

## Chapter 2

### ON CHAOS AND ORDER

*A decade ago, I was working on a book on systems theory for psychologists, psychotherapists and doctors (the first edition appeared 1997). I liked that book, which was meant as a fundamental textbook bringing some of the core ideas of modern systems thinking to the “clinical field”. Although it was addressed much more to clinical problems than another book which I wrote five years earlier with more mathematical and scientific fundamentals of chaos and systems theory, I felt still unhappy with the fact that I was aware that for some people in therapy and education this book might still be “too scientific”.*

*As a consequence, I decided to work—additionally—on a second book which deals with the same core ideas and has the same message, but from different points of view and written in a rather “unscientific” way of writing. Without mentioning any formula or sharp terminology and in a more narrative style, this book—entitled “Chaos, Fear and Order” (Engl. translation) —brings the idea of self-organization on different levels of human experience and interaction to the reader.*

*Both books were published at almost the same time, and some reviews referred to both of them. Although “Chaos, Fear and Order” has (until now) only two*

*editions, I am happy that it has prompted many more letters than any other of my books. People I have never met have before told me that they were challenged by the ideas it contains.*

*The following chapter is based on the first chapter of that book and is meant as an invitation to think about the broader meaning of self-organization and actualization.*

### **The Fear of Chaos**

The sociologist Peter Berger has described a poignant scene of the human struggle at the edges of chaos:

*A child wakes up in the night, perhaps from a bad dream, and finds himself surrounded by darkness, alone, beset by nameless threats. At such a moment the contours of trusted reality are blurred or invisible, and in the terror of incipient chaos the child cries out for his mother. It is hardly an exaggeration to say that, in this moment, the mother is being invoked as a high priestess of protective order. It is she (and, in many cases, she alone) who has the power to banish the chaos and to restore the benign shape of the world. And, of course, any good mother will just do that. She will take the child and cradle it in the timeless gesture of the Magna Mater... She will speak or sing to the child, and the content of this communication will invariably be the same - „Don't be afraid - everything is in order, everything is all right“ If all goes well, the child will be reassured, his trust in reality recovered, and in this trust he will return to sleep. (Berger, 1970, p.61)*

At numerous seminars and lectures I have experienced how this description has really struck a chord deep within the most disparate people. Without any lengthy introductions and explanations, this scene leads directly to the heart of the conflict between chaos and order, a theme which permeates every fiber of our existence. For every-

one can recall numerous similar scenes from his or her own life. And these are by no means limited to childhood experiences or to the consoling of children; chaos also lurks on the edges of existence for us so-called „healthy“ adults. No matter how strong a bastion of safety, familiarity, routine and order we erect around us, cracks can unexpectedly appear in its facade. Dreams, extreme, unmanageable stress, blows of fate, or simply an inexplicable sensitivity can lead to shocks which cause a flood of thoughts and emotions to overwhelm us and can threaten to sweep our ordered lives into the abyss.

Indeed, a human being rarely feels more threatened than when the firm fabric of his existence begins to unravel—when all order collapses and he finds himself utterly exposed to the unexpected and unpredictable. Even relatively harmless signs of such an impending dissolution fill us with dread. In his "Existential Analysis of the Nature of Fear" the Viennese logotherapist and existential analyst Alfred Längle speaks of the human being's "basic fear". He describes this as the realization that "nothing is certain"—a realization involving such a shaking of life's sturdy foundation that stability and security appear to be seriously threatened (c.f. Längle 1996).

It is therefore most understandable when under certain circumstances a human being attempts to rally his last reserves to combat an imminent loss of stability and when, in his need—as numerous psychotherapeutical clinical case studies demonstrate—he attempts to extract a last remnant of order from the chaos enveloping him. Differing theories dealing with psychopathology do agree on one point—that many of the most clearly visible manifestations of human fear and mental illness have their origins in experienced chaos or in inappropriate attempts at banishing such chaos.

In numerous stories of creation and various myths, in fairy tales and legends dealing with the beginning and

end of time, the threatening element of chaos appears again and again, a chaos whose etymological meaning is "unformed, shapeless primal cosmic mass, dissolution of all values, confusion." The Greek Hesoid (ca.700 B.C.) described chaos as the yawning, dark abyss which opened up between heaven and earth after the creation of the cosmos. And in an interpretation of Franz Josef Haydn's oratorio "The Creation" (1798) the author points out that chaos must first be overcome by life. "The instrumental introduction contains two basic motifs, a monotonous, gloomy tone and a cry echoing the struggle for life—chaos before the creation. In radiant C major to the sound of the full orchestra one hears the words 'Let there be light!' The first day of creation is dawning. The demons of the deep vanish."

