

5. CHANGING THE STATE OF SMALL GROUPS

Introduction

In this chapter we utilize the concepts of system states and the relationship of differentiation and centrality to explain how a trainer was able to change the social focusing of a small group of individuals. He was able to move the group focus from order to chaos, then return it to complexity where members participated in a dynamic and creative experience. Out of the complex state they were able to generate a new state of order, incorporating their discoveries from the complex state. He did this more than twenty times over a number of years, with different individuals in each group. These experiences demonstrate how a leader can move a small group into and out of any of the social focusing states as required.

In addition, this chapter shows the potential of our ideas for explaining social changes at the level of the small group.

History and Purpose of the Workshops

For about twenty years beginning in 1987, John Campbell was the trainer at a one-week Continuing Education class at St. Francis Xavier University (SFX), in Antigonish, Nova Scotia. In addition, from time to time he has been a facilitator for other workshops.

The inspiration for the SFX sessions was the belief that it would be interesting and useful to gather together about 20 facilitators, teachers, and trainers—persons who worked with others in group learning situations—and have them share their best ideas, methods and techniques, exercises, and experiments. During each session, one essential objective was to facilitate a process that would create a learning atmosphere in which this sharing could take place.

The workshops began with a two-hour session on Sunday evening, and continued for six hours a day from Monday to Thursday. The

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program concluded on Friday between noon and 1:00 p.m. (For more details of the workshops see Campbell, Flynn and Hay, 2003).

Initial Contact with People Coming from the Ordered Phase

Almost all of the participants came from organizations or situations where there was an expectation that workshops would be quite structured. The initial contact with the applicants attempted to confront these expectations by preparing them to experience much less order than they would normally anticipate. When the administrators at the host university received participants' registration forms, they forwarded, along with the usual package of material containing campus information, a letter from the Trainer of the Creative Facilitating Workshop which contained the following:

- 125 questions related to what a participant might want to achieve during the week.
- a request to think of a symbol which depicted what kind of a facilitator they want to be.
- accompanying these requests was a statement that no one would be asked to do or say anything during the week that they did not wish to do or say, i.e., that their personal choice would hold a high priority during the week.

In addition, participants were encouraged to bring to the session personally meaningful materials such as musical instruments, poetry, drawings, songs, dances, audio and video tapes, favorite writing (books, articles, quotations), Internet resources, favorite stories (their own and others) and myths. They were informed that resource tables would be set up in the classroom so that these resources could be shared with others.

The Social System and Differentiation and Centrality

The participants and Trainer were all members of the workshop social system. There were few outside connections to the group but the centrality of the group was greatly increased as people learned more

about each other—more information from outside the group was introduced.

In terms of the four parameters of differentiation, all of the attendees were trainers and facilitators, so were not diverse in occupation but, of course, they were from many different organizations so this diversity was present at the start and varied little over the week. Although the Trainer had established some connections with each participant, the connectedness of the group was established when everyone was introduced to each other. This was a random network. Interdependence was low but adaptability varied among the individuals.

Figure 19 shows the cycle of social focusing—d/c—that each workshop experienced over the week. Although the Trainer discovered how to do this empirically, what he actually was doing was manipulating differentiation and centrality to cause changes in the social focusing across various states of discrete systems, as outlined in what follows. In particular, he moved this social system into, and out of the complex state.

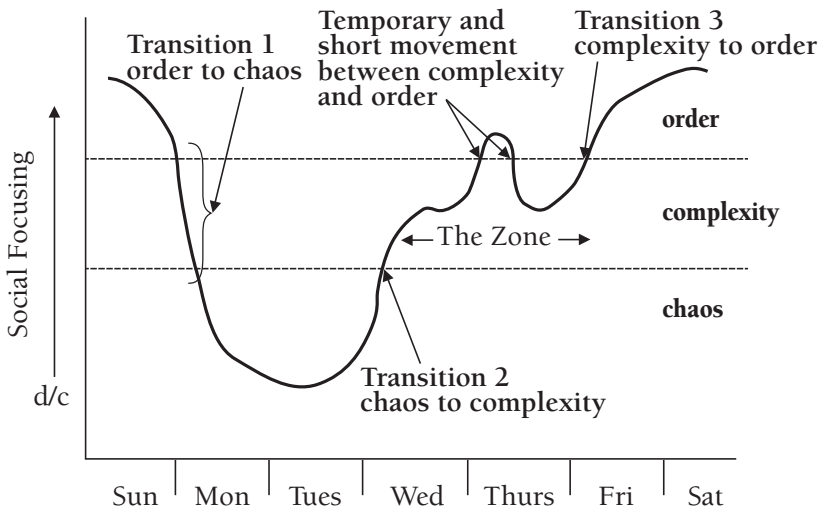


FIGURE 19

Typical Social Focusing History for Creative Facilitating Workshop

Transition 1: Moving from Ordered to Chaotic Focusing

Lowering d/c sufficiently would move a group from an ordered state into one of chaos. To lower the d/c ratio the Trainer increased centrality in the initial exercises by deliberately encouraging many interactions among people so they were exposed to a great deal of information that each person had brought with them. For example, participants were asked, initially, to trade and share resources they brought with them. This increase in new information was an increase in centrality for the system. At the same time, the Trainer offered no structure for this increased centrality even though participants often requested it. So the system moved toward chaotic focusing.

