Patterns

From the Editor:

Educators know how important knowledge of boundaries are in a successful learning environment. The educational system has set boundaries between teacher/student, between disciplines such as History/Literature/Mathematics/Art/Science, and between organizational elements such as Administration/Instructional staff/Maintenance staff, etc. These boundaries give us a sense of order and, for a long time, have been unquestioned.

Today, however, boundaries we have thought to be cast in stone (e.g. national boundaries, school boundaries, family boundaries, ethnic, conceptual and moral boundaries) seem to be melting before our eyes. Even the boundary between nature/culture is changing as we become aware of the potential of bio-technology, sensing our ecological imbalance and vulnerability.

In this environment new boundaries are forming. For example, multi-national corporations are replacing the power of nation/states giving rise to further political/ethnic/religous/secular/economic turmoil. The human species seems to be suffering an identity crisis as, like any adolescent, we seek to understand the given dynamics and establish our own social boundaries. In this issue of PATTERNS we focus on the concept of "boundary," exploring viable limits in complex systems that make up the world problematique.

Stafford Beers comments that "we should never forget that the accuracy of the definitions of boundaries depends on the perceptive competence of the observer: what is tangible? to whom?" *(International Encyclopedia of Systems and Cybernetics. Ed. Charles François)*

Making Boundary Judgements

by Gerald Midgley

Gerald Midgley is the Director of the Centre for Systems Studies, University of Hull, East Yorkshire, UK. The Centre (CSS) is a research centre based in the Business School at the University of Hull which is dedicated to the development and international dissemination of systems thinking and practice.

Process Philosophy

One of the big philosophical issues for systems thinkers has always been our opposition to both reductionism and subject/object dualism. In this short article I will concentrate on dualism, as I believe it is a more fundamental problem (see Midgley, 2000, for my reasoning).

A conventional approach to epistemology (the study of the nature of knowledge) asks, "if there is such a thing as knowledge, what gives rise to it?" There are obviously many possibilities: an individual consciousness; an embodied mind; an individual linked into a linguistic community; an inter-subjective construction of a social group, etc. There are as many possibilities as there are theories of epistemology.

Anything that can be seen as giving rise to knowledge can be called a "knowledge generating system." The trouble is, if the task of epistemology is to identify a general theory that can specify the nature of knowledge generating systems, then it is very easy to slip into dualism. Somehow, knowledge generating systems come to be seen as fundamentally distinct from the knowledge of the world that they give rise to.

However, there is an alternative approach to epistemology. I am going to start with Churchman's (1970) fundamental insight that all knowledge is bounded. In other words, *while in reality everything may be interconnected, what we actually know about any situation has limits, and it is these limits that we call boundaries* (also see Cilliers, 1998, for work in the complexity literature on this issue). So all knowledge is dependent on boundary judgements, whether these boundary judgements are implicit or explicit. If we recognize this, then suddenly both knowledge generating systems and the world itself come to be defined in exactly the same manner through the process of making boundary judgements. Knowledge about knowledge generating systems and the rest of the world has the same character: There is no dualism between the subject (knowledge generating system) and object (world).

Of course there is still a kind of dualism in here, but it's not the pernicious subject/object dualism that underpins reductionism. Rather, it's a dualism between the process of making boundary judgements and the content of any analysis, whether it's an analysis of what's in the world or an analysis of knowledge generating systems giving rise to knowledge about the world. What this actually means is that it is per-

In this issue we also touch on the field theory, a concept of Gestalt theory and practice. One of the un-sung founders of General Systems Theory, **Jan Smuts**, author of the book, *Holism and Evolution* (1926) thought in terms of the field within which boundaries of the person—a person's beliefs, attitudes and behavior—interacted with the energy of all the "forces" interacting together within the relevant field.

The field perspective is contrasted with a dualistic outlook that separates individuals from human systems. We refer to an article by **Malcolm Parlett** who argues that a Gestalt perspective would help us understand the discomfort of conceptual boundary shifts and help us recognize "the irreducible unity of the socio-cultural, animal and physical field in every concrete experience."

This unitary outlook at the heart of

fectly possible to accept any number of theories about either knowledge generating systems or the wider world, depending on our purposes. Each theory will be based upon a different boundary judgement.

Of necessity, there is a great deal of detail missing from this discussion of process philosophy. For instance, it is important to acknowledge that boundary judgements cannot exist independently from knowledge generating systems. See Midgley (2000) for more information.

Systemic Intervention

Having discussed process philosophy I can now consider the concept of intervention. I define intervention as "purposeful action by an agent to create change." This should not be taken to imply that an agent is an expert, or that agents can flawlessly predict and pre-plan the course of their interventions.

All knowledge is bounded.

Given the process philosophy already described, there are many different ways of describing an agent, depending on the boundary judgements that are assumed. An agent may be seen as a lone decision-maker, an organisation, a group of people, a person using a particular form of language, a community within a particular kind of ecosystem, etc. This takes us back to the idea that it is quite legitimate to choose between different conceptions; to choose between different boundaries of analysis. But however many ways there are of conceiving agents for particular purposes, we can still talk about intervention in a general sense as purposeful action by an agent to create change.

