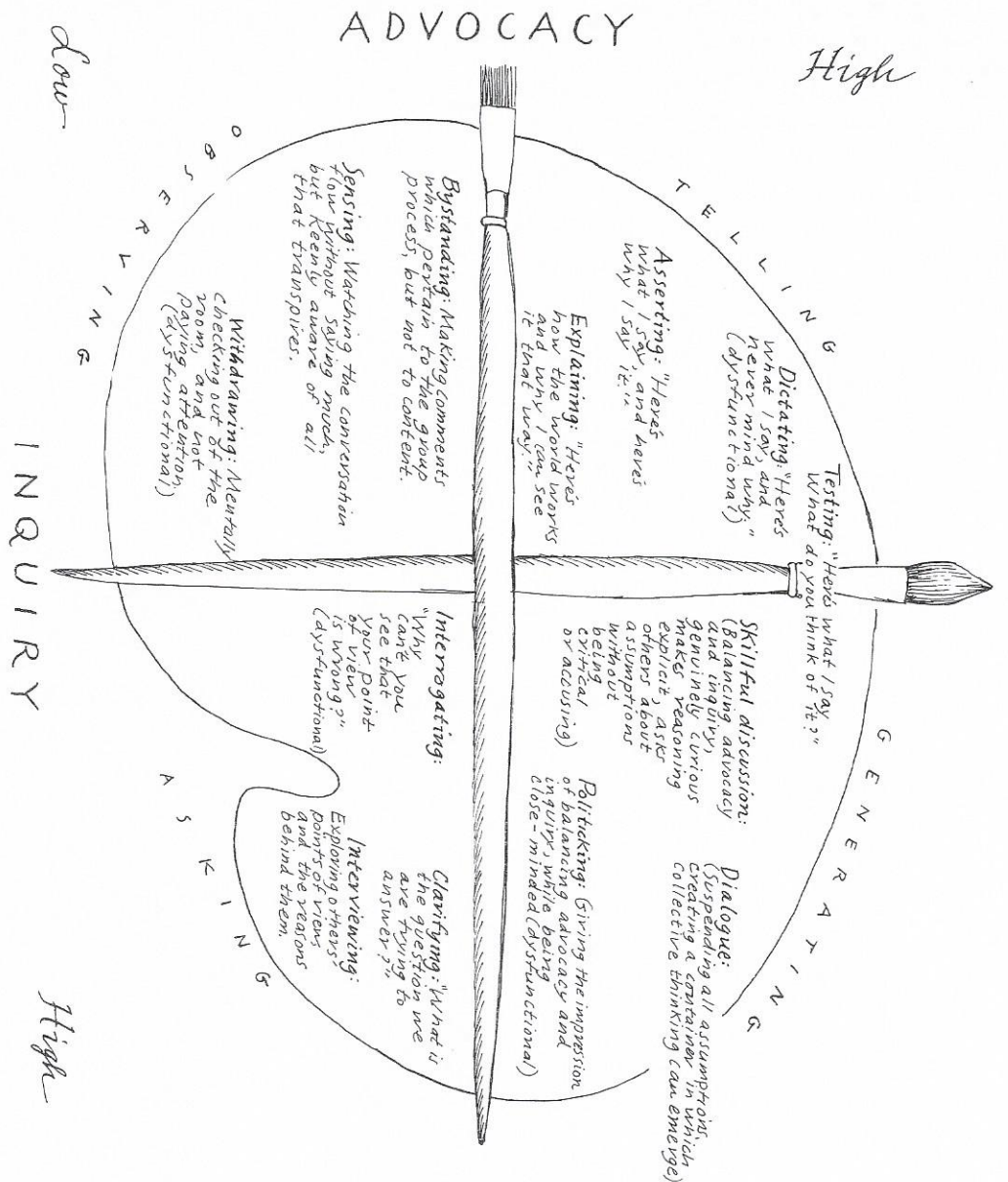
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*This diagram is an expansion of the “Inquiry/Advocacy matrix” developed by Dina McLain Smith.



relentless “interrogating,” without caring at all for the person being questioned. In the same vein, advocacy can feel like an inquisition if the advocate simply “dictates” his point of view, while refusing to make his reasoning process visible. People who are unwilling to expose their thinking may also “withdraw” into silence, instead of taking the opportunity to learn through observation.

One of the most destructive conversational forms is “politicking,” in which there is no overt argument—just a relentless refusal to learn while giving the impression of balancing advocacy and inquiry. In workshops, we see this form sometimes when people who have read *The Fifth Dis-*

cipline play “The Beer Game.” This game distribution system simulation, demonstration determines behavior. From the description *Discipline*, some readers conclude the behavior is under-ordering beer and remaining game. When these people show up to play impression at all costs. Their strategy is disastrous in real life, because it would be disastrous in real life, because in backlog don’t keep their customers. Non to consider any other course of play. When for the sake of their teammates, they don’t attention to their “superior” status: “Look, I know what I’m doing.”

