# Learning in action. Conversation with Donald A. Schön (I)

Donald Schön was born on September 19, 1930 in Massachusetts. He has dedicated 36 years of his life to study the theory and practice of individual and organizational learning. His main ideas come from his professional experience in researching, teaching, and consulting around the world. His main books are *Displacement of Concepts* (1963), *Technology and Change* (1967), *Beyond the Stable State* (1971), *The Reflective Practitioner* (1983), *Educating the Reflective Practitioner* (1987). He is co-author of four books. With Martin Rein, he published *Frame Reflection: Toward the Resolution of Intractable Policy Controversies* (1994). With Chris Argyris, *Theory in Practice: Increasing Professional Effectiveness* (1974), *Organizational Learning: A Theory of Action Perspective* (1978) and *Organizational Learning II* (1996). He also edited the book, *The Reflective Turn* (1991).

D. A. Schön has devoted several years to study what practitioners think of what they are doing while they are doing it. He thinks that everyone is a practitioner. Everyone may be a reflective practitioner if he learns from himself and from others, in the midst of action. In this conversation, having the interviewer as a gadfly and midwife in the Socratic sense, Schön himself, as a theory builder who mobilizes his knowledge and experience at the time he answers the questions, is an example of a reflective practitioner.

Note: I deliberately wrote (Part I) in the title of this interview to encourage D. A. Schön to continue our conversation. We could not do it. Don A. Schön died on September 13, 1997, while re-reading Dante Alighieri's *The Divine Comedy*.
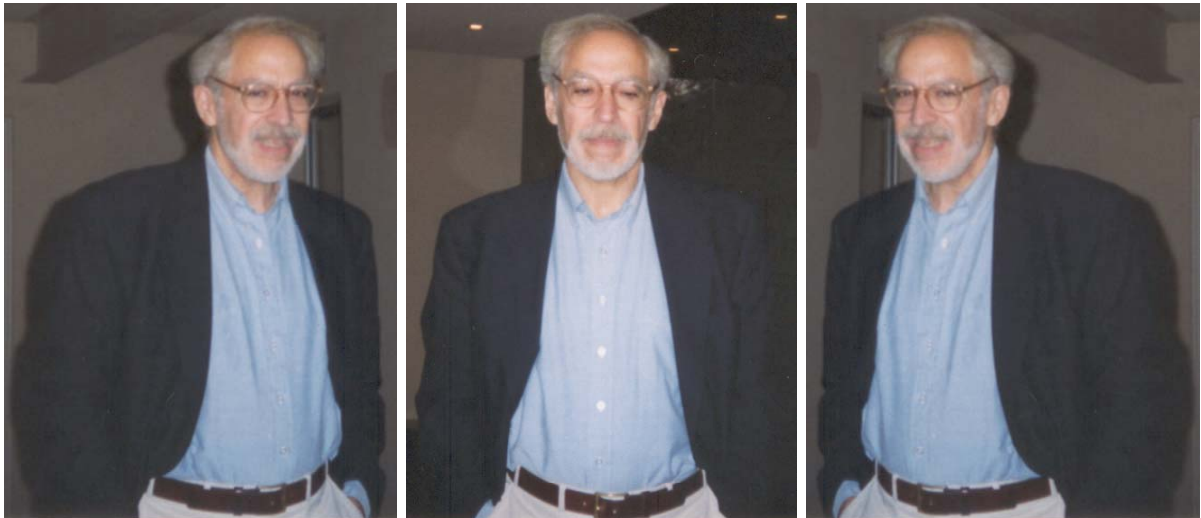
In 1971 you published *Beyond the Stable State*. What is the stable state?

