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Chris Argyris: theories of action, double-loop learning and organizational learning

Chris Argyris: theories of action, double-loop learning and organizational learning. The work of Chris Argyris (1923-2013) has influenced thinking about the relationship of people and organizations, organizational learning and action research. Here we examine some key aspects of his thinking.

Chris Argyris has made a significant contribution to the development of our appreciation of organizational learning, and, almost in passing, deepened our understanding of experiential learning. On this page we examine the significance of the models he developed with Donald Schön of single-loop and double-loop learning, and how these translate into contrasting models of organizational learning systems.

Life

Chris Argyris was born in Newark, New Jersey on July 16, 1923 and grew up in Irvington, New Jersey. During the Second World War he joined the Signal Corps in the U.S. Army eventually becoming a Second Lieutenant (Elkjaer 2000). He went to university at Clark, where he came into contact with **Kurt Lewin** (Lewin had begun the Research Center for Group Dynamics at M.I.T.). He graduated with a degree in Psychology (1947). He went on to gain an MA in Psychology and Economics from Kansas University (1949), and a Ph.D. in Organizational Behavior from Cornell University (he was supervised by William F. Whyte) in 1951. In a distinguished career Chris Argyris has been a faculty member at Yale University (1951-1971) where he

served as the Beach Professor of Administrative Science and Chairperson of the department; and the James Bryant Conant Professor of Education and Organizational Behavior at Harvard University (1971-). As well as making a significant contribution to the literature Chris Argyris was known as a dedicated and committed teacher. Argyris was also a director of the Monitor Company in Cambridge, Massachusetts.

Chris Argyris enjoyed the outdoors – and, in particular hiking (especially in the mountains of New Hampshire and across New England). He is reported as saying that his best thinking was done while taking long walks (which he did daily upto a year before his death). He died peacefully surrounded by his family, on Saturday, November 16, 2013 (Boston Globe 2013).

Chris Argyris' early research explored the impact of formal organizational structures, control systems, and management on individuals (and how they responded and adapted to them). This research resulted in the books *Personality and Organization* (1957) and *Integrating the Individual and the Organization* (1964). He then shifted his focus to organizational change, in particular exploring the behaviour of senior executives in organizations (*Interpersonal Competence and Organizational Effectiveness*, 1962; *Organization and Innovation*, 1965). From there he moved onto a particularly fruitful inquiry into the role of the social scientist as both researcher and actor (*Intervention Theory and Method*, 1970; *Inner Contradictions of Rigorous Research*, 1980 and *Action Science*, 1985 – with Robert Putnam and Diana McLain Smith). Much of the focus on this page lies with his fourth major area of research and theorizing – in significant part undertaken with Donald Schön – around individual and organizational learning. Here the interest lies in the extent to which human reasoning, not just behaviour, can become the basis for diagnosis and action (*Theory in Practice*, 1974 ; *Organizational Learning*, 1978; *Organizational Learning II*, 1996 – all with **Donald Schön**). He has also developed this thinking in

Overcoming Organizational Defenses (1990), *Knowledge for Action* (1993).

As well as writing and researching, Chris Argyris has been an influential teacher. This is how **Peter Senge** (1990: 182-3) talks about his own experience of Argyris as a teacher.

> Despite having read much of his writing, I was unprepared for what I learned when I first saw Chris Argyris practice his approach in an informal workshop... Ostensibly an academic presentation of Argyris's methods, it quickly evolved into a powerful demonstration of what action science practitioners call 'reflection in action'.... Within a matter of minutes, I watched the level of alertness and 'presentness' of the entire group rise ten notches – thanks not so much to Argyris's personal charisma, but to his skilful practice of drawing out... generalizations. As the afternoon moved on, all of us were led to see (sometimes for he first time in our lives) subtle patterns of reasoning which underlay our behaviour; and how those patterns continually got us into trouble. I had never had such a dramatic demonstration of own mental models in action... But even more interesting, it became clear that, with proper training, I could become much more aware of my mental models and how they operated. This was exciting.