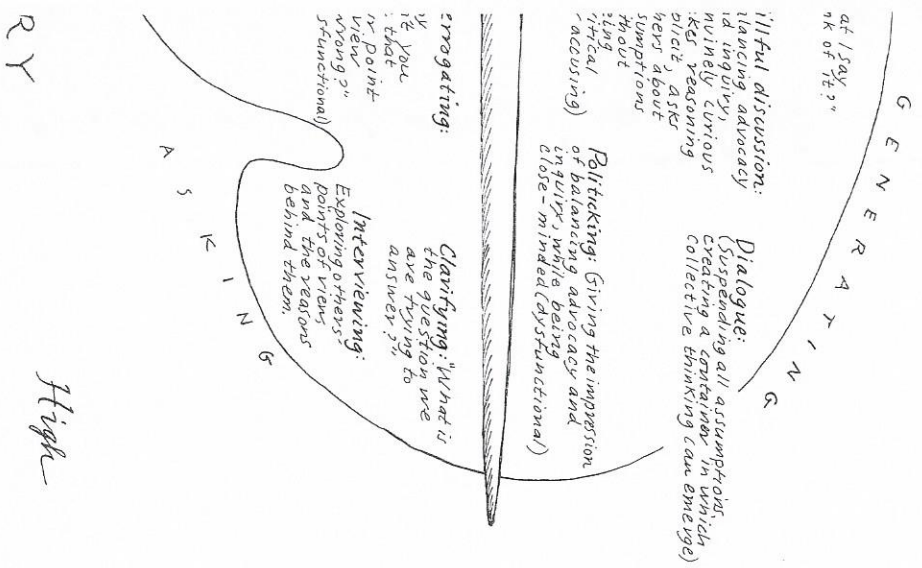
It is said that each of us has a natural advocacy or inquiry. Debate and law tea social work (if they’re practiced well) teach more for advocacy; women are more reward women are even taught that it is a sign of you want or need. (Instead of saying, “Can thirsty woman would say, “It’s a terribly horrible if we all had some special refreshment women had a hard time with advocacy, but joined managerial ranks in organizations, becoming more adept at balancing the two

Protocols for balancing adv

BALANCING ADVOCACY AND INQUIRY IS OR themselves, to begin changing a large or don’t need any mandate, budget, or approval always be rewarded with better relationship.

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Also see “Opening Lines” (page 263).



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discipline play." The Beer Game. This game is a mock production-and-distribution system simulation, demonstrating how the structure of a system determines behavior. From the description of the game in *The Fifth Discipline*,^o some readers conclude the best winning strategy is deliberately under-ordering beer and remaining in backlog throughout the game. When these people show up to play, they cling to their mistaken impression at all costs. Their strategy is disastrous for their team's score, and it would be disastrous in real life, because businesses which remain in backlog don't keep their customers. Nonetheless, these players refuse to consider any other course of play. When people ask them to change for the sake of their teammates, they don't argue back. They simply call attention to their "superior" status: "Look, I've read the book. Trust me. I know what I'm doing."

It is said that each of us has a natural predilection toward either advocacy or inquiry. Debate and law teach advocacy; journalism and social work (if they're practiced well) teach inquiry. Men are rewarded more for advocacy; women are more rewarded for inquiry. In the South, women are even taught that it is a sign of poor breeding to state what you want or need. (Instead of saying, "Can you get me a mint julep?" a thirsty woman would say, "It's a terribly hot day. Wouldn't it be wonderful if we all had some special refreshment?") During the 1970s, many women had a hard time with advocacy, but now that more women have joined managerial ranks in organizations, members of both genders are becoming more adept at balancing the two forms.

Protocols for balancing advocacy and inquiry

BALANCING ADVOCACY AND INQUIRY IS ONE WAY FOR INDIVIDUALS, BY THEMSELVES, TO BEGIN CHANGING A LARGE ORGANIZATION FROM WITHIN. YOU DON'T NEED ANY MANDATE, BUDGET, OR APPROVAL TO BEGIN. YOU WILL ALMOST ALWAYS BE REWARDED WITH BETTER RELATIONSHIPS AND A REPUTATION FOR INTEGRITY.

The purpose of these conversational recipes is to help people learn the skills of balancing inquiry and advocacy. Use them whenever a conversation offers you an opportunity to learn—for example, when a team is considering a difficult point that requires information and participation from everyone on the team.^o

Also see "Opening Lines" (page 263).

^o *The Fifth Discipline*, p. 27ff.

^o These protocols were adapted, with many changes, from course

material developed for *Leading Learning Organizations* (1993, Encinites, Calif.: Ross Partners); from material developed by Diane McLain Smith and Philip McArthur of Action Design; and from *The Fifth Discipline*, pp. 200–1.

1. PROTOCOLS FOR IMPROVED ADVOCACY:

Make your thinking process visible (walk up the ladder of inference slowly).

What to do

State your assumptions, and describe the data that led to them.

"Here's what I think, and here's how I got there."

Explain your assumptions.

"I assumed that . . ."

Make your reasoning explicit.

"I came to this conclusion because . . ."

What to say

Explain the context of your point of view: who will be affected by what you propose, how they will be affected, and why.

Give examples of what you propose, even if they're hypothetical or metaphorical.

"To get a clear picture of what I'm talking about, imagine that you're the customer who will be affected . . ."

As you speak, try to picture the other people's perspectives on what you are saying.

Publicly test your conclusions and assumptions.

What to do

Encourage others to explore your model, your assumptions, and your data.

"What do you think about what I just said?" or "Do you see any flaws in my reasoning?" or "What can you add?"

What to say

Refrain from defensiveness when your ideas are questioned. If you're advocating something worthwhile, then it will only get stronger by being tested.