A stable state is the state of affairs in which, from the point of view of an organization or an individual, the assumptions under which you conduct your life come true. The stable state is a kind of metaphor derived from chemical systems or thermodynamics: it is that you have an equilibrium with respect to the values of the variables that are crucial to the system in question. Systems maintain their variables within some range of values, but they can go outside the range. If they do, they may be brought back in by corrective strategies that are available within the system or, on the contrary, they may amplify and go critical. And the system may be thrown into a turbulent, chaotic state. One of the arguments I was making in that book is that stability is not a passive property of systems; it is a dynamic property. If you see something remain the same, you know that work is going on to keep it the same. For example, in the human body, temperature remains roughly constant, if you are well, at around 98.6, 98.2, or 98.9 ºF. When you get ill, your temperature can rise or fall. You use body temperature as a weapon against invading organisms. If you ask how the body keeps its temperature constant, you see that there is a lot of work going on. For example, the respiratory system —the system by which you take oxygen in and exhale carbon dioxide— is also part of the system for controlling the body temperature. You do work, take in oxygen and burn it to make heat. When you sweat, you use evaporative cooling to cool your body. Sweating is one of the body's devices for reducing temperature, keeping it below a certain critical upper limit. Dogs do not sweat, they pant; and panting is part of the dog's temperature control system. If you sweat too much you lose body temperature, and then other systems kick in to bring it up. So, there is a constant *homeostatic* process going on in which your body senses the values of the critical variables and actively works to bring them back within a satisfactory range. This is a metaphor for the social world. Within the social world also we work very hard to try to keep our living systems stable. You, as example, are a family man; you have children, a house, relationships, and you are constantly trying to keep all of them within a tolerable, maybe even desirable, range.
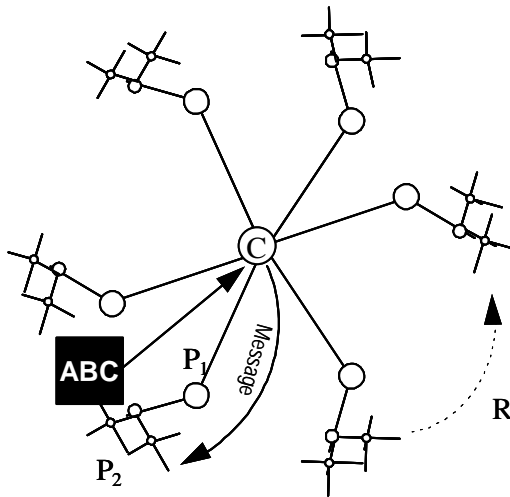
What happens when the stable state is broken?

There are four options: Return (going back to the past), Revolt, Mindlessness, and Learning. The structure of the book that I wrote 25 years ago considers the first three strategies, and then looks at the kind of learning that would deal with the world beyond the stable state.

Is the learning thesis the link between the *Beyond the Stable State* and the later work on *Theory in Practice*, *Organizational Learning*, and *The Reflective Practitioner*?

Yes. The idea that I was working on came directly from my consulting work. I would work for government agencies, universities, or industry. I often found in these institutions a model in mind, which I called the center-periphery model. Some-times I found it expressed in programs, in ideas about the diffusion of knowledge, information, or innovations. The basic idea of this model is that you have a center (C), which might be Mexico City, the Ministry of Education, the USA, the central office of the Regional Medical Program. Then, you have a series of peripheral units (P_1), away from that center, which might consist of university-based continuing education departments, agriculture extension agencies, or urban planning outposts, and the like; and then you have a larger periphery (P_2). In C you have the message, whatever it was. It could be an idea, a strategy, a program, a piece of knowledge. That message was to be sent out from the center C to P_1, and from P_1 to P_2. This was the model, for example, of how to improve medical education, or the medical competence of medical practitioners. You have a central bureau that develops and promulgates the message; and then you have continuing education and diffusion centers around the country; people will come and get updated, educated, and then go back into the communities. Many things have been thought of that way. This model, I think, is very familiar. It is also very much associated with the rational, comprehensive theory of planning. I had three very good examples of this model. One was the Jesuits under Saint Ignatius of Loyola and his ten disciples in the XVI century. Saint Ignatius sent out into the world basically the same message, with this extraordinary fidelity and great efficiency, across thousands of miles. He also could maintain his system at a time when it could take 3 to 5 years for a ship to reach Rome

from Jesuit outposts in Goa.[*] The second example was the communist party with its multiple cells. Finally, the Coca Cola Company. "Coke" is a very simple message, the basic product, the slogans, the graphics; and then there is the incredibly complex distribution system, associated with the network of local bottlers. These are three extraordinary systems of the center-periphery type. They illustrate how knowledge at the center is funneled out to the periphery. But I found in my consulting work that there was a lot of knowledge at the periphery: the knowledge that the local school teacher had, the knowledge of the local medical practitioner, the local business agent, which the center did not have. This conception of local knowledge in local conditions varies among the peripheral units (P_1) and different in the larger periphery (P_2) (see R in the model drawing). What kind of system of knowledge, diffusion, or program would you have if you recognized those things? It seemed to me that you really want to pay more attention to the network of localities, recognizing that each locality is unique in important ways, has within it practitioners who have local knowledge, and has , to some extent, learned to develop responses to its own local situation.