The ability, demonstrated here, to engage with others, to make links with the general and the particular, and to explore basic orientations and values is just what Argyris talks about when exploring the sorts of behaviours and beliefs that are necessary if organizations are to learn and develop.

Theories of action: theory in use and espoused theory

Our starting point is Argyris and Schön's (1974) argument that people have mental maps with regard to how to act in situations. This involves the way they plan, implement and review their actions. Furthermore, they assert that it is these maps that guide people's actions rather than the theories they explicitly espouse. What is more, fewer people are aware of the maps or theories they do use (Argyris, 1980). One way of making sense of this is to say that there is split between theory and action. However, Argyris and Schön suggest that two *theories of action* are involved.

The notion of a theory of action can be seen as growing out of earlier research by Chris Argyris into the relationships between individuals and organizations (Argyris 1957, 1962, 1964). A theory of action is first a theory: 'its most general properties are properties that all theories share, and the most general criteria that apply to it – such as generality, centrality and simplicity – are criteria applied to all theories' (Argyris and Schön 1974: 4). The distinction made between the two contrasting theories of action is between those theories that are implicit in what we do as practitioners and managers, and those on which we call to speak of our actions to others. The former can be described as *theories-in-use*. They govern actual behaviour and tend to be tacit structures. Their relation to action 'is like the relation of grammar-in-use to speech; they contain assumptions about self, others and environment – these assumptions constitute a microcosm of science in everyday life' (Argyris & Schön 1974: 30). The words we use to convey what we, do or what we would like others to think we do, can then be called *espoused theory*.

> When someone is asked how he would behave under certain circumstances, the answer he usually gives is his espoused theory of action for that situation. This is the theory of action to which he gives allegiance, and which, upon request, he communicates to others. However, the theory that actually governs his actions is this theory-in-use. (Argyris and Schön 1974: 6-7)

Making this distinction allows us to ask questions about the extent to which behaviour fits espoused theory; and whether inner feelings become expressed in actions. In other words, is there congruence between the two? Argyris (1980) makes the case that effectiveness results from developing congruence between theory-in-use and espoused theory. For example, in explaining our actions to a colleague we may call upon some convenient piece of theory. We might explain our sudden rush out of the office to others, or even to ourselves at some level, by saying that a 'crisis' had arisen with one of 'our' clients. The theory-in-use might be quite different. We may have become bored and tired by the paper work or meeting and felt that a quick trip out to an apparently difficult situation would bring welcome relief. A key role of **reflection**, we could argue, is to reveal the theory-in-use and to explore the nature of the 'fit'. Much of the business of supervision, where it is focused on the practitioner's thoughts, feelings and actions, is concerned with the gulf between espoused theory and theory-in-use or in bringing the later to the surface. This gulf is no bad thing. If it gets too wide then there is clearly a difficulty. But provided the two remain connected then the gap creates a dynamic for reflection and for dialogue.

To fully appreciate theory-in-use we require a model of the processes involved. To this end Argyris and Schön (1974) initially looked to three elements:

> **Governing variables:** those dimensions that people are trying to keep within acceptable limits. Any action is likely to impact upon a number of such variables – thus any situation can trigger a trade-off among governing variables.
>
> **Action strategies:** the moves and plans used by people to keep their governing values within the acceptable range.
>
> **Consequences:** what happens as a result of an action. These can be both intended – those actor believe will result – and unintended. In addition those consequences can be for the self, and/or for others. (Anderson 1997)

Where the consequences of the strategy used are what the person wanted, then the theory-in-use is confirmed. This is because there is a match between intention and outcome. There may be a mismatch between intention and outcome. In other words, the consequences may be unintended. They may also not match, or work against, the person's governing values. Argyris and Schön suggest two responses to this mismatch, and these are can be seen in the notion of single and double-loop learning.