So what is systemic intervention? I define it as purposeful action by an agent to create change in relation to reflection upon boundaries. The link with the process philosophy I defined earlier should be clear: If knowledge is dependent on boundary judgements, then reflection on these gives rise to new possibilities for knowledge to inform action.

Boundary Critique

What I want to do now is begin to deepen our understanding of what it means to reflect on boundaries in the context of intervention. I'm going to discuss a theory of boundary critique.
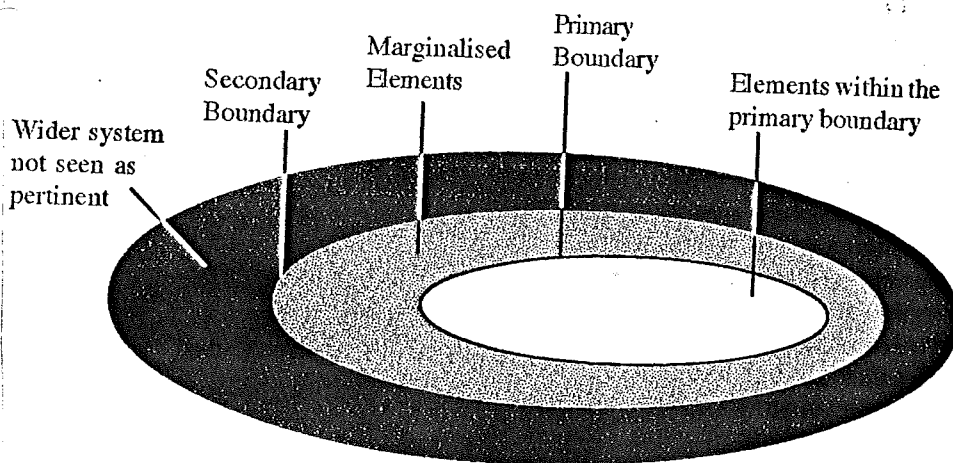
There's a tight relationship between boundaries and values

I've taken the term "boundary critique" from Ulrich (1996), and have used it to consolidate the work of a number of authors who have written about boundary judgements since the 1960s, starting with Churchman.

Churchman's (1970) basic insight was that boundary judgements and value judgements are intimately linked. Values direct the drawing of the boundaries that determine who and what is going to be included in an intervention. But taken-for-granted boundaries also constrain the values that can possibly emerge. So there's a tight relationship between boundaries and values, and reflection on different possibilities for making boundary and value judgements becomes imperative if an intervention is to be regarded as systemic. This, to me, is the core concern of the methodology of systemic intervention. Then other authors came along after Churchman and put a different slant on this work. For example, Ulrich (1983) argued that boundary critique should be a rational process. To Ulrich rationality is essentially about dialogue, so a boundary judgement is only rational if it has been agreed in dialogue with all those involved in, and affected by, an intervention.

What I've done myself is take some of the insights from Churchman and Ulrich and ask a slightly different question: "What happens when there are conflicts between different stakeholders making different value and boundary judgements?" My answer is expressed in the figure on the next page.

2 *(continued on next page)*   *(continued on next page)*

Figure 1: Marginalisation

Figure 1: Marginalisation

Wider system not seen as pertinent — Secondary Boundary — Marginalised Elements — Primary Boundary — Elements within the primary boundary

In the figure we see two boundaries, and each of them has a set of values (or ethics) associated with them. We can call the narrower boundary the primary boundary, and the wider one the secondary boundary. Between the two boundaries is a marginal area. Within the marginal area are people or issues that are of concern to those operating with the wider boundary, but which are excluded from the concerns of those using the narrow boundary. The two ethics come into conflict, and whatever is in the margins becomes the focus of that conflict.

Now, conflict can sometimes be productive, or when it is judged to be unproductive it can be resolved, but in many social situations this kind of resolution doesn't happen. What happens instead is that the conflict is simply stabilized. The stabilization happens by the imposition of either a sacred or profane status on the marginal people or issues. The terms "sacred" and "profane" are not meant in a purely religious sense, but indicate the valued or devalued status of marginalized elements. In fact, there is rarely a consensus about whether marginalized issues or people are sacred or profane, but by institutionalizing value judgements in social rituals, the conflict can be stabilized with one set of values dominating. So, if the profane status of marginal elements is institutionalized, then the primary boundary is reinforced because people can quite justifiably ignore or derogate whatever is in the margins. But if the sacredness of marginalized people or issues is institutionalized, then this challenges the narrow boundary judgement and reinforces the wider secondary one.

As I see it, these kinds of processes operate at every level in society, from small groups to international relations. Many different stakeholders and issues can be marginalized for all sorts of different reasons, and when they are made profane the effects can be quite devastating. Some forms of marginalization are relatively easy to overcome because they have their roots in very localized histories of conflict, but some stem from conflicts that are really endemic across society, and those are the ones that are most difficult to change.

Some examples of marginalization (relating to unemployment, customer relations, ecological sustainability and labour relations) can be found in Midgley (1992, 1994) and Yolles (2001). These may help to further clarify the theory.