One of my students here in Mexico, a computer systems person, told me the story that the management of her plant decided to set up a central help system for everyone who used a computer. But the management never asked the practitioners what was needed or would work (the icon **ABC** represents the knowledge in the periphery in the model drawing). The management set up the rules, never asking the practitioners, never paying attention to their experience. It was a hard story. Finally, they discovered that the help system had failed. Then, the practitioners were asked, "What is wrong?"

Who is the practitioner?

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[*]Formerly Portuguese territory on the southwestern coast of India; since 1962 formed with Daman and Diu a territory of India called Goa, Daman, and Diu.

Everybody is a practitioner, including the people who build theory, because theory building is also a practice. This is a thought I did not fully appreciate when I first wrote *The Reflective Practitioner* because I was talking about our usual way of contrasting practice and theory, or the world of practice and the world of science, the world of the academy and the world of practice. I think this contrast is important for many things, particularly because it is very powerful in the USA, and I think in Mexico, too. It suggests that practical knowledge should be treated as the application of theoretical knowledge. Well, people at each of these levels (pointing out C, P_1 and P_2 in his model drawing) are practitioners. They encounter characteristic problems of practice. For example, people at the center (C), who have a lot of authority, lack information about what is in the periphery (P_1 and P_2).

Is this "learning from the practitioner" present in the notion of inductive planning that you proposed in the early seventies?

Yes. The notion of inductive planning came from my own consulting practice. I found people caught in a sort of funny world of trying to impose on the periphery a central message that did not fit. They were involved in games of control and evaluation that were terrible. If I could help them, reconsider their centralized routines, they could see their jobs as going out to *learn* from these peripheral localities: learning what practitioners at the periphery were doing, collecting examples, looking at them, evaluating them, bringing them back to the center, making them available to others, diffusing the knowledge, creating a *learning system* in that limited sense of the world.

How to learn to become sensitive to the possibilities of distortion and how to test the reliability of translation? How to verify that the knowledge originated in the periphery reaches the center keeping the original message?

Do you mean, how to do it? I think of it in the same way as you might think about learning how to sing a song. You do not think you sing it as well as you could. I think we know something about the issue you describe, which I call the question of "reliability of communication." We know it has different elements. In part, it is a technological issue.

Saint Ignatius' communication was in the era of the technology of the ship. By the time he got the message back, the sender of the message might be dead. Today you can have direct *e-mail* interaction in few seconds. So one source of unreliability is change in circumstances during the time of communication. Tolstoy has this wonderful passage on the battle for *Borodino*[*] in which he writes that Napoleon could not send any message capable of being obeyed. Napoleon was far from the battle field, looking through a spy glass. He sent a horseman to the front, but the battle was moving very fast, faster than the horseman could arrive there. By the time the messenger arrived, the circumstances of the battle had changed so as to make the message obsolete . That was one of the things I was intrigued by, because I was in government at that point. I saw how government responds slowly to the perception of national issues, and during the time frame of governmental response, the situation changes. It does not change by itself alone; it also changes because the government, with the help of the media, publicizes the issue. Many of the stories of shortages are like that: we have shortages of nurses, doctors, scientists. By the time you get legislation and action to respond to the shortages, reality has changed. If you trusted the agents who are in direct contact with the situation where the shortage arises, to act in response to what they saw, at the time they saw it, then the response could be much more timely. On the other hand, there would also be much less ability to exert control over behavior from some central position.

Does the reflective practitioner follows a preconceived rational plan?

That depends on what you mean by rationality. You could mean that you need a rational plan in order to give other people good reasons for what you do, which could be consistent with reflective practice. Or you could mean that you need to have a plan in order to take action. When you take action, things often happen that are not contained in your plan, and you have surprise. But surprise, the mismatch of expectation to outcome, is what keeps you in touch with reality. At that point, you have to let your plan go. It is not that you let go of rationality, but you move into the mode of rationality in the midst of action. That sort of thinking in the midst of action is what I call "reflection-in-action."

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[*] Russian village, just west of Moscow, in which the Russian army retreated before Napoleon's army in the

It is a kind of rationality, in the sense that you turn thought back upon itself as well as on the surprises that confront you, to revise your thinking and your action. You could then proceed to examine the effectiveness of what you have done; you could look at the argument, the theory of action implicit in what you did.