Single-loop and double-loop learning

For Argyris and **Schön** (1978: 2) learning involves the detection and correction of error. Where something goes wrong, it is suggested, an initial port of call for many people is to look for another strategy that will address and work within the governing variables. In other words, given or chosen goals, values, plans and rules are operationalized rather than questioned. According to Argyris and Schön (1974), this is *single-loop learning*. An alternative response is to question to governing variables themselves, to subject them to critical scrutiny. This they describe as *double-loop learning*. Such learning may then lead to an alteration in the governing variables and, thus, a shift in the

way in which strategies and consequences are framed. Thus, when they came to explore the nature of organizational learning. This is how Argyris and Schön (1978: 2-3) described the process in the context of organizational learning:

> When the error detected and corrected permits the organization to carry on its present policies or achieve its presents objectives, then that error-and-correction process is *single-loop* learning. Single-loop learning is like a thermostat that learns when it is too hot or too cold and turns the heat on or off. The thermostat can perform this task because it can receive information (the temperature of the room) and take corrective action. *Double-loop* learning occurs when error is detected and corrected in ways that involve the modification of an organization's underlying norms, policies and objectives.

Single-loop learning seems to be present when goals, values, frameworks and, to a significant extent, strategies are taken for granted. The emphasis is on 'techniques and making techniques more efficient' (Usher and Bryant: 1989: 87) Any reflection is directed toward making the strategy more effective. Double-loop learning, in contrast, 'involves questioning the role of the framing and learning systems which underlie actual goals and strategies (*op. cit.)*. In many respects the distinction at work here is the one used by **Aristotle**, when exploringtechnical andpractical thought. The former involves following routines and some sort of preset plan – and is both less risky for the individual and the organization, and affords greater control. The latter is more creative and reflexive, and involves consideration notions of the good. Reflection here is more fundamental: the basic assumptions behind ideas or policies are confronted… hypotheses are publicly tested… processes are disconfirmable not self-seeking (Argyris 1982: 103-4).

The focus of much of Chris Argyris' intervention research has been to explore how organizations may increase their capacity for double-loop learning. He argues that double-loop learning is necessary if practitioners and organizations are to make informed decisions in rapidly changing and often uncertain contexts (Argyris 1974; 1982; 1990). As Edmondson and Moingeon (1999:160) put it:

> The underlying theory, supported by years of empirical research, is that the reasoning processes employed by individuals in organizations inhibit the exchange of relevant information in ways that make double-loop learning difficult – and all but impossible in situations in which much is at stake. This creates a dilemma as these are the very organizational situations in which double-loop learning is most needed.

The next step that Argyris and Schön take is to set up two models that describe features of theories-in-use that either inhibit or enhance double-loop learning. The belief is that all people utilize a common theory-in-use in problematic situations. This they describe as Model I – and it can be said to inhibit double-loop learning. Model II is where the governing values associated with theories-in-use enhance double-loop learning.

Model I and Model II

Argyris has claimed that just about all the participants in his studies operated from theories-in-use or values consistent with Model I (Argyris et al. 1985: 89). It involves 'making inferences about another person's behaviour without checking whether they are valid and advocating one's own views abstractly without explaining or illustrating one's reasoning' (Edmondson and Moingeon 1999:161). The theories-in-use are shaped by an implicit disposition to winning (and to avoid embarrassment). The primary action strategy looks to

the unilateral control of the environment and task plus the unilateral protection of self and others. As such Model I leads to often deeply entrenched defensive routines (Argyris 1990; 1993) – and these can operate at individual, group and organizational levels. Exposing actions, thoughts and feelings can make people vulnerable to the reaction of others. However, the assertion that Model I is predominantly defensive has a further consequence:

> Acting defensively can be viewed as moving away from something, usually some truth about ourselves. If our actions are driven by moving away from something then our actions are controlled and defined by whatever it is we are moving away from, not by us and what we would like to be moving towards. Therefore our potential for growth and learning is seriously impaired. If my behaviour is driven by my not wanting to be seen as incompetent, this may lead me to hide things from myself and others, in order to avoid feelings of incompetence. For example, if my behaviour is driven by wanting to be competent, honest evaluation of my behaviour by myself and others would be welcome and useful. (Anderson 1997)

It is only by interrogating and changing the governing values, the argument goes, is it possible to produce new action strategies that can address changing circumstances.