What to do

Reveal where you are least clear in your thinking. Rather than making you vulnerable, it defuses the force of advocates who are opposed to you, and invites improvement.

Even when advocating: listen, stay open, and encourage others to provide different views.

"Do y

2. PROTOCOLS FOR IMPROVED

Ask others to make their thinking process vi

What to do

Gently walk others down the ladder of inference and find out what data they are operating from.

"What that?" that?" that?" that?"

Use unaggressive language, particularly with people who are not familiar with these skills. Ask in a way which does not provoke defensiveness or "lead the witness."

Instead or "W you h thinki

Draw out their reasoning. Find out as much as you can about why they are saying what they're saying.

"What How conce reason

Explain your reasons for inquiring, and how your inquiry relates to your own concerns, hopes, and needs.

"I'm c sumpt

FOR IMPROVED ADVOCACY:

is visible (walk up the ladder of inference

What to say

"Here's what I think, and here's how I got there."

"I assumed that . . ."

"I came to this conclusion because . . ."

"To get a clear picture of what I'm talking about, imagine that you're the customer who will be affected . . ."

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What to say

"What do you think about what I just said?" or "Do you see any flaws in my reasoning?" or "What can you add?"

What to do

Reveal where you are least clear in your thinking. Rather than making you vulnerable, it defuses the force of advocates who are opposed to you, and invites improvement.

Even when advocating: listen, stay open, and encourage others to provide different views.

What to say

"Here's one aspect which you might help me think through . . ."

"Do you see it differently?"

2. PROTOCOLS FOR IMPROVED INQUIRY:

Ask others to make their thinking process visible.

What to do

Gently walk others down the ladder of inference and find out what data they are operating from.

What to say

"What leads you to conclude that?" "What data do you have for that?" "What causes you to say that?"

Instead of "What do you mean?" or "What's your proof?" say, "Can you help me understand your thinking here?"

Use unaggressive language, particularly with people who are not familiar with these skills. Ask in a way which does not provoke defensiveness or "lead the witness."

Draw out their reasoning. Find out as much as you can about why they are saying what they're saying.

"What is the significance of that?" "How does this relate to your other concerns?" "Where does your reasoning go next?"

Explain your reasons for inquiring, and how your inquiry relates to your own concerns, hopes, and needs.

"I'm asking you about your assumptions here because . . ."

Compare your assumptions to theirs.

What to do

Test what they say by asking for broader contexts, or for examples.

What to say

"How would your proposal affect . . . ?" "Is this similar to . . . ?" "Can you describe a typical example . . . ?"

Check your understanding of what they have said.

"Am I correct that you're saying . . . ?"

Listen for the new understanding that may emerge. Don't concentrate on preparing to destroy the other person's argument or promote your own agenda.

3. PROTOCOLS FOR FACING A POINT OF VIEW WITH WHICH YOU DISAGREE:

What to do

Again, inquire about what has led the person to that view.

What to say

"How did you arrive at this view?" "Are you taking into account data that I have not considered?"

Make sure you truly understand the view.

"If I understand you correctly, you're saying that . . ."

Explore, listen, and offer your own views in an open way.

"Have you considered . . ."

Listen for the larger meaning that may come out of honest, open sharing of alternative mental models.

Use your left-hand column as a resource.

"When you say such-and-such, I worry that it means . . ."

Raise your concerns and state what is leading you to have

"I have a hard time seeing that, because of this reasoning . . ."

4. PROTOCOLS FOR WHEN YOU'RE

What to do

Embrace the impasse, and tease apart the current thinking. (You may discover that focusing on "data" brings you all down the ladder of inference.)

*"What do
"What do
have no d
"What do*

Look for information which will help people move forward.

*"What is
"What do
what do e*

Ask if there is any way you might together design an experiment or inquiry which could provide new information.

Listen to ideas as if for the first time.

Consider each person's mental model as a piece of a larger puzzle.

*"Are we s
different
here? W
from?"*

Ask what data or logic might change their views.

*"What, th
happen b
sider the*

Ask for the group's help in redesigning the situation.

*"It feels l
impasse e
walk awa
understan
ideas tha
our think
"I don't i
tions una
ment."*

Don't let conversation stop with an "agreement to disagree."

Avoid building your "case" when someone else is speaking from a different point of view

theirs.

What to say

for
ples.

"How would your proposal affect . . . ?" "Is this similar to . . . ?" "Can you describe a typical example . . . ?"

"Am I correct that you're saying . . . ?"

ending
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y
: or

FACING A POINT OF VIEW WITH WHEN YOU DISAGREE:

What to say

"How did you arrive at this view?" "Are you taking into account data that I have not considered?"

"If I understand you correctly, you're saying that . . ."

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st,

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"I have a hard time seeing that, because of this reasoning . . ."

4. PROTOCOLS FOR WHEN YOU'RE AT AN IMPASSE:

What to do

Embrace the impasse, and tease apart the current thinking. (You may discover that focusing on "data" brings you all down the ladder of inference.)

Look for information which will help people move forward.

Ask if there is any way you might together design an experiment or inquiry which could provide new information.

Listen to ideas as if for the first time.

Consider each person's mental model as a piece of a larger puzzle.

Ask what data or logic might change their views.

Ask for the group's help in redesigning the situation.

What to say

"What do we know for a fact?"

"What do we sense is true, but have no data for yet?"

"What don't we know?"

"What is unknowable?"