Moreover, connections among all the members were established through individuals speaking about themselves and participating in the discussion. Essentially, one large group was established with everyone connected to each other. Such connectedness, a random network, decreases differentiation and tended to move the system toward chaos as each new piece of information was widely shared and the group moved quickly into several new directions.

This technique can be related to Kauffman's work with NK networks. K , the number of connections among the N participants was increased as the group communicated with one another, sharing the resources they had brought with them. Kauffman has shown that for NK networks, chaos always occurs at K greater than 4.

Secondly, the rules governing interactions among people were varied through the use of various novel exercises. Again, this had the effect of increasing centrality—the influx of new information—as new behavior and reactions were produced under rules that encouraged a range of choices and removed constraints on the participants. When the Trainer was successful, the group became chaotically focused, an uneasy state for most people.

Defining an Uncertain Reality by Breaking Down Order

The first and most important task during the early sessions of the Workshop was to break down expectations of order by helping

participants become comfortable with an unstructured, indeed, a chaotic environment. Initially, the participants and even the Trainer felt great uncertainty about what was going to happen next.

The participants were greeted with a brief welcome after they took their seats on chairs arranged in a horseshoe, with a flipchart at the open end. Then the Trainer explained that the first exercise was to list words or phrases which described the atmosphere in which they learned best. The Trainer began this process by putting the words 'co-creation' and 'choice' on the flipchart and explaining their significance. Written handouts on the two terms were also provided. Thus, participants were aware at the very beginning of the session that they had wide control over what they did and said in these sessions.

Participants then shared for a few minutes, in groups of two or three, those words and phrases that described the atmosphere in which they learned best. After this subgroup sharing, the large group reconvened and participants were invited to write their words on the flipchart. Many words and considerable discussion were forthcoming. The Trainer said a few words about other concepts, such as 'laughter' and 'a positive approach', which help create an atmosphere conducive to learning.

It was important that the Trainer spoke only briefly, so that the limelight was left to others, and to respect the principle of co-creation from the outset. Usually some group members found ways of testing what was going on, to determine whether or not the principles that were being discussed were indeed going to be respected in the sessions. It was essential that this exercise not be rushed since it took time to establish safety and trust. However, these elements tended to build rapidly when co-creation, choice, laughter, and a positive approach began to take hold.

Words such as confidential, knowledge, authentic, substantial, challenging, respectful, and caring, were suggested by the participants. As well as giving first priority to establishing a positive learning atmosphere, this exercise was a gentle way of introducing group guidelines, a necessary step to the next stage of moving out of chaotic focusing. The learning of names of fellow participants followed immediately.

These opening exercises were dynamic, interactive and fun. During these exercises, the many and varied interactions may have seemed to be going nowhere but their very lack of structure helped move the members out of the ordered focusing of their previous experience. They also established a few simple rules such as choice, staying positive, and co-creating, which would eventually form the basis of the transition to complex focusing.

Occasionally, there were obstacles to this process, in addition to the pervasive organizational scripts they brought with them, such as attempts by some participants to impose order on the group, challenges from difficult individuals who attempted to intimidate others, or from people who had supervisory capacities in relation to other individuals in the group. On these occasions, the Trainer found ways to loosen up the group by introducing such core principles as equality, staying positive, and protecting each person's right to do what s/he wants. All of these principles seemed necessary to move the group temporarily into a state of chaos, paving the way for later creative and complex options.

Chaotic focusing, however, was experienced as a state of uncertainty and could be quite upsetting for everyone, including the Trainer.

Here are some responses from participants describing their sense of uncertainty. SFX refers to the Creative Facilitating Workshop held at St. Francis Xavier University in 2002; USA refers to similar workshops with the United Steel Workers of America Union, 2001, 2002.

It never entered my mind that this was something crazy, but I did wonder what was going on. Even the description of the course left uncertainty but I think that also added inner excitement as well... I felt like a fish out of water, not sure whether or not I belonged... I felt some anxiety—like it may be a very long week! (Workshop, SFX, 2002). I expected a much more regimented format yet I enjoyed this experience much more... [I] only [had] uncertainty in myself (Workshop, USA, 2002).

Chaos

People became quite edgy as they found themselves moving into chaotic focusing. The group often split into those who wanted more

structure and those who were happy to go with the flow. As long as the Trainer was patient and resisted the urge to intervene and impose his own structure, the group became chaotic. Because of its inherent uncertainty, however, chaotic focusing was very disorienting for everyone, including the Trainer. The butterfly effect—great sensitivity to small changes—meant that the slightest disturbance could send the group wildly off into new directions.