There is, it is true, also the idea of chaos as a creative force — as described in many eastern philosophies or in the works of Paracelsus, Jacob Böhme, Georg C. Lichtenberg, Friedrich von Schlegel, Friedrich Nietzsche, Martin Heidegger and others, and most particularly in the works of the psychotherapists, from C. G. Jung to Carl Rogers and Fritz Perls and up to the systems and family therapists of today. However, all of these authors would appear to agree that the human being's tolerance of even such a positively interpreted chaos, that is chaos as a potential for creative change, is severely limited. In full force "the dissolution of all values and order" can at best only be endured as a relatively short transitional phase. Such a phase of radical change, in which all of the entrenched structures are thoroughly shaken must necessarily be followed by renewed order and a reduction of complexity. The regaining or retention of a certain stability and the familiar structures of our personal universe (*Lebenswelt*) is essential for our everyday lives.

The central question of this first chapter arises from the above experiences, descriptions and thoughts: just

how do we so-called "normal" adults manage to banish fear-inducing chaos and to find meaning and order in this world? In contrast to children and many patients, for whom the introductory nightmare scene is a rather typical reflection of their personal universes, we seemingly take it for granted that we will live relatively undisturbed within our reality, the everyday reality of our society. Not only do others expect us to conform to this reality, we expect it of ourselves. And all this is in no way affected by the fact that our everyday reality displays tears and cracks about the edges. Indeed, we are fully justified in calling such phenomena merely peripheral areas of our normality. This question of just how we manage to banish chaos and to find meaning and order in this world has become increasingly topical in the last decades, for modern scientific research in the field of chaos and the systems theories has robbed us of our belief in an orderly world which for us is comprehensible, predictable and ultimately controllable. The image of our world as a gigantic clockwork which, when wound up, runs eternally according to some universal law of dynamics, was severely shaken at the turn of the century by quantum physics and the theory of relativity—and has since been utterly destroyed.

Instead, our modern view of the world again converges with the philosophies of various cultures and times (and with those of our own culture), in the awareness that the world is above all to be seen as an incredibly complex process, a process which we are intimately involved in and which we contribute to, but which for us, as part of the whole, must ultimately remain incomprehensible. Meaning and order can no longer be taken for granted. On the contrary, we are faced ever more often with the struggle to understand these concepts.

The concept of the world as a process alone exceeds human comprehension. For in a world which does not

exist but merely occurs there is nothing substantial which can be relied upon eternally, which we can consider „eternal“. On the contrary, everything is in a constant state of change. One cannot wade into the same river twice, as Heraclites long ago pointed out. As scientists we thus must recognize ever more clearly that our ordered systems are at best islands in a seething sea of chaos.

But if this thinking, with all its consequences, formed the structure of our personal universe we could not live in it. In a world in which we experienced solely the uniqueness of every moment and every space-time configuration, in which therefore there were no recurring patterns, and as a result nothing familiar, paralyzing fear, such as one encounters in nightmares and psychotic illnesses, would be our constant companions. In such a world one could not physically survive, as we shall see later. It is therefore necessary to banish chaos and to provide our world with a certain order, regularity and reliability. It should be noticed that, in the field of clinical and so-called abnormal psychology we diagnose people as suffering from a lot categories of dis-”orders“. But how is order achieved?

### **Avoiding Chaos by Means of Reduction**

In order to continue the line of reasoning begun here it is important to understand that order for us is always the result of a reduction of complexity—an insight which is stressed not least of all in modern systems theories. We achieve this reduction by more or less chopping up the unique process of universal evolution—this chaos—into pieces, assigning these pieces to categories and thus inventing recurring patterns. By means of this creative

dismembering the incomprehensible becomes, at least partially, comprehensible (for us).

I would like to illustrate this important point by means of the categories "evening" and "morning". We usually speak of these categories „evening“ and „morning“ as if they somehow actually existed—as if they were not our inventions but unquestionable constituents of reality. But strictly speaking, no evening in the history of the universe was exactly like the other and no morning identical to the other. And yet it is not only sensible to speak of evenings and mornings, it is essential for life that the sequence of these invented categories is seen as a rule. For only repetition makes both predictability and planning ahead possible, thus reducing our insecurity in dealing with our universe. We would not have been able to perform any of the acts or to take part in any of the activities which we experienced today if we had not created such recurring patterns.

It must be stressed that this reduction, i.e. categorical abstraction is by no means dependent on conceptualization and language—which limitation would mean that the creation of recurring patterns is primarily a human trait. On the contrary, this manner of gaining knowledge is apparently so basic and important for life in general that even its "lowest" forms have adapted evolutionarily to this (artificial and abstract) sequence of mornings and evenings. Where life forms have, for example, abstracted "light" from the endlessly complex process, the incomparability of mornings has been reduced to a single variable: "the reappearance of light"—and with regard to this one aspect all mornings are indeed the same.

In addition to this reduction involving "light" and thus the sequence and predictability of day and night, one also finds the construction of many more recurring patterns in evolution—low tide/high tide, spring/summer/fall/winter

and many more, which are given labels such as "inborn triggering mechanisms", "instincts" and the like.