However, the purpose of presenting this work is not merely to make an interesting sociological point: I argue that it can usefully inform intervention (see Midgley et al, 1998, and Midgley, 2000, for some practical examples).

Gestalt thought returns us to an "original, undistorted, natural approach to life." Since human beings always exist within systems of relationships, lives and collective systems intertwine and need to be considered together as a unified field.

This kind of thinking prompts us to look at the present political climate in the United States and ask what personal privacy and collective security mean in the age-old paradox of reconciling the one and the many. Parlett states that *"the Gestalt approach has led to emphasizing that each individual has personal choice and a capacity for enhanced self-support."* This resonates with **Heinz von Foerster's** famous statement on ethics; "Always act so as to increase the number of choices." *(see PATTERNS, March 1996 and May 2000)* How educators graple with these "nontrivial" questions will determine, to a great extent, the quality of life the next seven generations will inherit.

From the **Sydney Morning Herald** (Australia) we get a view of the potential threat to personal boundaries we have held sacred thanks to the Constitution of the United States. In an article by **Ritt Goldstein, July 15, 2002,** we learn that with the passage of the Patriot Act and the Terrorism Information and Prevention System (TIPS), a project of the Department of Justice, a surveillance network is scheduled to start next month in 10 cities, with 1 million informants participating in the first stage.

This pilot program, described on the government Website http://www.citizencorps.gov/ will recruit volunteers primarily from among those whose work provides access to homes, businesses or transport systems. Letter carriers, utility employees, truck drivers and train conductors are among those named as targeted recruits.

Historically, informant systems have been the tools of non-democratic states. According to a 1992 report by **Harvard University's Project on Justice,** "the accuracy of informant reports is problematic, with some informants

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having embellished the truth, and others suspected of having fabricated their reports."

Present Justice Department procedures mean that informant reports will enter databases for future reference and/or action. The information will then be broadly available within the department, related agencies and local police forces. The targeted individual will remain unaware of the existence of the report and of its contents."

When privacy boundaries are breached there is a circularity of energy. Fear permeates the environment. *"The Patriot Act already provides for a person's home to be searched without that person being informed that a search was ever performed, or of any surveillance devices that were implanted.*

"At state and local levels the TIPS program will be co-ordinated by the Federal Emergency Management Agency, (FEMA) which was given sweeping new powers, including internment, as part of the Reagan Administration's national security initiatives."

In my experience during the social unrest resulting from our government's involvement in the Viet Nam War, a similar plan to super-impose the military to work more efficiently with the local police and fire departments was attempted. An aware and very involved citizenry was able to thwart this undemocratic bid to create "secure boundaries" between the citizens and their government. The article points out that many key figures of the Reagan era are part of the Bush Administration and the creation of a US "shadow government", operating in secret, was another Reagan national security initiative.

Cyberneticist **Stafford Beer** refers to the boundaries that academia places on knowledge as *"hardening of the categories."* In excerpts from a speech he made at the **World Multiconference on Systemics, Cybernetics and Informatics** in 1998 commemorating **Warren McCulloch** and

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Theoretical and Methodological Pluralism

So, I've introduced the idea of boundary critique, which I believe should be central to systemic intervention. Now I want to say a little about the kind of theoretical and methodological pluralism that logically follows from what I have said about boundaries. Let us start with theoretical pluralism.

Different theories assume different boundaries for analysis. If it's legitimate to decide on boundaries out of a wide range of possibilities, it must also be legitimate to draw upon a wide variety of theories.

Now, not only can the systems perspective I am talking about allow theoretical pluralism, but it allows methodological pluralism too. If we look at different methodologies, we find that they make different theoretical assumptions. So if it is acceptable to welcome in a variety of theoretical ideas, a similar variety of methodological ideas can have validity too.

In fact, I would suggest that there are two forms of methodological pluralism, both of which are essential to systemic intervention. The first is learning from other methodologies to inform one's own. That way, each agent has a continually evolving understanding of systems methodology. We no longer have to accept a situation where people build a methodology like a castle and then defend it against others who want to breach the castle walls. Rather, if people begin to see methodology as dynamic and evolving, they can learn from others on an on-going basis.

The second form of methodological pluralism is about drawing upon, and mixing, methods from other methodologies (as well as designing one's own). If we can learn from other methodologies on an on-going basis and adopt a wide range of methods, then we can have a truly flexible and responsive systems practice.

The boundary concept sits at the heart of systemic intervention.

Arguably, one of the great strengths of the systems movement has been the wealth of methods that have been developed to serve different purposes over the years. If we can begin to harness this wealth into a form of systems practice that still keeps the idea of reflecting on value and boundary judgements at its core, I think systems thinkers will have a great deal to offer in support of social change in the coming years.

Conclusion

Hopefully, you will be able to see from this short article how the boundary concept sits at the heart of what I call "systemic intervention." Given that our Universe is fundamentally complex and interactive, which makes comprehensive understanding impossible, the boundary concept is also relevant to complexity science. If the same concept is relevant to the discussion of both systemic intervention and complexity, then it's arguably a logical next step to look for synergies between them. Of course, in the process, some fundamental assumptions of either or both discourses may be subject to challenge. It is precisely this challenge that fascinates me and motivates my forthcoming work on the issue. I look forward to continuing debates.