The tricky part was to prevent chaos from degenerating into conflict and mayhem, and to know when to set the right conditions for a return to a new ordered state just on the edge of chaos, where a more complex set of interactions could emerge. The skill of the Trainer was to set up conditions to control what was essentially uncontrollable, to gradually guide people back into complex focusing. In the following section we examine the second transition to a complex state at the edge of chaos, Wolfram's class 4 region.

Transition 2: Moving from Chaotic to Complex Focusing

The transition from chaotic focusing to complex focusing for the Workshop had to be controlled so that the group stayed mostly in complex focusing during the next stage, although it tended to move in and out of chaotic focusing for brief times. The essential feature was to increase differentiation by increasing interdependence and adaptability, as well as changing the type of connectedness to increase differentiation, and by reducing centrality even as the participants learned more about each other.

Building Interdependence and Adaptability, and Changing Connectedness

To move from chaotic to complex focusing required increasing differentiation while minimizing centrality. The primary effort to increase differentiation was to increase interdependence and adaptability by using the program described below to establish group objectives. While this was happening, connectedness was moved toward the small worlds network by forming small subgroups, weakly connected to other subgroups, and thus increases differentiation. While the group was

establishing these objectives, the participants were building their level of trust which, in turn, increased interdependence and adaptability and, therefore, differentiation.

Identifying Personal Objectives and Introducing Feedback

One of the basic assumptions in the Workshops was that everyone in the group was a teacher. Consequently, it was vital that everybody knew the wants of the other participants if s/he were going to give feedback regarding progress relating to those wants. The 'I Want' exercise was designed to ensure that each participant knew the personal objectives of everyone else in the group, that is, to the extent that a participant wished to disclose those objectives.

Participants were asked to finalize their personal list of wants, which they had been working on since they registered, to share the list with another person if they wished, to list their wants on a sheet of newsprint, adding their own symbol and name, and posting their newsprint on the wall, then reading others' lists of wants before returning to their seat.

The result was the beginning of an understanding of why others in the group had come to the workshop. After a discussion related to what this exercise had achieved, participants were invited to come to the front of the room and speak about their list of wants to the group. As part of this presentation, participants were asked to incorporate other aspects of their lives if they wished. For example, they could tell the group where they lived and they were encouraged to talk about their symbol. They were invited to tell the group any other relevant things about themselves—especially their positive accomplishments in their home life, their work, and in their community. It was emphasized that the most important part of this presentation was the telling of the persons' goals, in the family, at work, and in the community.

Time was taken to inform participants that from this point on each person's presentations would be videotaped unless s/he expressly indicated that they did not want a particular performance to be taped. A copy of this taping was provided for each participant later. In this way, the rule of feedback was introduced. More direct feedback came from

other people who were encouraged to give the speaker constructive feedback relating to the presentation. They were also told that critical feedback was not permitted, a feedback rule which was followed throughout the Workshop.

Usually speakers were willing to receive encouraging feedback but occasionally a speaker would exercise his or her option not to receive any feedback. Crisp feedback was useful at this stage so that lengthy, detailed feedback did not interfere with the flow of the session which had, as its main objective, the sharing of participants' goals in a fairly unstructured way. To facilitate feedback, large presentation boards were placed at the front of the room. These boards had pasted on them numerous examples of appropriate, brief, encouraging comments that group members could use as triggers for other positive statements which applied to the presentations. The Trainer modeled these crisp comments.

When everybody who wanted to had done this exercise, there was a general discussion about what had transpired during the introductory presentations. Final comments and questions concluded the session. Participants were invited to remain afterward to view their video tapes by themselves, with friends, or with the Trainer, at which time they could ask for additional constructive feedback.

Through the sharing of personal wants with the whole group, as well as the invitation to share other personal things—symbols, positive accomplishments, constructive comments related to other participants—communication shifted to a deeper place, below that surface level from which most more structured group communication emanates. This was perhaps the most important rule, for as more participants shared from that deeper place, interaction gradually became more focused.

Everyone had now been much more open and had become more knowledgeable about the wants of other participants, and each had participated in feedback and discussion—interdependence had greatly increased. It was likely that adaptability had also increased as individuals learned to understand each others' wants.

Identifying Group Objectives

Group objectives, in this instance, were the facilitation topics which were most important to the group members as a whole, and which would form the basis of the remainder of the Workshop. The Trainer established these group objectives by compiling a general list from the participants' 'I Want' lists, a summary of wants, ranging from most-requested to least-requested topics. After the topics that were most important to the group had been established, the participants were divided into subgroup stations. The number of stations depended upon the number of topics most requested by participants.

Members then self-selected a station, choosing the subgroup which held the most interest for them. Members could choose a particular subgroup because they had expertise in that area, or, they might choose the one which would help them with a specific topic. Some individuals chose to gather together to explore a topic which had not ranked high on the priority list. Most members, however, chose a subgroup which dealt with the most requested topics.

Members in these smaller subgroups then were asked to discuss their chosen topic and to find specific ways through which all participants in the program might achieve the objectives related to their topic. The next step was to have each subgroup report its findings to the large group, outlining methods which might be used to achieve the group objectives that had been established. The exercise often uncovered an abundance of participant resources.