"What do we agree upon, and what do we disagree on?"

"Are we starting from two very different sets of assumptions here? Where do they come from?"

"What, then, would have to happen before you would consider the alternative?"

"It feels like we're getting into an impasse and I'm afraid we might walk away without any better understanding. Have you got any ideas that will help us clarify our thinking?"

"I don't understand the assumptions underlying our disagreement."

Avoid building your "case" when someone else is speaking from a different point of view.



37 Conversational Recipes

Robert Putnam

The help Robert Putnam, a partner in Action Design, gave us in this part of the book emerged from his work on this piece for us, which in turn was based upon a more in-depth article for action science practitioners: "Recipes and Reflective Learning: What Would Prevent You from Saying It That Way?" by Robert Putnam, in The Reflective Turn: Case Studies in and on Educational Practice, (1991, New York: Teachers College Press). Philip McArthur, whose "Opening Lines" (page 263) provide an example of recipes, is also a partner in Action Design.

People who are learning reflection and inquiry skills very quickly develop a repertoire of stock phrases. I call these phrases "recipes" because most of them are used like step-by-step procedures for getting a particular response. For instance, here is a conversation where "Paul," an in-house consultant, is trying to help "Linda," a supervisor, delve into the assumptions underlying a troublesome incident where someone had been fired:

PAUL: Are you and the other supervisors going to talk about this incident, to learn from it?

LINDA: I'm not going to bring it up.

PAUL: *What prevents you from bringing it up?*

LINDA: Nothing prevents me. What do you want me to say?

Later, Paul reflected, "I seemed to get myself into trouble with that line that I couldn't get myself out of." Then he described what went through his mind at that moment: "Am I handling it right? Am I too concerned about what I'm doing? Am I getting stuck in the technique?"

The value of recipes

PAUL'S REFLECTIONS SUGGEST EXACTLY THE DIFFICULTIES WE EXPECT IN the early stages of using any new technique. It feels unnatural. When he got into difficulty, he doubted his ability to follow-through consistently. And his self-consciousness made it even less likely that he would follow

through competently. At first glance, you might think that Paul is a terrible double blind, he didn't have the techniques with skill, so he was stuck with that "parrot" (as Paul himself pointed out would say, and that would inevitably "get him"). But the learning of skills begins with redecide the ladder of inference (see page 242, to apply it? Without practice, the concept until it's second nature, you can't practice short-cut the dilemma by following a set of

1. Identify the conclusions someone is making.
2. Ask for the data that lead to the conclusions.
3. Inquire into the reasoning that connects the data to the conclusions.
4. Infer a possible belief or assumption.
5. State your inference and test it with the person.

Working recipes into obsolescence

RECIPES LIKE THESE PRODUCE USEFUL DATA to the tongue. Their vividness may also aid in

But there is a caveat. Rules and guidelines when we deliberately use them to move beyond based behavior. Recipes must be made to work. Here are some rules and guidelines for are also recipes; so they, too, must be made (job).

■ Examine your own conversations later.

Describe and reflect upon your use of instance, used "What prevents you?" as a technique, Paul realized the prejudice I maybe it wasn't inconsistent for her to say it now. It may have been just a timing hearing that. I was sort of forcing it in thing." For Paul, this sort of self-judgment learn.

■ Seek out generic strategies for improving When you look at your earlier conversations

sational Recipes

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DES

EXACTLY THE DIFFICULTIES WE EXPECT IN new technique. It feels unnatural. When he d his ability to follow-through consistently. ade it even less likely that he would follow

through competently. At first glance, you might assume that he was in a terrible double bind; he didn't have the sophistication to use inquiry techniques with skill, so he was stuck with "recipes"—canned remarks that "parrot" (as Paul himself pointed out) what a skilled intervenor would say, and that would inevitably "get him in trouble."

But the learning of skills begins with recipes. For instance, if you decide the ladder of inference (see page 242) is useful, how do you learn to apply it? Without practice, the concept won't be second nature; but until it's second nature, you can't practice with it effectively. So you short-cut the dilemma by following a set of rules:

1. Identify the conclusions someone is making.
2. Ask for the data that lead to the conclusion.
3. Inquire into the reasoning that connects data and conclusion.
4. Infer a possible belief or assumption.
5. State your inference and test it with the person.

Working recipes into obsolescence

RECIPES LIKE THESE PRODUCE USEFUL DATA, AND THEY COME QUICKLY to the tongue. Their vividness may also aid in focusing reflection.

But there is a caveat. Rules and guidelines can play a vital role only when we deliberately use them to move beyond rule- and guideline-based behavior. Recipes must be made to work themselves out of a job.

Here are some rules and guidelines for doing so. (Of course, these are also recipes; so they, too, must be made to work themselves out of a job.)

■ *Examine your own conversations later.*

Describe and reflect upon your use of the "recipes." Paul, for instance, used "What prevents you?" as a kind of advocacy, implying that Linda was hypocritical. But through his own retrospective critique, Paul realized the prejudice he had made: "I see now, maybe it wasn't inconsistent for her to say, 'I don't want to talk about it now.' It may have been just a timing kind of thing. But I wasn't hearing that. I was sort of forcing it into an inconsistency kind of thing." For Paul, this sort of self-judgment is an invaluable way to learn.