Life as we know it has, therefore, been wrested from chaos. It has established itself in an evolutionary process proceeding from the Big Bang as an alternative, so to speak, to the constantly recurring decay described in the field of thermodynamics. And all forms of life on this planet are dependent on the regularity, the recurring patterns that they create by means of reduction and abstraction. Friedrich Cramer, director for many years of the Max Planck Institute for experimental medicine in Göttingen, Germany, then uses the term "chaos avoidance strategies" in connection with life, from protein biosynthesis to complex biological processes, as well as to such cognitive inventions as art and aesthetics, and he stresses the fact that "order, development of life forms and creative power are the result of an inherent chaos avoidance, in the universe as in the life of each individual" (Cramer 1988).

### **Human Chaos Avoidance**

Chaos avoidance is of particular importance for the human race, which has given its world an enormously complex system of rules, that which we refer to as "society" and "culture". Chaos, the infinite complexity of the unique world process, is apparently so threatening to us that evolutionary programs take effect virtually from the first day of our lives to wrest order from chaos and to seek out any possible „regularities“ among the processes of the experienced world.

This becomes clear when one studies the innate abilities of babies. A new-born baby possesses, for example, the astonishing ability to break down the stream of

sounds of any language spoken on this earth into its component parts. By means of single-frame analysis of filmed human communication one can demonstrate that when two adults converse they both produce slight movements, movements which the listener synchronizes with certain linguistic units (known as phonemes) uttered by the speaker. Babies only a few hours old are equally capable of moving synchronously in response to this linguistic structure, and this apparently, as stated above, in any existing language. What makes this particularly amazing is that we adults when listening to a truly foreign language with its foreign grammar cannot say where in the stream of sounds a particular word begins and ends. Such identification is necessary, of course, in order to learn any grammar, a system essentially based on the order of individual words. A new-born child, of course, also adjusts ever more to those sound patterns (words) which are used in the linguistic community it is living in. It can then distinguish these patterns ever more accurately and establishes a complex grammar, but in the process loses the ability to react to any other language.

In an even more impressive example the developmental psychologist Bower tells of a congenitally blind child which was given a radar-like position-finder with whose help every object within a radius of two meters was converted into audible frequencies, the pitch of the tone indicating the distance of an object and the volume its size. If an object moved towards the child the pitch and volume of the tone changed simultaneously. A few seconds after the installation of the device the baby knew that these changes indicated an object approaching its face. The salient point is that no baby had ever before been confronted with this type of specific information. Apparently the baby was able to utilize the equivalence of this acoustic information to that of the optical data and to react appropriately (see Bower 1978).

A different study of four-month-old infants showed that they were capable of detecting simple rules in the structure of their environments. That is, they were able to adapt quickly in reinforcement experiments involving the turning of their heads in certain patterns, such as "twice to the right", "three times to the right" and "right-left-change over." As only head movements of a certain extent were reinforced as correct "reactions", reactions failing to meet this criterion were not rewarded. This at first led to faulty "concepts", until by "testing" various "hypotheses" the babies arrived at the correct strategy.

All three of the studies used as examples here demonstrate that the search for possible regularities in the environment is also an inborn trait of human beings, and that rules and order are apparently of central importance. Even in those cases in which the search for rules should actually fail—because psychologists in laboratory experiments have so created a segment of the world that it is sure to contain no order—structured order is established. This is demonstrated by, among others, an old experiment dealing with the psychology of perception. On a board containing, say, ten rows of ten lightbulbs, each bulb is connected to a random generator and therefore lights up at irregular intervals. The observer, however, by no means sees lights flashing on at random—what he sees instead is moving structured shapes (or so-called "Gestalten").

Gestalt psychology, a theoretically and experimentally significant branch of psychology during the first decades of this century (until its disbanding by the Nazi regime), worked out how actively organized our knowledge of the world is even on the lowest sensory level. Sensory perception is to be regarded as a complex process, in which stimuli are converted into "Gestalten"—a process which is described in, among others, so-called "Gestalt" laws. We automatically organize dots on a piece of paper to

patterns and pictures and perceive a sequence of tones, if at all possible, as a "melody", the elements within these arrangements (dots or tones) often receiving new and specific meaning—for example this gives rise to the phenomenon known as the "leading tone" of a melody. Such findings exist in numerous variations—also involving the creation of more complexly structured order. Moving geometric figures, for example, can thus, under certain circumstances, produce a vivid impression of typical "social interactions" or "causes and effects". This, too, has been the subject of numerous psychological experiments. In principle, however, we have already encountered this phenomenon in animated films—where it is then particularly impressive when the moving shapes do not possess human or animal forms at all, in fact do not have any similarity to them, but rather any other forms whatever. Even then the way the shapes coordinate their movements and approach one another still creates the overwhelming impression that here one is dealing with "living creatures" or even "human beings" who are interacting.