Forming subgroups decreased the connections to each individual and the Workshop becomes a collection of smaller subgroups with some weak connections among the subgroups. The original "everyone connected to everyone" connectedness, a random network, was gone, and the sensitivity to change decreased as each subgroup became more focused. This moved connectedness into what was essentially a small worlds network, a set of small 'cliques' that had some connections to each other. This type of network makes the system move toward the complex state from a chaotic one, as differentiation was higher than if the network were random. Moreover, each individual chose the group in which s/he was most interested, thus increasing adaptability.

The 'Identifying Group Objectives' exercise was not always required. Sometimes at the end of the 'I Want' exercise, or during the period immediately following that exercise, the group was already in the complexity state at the edge of chaos. Such groups wanted to move in their own way and would have been impatient with any more formal efforts to establish goals. When the Trainer sensed that he was in the way of the group moving at its own rhythm, he might decide to discard the 'Identifying Group Objectives' exercise. This meant that interdependence and adaptability had increased sufficiently in this small social system to move the system into complex focusing even though it was still a random network.

With the completion of the group objectives task, the overall program shaped up like this. At the individual level, all participants had clarified their personal goals and had been invited to pursue those in their own time and at their own discretion. Members had been informed of each other's goals, had been invited to share ways in which all goals might be met, and had learned how to give encouraging feedback when appropriate.

Through these smaller subgroups, usually, the entire group established priorities regarding what things it would like to learn, and it had suggested specific things that could be done in the group to facilitate that learning. Now the group was invited to concentrate all its energy on achieving these individual and group objectives.

By increasing interdependence and adaptability, and by adjusting connectedness, if necessary, the group had increased differentiation. Centrality had not increased and, therefore, d/c increased. In every workshop the group moved into complex focusing as described in the following sections.

Moving Toward Complex Focusing

In general, constraints tend to move systems, such as small groups, into the ordered phase, almost by definition. Since the Creative Facilitating Workshops were fairly isolated from external constraints, the constraints introduced by the Facilitator were internal. Internal constraints refer to the way the coupling of lower level subsystems moves the system—a group here—into the edge of chaos, although the way this

happens cannot be completely known (Hayles, 1991: 45; Holland, 1998: 8-9; Flake, 1999: 449-450).

As well, the Trainer limited the range of behaviors permitted for each individual, for example, by restricting criticism. Restricting criticism meant that the group was biased toward agreement, what the Trainer called 'co-creation'. Along with limiting the range of person-to-person interactions, these changes reduced group centrality, limiting inputs of conflicting information for both individuals and subgroups.

Allowing supportive comments and forbidding critical remarks was also useful for developing a structure of increased differentiation. The conversations became more focused, and interdependence and adaptability increased. Differentiation was increased by introducing these and other rules to establish significant constructive interaction among members of the group. In addition, the Trainer provided some additional structure through videos and the 'wants' exercise. Members discovered that as a group they had talents and abilities, and could trust each other; thus interdependence and adaptability increased.

Still, there remained a lot of connections for each member of the group, and to move from chaotic to complex focusing required some further reduction in the number of connections thus moving connectedness from random towards a small worlds structure.

An even more direct way that a group can move toward order, even with multiple connections, is through the process of canalization (Kauffman, 1995: 103-106). Canalization in NK systems can occur in a network if several connected individuals happen to have the same Boolean rule. An example of canalization would be a feedback loop connecting, say, 6 elements so that the sixth element was connected to the first. In such a loop, if all 6 elements were guided by the rule, "If either one or the other of my inputs is 'on' then I will be 'on'", then once one element was turned on, all would be turned on. Canalizing is rare in theoretical Boolean systems, especially as K increases but common in biological systems. It is as though living systems had evolved to favor canalizing.

For the Workshops, this meant that several people in the group had to want the group to move in a certain direction. If so, once a certain

suggestion was spoken, the entire group would seem to catch fire and evolve that way. The Trainer's technique of subdividing the large group into small subgroups to work on areas of common interest aided canalization.

At the same time, as the discussion in the subgroups went on, the positive ideas and techniques that developed tended to unite the subgroup participants, increasing their focus—adaptability and interdependence—and produced a specialized output. The effect of higher specialization in each subgroup had the effect of increased differentiation for the entire group, and its information handling would be enhanced. Thus, the d/c ratio rose even higher and moved the group closer to the ordered realm. Later, allowing connections and trading of ideas among the several subgroups allowed the development of small worlds connectedness and encouraged them to co-evolve together into complex focusing.

Internal feedback, a characteristic of complex systems, was another technique used by the Trainer to help the group evolve into complex focusing. Members were able to observe their own behavior on videotape and receive comments from the Trainer and others. These comments encouraged both experimentation and convergence, typical of complex systems. Every time this happened, the group was energized and began to operate at an even more intense and synchronous level. For example, as the Trainer inhibited critical comments during feedback, eventually any member of the group would notice and discourage such criticism. Soon, it disappeared altogether.