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Ed. Note: We have always been deeply grateful for Heinz von Foerster's interest and support of our attempt to bridge the communication gap that exists between public educators and "new science" theorists. For this issue on the problem of boundaries we reprint this letter originally published in the March 1997 issue of PATTERNS. There is an index of past issues of PATTERNS at www.haven.net/patterns/

2/7/97

Dear Barbara,

I always enjoy your PATTERNS when they arrive, your Editorial and all the bits and pieces about Cybernetics, Systemics, Pedagogics, Managerics, and other mind-boggling perspectives. In your January 1997 issue you gave us Reflections on Excerpts of Ken Wilber's book No Boundary. Your Reflection began by saying that "The book examines how we create a persistent alienation from ourselves, from others, and from the world by fracturing our present experience into different parts, separated by boundaries." I thought this was very well put.

Now, what to do about "alienation?" Of course; No Boundaries, that is, aiming at wholeness!

Your wonderful editorial policy putting highlights of the discussion into boxes allows a crescendo for the argument to develop while going through these boxes one by one. I followed this strategy, shedding my "boundarism" step by step, and my whole began to embrace with joy Wholeness when - at climax - the ultimate box revived the primordial boundary!

"THE MAP IS NOT THE TERRITORY"

A double Whammy! One Whammy! I thought he preaches "No Boundary," and here is an untransgressable one! The other Whammy for me was that for years I tried to persuade Gregory Bateson and some of his disciples to let go of this theorem of Korzybski's and adopt the position:

"THE MAP IS THE TERRITORY"

Should one ask "Why?" the answer is, of course, "We don't have anything else," or in Wilber's words: "To disclose reality as non-boundary...."

But Korzybski sounds so plausible, how can one right the wrong? Easily, by saying;

"THE MAP OF THE MAP IS NOT THE MAP OF THE TERRITORY."

Ever yours

Heinz Von Foerster,

Candace Pert, he comments;

"Various taxonomies have been used to classify human knowledge, the most general based upon the practical needs of libraries (or possibly librarians). The library is organized by subjects. As new knowledge accrued, it was allocated to the correct subject in the shelves. The past tense is important: those judgements were written in stone, although later knowledge makes the categories less than optimal."

Beer points out that this is an illustration of circular causality. "A book is allocated to a subject, which is defined as a university department, which determines what books will be allocated. The growth of knowledge so defined is an accretion of past decisions about the categories to which books belong. This raises problems when hitherto separate topics become multidisciplinary: biophysics, for example, or socioeconomics. These problems are not always satisfactorily solved. In the case of a new subject that is multidisciplinary, such as cybernetics, no satisfactory solution is found."(Systemic Practice and Action Research, October 1999. Plenum Publishers.New York. pp. 441-442)

On page 10 we print excerpts from Beer's *Celebration for Candace Pert.* He writes "Her discovery of the opiate receptor radically changed our conceptual boundary separating the mind and body. Her scientific demonstration of the molecular reality of informational substances--the neuropeptides--in continual interaction between body and mind is, at least in my view, a great cybernetic triumph."

We must accept finite disappointment, but we must never lose infinite hope.

Martin Luther King Jr.

Gerald Midgley has been awarded a contract by Sage Publications to edit a four-volume set of books on systems thinking.

The purpose of this set of edited readings is to bring together classic and contemporary writings across the whole breadth of the systems field. Some of the most influential theoretical papers will be included, as well as applications in domains as diverse as global environmental modelling, the management of organisations and family therapy.

Key critiques of the leading writers will also be included, allowing the reader to see how and why paradigm breaks took place. It was these breaks that led to the extraordinary diversification of systems theory and practice, leaving us today with an incredible resource of theories and methodologies for holistic analysis and systemic intervention. *It will be an important task for systems thinkers in the first half of the 21st Century to make sense of this diversity, and harness it in the service of social and ecological change for a sustainable, just and peaceful world.* If we are successful, this will be an important and beautiful gift for future generations. Therefore, the time is right for the production of a multi-volume set that, for the first time, assembles key aspects of the diversity of systems thinking and practice in one place, ready for the task ahead.

Volume I will demonstrate the initial mission of the systems enterprise: to produce a general theory that could unify the scientific disciplines. It will also include highly influential theoretical work on natural and social systems, cybernetics and complexity science.

Volume II will shift attention to how the ideas presented in Volume I have been used to inform theories, methodologies and methods for practical systems modelling. A wide variety of applications will be represented.

Volume III will then document a

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The Unified Field in Practice

by Malcolm Parlett, Ph.D

Dr. Parlett is a Gestalt therapist who co-founded the Gestalt Psychotherapy Training Institute, UK, and is editor of the British Gestalt Journal.
Excerpts from an article accessed at <www.gestaltreview.com/1997/parlett.html

This paper reflects on the "unified field" as a concept at the heart of Gestalt theory and practice. The field perspective is contrasted with a dualistic outlook that separates individuals from human systems. Instead, individuals can be regarded as embodying systems, both affected by them and affecting how they are. Implications for practice, for ideas of adult development, and for dealing with political and social issues are all discussed. The paper concludes by underlining the sociopolitical priorities of the founders of the Gestalt approach.