■ *Seek out generic strategies for improving your use of "recipes."*

When you look at your earlier conversations, try to figure out gen-

eral strategies for various impasses. For instance, Paul worked with a manager named Mike, who had given a mixed message to a subordinate. Over and over, Paul asked Mike what had led him not to say more directly what he really wanted. Later, listening to tapes of the conversation, Paul realized a maxim: rather than getting people in situations like Mike's to admit they are wrong, you can be more helpful by naming how they are caught in a dilemma and focusing on how they can manage it more successfully. Paul went on to use this maxim very successfully in work with other people.

■ *Put yourself in the other person's vantage point.*

This is a difficult rule to remember to follow. Paul, for instance, with all his training and reflection, still found himself advocating his point of view in a series of highly charged meetings about downsizing. Even his "recipes" were just subtle ways of trying to manipulate a plant manager, whose name was Greg, to change his mind. But finally, when Greg responded to one of Paul's recipes by saying what he feared his boss would do, Paul (as he said later) felt something shift within him. He began to talk openly in the group about how he might think differently "if I put myself in Greg's shoes." Greg, in response, articulated a breakthrough scenario. Gradually the group worked through its impasse and developed a proposal for restructuring their division more intelligently.

■ *Ask for the perspective of the people you're working with.*

By this time, Paul had moved beyond recipes. He was able to ask the people he worked with, "Am I inviting enough inquiry in my own advocacy? I tried to, but I don't know if it was just pro forma." His interventions had become less stilted, more natural. And his attention had turned away from "Will I or won't I get them to do what I think we should?" and more to "What can we accomplish?"

Recipes, when you first start using them, are gimmicks. You'll use them within your taken-for-granted way of framing the situation. But as you gain experience with them, the frame too may shift. You may be able to jump, without planning in advance exactly how to do it, from superficial technique to a deeper sense of practice.

38 Opening Lines

Philip Marthur

When . . .

Strong views are expressed without any reasoning or illustrations . . .

"You're under to believe."

The discussion goes off on an apparent tangent . . .

"I'm not saying how."

You doubt the relevance of your own thoughts . . .

"This is so, let's."

Two members pursue a topic at length while others observe . . .

"I'd like what you think."

Several views are advocated at once . . .

"We need to take time."

You perceive a negative reaction in others . . .

"When I was upset, I said or."

You perceive a negative reaction in yourself . . .

"This is than you give it I misused or."

Others appear uninfluenceable . . .

"Is the or do it others."

only from the report, do you get of the story and important is this event?

ences and phrases actually contribute to this im-

rt to person A.

to you get, *only from the report*, of person A?

u to this impression? For example, what is written appear in any other report? What is emphasized

n-raiser" paragraph. What does the author of this uses about?

thor want A to ignore or look away from? For s or details are omitted from this report?

hor want A to conclude? What actions does the kee?

you showed this page of answers to A. Would A ssesment and assumptions here? Would A be sed?

ns in your answers to these questions be tested? i to think that they might not be true?

Questions (5-14) for your report to B.

ort to write. But you now have three versions of " or kernel paragraph, and an end.

s of your final draft from among your versions. ll concentrating only on loyalties A, B, and the are finished with the first draft, look it over with alties" in mind. What will need to be added or ticulate the changes needed to make it palatable ou would show it to. If the loyalties conflict too dld consider releasing two or three separate doc-

PTIONS (OPTIONAL)

ish, a simple (albeit politically sensitive) way to Show the material you have written so far to A

and B. Show them their version, versus the version written for the "truth," versus the equivalent three paragraphs of your final version. Tell them you are trying to decide which material to emphasize in the final draft. Ask them which they prefer.

It is always a bit frightening to reveal assumptions in written form. However, most people are fairly tolerant of something they know is an early draft, particularly if it's marked as such. They will often critique an early draft far more constructively, and openly, than they would critique a draft they think is final. If you are willing to show some of your "scaffolding" to others, it can open inquiry on issues that were never raised before, because no one thought to raise them until they were written down.

Multiple Perspectives

Charlotte Roberts, James Boswell

The more perspectives on an issue that a team can consider, the more possibilities exist for effective action. The point is not just to look at one or two extremely different perspectives, but to capture as many differences of nuance as possible.

STEP 1: DESIGNING THE WHEEL

Create a disk about eighteen inches in diameter from thick paper which can be written upon. Lay the wheel in the center of the table. Write a title or draw a symbol for the problem in the center of the wheel.

Draw lines across the wheel as if cutting a pie, dividing the wheel into equal slices—one for each member of the team. Write everyone's name on a slice of the wheel.

Then write up cards with the names or titles of eight or more key stakeholders, for the problem being explored. Some stakeholders may be internal: the VP of finance, regional sales managers, technicians, supervisors, or hourly workers. Others will include key external groups: customers and suppliers, government regulators, competitors, and consumers. Set out one flip chart for each key stakeholder.



P U R P O S E

To open up or widen a team's perspectives—the points of view from which the team members regard a problem.

O V E R V I E W

Rotating between roles encourages members to see an important issue from as many vantage points as possible.

P A R T I C I P A N T S

An intact team, working on a real problem.

T I M E

Twenty minutes or more.

3. What impression, *only from the report*, do you get of the story and the facts? How important is this event?
4. What specific sentences and phrases actually contribute to this impression?

Now look at the report to person A.