This internal feedback loop helped the group modify its own behavior in ways that brought group members closer together, and intensified its development. Many of the exercises of the Trainer during this phase of the Workshop were designed to establish these internal feedback loops, a prerequisite for complex focusing.

Canalization and feedback structures may also be viewed as a network structure that combines a mixture of random individual links within, along with weak links among several cliques, the small world connectedness that favors complex focusing.

Complex focusing can be reached by several routes but it needs enough time, especially in the beginning, for group interaction and for internal constraints to have a chance to develop in this direction. Of course, as is characteristic of complexity, the processes of change and development were neither uniform, linear or predictable. Each day new patterns appeared and each workshop evolved in a different way.

A lot of the experimental work with computers and networks on complexity, as discussed in Part I, requires that the rules for the transition to the complex state be precisely defined. These rules can be simple but adding complications to the rules does increase the probability of the complex state. Nevertheless, we cannot know in advance which rules lead to the complex state.

Similarly, for social systems, we do not know the exact rules that generate the complex state but by making sure that d/c increases we increase the likelihood of moving from chaotic into complex focusing. Hence, we have highlighted the Trainer's techniques that decreased centrality and increased differentiation to move the group into complex focusing.

Emergence in Complex Focused Systems

While the resulting complex focused groups may have resembled each other superficially as they entered the Zone of complexity, the exact nature of what happened within such groups was always different and always unpredictable. Unlike carefully organized groups within larger organizations, the Creative Facilitating Workshops remained a bottom-up model. Rather than being engineered by a master planner, emergence began at the ground level (Johnson, 2001). The role of the Trainer was to set up the right conditions for the emergence of new forms of order while the system was complex focused, without controlling the results. Unlike many physical models of social processes, models of complexity do not involve simple causality where a change in A leads to a predictable change in B. Rather, a change in A generates a new system and a new process that, while it may be described in general terms, is extremely complicated and difficult to analyze.

It is important also to note that complex systems may oscillate back and forth between the chaotic state and ordered state. In Kauffman's terms, the system moves between supercritical and subcritical phases (1994: 91ff). For example, biological populations controlled by variables of reproduction, resources, and mortality, tend to follow a path from chaotic population values, to orderly predictable states, to periodic oscillations among several population plateaus, to chaos again, before repeating the cycle, all characteristic of systems near complex focusing (Prigogine and Stengers, 1984: 167-170).

Thus, within the complex focused social groups of the Workshop operating near the edge of chaos, one could observe individuals freely interacting with each other, forming smaller, temporary subgroups, which broke up quickly before reforming into different patterns. The entire group remained fluid, although it was somewhat united. It was both a dynamic group and a group perfectly synchronized, operating with a different sense of time, a group in the Zone. One can sense a similar process in Wolfram's description of class 4 complexity, as in his rule 110, illustrated in Figures 6 and 10 in chapter 2. Here we see sophisticated structures and chaos intermingled.

Eventually, if the workshops had continued on for a long time, the entire system may have settled down and moved into a stable equilibrium away from complex focusing into a new ordered state. A new system level, the relatively permanent group, might have emerged. The groups in the Creative Facilitating Workshops, meeting for less than a week before dispersing, did not have time to form a new stable system level. To observe such a phenomenon would require observations of groups in a somewhat stable environment over an extended period of time.

On the other hand, most members of the workshops did return to fairly structured environments and organizations. One function of the final closure exercises, and especially the Tool Kit, which occurred during the final third transition step, was to help individuals leave the heady euphoria at the edge of chaos and return to the more structured realm of order.

First, though, we will describe in more detail the experiences which happened during the complex state.

Achieving Personal and Group Objectives at the Complex Edge of Chaos

As members began to work together to achieve personal and mutual goals, there was usually a transition to a highly cohesive group which, we believe, was operating at the edge of chaos in the complex focusing state. At this point, the Trainer withdrew somewhat from direct participation in the activities of the group. In the workshops there was a basic assumption that individuals attracted to these sessions would know better than anybody else what worked best for them to achieve their goals, although they may need help to uncover that knowledge and they may need resources and acknowledgments which would serve as support as they moved toward their objectives. Part of the Trainer's task was to provide materials—numerous handouts, books, video and audio tapes, Internet access, art supplies, musical instruments, toys, easels, newsprint—anything within reason which would assist participants in their work. As well, the Trainer continually offered options, alternatives, and suggestions from his knowledge and experience that he thought would be helpful. Ultimately, however, it was the participants' use of their own creativity and energy to meet their own ends that brought results.

The Trainer invited the group to produce presentations, storytelling, subgroup work, talks, experiments, thinking-on-your-feet exercises, anything that would help them achieve their goals. When participants responded, the program moved into its most exciting stage. Participants made individual efforts to meet their personal goals, and smaller subgroups facilitated exercises that were addressed to achieving the group objectives that were set earlier. Feedback constitutes an important part of these individual and subgroup efforts. Constructive feedback in the presence of the whole group came immediately after the presentations. Constructive suggestions might also come from viewing the video tapes privately with acquaintances and friends, or with the Trainer. Additional constructive feedback came also from the Trainer and other participants during breaks, at meals, and during the evenings in residence if the program were held in a residential setting. While these participant presentations and experiments proceeded, the Trainer filled in any spaces with useful presentations and exercises.