Chris Argyris looks to move people from a Model I to a Model II orientation and practice – one that fosters double-loop learning. He suggests that most people, when asked, will *espouse* Model II. As Anderson (1997) has commented, Argyris offers no reason why most people espouse Model II. In addition, we need to note that the vast bulk of research around the models has been undertaken by Argyris or his associates.

Exhibit 1: Model I theory-in-use characteristics

The governing Values of Model I are:

Achieve the purpose as the actor defines it

Win, do not lose

Suppress negative feelings

Emphasize rationality

Primary Strategies are:

Control environment and task unilaterally

Protect self and others unilaterally

Usually operationalized by:

Unillustrated attributions and evaluations e.g.. “You seem unmotivated”

Advocating courses of action which discourage inquiry e.g.. “Lets not talk about the past, that’s over.”

Treating ones’ own views as obviously correct

Making covert attributions and evaluations

Face-saving moves such as leaving potentially embarrassing facts unstated

Consequences include:

Defensive relationships

Low freedom of choice

Reduced production of valid information

Little public testing of ideas

Taken from Argyris, Putnam & McLain Smith (1985, p. 89)

The significant features of Model II include the ability to call upon good quality data and to make inferences. It looks to include the views and experiences of participants rather than seeking to impose a view upon the situation. Theories should be made explicit and tested, positions should be reasoned and open to exploration by others. In other words, Model II can be seen as **dialogical** – and more likely to be found in settings and organizations that look to **shared leadership**. It looks to:

> Emphasize common goals and mutual influence.
>
> Encourage open communication, and to publicly test assumptions and beliefs.
>
> Combine advocacy with inquiry (Argyris and Schön 1996; Bolman and Deal 1997: 147-8).

We can see these in the table below.

Exhibit 2: Model II characteristics

The governing values of Model II include:

Valid information

Free and informed choice

Internal commitment

Strategies include:

Sharing control

Participation in design and implementation of action

Operationalized by:

Attribution and evaluation illustrated with relatively directly observable data

Surfacing conflicting view

Encouraging public testing of evaluations

Consequences should include:

Minimally defensive relationships

High freedom of choice

Increased likelihood of double-loop learning

Taken from Anderson 1997

As Edmondson and Moingeon (1999:162) comment, employing Model II in difficult interpersonal interactions 'requires profound attentiveness and skill for human beings socialized in a Model I world'. While they are not being asked to relinquish control altogether, they do need to share that control.

Organizational learning

Chris Argyris and **Donald Schön** suggest that each member of an organization constructs his or her own representation or image of the theory-in-use of the whole (1978: 16). The picture is always incomplete – and people, thus, are continually working to add pieces and to get a view of the whole. They need to know their place in the organization, it is argued.

> An organization is like an organism each of whose cells contains a particular, partial, changing image if itself in relation to the whole. And like such an organism, the organization's practice stems from those very images. Organization is an artifact of individual ways of representing organization.
>
> Hence, our inquiry into organizational learning must concern itself not with static entities called organizations, but with an active process of organizing which is, at root, a cognitive enterprise. Individual members are continually engaged in attempting to know the organization, and to know themselves in the context of the organization. At the same time, their continuing efforts to know and to test their knowledge represent the object of their inquiry. Organizing is reflexive inquiry....
>
> [Members] require external references. There must be public representations of organizational theory-in-use to which individuals can refer. This is the function of organizational maps. These are the shared descriptions of the organization which individuals jointly construct and use to guide their own inquiry....
>
> Organizational theory-in-use, continually constructed through individual inquiry, is encoded in private images and in public maps. These are the media of organizational learning. (Argyris and Schön 1978: 16-17)