This fundamentally constructive nature of at least parts of our "Erfahrungswelt" (experienced world) can hardly be demonstrated more clearly. We cannot and need not go into detail here, but the examples show that beginning at a very elementary level of perception, even before our consciousness intervenes with deliberate decisions, our impressions are always experienced as parts of a structured world. And in the process of establishing order, of banishing chaos, we invent rules and regularity as the need arises.

This active search for regularities and the organization of stimuli it involves also applies in a similar form to practically all "life rules" (without explaining this more fully here). Some of the principles of organization have been acquired in the course of evolution—as, for exam-

ple, figure-background differentiation and other aspects of Gestalt perception. And in other areas as well the in-born contribution should not be underestimated: speech, sexual behavior, social relations, panic reactions, logical thought processes and the like are influenced to a substantial degree by the structuring principles which have emerged during the process of evolution.

However, for human beings it is significant that they can go beyond these evolutionarily and biologically acquired rules to adapt them individually and socially, and even to invent entirely new areas of rules. These are particularly useful in the individual's adaptation to his or her personal living conditions (in a more narrow sense).

### **Between Chaos and Order**

Establishing order is therefore extremely necessary. For it wards off the unfathomable distress that we would otherwise fall prey to in our experiential chaos—a chaos in comparison with which the above-mentioned psychotic breakdowns and nightmares would seem to be no more than harmless preliminary stages. For this reason we should appreciate this positive aspect of order. The reduction of a complex, unique process to recurring classes of phenomena gives structure to chaos, makes predictions possible and reduces insecurity, thus creating reliability. And this reliable order is with us from the first days of our life.

Let us recall the scene involving the mother who banishes chaos for her child by being, as Berger puts it, a high priestess of order. She sings, we are told, a lullaby.

Now, songs are the embodiment of regularity; lullabies and evening songs in particular possess simple, repeated sequences of tones, for they sing of the rising moon, the

starry sky, the approaching dawn—phenomena which are recurrent and predictable. And, above all, these songs and their words can be repeated again and again in the same manner. We all know the reaction of many small children: "Oh, can't you sing me ... again?" And preferably it is those songs which they have already heard a thousand times or more. And woe unto you if you make any changes! What is needed to soothe a child is not something new but rather that which occurs again and again.

The fact that, strictly speaking, the singing of every song is a world premiere—unique, at no time before or after existing in exactly this form, just like every evening and every morning, just like everything we experience—this particular aspect plays no role at all. In contrast, we abstract that which the phenomena have in common, that which is similar, or in other words, familiar. Everything then is so safe, so familiar, that one no longer needs to listen and to pay attention carefully and can, like the child, doze off.

But he who now mentally slips into an idyllic imaginary world where all is familiar, so familiar that he need no longer listen carefully—he has forgotten to take the needs of his spouse or companion into account:

"Really! You aren't listening to me!" or "You aren't really listening to me!" Who is not familiar with such reproachful exclamations?

And here we see the other side of the chaos coin. We have, it is true, just stressed, in a kind of provisional conclusion, that the reduction of a complex, unique process to recurring classes of phenomena gives chaos structure, reduces uncertainty, makes predictability and reliability possible and creates, as it were, familiarity. But now we must add that this reduction to that which is all too familiar limits the ability to grasp uniqueness and closes our eyes to the creative side of the life process.

In contrast to the situation in which a lullaby is sung and a soothing familiarity is conjured up, there are many situations in which our spouses, companions and others have a strong interest in their words being given the status of a „world premiere“, in our really getting involved in what they have to say which is new and unique, or simply in their manner of relating to us here and now. And if we become involved at least somewhat in this uniqueness something like a personal encounter could take place.

If, however, we merely glean that which is known and familiar to us from the words and situation, and then respond with, to ourselves or out loud, „Oh, I already know that!“, if we already tune out after the third word, pursuing our own thoughts and not listening to what is new, then what takes place will not be a personal encounter but merely an exchange of empty phrases, an acting out of tired rituals. And then trouble is often unavoidable. For our partner then feels, rightfully so, that he or she is not being perceived as a person but misused as an easily replaceable object whose only purpose is to set our own schemata (i.e. cognitive patterns) in motion. Even on the level of technical discussions, in which a personal exchange is not necessarily desirable, we are expected to be receptive to the new information and not to always act as if we already knew how each sentence would end and what the other had to say.

The fact that everyone is only too familiar with such situations, however, shows the effectiveness of a mechanism which primarily causes us to comb our experienced world in search of recurring patterns. Indeed, the same process which creates order and security—namely the reduction to familiar categories—is at the same time the kiss of death for creativity and change. And this is where unnecessary, compulsive order can set in. By means of

illustration I would like to use an example that again commences with evenings and mornings:

When someone says "I got up at seven o'clock every morning this week, had breakfast with my wife", etc., he is not just sticking to society's division of time into "days" and "hours" (using an unbiological precision or "punctuality"). On the contrary, he is failing to mention that the spectacular rosy dawn in the clear, cold air last Tuesday "morning" was completely different from the incomparable scene of a fog-shrouded "morning" sun on Wednesday, and that this in turn was something totally different from the sparkling world of glittering raindrops on Thursday "morning" (to name only a few possible aspects of "mornings").