What problems do organizations face for implementing reflection in action?

There are three kinds of phenomena that can prevent an organization from reflecting in action, from being responsive to surprise. One is the inability to *describe*; they know something, but they cannot say what it is. They see the phenomenon, but they cannot describe it, which is why they cannot respond to it. The second possible impediment is that they cannot imagine; the world moves out from under their model of understanding. It just does not occur to them, they cannot dream of it. Third, individuals may be unwilling to describe what they perceive, thereby rendering it undiscussable. The unimaginable, indescribable, and undiscussable are important blocks to productive organizational learning. Moreover, these features are interconnected. If you cannot talk about things, if it is dangerous for you as an employee of this organization to talk about ideas that run counter to "the way we do things," you do not get much practice in talk about them; and it takes practice to imagine and present alternative views of the world.

What is your viewpoint on the *Stable State* under a process of corporate reengineering?

Reengineering became an idea in good currency in the late nineteen-eighties. It had a rather limited life cycle, maybe seven years. I think it was, in part, a response to a certain stage of competition between Pacific Rim industries and American companies. It was a response to global competition in which the leading-edge players were very lean. In response, U.S. companies had to learn to be very efficient and lean themselves. But reengineering was also a response to a situation in which you could redesign tasks — especially routine, predictable tasks— on the basis of computer and electronic communications technology. Now you could really do things in a way you could not

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battle of 1812.

before. But it is interesting that the impact of computer technology, in the first instance, was to allow you to *automate* what you did before. It is a little bit like what often happens with new building materials. When reinforced concrete was introduced into the bridge building systems, the first thing people did with it was to use it as a substitute for cast iron or stone. They had high reinforced concrete for stone. They had not yet seen the possibilities. The form of the bridge had not yet changed. Later on, as people become aware of the potentials of reinforced concrete, the bridge could become much thinner and curved; other possibilities for design emerged which were not possible with cast iron or stone. As with reinforced concrete, reengineering was a redesign of certain types of tasks to make them more efficient on the basis of the use of the computer. As we began to know in the nineties, you have these two things coming together: both the pressures of global competition, especially Pacific Rim competition, and the potentials of the computer and information technology to increase efficiency. People who saw that connection (like Index Corporation in Cambridge, and Mike Hammer) made lots of money on reengineering.

Would you agree that the problem behind reengineering is that the feeling of the *stable state* is broken?

Yes. In many business organizations, management is faced with the dilemma that they must become more productive, to reduce costs in order to stay in the market place, and the computer often allows them to achieve that. If they do not respond, they are dead. On the other hand, they depend upon the loyalty and the commitment of their employees. If you were a manager, how could you work out that problem? It seems to me you have to think of several alternatives about the contract that you make with your employees. Let me tell you a short story about a friend of mine, Bill Ford, who is an old labor man, a union man who worked on the docks in Sidney, Australia. After a career as a labor economist, he began a consulting company. He consults with breweries, steel companies, building construction companies, chemical companies. Going under the banner of "learning," he talks to people at three levels: workers, middle managers and top managers. He talks about learning, at the level of the firm, in order to improve performance, to increase productivity, especially to reduce costs, to capture market share,

and how to do this. He also talks to workers, at the levels of individuals and teams about how they might learn, for example, to acquire multiple skills, to handle multiple jobs, so that if one job is eliminated by reengineering other jobs become available to them. He talks to the middle level about what it means to manage a "learning system" in which people at the shop floor level are engaged, supported, rewarded, pushed toward learning in this sense. He recognizes the reality of downsizing and works on a new kind of contract that offers people the opportunity to stay or to leave. In a relatively generous way, trying to provide time, opportunity, retraining, he approaches who leaves and how they leave. Those features are spelled out in the contract. There are choice points that arise for people. If they are up to entering into this new kind of organizational world, they commit to in-creasing productivity, to being measured by this performance in that sense, and to a learning program which involves significant investments in their product. This is a huge change in the operation of the plant, both from the point of view of rather sleepy management and from the point of view of a rather corrupt union where there has been a lot of graft and feather-bedding.

If we bring your *Organizational Learning II* (1996) to the issue of learning while facing organizational problems, who learns on behalf of the organization?