With this set of moves we can see how Chris Argyris and Donald Schön connect up the individual world of the worker and practitioner with the world of organization. Their focus is much more strongly on individual and group interactions and defenses than upon systems and structures (we could contrast their position with that of **Peter Senge** 1990, for example). By looking at the way that people jointly construct maps it is then possible to talk about organizational learning (involving the detection and correction of error) and organizational theory-in-use. For organizational learning to occur, 'learning agents',

discoveries, inventions, and evaluations must be embedded in organizational memory' (Argyris and Schön 1978: 19). If it is not encoded in the images that individuals have, and the maps they construct with others, then 'the individual will have learned but the organization will not have done so' (*op. cit.*).

In this organizational schema single-loop learning is characterized as when, 'members of the organization respond to changes in the internal and external environment of the organization by detecting errors which they then correct so as to maintain the central features of theory-in-use' (*ibid.*: 18). Double-loop learning then becomes:

> … those sorts of organizational inquiry which resolve incompatible organizational norms by setting new priorities and weightings of norms, or by restructuring the norms themselves together with associated strategies and assumptions. (Argyris and Schön 1978: 18)

The next step is to argue that individuals using Model I create Organizational I (O-I) learning systems. These are characterized by 'defensiveness, self-fulfilling prophecies, self-fuelling processes, and escalating error' (Argyris 1982: 8). O-I systems involve a web of feedback loops that 'make organizational assumptions and behavioural routines self-reinforcing – inhibiting "detection and correction of error" and giving rise to mistrust, defensiveness and self-fulfilling prophecy' (Edmondson and Moingeon 1999:161). In other words, if individuals in an organization make use of Model I learning the organization itself can begin to function in ways that act against its long-term interests. Indeed, in a very real sense systems can begin to malfunction. As Argyris and Schön (1996: 28) put it, 'The actions we take to promote productive organizational learning actually inhibit deeper learning'. The challenge is, then, to create a rare phenomenon – an Organizational II (O-II) learning system.

Here we come to the focus of organizational effort – the formulation and implementation of an intervention strategy. This, according to Argyris and Schön (1978: 220-1) involves the 'interventionist' in moving through six phases of work:

Phase 1	**Mapping the problem as clients see it.** This includes the factors and relationships that define the problem, and the relationship with the living systems of the organization.
Phase 2	**The internalization of the map by clients.** Through inquiry and confrontation the interventionists work with clients to develop a map for which clients can accept responsibility. However, it also needs to be comprehensive.
Phase 3	**Test the model**. This involves looking at what 'testable predictions' can be derived from the map – and looking to practice and history to see if the predictions stand up. If they do not, the map has to be modified.
Phase 4	**Invent solutions** to the problem and simulate them to explore their possible impact.
Phase 5	**Produce the intervention**.
Phase 6	**Study the impact**. This allows for the correction of errors as well as generating knowledge for future designs. If things work well under the conditions specified by the model, then the map is not disconfirmed.

By running through this sequence and attending to key criteria suggested by Model II, it is argued, organizational development is possible. The process entails looking for the maximum participation of clients, minimizing the risks of candid participation, starting where

people want to begin (often with instrumental problems), and designing methods so that they value rationality and honesty.

Conclusion

How are we to evaluate these models and line of argument? First, we can say that while there has been a growing research base concerning the models and interventionist strategy, it is still limited – and people sympathetic to the approach have largely undertaken it. However, as **Peter Senge's** experience (recounted at the top of the page) demonstrates, the process and the focus on **reflection-in-action** does appear to bear fruit in terms of people's connection with the exercise and their readiness to explore personal and organizational questions.