In this example I am not interested in phenomena of language. We need such linguistic reductions, above all in everyday life. They are undoubtedly important in helping us to communicate quickly. No, here I am interested in the question of whether anything more than just a stereotyped category, "mornings", was "perceived" and "experienced", or whether at least—under less stress—something more than and different from such "mornings" can be experienced—and moreover, whether it was noticed at all that actually—despite being the product of human planning—"the breakfast" also displayed many differing details "every morning" and always tasted different. This last point is true not only because no two breadrolls are identical but rather because we cannot and should not ever feel exactly the same about anything if we are still capable of clearly experiencing our own life reality. And because our perceptions and their cognitive processing are strongly influenced by our moods and emotions, even two identical breadrolls will, depending on our mood, taste different.

When, however, that which we experience out of the possible variety and complexity is reduced to categories

such as "had breakfast" at "every morning" we should then not be surprised if "every evening" "the same arguments" about "the same problems" always crop up. For the same reduction to (too) few and (too) rigid categories also takes effect in the structuring of our social sphere. In our interactions with spouses, children and others it is again just "the same old story". Therapists encounter this excessive reduction, this experiential impoverishment in many of the people who sit across from them. But who among us can claim that he himself does not react similarly, at least to a degree, or even possibly much too strongly and much too often?

Seen from this angle the ways of encountering the "world" can be placed on a scale between two diametrically opposed poles.

At the one extreme end we find the chaotic, the unpredictable, and the highly complex. And the more we become involved with the uniqueness of processes the less reduced are our experiences, which now are more likely to admit the awareness of the new, the surprising and the creative. But therefore we are less able to create categories, cannot make predictions based on regularities and are all the more likely to fall prey to the fear of the unpredictable and uncontrollable.

At the other extreme end we find reductive order. And the more we categorize at this other end and detect or invent recurring aspects and regularities, the more predictable and therefore safer our experience of the world becomes. As a result chaos is held in check or even banished. But we find the "things" treated in this manner all the more rigid, boring, reduced and uniform.

## **The Social Banishing of Chaos**

A human being does not, of course, find his particular position in the area of conflict between these two poles all by himself. On the contrary, a prospective member of our culture is born into a stable system composed of social interaction, established institutions and material structures. Long before we walk out onto life's stage the scenery in this never-ending drama has been put in place and our roles at least roughly prescribed by bundles of expectations. And our very first steps on this stage are accompanied by—if not actually controlled by—instructions governing actions and meaning which are intended, as systems of rules, to reduce complexity and banish chaos. For example, two significant systems of rules are the oral and written forms of language. In addition, our culture in particular has created regularity by processing materials into commodities (in the broadest sense of the term). We need only look around us: there is hardly anything unspoiled and natural to be seen, hardly anything that has not been processed or adapted to different uses or even created wholly by man. Tools, vehicles, buildings, clothing, works of art (in the broadest sense) devices used for mass communication, etc.—all have a strong influence on our sensorial impressions.

The experiences which are possible with these objects are by no means chaotic but rather highly regulated and ordered. At the very latest the socialization process sees to this, that is to say, the education we receive from school, the workplace and all the other social institutions. A fork is not to be used for scratching but must be employed in a prescribed manner if one is to avoid the embarrassment of bad manners and the subsequent tutoring in deportment this would entail. It is just the same with a fountain pen, which is not meant to be thrown about or used to spear pieces of food—indeed, in school it is not

even to be used for "scrawling about" but is reserved for certain highly regulated movements which result in the production of highly standardized symbols. Usually the creativity which is invested in inventing such objects serves to limit creativity in the use of the objects and to establish regularity.

Such routine behavior does, of course, provide the freedom one needs to be creative in other areas. Thus the correct, rule-conforming use of a fountain pen, a typewriter or a computer saves a lot of time and energy (compared to the quill or the chisel used in cuneiform writing), which one could use, for example, for the development and recording of original ideas—perhaps in the form of a poem or a scientific treatise. But before we overrate the freedom to be creative gained as a result of rules one should ask oneself just how many of all the people who use a fountain pen, a typewriter or a computer are really able or allowed to use these apparatus to creatively express their inner selves. Most people probably use these apparatus within a framework of activities in which they are not self-determined but rather subjected to rules and constraints.

Next to meaningfully transformed matter regularly structured social relations are the second large sphere in which the human being establishes a world with an order he has wrested from chaos. Our modern societies in particular are distinguished by the fact that ever more areas which were formerly reserved for the spontaneous activities and initiative of the individual have now been systematically regimented by means of compulsory rules. There has been a steady increase not only in the number of laws and ordinances and the wide range of areas they regulate, but also in the spectrum of duties organizations and institutions perform.