The tools and ideas emerging in the group could cover a range of topics, for example, activities for opening groups, setting objectives, building confidence, coming to consensus, mediating, promoting discussion, ice-breakers and warm-ups, enhancing laughter and fun, evaluating the work done, staying positive, energizing groups, building trust, storytelling, reading to a group, using metaphors, enhancing concentration and focus, dealing with difficult people, stress reduction and relaxation, exercises with art and music, demonstrations involving dance and movement, and closing group exercises.

When the group was working well and complex focused, participants felt as though they were in a space which can be compared to the state of being in the Zone when one is participating in a sports event.

Groups in the Zone

Although the Zone phenomenon has not been studied systematically, an overwhelming body of anecdotal evidence indicates that the Zone experience is real. Here are some comparisons between the personal experience of an athlete in the Zone and the experience of being in an emerging group at the complex edge of chaos.

Just as the athlete experiences a relatively effortless flow and a quality of lightness in his or her movements, the group flows in a natural and easy manner from moment-to-moment as if it were being carried along by a friendly current in a mysterious river. The group is entirely engaged in its interactions, like an athlete who is totally immersed in the game. Afterward, both athletes and group members may be reluctant to take full credit for what has transpired when in the Zone. They have a sense that during the time in the Zone they were both doing something and being done to. To the athlete, sometimes perceptions are altered when in the Zone. In basketball, the basket seems as big as a lake; in soccer, players can see the whole field and the exact location of each player. Similarly, in the group during periods in the Zone, members do not have to think about problems; they seem to know exactly what to do, without a moment's hesitation.

Those participating in this work in the Zone experience a different sense of time. Sometimes these phenomena may be accompanied by a

sense that time has slowed down. When the session is flowing in a natural way from segment to segment, sometimes in an uncanny way, blocks of time would pass rapidly. Before they knew it, the time came to close the session. Again, often, although a session might be spontaneous, unrehearsed, and creative, it would come to a coincidental or serendipitous finish at precisely the time that the formal schedule indicated the session should end.

In Creative Facilitating sessions an inordinate number of things occur in an unexpected manner. For example, people who, at the beginning of the sessions, seemed least likely to contribute anything substantial to the group, invariably contribute to the group and to the learning of the Trainer in significant ways. Participants were cautioned to watch for events happening in such unexpected and surprising ways.

Perhaps the most exciting part of the group's working in the Zone was not knowing what was going to happen next. Sometimes, presentations spun off one another as if they were planned. At other times, the process seemed jerky and awkward. Sometimes a smooth-flowing process would stop abruptly. At other times, a session that had been somewhat stagnant would come to life suddenly. Sometimes the Trainer was in the background, inconspicuous, guiding gently. At other times, he became very visible, filling in with presentations and offering other techniques. As individuals pursued personal and group objectives, the ebbs and flows, the mountains and valleys, the comings and goings, took on an unpredictable character typical of the mode of complexity.

Here are some comments from the participants in workshops which expand on what it was like to be in the realm of complex focusing.

Sense of Time: Time did not exist...It was amazing to never look at your watch, and, if you did, realize the disappointment of only a few minutes left...I feel as if I had escaped the real world and entered another time zone...completely present in flow (Workshop, SFX, 2002). Time flew by; before you realized [it], day was over...Sometimes the discussions were so interesting that it seemed like time was flying. (Workshop, USA, 2001). You would get lost in time due to the fun we had, or the interest and concentration on what was going on in class (Workshop, USA, 2002).

The Zone: We became a group with a common purpose.... I couldn't believe it. I just 'was'. (Workshop, SFX, 2002). I was very relaxed as if I had known these people all my life...Found when the topic became personal or deep, that's when the Zone happened...Everybody blended together and culture differences did not matter...The group as a whole seemed to be coming into a Zone at the end of the week (Workshop, USA, 2001)

The Unexpected: Lots of surprises...Some people had so much depth within them that I was delighted by their hidden gifts (Workshop, SFX, 2002). I connected with opposites...One person really surprised me...At first I may have been not so open to some members but by the end I had connected (Workshop, USA, 2001). It was different than I expected [it] to be and it surprised me (Workshop, USA, 2002).

Serendipity: I had many revelations revealed through symbols this week. It was eerie at times. There were many profound moments, quotes, that spoke to me (Workshop, SFX, 2002). This class lulled me into a magical environment (Workshop, USA, 2001). I know this sounds stupid, but I call it the undercurrents (Workshop, USA, 2002).

Synchronicity: It was so awesome that only a greater connection would have made this happen...there were times when I felt we were all tapped into a special place. A different state of being. For awhile I didn't want to leave. I didn't want to return to reality...I sometimes floated above the classroom (Workshop, SFX, 2002). (Workshop, USA, 2002).