5. What impression do you get, *only from the report*, of person A?
6. What text leads you to this impression? For example, what is written to A that does not appear in any other report? What is emphasized for A?
7. Look at the "curtain-raiser" paragraph. What does the author of this report believe A cares about?
8. What does the author want A to ignore or look away from? For example, what facts or details are omitted from this report?
9. What does the author want A to conclude? What actions does the author want A to take?
10. Imagine now that you showed this page of answers to A. Would A agree with the assessment and assumptions here? Would A be pleased or chagrined?
11. Can the assumptions in your answers to these questions be tested? Is there any reason to think that they might not be true?

Now answer the same questions (5–14) for your report to B.

STEP 6: THE FINAL REPORT

You still have a final report to write. But you now have three versions of a beginning, a "nut graf" or kernel paragraph, and an end.

You can choose parts of your final draft from among your versions. Choose deliberately, still concentrating only on loyalties A, B, and the truth. Then, when you are finished with the first draft, look it over with each of your other "loyalties" in mind. What will need to be added or subtracted for each? Articulate the changes needed to make it palatable to each of the people you would show it to. If the loyalties conflict too much, perhaps you should consider releasing two or three separate documents.

STEP 7: TESTING YOUR ASSUMPTIONS (OPTIONAL)

You now have, if you wish, a simple (albeit politically sensitive) way to test your assumptions. Show the material you have written so far to A

and B. Show them their version, versus "truth," versus the equivalent three paragraphs you are trying to decide which material draft. Ask them which they prefer.

It is always a bit frightening to reveal a. However, most people are fairly tolerant of early draft, particularly if it's marked as such early draft far more constructively, and open a draft they think is final. If you are willing "folding" to others, it can open inquiry on it before, because no one thought to raise it down.

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Then write up cards with the names of stakeholders, for the problem being explored: be internal: the VP of finance, regional sales perversors, or hourly workers. Others will be customers and suppliers, government regulators. Set out one flip chart for each key:

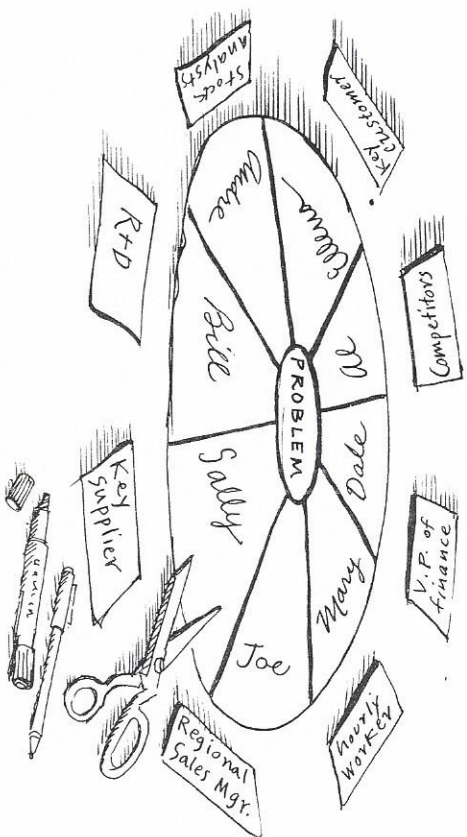
S U P P L I E S

Flip charts, note cards, markers, Post-it notes, and thick paper for the "perspective wheel." If the wheel seems unwieldy, a similar effect can be achieved by handing cards from one person to the next, or shuffling and dealing the cards after each turn.

E N V I R O N M E N T

A comfortable meeting room with a central table and room for numerous flip charts.

Place the cards, evenly spaced, around the edge of the wheel, so it looks something like this:



STEP 2: PLAYING THE WHEEL

When the wheel is turned one space, each person's name will stop in line with one of the key stakeholders. At each turn of the wheel, each team member must add to the understanding of the perspective to which he or she has moved.

For example, Bill's name lands adjacent to the CEO card at the edge of the wheel. Bill walks to the flip chart for that stakeholder position and completes this sentence, "From my perspective as CEO, the critical elements within this situation are . . ."

Comments may concern the problem (perhaps written in black) or ideas for leverage (perhaps written in green), but all comments should be written as if you are the person whose card you have landed on.

You are not permitted to "pass." If you feel as if you don't understand this stakeholder's perspective, ask yourself these questions, playing the role of that person:

Time: What time frame am I operating within? When did I begin to look at the problem? When will it, effectively, be a nonissue for me?

Expectation: What do I expect will happen, if all continues as expected? What do I hope (or demand) should happen? Who expects me to deal with this? What do they want me to do?

Examination: How closely am I willing to examine the problem? From how far away do I see it? What else is aggregated with this problem as I see it?

Understanding: What do I see about the sees? What understanding of the problem data is my understanding of the problem based on?

STEP 3: WORKING WITH THE PERSPECTIVES

At some point, you will find yourself with a perspective. Now, as a team, you can talk through them. You may drop deeper within a van might start out with one stakeholder representing you might realize there are three distinct "flavors" requiring its own flip chart page.