People who do not fit within this system of rules and who are likely to spread chaos—the mentally retarded

and ill, the physically handicapped, the homeless and others—are shunted aside and handed over to the appropriate institutions. Starting with infant care and kindergarten and progressing to mental hospitals and homes of every kind for the mentally retarded, and finally to special wards in hospitals where the dying are cared for professionally, the chaos in and caused by these human beings is banished to the periphery of our normal, everyday life. These areas of life go largely unnoticed in our “usual” daily routine and are, accordingly, also as strictly regulated as is conceivably possible. But the persons in care, if not others as well, do not perceive this tendency to regulate life as a positive, creative order but rather as isolation and subjugation involving an imposed order.

A young human being is exposed to strict regulation in a similar fashion. As a result, his highly complex and often bewildering, unpredictable reactions are—as Heinz v. Foerster puts it —“trivialized“: young Fritz is in school and perhaps his answer to the question “How much is three times three?“ is: “green!“. But this creative answer is, of course, not permissible. Therefore he is taught that to answer the question “How much is three times three?“ reliably, predictably and reproducibly he must say “nine!“ (c.f. v.Foerster 1988). However, it must be said that, for example, in the course of formal education—or the socialization process in general—knowledge and behavior are differentiated. But these differentiations take place within the narrow framework of society's approved system of rules. And the fact that it is western civilization which has shown a particularly strong tendency to reduction and to order based on control has been of much consequence. For this culture is more likely to tempt us to banish chaos not only by necessary means but to approach too avidly the order end of the scale and to thereby establish more restraints than are needed. This is closely connected with the dominant concepts of order.

### On “Law and Order“

In our society the term „order“ is often closely connected to the idea of „putting something in order“, that is, establishing orderliness. We need only think of the areas we live and work in—desk, kitchen, and apartment. We must intervene daily to transform the seemingly self-generating untidiness into orderliness.

Isn't this what we experience every day in other areas of our lives? And don't we hear, from the leading politicians of our state and from many who elect them, the call for “law and order“?—which as a rule is synonymous with the call for forces whose task it is to prevent chaos from developing or spreading: clear laws, specific institutions and rules, and police and other law—enforcement agencies which can impose order from without and if need be preserve it by constantly intervening. For roughly 300 years this view has been held and supported by western science. Indeed, one can even call this view an essential guiding principle in the development of this science, as will be elaborated on later in chapter three. Further back in time, in the Middle Ages the acknowledged goal of science was rather to understand nature in order to act in harmony with it. But in the 17th century, with the development of the experimental method and mathematical analysis, together with the application of the newly-gained knowledge to expand technology, scientific research received a new image and goal: It was now a matter of subjugating nature and dominating, controlling, and ruling it.

And are not indeed the achievements of technology clear proof that the world can be reshaped and ruled? Engines, automobiles, airplanes, the chemistry of synthetics and the biochemistry of medical technology, our advances in the microscopic world with nuclear fission and atomic power and in outer space with the moon landings

and space probes—doesn't all this show the triumph of the human mind over nature?

If one follows the media and the press releases of the politicians, it all too often appears as if one must answer this question in the affirmative. But today more and more people realize that despite all its progress, classical western science has also created a tremendous potential for destruction. It didn't take Chernobyl and uranium smuggling to teach us that the security of nuclear reactors and weapons cannot be guaranteed.

The eradication of diseases such as tuberculosis, cholera and typhoid has not provided us with absolute control over disease, as the rapid increase in the incidence of cancer, heart disease and AIDS shows clearly. Our airplanes have undoubtedly become safer and in the area of industrial production we have mastered numerous complicated manufacturing technologies. But we have paid for this with a depleted ozone layer, acid rain and numerous other environmental problems.

Today science itself has also had to radically revise its view of life. Modern chaos research and systems theories of the last two or three decades have, as stated earlier on, destroyed once and for all the long-held belief in the fundamental calculability of "the world". Consequently, the concepts regarding order also had to be revised—at least in academic circles. Though it is not possible to elaborate on chaos research here, one of the key findings is that un-specific ambient conditions of a system are enough in themselves to enable it to unfold its own internal order. This means that these structures of order are present as possibilities within the system. And although they are encouraged and, after a fashion, caused to unfold by external conditions, the resulting order as such is not introduced from without.

These phenomena are downright typical of all manner of life processes. This became clear when scientists began to see their world through different eyes and suddenly discovered self-organizing processes everywhere. From a biological-medical standpoint the organization and function of organs such as heart, kidneys, lungs, lymph glands, central nervous system and others have been described very accurately by means of chaos- and self-organization theories. The same is true of psychic and communication processes.