This process continued until the last hour of the program when the group participated in closing exercises. Sometimes the closing itself consisted of exercises suggested by one of the participants. Certainly, an important part of the ending of the workshop was preparing members for a return to their more structured and orderly home environments. This preparation needed to start several days before the actual closing, all part of the final Transition 3 back to order.

Transition 3: Return to Order

Although these groups in the Creative Facilitating Workshops existed for too short a time to become ordered, most participants would

return to a more ordered environment and the Trainer, quite rightfully, attempted to prepare them for this re-entry with the Tool Kit. In this section, we will describe how the complex state of Transition 2 moved back into the ordered realm during the third and final stage.

Ordered Systems

Although the excitement of being in the Zone of complexity was the goal of these Workshops—and perhaps of many other similar short-term facilitated systems—order focused systems such as organizations are not necessarily bad. Such systems are highly productive and efficient, especially if the output needs to be repetitive and predictable, a necessary condition for much of modern society. There is a kind of peaceful, rather elegant calm for individuals working within an organization, in contrast to the intense interaction of complex systems at the edge of chaos. In any case, most of the participants in the Creative Facilitating Workshops were going to return to much more ordered organizations.

Various terms are used for this transition into order: *order out of chaos* (Prigogine and Stengers, 1984), and *self-organization* (Gleick, 1987; Hayles, 1991; Kauffman, 1995: 25; Bak, 1996; Flake, 1999: 276) are two of the most common ones. Quite likely, the ordered realm of repetitive focusing is the condition of most advanced evolutionary systems when the environment is relatively calm.

Hayles introduced the evocative term, ‘quality’, to describe the ordered level (Hayles, 1991: 44), described by Bak as “Quality, in some way, [emerging] from quantity” (Bak, 1996: 7). Kauffman defined order as a state of homeostasis. No matter where the system starts each day, it ends up in the same state because it is in a deep basin of attraction (Kauffman, 1995: 81-83). Hence, ordered systems are resistant to small perturbations, as we saw in virtual systems, and have less sensitivity to initial conditions. To put it another way, because they are more linear and predictable in their behavior, they can be modeled in simpler terms, are more predictable and can more easily be controlled.

Thus, the Tool Kit—which participants were encouraged to modify for themselves—was a way to appreciate what real organizations were

like, while at the same time preserving some of the excitement which was experienced in the workshops during complex focusing.

Producing Ordered Focusing

For a long time, system theorists assumed that it took a lot of effort to move systems into an orderly phase, and that left alone, ordered systems would gradually break down, moving out of order into disorder, the direction of increasing entropy. As we discussed earlier, this conclusion is the essence of the Second Law of Thermodynamics that declares that entropy increases in closed systems.

What amazed early complexity scientists was how order seemed to emerge spontaneously from apparent chaos. The term negentropy was sometimes used to describe this characteristic of biological evolution that seemed to go against the overall trend of increasing entropy described by the Second Law. Nevertheless, negentropy is certainly not confined to living systems. The very laws of nature may be the result of complexity processes. In one of the few sociological attempts to apply complexity theories, the writers argue that both physical and social laws may evolve from processes of complexity (Eve, Horsfall et al., 1997: xvii).

Even very complicated systems may reach the ordered state in a remarkably short time. Kauffman describes again and again how stunned he was in the mid-1960s when he discovered that even in huge networks with many light bulbs (N very high), the magic $K=2$ number (two inputs for each light bulb), produced order in a fraction of a second, every time (1995: 83).

$K=2$ would describe an extreme hierarchical structure where each individual receives input from, for example, one supervisor and from one person reporting to her or him. Order can also occur with slightly larger K , especially class 2, repetitive order, but there would still be a fairly rigid structure and a restricted interaction pattern. Such a structure encourages people to agree with superiors, and discourages new ideas and disagreement. For example, many organization meetings are very ordered, usually intentionally. Even with many (high N) participants, especially during information meetings, there is a strong tendency toward agreement, and thus the maintenance of order. Other factors that can take

the group far into the ordered realm are powerful individuals or subgroups—representing high differentiation (interdependence and adaptability)—which force others to conform by limiting new information and so lowering centrality.

As Wolfram has pointed out, while we can visually recognize chaos, complexity or the two kinds of order in the output of computer models of discrete systems (See Figures 1, 9, 6, and 5 in chapter 2), the ordered states are much easier to describe in simple terms than chaos or, especially, complexity. The final stage of order also seemed easier to produce in the workshops, in part, probably, because members would be wondering what would happen after they left the sessions.

Participants needed to prepare themselves for the abrupt shift from the excitement of the Workshop to the predictability of the ‘real’ world. As the final exercises brought them together into a focused, more ordered experience, the ‘Tool Kits’ were a more permanent resource they could take with them. The Tool Kit and the discussions surrounding it brought the group back to a network with a central hub, the Trainer, typical of a very ordered network. Furthermore, their discussion was focused to decrease the volume and diversity of information communicated and, therefore, further decreasing centrality, again increasing d/c and making the group more focused.