Second, it is assumed that 'good' learning 'takes place in a climate of openness where political behaviour is minimized' (Easterby-Smith and Araujo 1999: 13). This is an assumption that can be questioned. It could be argued that organizations are inherently political – and that it is important to recognize this. Organizations can be seen as coalitions of various individuals and interest groups. 'Organizational goals, structure and policies emerge from an ongoing process of bargaining and negotiation among major interest groups' Bolman and Deal 1997: 175). Thus, perhaps we need to develop theory that looks to the political nature of structures, knowledge and information. Here we might profitably look to games theory, the contribution of partisan and political institutions (Beem 1999) and an exploration of how managers can make explicit, and work with, political processes (Coopey 1998). Perhaps the aim should be 'to incorporate politics into organizational learning, rather than to eradicate it' (Easterby-Smith and Araujo 1999: 13).

Third, and this might be my prejudice, I think we need to be distrustful of bipolar models like Model I and Model II. They tend to set up an 'either-or' orientation. They are useful as teaching or sensitizing devices, alerting us to different and important aspects of organizational life, but the area between the models (and beyond them) might well yield interesting alternatives.

Fourth, the interventionist strategy is staged or phased – and this does bring with it some problems. Why should things operate in this order. Significantly, this does highlight a tension between Argyris's orientation and that of Schön (1983). **Schön** in his later work on **reflection-in-action** draws on his pragmatist heritage (and especially the work of Dewey) and presents the making of theory-in-action and the expression of professional artistry in a far less linear fashion. Rather than there being phases, we could argue that intervention of this kind involves a number of elements or dimensions working at once.

This said, the theorizing of theory-in-action, the educative power of the models, and the conceptualization of organizational learning have been, and continue to be, significant contributions to our appreciation of processes in organizations. The notion of 'double-loop learning' does help us to approach some of the more taken-for-granted aspects of organizations and experiences. It provides us with a way of naming a phenomenon (and problem), and a possible way of 'learning our way out' (Finger and Asún 2000). Argyris and Schön have made a significant contribution to pragmatic learning theory (following in the line of **Dewey** 1933; **Lewin** 1948, 1951; and Kolb 1984). First, by introducing the term 'theory' or 'theory in action', 'they provide the function of abstract conceptualization (see **experiential learning**) 'more structure and more coherence' (Finger and Asún 2000: 45). Abstract conceptualization 'becomes something one can analyze and work from' (*op. cit.*). Second, through the notion of 'learning-in-action' Argyris and Schön rework the experiential learning cycle.

> Unlike Dewey's, Lewin's or Kolb's learning cycle, where one had, so to speak, to make a mistake and reflect upon it – that is, learn by trial and error – it is now possible thanks to Argyris and Schön's conceptualization, to learn by simply reflecting critically upon the theory-in-action. In other words, it is no longer necessary to go through the entire learning circle in order to develop the theory further. It is sufficient to readjust the theory through double-loop learning. (Finger and Asún 2000: 45-6)

This is a very significant development and has important implications for educators. In the **experiential learning** model of Kolb (1984) the educator is in essence a **facilitator** of a person's learning cycle. To this role can be added that of teacher, coach or mentor, the person who 'helps individuals (managers, professionals, workers) to reflect upon their theories-in-action' (Finger and Asún 2000: 46). It is a significant development – but it has gone largely unnoticed in the adult education and lifelong learning fields. This is a result, in part, of rather blinkered reading by professionals and academics within that area, and because Argyris and Schön did not address, to any significant degree, the arena directly (Argyris's continued to focus on organization and management, and Schön's on professional thinking).

Further reading and references

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Links

An interview with Chris Argyris – includes discussion of model I and model II organizations. (from *Thought Leaders*)

Action Science Network – includes an outline of action science (and model I and model II) and a detailed bibliography of Argyris¢¢ work.

Chris Argyris – useful, short biography by Bente Elkjaer

Chris Argyris – brief biography from Harvard Business Review.

Good communication that blocks learning – article by Argyris for Harvard Business Review, 1994

Motivation Theory article reviewing Argyris' concern with increasing interpersonal competence.

Chris Argyris – Page from the Monitor Group (where Argyris is a director) with links to some of his publications.

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