As Gestalt practitioners, we never really work with "just an individual" because human beings always exist within systems of relationship. They identify with families, communities, occupational groups, and nationalities. Such affiliations, roots, and historical continuities serve as important human stabilizers and contribute significantly to a sense of identity. Lives and collective systems intertwine and need to be considered as a unified field. This is the term given, within the Gestalt discipline, for this web of interconnection between person and situation, self and others, organism and environment, the individual and the communal.

The Concept of the Unified Field in Gestalt Therapy

Field theory derives from the work of Kurt Lewin (1890-1947). In psychology, it is the body of ideas and way of thinking built around the concept of the unified field... His concern was to establish how the behavior of an object (including a person) is "determined by the field structure or configuration of the energy within the field" (Hartmann, 1935, p. 68). In Lewin's field (Lewin, 1952) there was a spatial representation of a person's psychological reality. Drawing on topology and vector geometry, he attempted to show, for example, how someone's desire or want for something might be countered by "obstacles" that existed either in the "person's environment" or in the person's "beliefs and attitudes" and that behavior—what the person actually did—was a function of all of these sets of "forces" relative to one another, and all interacting together. So "inner" and "outer" reality are both contained within the field, as are other distinctions—such as "person" and "situation," and "figure" and "ground." The field is a unifying concept, not eliminating such divisions, but denoting them as provisional and relativistic. The differentiations have only a temporary phenomenological status, not an absolute, fixed, or "objective" status.

Writers about field theory in the human sciences acknowledge that the notion of "the field" derives from physics. There it has appeared from the eighteenth century as a concept to help elucidate "action at a distance." Physicists agree that there is a gravitational field, an electromagnetic field (remember your grade school science experiment with the iron filings on paper, "organized" by a magnet?), and strong and weak nuclear fields (Laszlo, 1993). Lewin's (1952) development of the field concept as a "human force field" was a bold step, taking it beyond the realm of physics.

In summary, field theory invites the Gestalt practitioner into nonlinear thinking (undermining simplistic notions of cause and effect). It honors the specific nature of situations and people (no individual's experiential field is the same as another's). It is relativistic and nondichotomous (instead fields interconnect, overlap, and co-influence one another). It underlines present-centeredness and the uniqueness of moments (requiring a process orientation that acknowledges a world of flux and change). Above all the field is organized (meaning arises out of the constellation of all the energies, vectors, or

influences in the field as they act together)......

What emerges overall is that the individualist paradigm, as Wheeler (1995) calls it "with its assumption that human beings are wholly separate beings ending at their skins" is in retreat. Whatever its exact status, the unified field is a concept that is here to stay.

Appreciating the Unified Field

Field theory, Lewin used to emphasize, is more than a theory in the conventional sense. It gives us a holistic way of regarding human experience. The perspective is critical to our becoming competent and sensitive practitioners. "Seeing" nondichotomously is a first and necessary step. For instance, breathing and the presence of air are so interlinked that to separate them is an academic abstraction; yet few people recognize this. The same goes for eating in relation to food or driving in relation to roads and gas stations. Neither pole exists without its accompaniment. People can only be "therapy clients" because therapy and therapists also exist.

If one is to move on from the customary dualism and splitting, a unified field perspective needs to be cultivated. Another example has been found helpful in getting the point across. It has to do with trees. These can be thought of as distinct and separate organisms, indeed as large individual plants. Yet in studying their life (and with concern for their well-being), there is a progressive realization of how completely trees are integrated within the ecosystem of which they form part. A tree forms part of a landscape— affected by other vegetation, predators, soil chemistry— and provides shelter and nourishment for other plant and animal life. If one uproots a tree, the landscape is changed, the ecosystem disrupted. Unless replanted, the tree dies— still undergoing further transformation as part of a wider system, natural or artificial. In other words, the tree does not exist independently. The only tree that can do that—i.e., exist as a landscape-independent tree—is a conceptual tree, imaginary or theoretical, a Platonic ideal.

Lives
and collective systems
intertwine.

Obviously, there are problems in language.Individuals exist in intimate relation to the human systems they are part of, all the time, yet customarily split the unified field along dualistic lines. For example, managers in a corporation will speak of "the organization" and "we managers" in a way that suggests that they are not themselves an intrinsic part of the organization. "Agent" is artificially divided from "acted upon," "it" from "them," system from people. Phenomenologically, this is the kind of way in which most people apprehend reality, as a divided reality. A move may be made towards a field orientation—perceiving organizational systems as "humans in relation," or people as "system carriers,"or the system as a human creation that then "creates" humans. But as with other changes in language suggested by Gestaltists, changes of this kind would have mainly an awareness-heightening function. Perhaps more—the women's and civil rights movements have demonstrated that changing language is a step in changing the shared phenomenology, a political act....