Thereby natural science has at last begun to deal with something which has always been available to the vast majority of human beings as alternative knowledge. A mother who carries her child under her heart, a farmer or a gardener—they have always been confronted daily with the knowledge that the complex order which they see developing around them can by no means be considered solely the result of their personal power and control over things. Such people have always interpreted “law and order“, the favorite slogan of conservative politicians, differently: namely, that only through trust in the “laws“ of nature and through the greatest possible harmony with them can one support those processes which call forth an autonomous order or enable an inherent order to develop. From this life-oriented point of view an entirely different conception of order can be seen: here one must trust rather than do or control. One can only support that which is already present or arranged, as order emerges on its own—under conditions, to be sure, that one can influence. This last aspect is dealt with more thoroughly within the framework of the so-called self-organization theories.

When we think of the mother and her unborn child, growth processes in nature, the development of personal gifts and the question of what we must do to make our partner love us we should not find it difficult to recognize

the absurdity of control-ideology. Even the mother in the opening anecdote was not primarily conveying to her child: “I have got everything under control“, but rather: “Everything is all right“, in the sense of: “Have trust in being and becoming“.

And still we experience again and again how difficult it is for us to have such trust—even when we are reasonable enough to recognize that control would also not be of any help to us. As parents involved in the upbringing and education of our children, as therapists accompanying patients during transitional phases, and in many similar situations, we often feel incapable of mustering the trust needed to avoid intervening too much from the side of order, limiting ourselves instead to merely providing improved and helpful conditions. We give in all too easily to the powerful ”law and order“ ideology.

### **How Relationships Become Rigid**

Therapists often observe in the dynamics of families and couples that banishing chaos by means of order can easily destroy an adequate equilibrium between uniqueness and regularity. Then, the human beings become the victim of a self-inflicted compulsory order. This is because the family, as part of the general social framework, plays a special role with regard to the creation of order. This results from the high level of intimacy and physical contact between members of a family as well as the security and confirmation of personal worth they expect from their interactions. In addition, communication for the most part is face to face, which is to say that what one person expresses is to a very large degree the impression the other person receives and vice versa—interactions with immediate feedback.

At the same time, however, these familial interactions must always pass through each family member's personal “bottle-neck“ of interpretation. And now the mechanism described above in its effects on the individual can become fully effective—or even fully destructive. When our total possible experience of the world is reduced too strongly by schemata and we address ourselves less to that which is unique and more to that which seems to us to be always the same, our personal relationships will soon indeed be characterized by the repetition of rigid behavior patterns.

Therapists who deal with families and couples often observe how reactions to another person's forms of expressing himself have less to do with the communication itself than with some curious rules: off-hand one could say that the attempt at communication made by one person—let's call her Ute—as registered and processed by the other person—let's call him Peter—merely acts as a general trigger which causes an “inner film“ of expected meaning to start to play. So, as I explained earlier, Peter does not actually listen any more. In certain situations if Ute merely opens her mouth he already knows “what's up“. At least he thinks he knows. But how can he know for sure if he doesn't really listen any more? At any rate, what Peter is reacting to is more his “inner film“ than what Ute has said. For therapists the following brief exchange is therefore typical:

*Therapist:* What did you perceive?

*Peter:* The way Ute looked at me I knew what to expect.

*Therapist:* Did you hear what she said?

*Peter:* No, I already know what she is going to say when she looks at me like that.

When Ute becomes aware that Peter's reactions to much of what she says are always the same because he

doesn't listen, she will go to less effort to come up with anything new. This in turn confirms Peter in his belief that he was right in thinking that "Ute always goes on about the same old things." Unfortunately, it is not only Peter who is affected in this manner. We could have observed and related this whole interaction from Ute's point of view. Here a vicious circle of reduction has been set in motion in which both partners appear to be both active participants and victims of circumstance at the same time. Sadly, this commingling of the roles of perpetrator and victim is typical of many social relationships.

Those interpretation patterns and forms of behavior which (in the sense of the interpretations) are mutually confirmable develop especially well during the common development of a family or a couple. Hence, these persons' degree of freedom can under unfavorable circumstances become increasingly restricted. This results in a situation which an observer experiences and describes as "encrusted, rigid structures". The wife's most likely different utterances and their intentions are all reduced to the category of "nagging", and this is what her husband reacts to. There are simply far too few categories at hand that could be used to understand the partner's behavior.

When families submit themselves to therapy their therapists do actually find that in the course of time the spectrum of possible behavior patterns ( and how these were perceived and mentally interpreted) has been reduced to a few different categories. The degree to which the "overly familiar" has insinuated itself, as it does into every family in time, has increased enormously. The family member does not react to what was said but to what (in his own personal conviction) this means and what the other person is imputed to have really said.

As a result such a family system is also often incapable of utilizing spontaneous creativity in a member's behav-

ior to effect change—for such creative behavior is effectively neutralized by the interpretation categories.

Furthermore, these assumptions which are significant for actions are not tested for their veracity because as self-fulfilling prophecies they are constantly being confirmed by (reduced) perception. Because this process is to a large degree an unconscious one and one cannot (meta)-communicate about it, a family at this stage is caught in its own web of actions, perceptions and mental interpretations. May be by this point the family needs outside help.