In each case, how does the way you are dealing with your capacity for dealing with a chronic or b

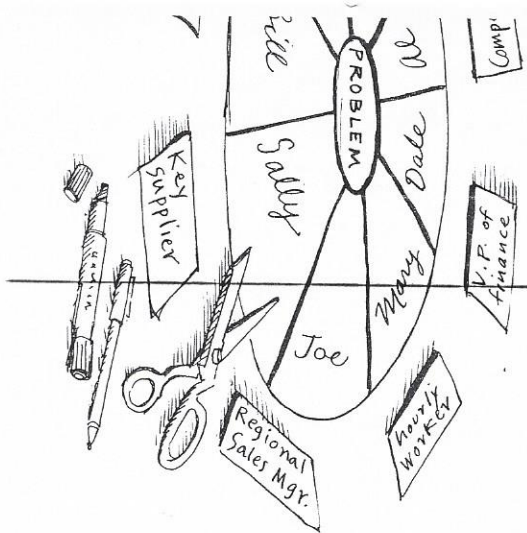
40 Creating Scenarios

Art Kleiner

Contrary to what many people believe at purpose is not prediction. A scenario, novator Napier Collins puts it, is "an imagination of what will happen: you position of which will probably come to pass, more keenly aware of the forces acting on a scenario exercise has been successful when shakes your worldview. Kees van der Heijde scenario work on page 279) calls this the "all

A scenario planning exercise is a bit like up to bring forth distinctions and phenomenon ignores. Discerning the differences between while everyone else viewed the "Arab natic Royal Dutch/Shell scenario planners anticipated 1970s. Seeing the demographics and economic Union, while Western politicians saw only Shell's scenario planners foresee *glasnost*.

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data is my understanding of the problem based upon?

STEP 3: WORKING WITH THE PERSPECTIVES

At some point, you will find yourself with full descriptions of each per-
spective. Now, as a team, you can talk through the situation from each
of them. You may drop deeper within a vantage point: for example, you
might start out with one stakeholder representing "finance." Gradually,
you might realize there are three distinct "finance" vantage points, each
requiring its own flip chart page.

In each case, how does the way you are thinking and seeing limit
your capacity for dealing with a chronic or high-voltage issue?

40 Creating Scenarios

Art Kleiner

Contrary to what many people believe about scenario exercises, their
purpose is not prediction. A scenario, as longstanding scenario in-
novator Napier Collyns puts it, is "an imaginative leap into the future."
You don't predict what will happen; you posit several potential futures,
none of which will probably come to pass, but all of which, make you
more keenly aware of the forces acting on you in the present. You know
a scenario exercise has been successful when you feel a premonition that
shakes your worldview. Kees van der Heijden (who describes his own
scenario work on page 279) calls this the "aha" experience.

A scenario planning exercise is a bit like a storytelling workshop, set
up to bring forth distinctions and phenomena that the conventional wis-
dom ignores. Discerning the differences between Iran and Saudi Arabia,
while everyone else viewed the "Arab nations" as a single bloc, helped
Royal Dutch/Shell scenario planners anticipate the oil shortages of the
1970s. Seeing the demographics and economic pressures on the Soviet
Union, while Western politicians saw only an "evil empire," helped
Shell's scenario planners foresee *glasnost*. Looking at the slow-starting



sive dynamics of advertising revenue in new media scenario workshop envision the current wave of mergers and cable television companies. The method can be ranging from the price of gold to the economic status from the future of energy efficiency to the competition to condense scenario work to a half-day or week—becoming clear that such efforts usually don't give to delve past their existing preconceptions. The audience for artists and managers at New York University's communications program meets twice a week for six supplemented by regular conversations over computer amount of time feels cramped. Each of the steps in is an exercise in reeducation: creating a new col-ptions about the outside world, which none of us own.

ENSE OF PURPOSE

enuine learning only when they answer genuine concerns they are merely an academic exercise. The concerns ng, shared by the entire group (ideally of eight to best with uncertainty. "Should we move toward do-markets?" "What sort of career should we prepare v can we build democratic institutions in South Af-our focus is not a trivial task, especially because the deally be diverse people with a common interest. As a, it requires moving past the concerns which people ie concerns which truly motivate them.

DRIVING FORCES

upon the distinction between two types of driving ed forces are reasonably predictable. We all know, alanimity, how many twenty-year-olds will exist in any ars from now. We can assume that the pace of tech-continue, with costs of new devices falling at a fairly ority of forces at play are uncertain. Will investors eloped countries? Will consumers continue to ea-

gerly want new media products? Will American manufacturing catch up to Japan's quality standards? You can't know the answer, but you can become far more aware of the reasons why events might move in one direction or another, and the implications of their movement.

The predetermined elements set the boundaries within which your scenarios take place; while the act of picking key uncertainties leads you to the most significant ramifications of your decision. This typically requires both intensive give and take within the group, as well as outside research. In our NYU workshop, for example, one participant demonstrated the value of outside research by investigating, on his own, how many new semiconductors it would take to develop a nationwide information highway with video available on demand. He concluded that America would have to double its chip manufacturing capacity—which dramatically changed our sense of how quickly a full-scale national digital network could emerge. For that group, whose members had tacitly assumed their immediate future was tied to such a network, this was shocking news.

STEP 3: SCENARIO PLOTS

Like working with system archetypes, developing scenarios involves considering "classic stories" in terms of your current situation. (Indeed, as a few researchers are discovering, the system archetypes on page 121 and this stage of scenario planning are devilishly complementary.)

You create several stories of your own, trying to make each evoke a future which pulls you past your own blinders. As you talk, you enrich the plots, developing sketches of what might plausibly happen.