Since Perls, Hefferline, and Goodman spelled out the unitary field outlook in 1951, when it was indeed revolutionary, much has happened. Holistic medicine and environmental awareness have burgeoned. There is a new and developing cosmology. The complex interdependencies of humans and the systems of our fragile planet have been widely appreciated. The general outlook has shifted away from viewing reality in boxed categories, and what might be called "holistic competence" is more widespread.

It is a sobering thought—returning to the example of trees—that the destruction of the rainforests, with associated threat to continuance of human life, may depend on there existing a still widely accepted model of reality that is anti-holistic and enables people to regard trees as separate from their surrounding ecosystem. They are seen only in the context of commerce, as economic products, and other awarenesses are suppressed. The lack of holistic competence is woefully evident. Choicefully, by cultivating a uni-

paradigm shift from the theories and methodologies presented in Volumes I and II, which mostly take for granted that systems can be objectively described, to a new view of systems that takes the positioning of human individuals and collectives as central. In this view, which has been labeled in several different ways (e.g., "second order cybernetics" and "soft systems thinking"), the systems perspective is conceived as a useful way of seeing that can help people manage complex situations.

Volume IV will then present two strands of contemporary systems thinking. First, there is the work of those who have been critical of all previous systems approaches on the grounds that they do not address the complexities of power relations. These authors have produced some interesting alternative perspectives. Second, Volume IV will present some initial attempts to draw upon the strongest work in all the various systems perspectives to create a more flexible and dynamic systems practice that is capable of supporting sustainable improvement for the benefit of future generations.

While Gerald Midgley will take responsibility for editing, it will be vitally important for the credibility of this project that the job of assembling the papers is done in consultation with people from across the spectrum of the systems movement. This collection will be aimed primarily at libraries and we are hoping that every reader of Systems Prospects who is working in a University will ask his or her library to make a copy available to its students. As far as we are aware, never before has such a broad and substantial set of readings on systems thinking been collected together in a single publication. We therefore believe that this is an important legacy to leave for future generations.

Shikshantar
The Peoples' Institute for
Rethinking Education and
Development
http://www.swaraj.org/
shikshantaresources_societal_learning.html

Some of the Learning Resources:

Apffel-Marglin, F. 1998. The Spirit of Regeneration: Andean Culture Confronting Western Notions of Development. London: Zed Books.

Botkin, J.W., Elmandjra, M., and Malitza, M. 1979. No Limits to Learning - Bridging the Human Gap. Oxford: Pergamon Press Ltd.

Esteva, Gustavo and Madhu Suri Prakash. Grassroots Post-Modernism. London and New York: Zed Books Ltd., 1998.

Haverkort, B. and W. Hiemstra, eds. 1999. Food for Thought: ancient visions and new experiments of rural people. London and New York: Zed Books.

wa Thiong'o, Ngugi. 1993. Moving the Centre: The Struggle for Cultural Freedoms. Nairobi: East African Educational Publishers.

Gandhi, Arun. "Gandhian Education: The Difference Between Knowledge and Wisdom" in ENCOUNTER, 15(2), Summer 2002.

Haverkort, B. and W. Hiemstra, eds. 1999. Food for Thought: ancient visions and new experiments of rural people. London and New York: Zed Books.

Jain, M. 1997. "Towards Open Learning Communities: One Vision Under Construction." Paris: UNESCO Learning Without Frontiers.
http://www.unesco.org/education/educprog/lwf/doc/cies97.html

fied field perspective, there is sensitization to the web of interconnection and interrelationship........

A practical thing to be done, then, is choicefully to become more field sensitive, drawing on a wider range of relevances, instead of focusing on one part or one configuration of the field exclusively. The "medical model," on the other hand, invites the therapist to do just that (e.g., to concentrate on diagnosing the cause of identified symptoms). An outlook of "hunting the reason" infiltrates many professions, as well as in popular and media discourse (for instance, that a mass slaughter of children by a lone gunman — as happened recently in Dunblane, Scotland — can be "explained by his being an unhappy loner," "occurs because he had easy access to guns," or "the reason for his doing it was that he felt shunned by society").

Instead, field theory allows for the portrayal of individual events in more complex ways that do not offend common sense. Thus, there is often a pattern of emergence where particular happenings "trigger" consequences, but where the trigger is less important than the existing "tension system" (Lewin, 1952)........

Leaning into the different outlook of the unified field opens up other possibilities. Contributing to a more sophisticated model of adult development is one of them. ....

We create our systems and our systems create us.

The perspective of the unified field can also sensitize practitioners to political questions. Politics, the environment, and social pressures are impacting the people that therapists and organizational consultants work with all the time. (They also impact the practitioners of course.) Every day, when they read a newspaper or switch on the television, patients or clients are re-immersed in an all-pervading culture that is taken for granted. The extent to which people fall into confluence with the culture or the extent to which they attempt to "stand apart," as differentiated and self-supporting individuals, has exercised Gestalt therapists since the beginning. But some of the discussion seems to have been unrealistic.

Participation in the social world at all rests on there being at least some confluence and introjection, as Polster (1993) refreshingly points out. Lives are so entangled with the political, economic, and epistemological assumptions of our time that culture confluence is all-pervasive. To pretend otherwise is naive. Even determinedly individualistic people often align themselves (with or without awareness) with particular images or types that circulate within the pervading mass culture. No one is altogether immune.