Still, the participants had learned and experienced the potentiality of complexity, and had developed for themselves a set of techniques to move, perhaps, their colleagues at home closer to the edge of chaos and the creativity of complexity.

Preparations for a Return to Order

As the group was working to achieve its objectives during the main part of the Workshop, at an appropriate time participants were invited to reflect on the fact that within two or three days most would be returning to higher level organizations.

The Tool Kit for Moving Back to Order

From time to time during the last part of the course, the contents of the handouts, ‘The Tool Kit’ and ‘Carrying New Ways of Being into One’s

Community' were discussed. It was hoped that these discussions would ensure that, when the time came to depart for home, participants would be able to return to the state of order from which they came to the Workshop.

These discussions and handouts had three purposes: i) to outline the numerous environmental influences which may affect participants' efforts to initiate personal, workplace, and community change, ii) to provide information regarding positive ways to re-enter home, work, and community environments, and iii) to emphasize the necessity of participants developing a daily program—a Tool Kit—unique to oneself, which would provide individual readings, techniques, affirmations, visualizations, music, exercises and guidelines to maintain and strengthen those elements of the training program which that individual valued.

The Tool Kit was meant to ease the participants' descent from the mountain top experiences of being in the Zone, while at the same time suggesting that some of that experience was portable back to the more ordered world. It recognized the reality that individuals were returning to their own networks of friends, family and the organization itself, networks which were usually more structured and ordered than the complex group of the workshops. At the same time, when successful, the workshop had expanded the abilities and enhanced the confidence of the participants, and some of those skills and abilities could, in turn, influence their home networks. For example, people were returning to an organization which often, perhaps by necessity, encouraged a culture of competition among co-workers, and conflict with outsiders. Participants returning from the workshops might be able to introduce some elements of co-operation and co-creativity, typical of systems near the edge of chaos, which could help organizations respond more innovatively to changing environments.

Individuals exist in many social systems, both large and small, and each such system has its own centrality and differentiation. By changing either of these, if possible, s/he may change system behavior.

Here is a sample of how participants experienced this preparation for the third transition from complexity back into more order.

I gave a lot of hard thought to my shield—this was difficult for me...John stretched our comfort zone again and again and at this moment there was no finish line (Workshop, USA, 2002)...I had more energy to try different options because I know someone would respond and appreciate...I would answer by quoting Benjamin Netanyahu, “Leadership is where vision and reality meet”. (Workshop, SFX, 2002). I feel a lot of new and exciting options were just around the corner...I am a totally different person now. Full of confidence (Workshop, USA, 2001). Feel more empowered and confident to be able to speak in public...I had an energy I can’t explain (Workshop, USA, 2002).

Conclusion

Only recently have the insights of complexity science been applied to social systems, and fewer still attempts have been made to use complexity science to explain what happens in small groups (Arrow, McGrath et al., 2000). While Arrow et al. did speculate that work groups within an organization may respond to outside disruption by becoming transformed into a new structure and a new set of behaviors, they did not elaborate on how this transformation takes place (2000: 205). This was the essential idea in the work described here: how groups can be guided from order into chaos, and back into complexity where a new kind of order emerges.

Are these change patterns typical of how new groups are formed? Do individuals come together from their more or less ordered lives, overshoot into chaos as a new group forms, progress into creative complexity through the establishment of a few norms, a complexity characterized by enthusiasm and high cohesion, before going back into a rather routine ordered state? Is this cycle repeated? Our work is based upon the experience of one type of group found in relatively short-term training workshops, but it was the original evidence for the ideas presented in this book. Still, we would like to see more experimental work on cycles of small group behavior.

There are many different kinds of groups. They exist and prosper according to the needs of individual members and whether or not the

whole group achieves its goals. Groups may be temporary, as in this study, or have long histories. In some groups, for example clubs, the group exists primarily to serve the members' needs. At the other extreme, groups such as professional sports teams or musical groups are expected to achieve certain external performance goals. The balance between meeting the needs of individual members and achieving group goals varies from group to group, and this balancing process, along with a diversity of external environments in which the group is embedded, defines much of the uniqueness of each group. In all groups, progress depends on the group performing in a manner such that the whole is greater than the sum of its parts.

We believe that relating changes in group patterns to the more universal patterns of change we have outlined in chapter 2 is useful for other kinds of applied group work. In particular, the use of techniques such as the generation of uncertainty as an element of chaos, and then the development of a few simple rules to guide the group back into complexity at the edge of chaos, may be helpful techniques for all group leaders to consider. As we point out, skilled group trainers have learned by experience that such transformations are essential for healthy change and development, for achieving both individual and group satisfaction. This chapter should reassure already successful trainers while also offering new techniques.

Essentially, the techniques described can be used to establish the social focusing state of many group situations, even for groups embedded within hierarchical structures of higher level systems, constrained by expectations of orderliness. In the next chapters, we will examine organizations and societies as they shift among the four types of social focusing—chaos, complexity and the two types of order.