This outline was intended to make clear how our essential ability to reduce chaos and complexity to categories can, under unfavorable conditions, turn into self-reinforcing, rigid patterns of cognitive and interactive processes in which one is trapped as a victim while at the same time participating in the interactions as a perpetrator. A society obsessed with an ideology based on power and order can paralyze the creativity in the lives of the individuals as well as in those of partners, couples, friends, families, and other social institutions. Then, our encounters with the world, with other people, and ultimately with ourselves, become rigid and governed by abstract categories—sometimes far from real needs, real feelings, real meanings and, at worst, far from reality at all.

### **On Incongruence**

In the person-centered approach of Carl Rogers, it is known that it is not only (self-)actualization, but also incongruence that plays a central role. “Incongruence” means the lack of adequate conceptualizations or “symbolizations” of organic (sensory and visceral) experiences. According to a proposition of Rogers’ theory of

personality, not all values and evaluations are adequate descriptions of one's experience. In contrast, during the course of a child's development, social evaluations by others become part of the phenomenal field not as experiences that involve other but rather as introjections—for example “this behavior of mine is bad”, where the correct symbolization “I experience that my parents experience this behavior to be unsatisfying to them” is distorted into “I perceive this behavior to be unsatisfying”.

Similarly, the expression of anger comes to be “experienced” as bad, even though the more accurate symbolization would be that the expression of anger is often experienced as satisfying. Thus, Rogers stresses “The values attached to experiences ... in some instances are values introjected or taken over from others, but perceived in distorted fashion, as if they had been experienced directly” (Rogers 1951, p. 498). Consequently, in a later proposition, the benefit of person-centered psychotherapy is described by the following: “As the individual perceives and accepts into his self-structure more of his organic experience, he finds that he is replacing his present value system—based so largely upon introjections which have been distorted symbolized—with a continuing organismic valuing process” (ibid. 522).

Focused on the congruence and incongruence of experience and its symbolization, Rogers seem to discuss the same challenge of the tension between unique, complex, unspeakable and indescribable processes of experience and the necessity of nevertheless referring, understanding, symbolizing, and communicating these experiences by way of language and its categories, which entail abstraction and reduction.

This becomes even more clear in a statement by Rogers in the context of interpersonal relationship (Rogers 1961, p 341): “There is an important corollary of the con-

struct of congruence which is not at all obvious. It may be stated in this way. If an individual is at the moment entirely congruent, his actual physiological experience being accurately represented in his awareness, then his communication could never contain an expression of an external fact. If he was congruent he could not say, 'That rock is hard'; 'He is stupid'; 'You are bad'; or 'She is intelligent.' The reason for this is that we never experience such 'facts'. Accurate awareness of experience would always be expressed as feelings, perceptions, and meanings from an inner frame of reference. I never know that he is stupid or you are bad. I can only perceive that you seem this way to me. Likewise, strictly speaking I do not know that the rock is hard, even though I may be very sure that I experience it as hard if I fall down on it. (And even then I can permit the physicists to perceive it as a very permeable mass of high-speed-atoms and molecules.) If the person is thoroughly congruent then it is clear that all of his communication would necessarily be put in a context of personal perception."

The discussion of (in)congruence deals with the question of how much an experience is adequately (or, due to introjections, distorted) symbolized by this process of abstraction and reduction. Our discussion focused the problem onto abstraction and reduction in a broader sense—making clear that, on the one hand, even human "experience" is reduced and pre-structured by evolution and that, on the other hand, the process of symbolizing is embedded in social structures and their interconnectedness with categories, meaning-structures, metaphors, and narratives. Moreover, these social structures influence and are influenced by processes on different levels—an encounter between two people, family interactions, processes in organizations and in society as a whole (to mention only some levels and areas).

Of course, many therapists, counselors, educators and others share the message that the more we become involved with the uniqueness of here-and-now processes, the less reduced our experiences are by symbolization, which are then more likely to admit the awareness of the new, the surprising and the creative. But if we move too far onto to the side of chaos—to the unpredictable and complex—the price is that we cannot make predictions based on regularities and are all the more likely to fall prey to the fear of the unpredictable and uncontrollable.

However, extreme reductive order, established from outside by way of introjections or values and prescriptions which turn out to be more or less inadequate for the processes of life, doesn't seem not to be the right solution. The more we categorize and detect or invent recurring aspects and regularities, the more predictable and therefore safer our experience of the world becomes. As a result, chaos is held in check or even banished. But we find the “things” treated in this manner all the more rigid, boring, reduced and uniform. The necessary order has to be adaptive to conditions, constraints and requirements on different levels, in different situations and to different needs and values. Therefore order can not simply be prefabricated, but also has to combine the aspects of both security and creativity. Actualization of self-organized order—in other words: Trust in being and becoming—is the general message shared by wise old sayings in various cultures, Humanistic Psychology, and Therapy and modern systems theory.

The following chapters will discuss this in more detail.

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