Human beings, of course, exist within many systems and collectivities at the same time. They experience the intersection between different realities, many of which compete or conflict. Who has not felt uncomfortable having just seen pictures of African famine and then sitting down to a large meal? Ordinary people make the detailed arrangements of their own lives, and yet are also (inevitably and increasingly) world citizens, celebrating the fall of the Berlin Wall or the signing of an agreement to end a war (as in Bosnia), or sharing in the Olympic Games via satellite TV. Through the medium of television in particular, individuals collectively share anguish with their fellow citizens after a huge natural disaster. As phenomenologically the world shrinks (or expands, according to the perspective taken), the great affairs of the planet become immediate, living room reality. And they impinge on everyone.

Co-Created Communities

Setting off in the opposite direction—integrating communal and political themes with personal material—leads to reflecting on the statement, "We create our systems, our systems create us." There is a two-way process within the unified field. Members of systems introject, assimilate, go along with reluctantly, or actively rebel against what the systems offer—the norms, conventions, values, and beliefs that have become part of them or from which they seek to escape. The fact that many of these "system qualities" may be taken for granted (i.e., individuals are confluent with them) does not mean the

individuals are not influenced by them or that they do not automatically share responsibility for how systems are and how they operate—again, often without full awareness. Even taking up an extremely oppositional stance is a form of participating; systems "create" rebels just as they "create" devotees..........

Splitting, denial, and not taking responsibility are common when the unified field is not appreciated for what it is...... By putting "oneself" here and "the system" over there, one can continue a dualistic view of the world in which responsibility is much less pronounced. Adopting the unified field perspective wholeheartedly entails individuals recognizing that they are not just in a group but are the group. They constitute the systems they are in; they are part of their system's existence as the system is of theirs.

It is not surprising, then, that those experiments conducted by social psychologists— where people become unwitting participants in an all-embracing unusual setting (like a mock prison)—sometimes bring out wholly "alien" behavior that is at odds with how the participants generally react in life. *Manipulating people by manipulating their environment is a favorite controlling device for those in power.* It takes a particular kind of developed self-support to survive social pressures that are alien and oppressive— differentiating a zone of self, which remains clearly bounded within the field. To resist the prevailing currents in the field in rugged "field-independent" (Witkin, 1962) fashion at certain times is part of creative adjustment, as—in other circumstances—is also "bowing to the inevitable" and choicefully "going with the flow."

The traditional emphasis placed on self-responsibility in the Gestalt approach has led to emphasizing that each individual has personal choice and a capacity for enhanced self-support. Recognizing the inevitable membership of community suggests that full self-responsibility extends to being partly responsible for the collective as well. There is no escape: even political apathy or uninvolvement does not mean individuals have no influence, but rather that they simply have an influence of a particular type.

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The educational choices of the future will be much more varied, vital, and relevant in character, selection, and location than what is currently being offered.
Most people--even in their wildest imaginations--can hardly conceive of the abundant smorgasbord of opportunities looming just over the horizon. We need to set people free to create it.

Web Site Makes Math Fun For Kids www.figurethis.org
A new Web site launched by the National Council for Teachers of Mathematics, the National Council for Minorities in Engineering and Widmeyer Communications enhances math learning outside the classroom by making learning fun. Figurethis.org aims to convey to students how much math matters in daily life and helps bolster achievement by engaging students in a variety of problem sets.

Ten Lies My School Taught Me

by Manish Jain

10. Western science and technology can solve all our problems.

9. Big bombs and big armies will give us security, protection and peace.

8. Competition and greed will bring out the best qualities in us. I can only win when others lose.

7. Only Western-style parliamentary democracy can lead to a more just and free society. It gives people a real voice and real choices in the decision-making process.

6. All life and happiness revolves around money; without money you can't do anything meaningful. If the rich get richer and GNP increases, then the benefits will someday trickle down to the rest of society. So, it is good for the poor that the rich people become richer and consume more.

5. America and European countries are financially richer because they are smarter and work harder. America and European countries are 'Developed' nations. Poor people around the world are poor because they are lazy and stupid.

4. Human beings are separate from Nature. Nature is our biggest enemy and it must be conquered/controlled/ exploited in order for human beings to progress. Furthermore, common people cannot be trusted to take care of their natural resources – only the Experts are qualified to do this.

3. Over-population is the biggest problem facing the world today. If the poor people would just stop reproducing, everything would be okay.

2. English is a superior language and my local language, Mewari, is inferior, backwards and uncivilized.

1. India became independent in 1947 and I am a free human being.

I invite you to share the lies that you have been taught.

M.J.

Celebration for Candace Pert

by Stafford Beer

Some 25 years ago she (Candace Pert) discovered the opiate receptor. This is a site in the cell that can recognize an opiate, typically a protein molecule, which is then anchored in the outer cell membrane to bind with substances such as neurotransmitters. There was confusion and disagreement at the time, as to whether the biochemical components even existed in the body naturally to create such outcomes.