Those who have to learn on behalf of the organization need to be committed enough to the organization to do that. Let me refer to Bill Ford's story again. He has in mind a very clear model of what kinds of changes people need to make in order to move toward learning as a core of organizational competence. He has prototypes in mind that can help you see how to move in that direction. He is not working in a Rogerian[*] mode that says, Let me help you to reflect on the situation. He holds up a model of what you could be, and says, If you want to become this, I can help you to do it. He talks to top managers, workers and middle level managers. Considering your question of who learns on behalf of the corporation, the answer is "all three," but they learn different things, they learn under different conditions of interaction with one another, and the social contract under which they learn becomes an object of development in its own right.

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[*] This refers to Carl Rogers' personal reflections on teaching and learning that D.A. Schön analyzes in *Educating the reflective practitioner* (1987).

In *Educating the Reflective Practitioner* (1987), you refer to two psychiatric methods of dealing with individual problems. How would they apply to organizations?

There are many approaches to psychiatry. What you are referring to is my discussion of the different approaches of Erik Erikson and Donald Spence. I think this difference is epistemological, about the kinds of knowledge you can get in a psychiatric interchange. Erickson, who was a disciple and follower of Freud, believed you could really get objective knowledge about the patient's past, that part of the patient's past that accounted for the pathology of the present. This method of analysis uses free association and the interpretation of free associations, dreams, slips of the tongue and other windows on the unconscious. All of that was a workable methodology for achieving reasonably objective knowledge about what doctors call disease, the causal system that leads to psychopathology. Spence, on the other hand, questions that epistemological foundation and the methodology associated with it, and therefore questions objectivist psycho-therapy. His argument is that there is no way in which you can really test your claim to know the true past of the patient. Spence does not think that is an argument against the effectiveness of psychotherapy, in principle. His criterion for psychotherapeutic effectiveness has to do with pragmatics and aesthetics. In this view, patient and doctor together tell a story. They tell us a story about this patient's past, and how his past led to his present. The story needs to be a *persuasive* story. It needs to appeal to both parties, but especially to the patient. It needs to be *rhetorically* effective, in the Greek sense of that term. But it also has to work. It has to be pragmatic in the sense that believing the story enables the patient to act in a way that solves problems that he had not been able to solve before, or makes him believe that those problems are not worth solving, or helps him get unstuck where he was stuck before. These two criteria, the aesthetic or rhetorical and the pragmatic, are linked because Spence believes that the story can be pragmatically effective only if it is also persuasive and rhetorically effective. You have to believe it and find it appealing if you are going to act on it and find that it works. But in both of these respects it does not matter whether the story reflects the truth of the past.

Now, let's shift the context from individuals to organizations. In principle, you could have the same opposition. You could have somebody who said that organizational pathology, like personal pathology, represents specific objective kinds of conditions: things go wrong, communications are bad, distrust arises, productivity declines, the organization fails to advance or to compete effectively. All these things can happen. If they happened, they have causes in the past of the organization which can be discovered through investigation and fixed. That would be "Erikson" in organizational consulting. The "Spence" in organizational consulting would say, "This organization is in trouble, is dysfunctional; it is stuck and needs help in looking forward. What it needs is a story that it can hang onto, which it can believe, about how it got to the situation that it is in; and that story needs to be pragmatically effective in terms of how it can help the organization move from its present situation to a better future. That is the job of the consultant, that is also the job of the leadership: to find the persuasive pragmatically effective story. The truth of the story is not terribly important."

My own view is that in the life of organizations the testability of ideas, propositions and assumptions *is* terribly important. It is terribly important that we be able to test the validity of what has been said, and especially test the propositions and assumptions that are central to the life of organizations. I think that holds at all levels. For example, business strategy, the path by which a business seeks to improve market share. If we believe in this market niche, we have certain assumptions about it: can we test them? How could they be tested not only by the person at the top of the organizational pyramid but also by others who are stakeholders in the enterprise of trying to establish that market niche. And the reason why I think it is important is because only through the public testability of ideas can you raise questions, detect error, recognize alternatives, take surprise seriously, and respond to it. All these things that are required for productive organizational learning depend on public testability. In terms of the organization, testability is essential to justice. Suppose for example, I am blamed for making a new product fail. Maybe I did make it fail, but maybe I did not, or maybe, you and I both were responsible for this. Now is there any hope for justice under these circumstances? If there is not, that is very important for the organization's evolution. The organization will

evolve differently if you and I believe that there is no hope for justice. Don't you think so? I mean, you would then have to protect yourself unilaterally, and so would I. If I believe that I will be unfairly blamed by others who are trying to blame me, I may get clever, getting to them before they get to me.