For our scenarios at NYU about the future of global information networks, we gradually settled on the availability of capital as a key uncertainty. Moving in one direction led to a future we called "keiretsu world" (after the Japanese industrial consortia), in which information flows were dominated by large corporations, while another led to a "virtual world," in which large companies were no longer necessary, and devolved.

You don't care how likely or unlikely each story may be. You care about whether it illuminates your understanding. In fact, if a substantial drop in the demand for your product or service is undeniably plausible—even if it seems like the chances against it are 100 to 1—then you owe it to yourself to create a story around that event, to spark the necessary creativity and preparation that you might never need, but which is worth developing in any case.

but ultimately explosive dynamics of advertising revenue in new media helped my own scenario workshop envision the current wave of mergers between telephone and cable television companies. The method can be applied to subjects ranging from the price of gold to the economic stability of East Asia; from the future of energy efficiency to the competitiveness of hospitals.

People often want to condense scenario work to a half-day or weekend session, but it's becoming clear that such efforts usually don't give people enough time to delve past their existing preconceptions. The annual workshop I lead for artists and managers at New York University's interactive telecommunications program meets twice a week for six straight weeks, supplemented by regular conversations over computer network. Even that amount of time feels cramped. Each of the steps in that six-week process is an exercise in reeducation: creating a new collective set of assumptions about the outside world, which none of us could reach on our own.

STEP 1: REFINING OUR SENSE OF PURPOSE

Scenarios provoke genuine learning only when they answer genuine concerns. Otherwise, they are merely an academic exercise. The concerns should be compelling, shared by the entire group (ideally of eight to twenty people), and best with uncertainty. "Should we move toward domestic or overseas markets?" "What sort of career should we prepare students for?" "How can we build democratic institutions in South Africa?" Articulating your focus is not a trivial task, especially because the participants should ideally be diverse people with a common interest. As with a vision exercise, it requires moving past the concerns which people *think* they have to the concerns which truly motivate them.

STEP 2: UNDERSTANDING DRIVING FORCES

Scenarios are built upon the distinction between two types of driving forces. Predetermined forces are reasonably predictable. We all know, barring unforeseen calamity, how many twenty-year-olds will exist in any country nineteen years from now. We can assume that the pace of technological growth will continue, with costs of new devices falling at a fairly predetermined rate.

But the vast majority of forces at play are *uncertain*. Will investors gravitate to less-developed countries? Will consumers continue to ea-

gerly want new media products? Will America to Japan's quality standards? You can't know become far more aware of the reasons why direction or another, and the implications of

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STEP 3: SCENARIO PLOTS

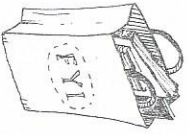
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This short description has benefited from concepts developed by Shell scenario innovators Pierre Wack and Ted Newland, from conversations with more recent Shell alumnae Arie de Geus, Kees van der Heijden, and Adam Kahane; from seeing the work of David H. Mason, Jim Henry, and others at Northeast Consulting Resources, Boston; and from the insights of Hapier Collins, Peter Schwartz, Lawrence Wilkinson, and others at Global Business Network.



STEP 4: STRATEGY, REHEARSAL, AND CONVERSATION

This may be the most important step. Regrettably, it is the most often ignored. Having developed two, three, or four scenario plots, you now consider each of them. What strategies would be effective no matter which of those futures came to pass? What would it feel like to live in those worlds? Some teams go so far as to rehearse the scenarios, as if they were pieces of improvisational theater, with each participant taking the part of a different key actor. It's also important to describe the scenarios to others—to get insights from the rest of the organization that may make your pictures of the world richer.

You may find that your scenarios themselves go through several iterations. That's all for the better. When you are done, you will have a language you have created, in which collective assumptions can be voiced. "Will this strategy stand up in a 'keiretsu world'?" you may ask each other. Or, if "virtual world" comes to pass, will we be prepared?*

THE ART OF THE LONG VIEW* by Peter Schwartz (1991, New York:

Currency Doubleday).

The preeminent introduction to scenario planning. Peter Schwartz has conducted scenario work at Stanford Research Institute in the 1970s, at Royal Dutch/Shell in the 1980s, and now at Global Business Network, a future-oriented information-gathering and scenario-developing company based in Emeryville, California. A naturally gifted story-teller, Schwartz covers all the key steps of the process in detail. I helped create this book; I have also seen people use it avidly. It opens up a seemingly arcane technique, and makes it feel both accessible and compelling.—AK

41 Shell's International Consultancy

Kees van der Heijden

Giving scenarios a context organization

For learning to see the unexpected, scenario the early 1980s, planner Kees van der Heijden, throughout the massive network of companies Dutch/Shell worldwide. Originally from the University of management at Strathclyde University, (

From the beginning, the purpose of organized by Pierre Wack (the original innovator): "to change the mental maps of managers even with a few exercises, to establish what let alone to change them. Asking them out models?" is obviously a waste of time.

The people who know that from experience "expert systems," which try to replicate in a narrow domain. Suppose, for instance, knowledge codified into this type of computer don't ask you to list your knowledge. Instead, tiny small initial interview with you, go to prototype, and sit you down in front of it. Yes question. The computer comes back with a question as the expert, say, "Look, this is nonsense defensively. They ask: 'Well, why is it nonsense, and they change the computer program months, this rapid prototyping process content which you are confronted with the wrong in a bit more explicit about your own logic, reasonably well in the expert system.

For almost a decade, I have been working