The search to find the opiate receptor was one of dogged endurance reminiscent of the search for radium. Other scientists were searching too, but it was she who discovered a pair of amino acids constituting the critical peptide. This in itself was a discovery of major importance—significant people in the field expected Candace Pert to be awarded the Nobel Prize. The nonstory of that, and of how the hardly less significant Lasker Award for medical research (often endorsed by a later Nobel Prize) was awarded to three men—men heavily underlined—will appall but not surprise egalitarian scientists, especially if they remember the shocking events surrounding Rosalind Franklin and the discovery of the DNA molecule. You may read about all this in Pert's book *Molecules of Emotion*, and very entertaining and exciting you will find it........

Where about in the body would you expect to find opiate receptors? Obviously you would look in the brain itself—the hypothalamus perhaps. Alternatively you would look in the limbic system. But when she looked comprehensively for "her" peptides, she found them all over the place in the body. Think of finding concentrations of such peptides in the colon, as she did...So *that's* where "gut feelings" come from!

We move to the early '80s. The neuropeptides, it had reasonably been assumed, communicated across synapses in the nervous system. The assumption proved untenable. Many of the neuronal receptors were inches away from the neruopeptides: How were they communicating, if not across the synaptic gap? A co-worker called Miles Herkenham found that, counter to the assumption of people working in the neurosciences, less that 2 % of neuronal communication actually occurs at the synapse. This seems so absurd that for several years the result was ignored.

So *that's* where "gut feelings" come from!

But Miles Herkenham was right all the time. He reckoned that the connection did not reside in the synapse-brain cells, but was determined by the specificity of the receptors. Candace Pert wrote, *"the way in which peptides circulate through the body, finding their target receptors in regions far more distant than had ever previously been thought possible, made the brain communication system resemble the endocrine system, whose hormones can travel the length and breadth of our bodies. The brain is like a bag of hormones!"*

At about this time, Francis Schmitt, who had originated the neuroscience research program at MIT, introduced the terminology of "information substances" to describe "a variety of transmitters, hormones, factors, and protein ligands"—ligands are various small molecules that specifically bind to a cellular receptor, such as the opiate receptor, thereby transmitting an informational message to the cell. This was exactly the concept the Candace Pert needed to advance her own work, and she embraced it enthusiastically.

Now there are three classically separated areas of medical biology.

• **Neuroscience**__dealing with the brain and central nervous system
• **Endocrinology**—dealing with the glands.
• **Immunology**—dealing with the spleen, bone marrow, and lymph nodes.

If you have taken my homily about the hardening of the categories to heart, and recall my long battle in the '50s to incorporate the endocrine system into my brain model, you will understand the excitement with which I received the discoveries that *Molecules of Emotion* unfolded. Instead of those three sciences demarcated by their library shelves and dedicated journals, and following them into separate laboratories, we have a unified system. It consists of a multidirectional network of communication, linked by informational carriers at the molecular level. It is surely delightful to contemplate the continuous molecular busyness that achieves wonders of intricate homeostasis—while quite indifferent to the pompous definitions of academe.

Many of the discoveries made by Candace Pert are pointing to the kind of holistic emphasis on the unity of being that is familiar in eastern philosophy. I see her helping to cross that East-West divide—and that other chasm existing between science and philosophy. Surely these are matters for high celebration. By the end of her book she is openly hypothesizing about connections not only between body and mind, but between body, mind, soul, and spirit. Predictably, she will have a rough ride as do all holists. I should like to wish her well in those endeavors and that she continue with the same brave-heartedness with which she confronted so much prejudice in the past. Meanwhile, her scientific demonstration of the molecular reality of informational substances— the neuropeptides—in continual interaction between body and mind is, at least in my view, a great cybernetic triumph.

Network News

Our new **Facilitator Terry Burik** has sent ASCD our annual report. Our total membership is 161 and we are sorry to report that only 56 are up-to-date on their membership dues. NOT a very good record. Terry will have a report for us in the August issue

ASCD Networks are member-initiated groups designed to provide opportunities for involvement and sharing of information related to a common interest area in the field of education. Check out:

http://www.ascd.org/aboutascd/cr/networks/network.html

This **Systems Thinking and Chaos Theory Network** explores the new evolutionary cosmology and the emergence of new science which includes the human spirit. It recognizes the importance of creativity and imagination in a re-enchantment of learning and teaching. It supports the development of a design culture in which we learn to create our futures.

At the recent **American Society for Cybernetics Conference**, the Board agreed to post our newsletter, PATTERNS on their website and offer subscriptions to new members.

Our videotape project is developing and we'll have more news in the next issue of PATTERNS.

Although PATTERNS is sponsored by the Association for Supervision
and Curriculum Development, it is not an official publication of ASCD.

You are invited to join us as a member of the ASCD sponsored
Systems Thinking and Chaos Theory Network

Please send this form and a check (US dollars) made out to:

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<u>*Please check your address label to see if it is renewal time.*</u>

Membership includes a subscription to bi-monthly PATTERNS, discounts on all network sponsored videos, tapes, workshops and conversations, an opportunity to present at the ASCD annual conference, and a support system for personal and professional systemic change.