The Open System: From Theory to Practice

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The open system is in the most basic sense the overall conceptual framework of all the work recorded here but its origins are much more specific and still frequently misunderstood. The origins of the open system of course, lie in the famous 1965 paper by Emery & Trist.

This paper eventually became a 'citation classic' but again, is much more cited than actually used. However, the paper has proven its immense practical significance and if anybody really want to know what 'game changer, 'revolutionary', or any of the hyped up descriptions thrown around today really mean, and what sort of a reception they can expect in the world of academic social science, if they actually happened to produce one, I urge them to read Fred's introduction to the 1965 paper published as 'Formulating the Perspective' in Vol III of the Tavi Anthology. Not a pretty story.

We are not going to reproduce the original article here, it is easy to find on paper and on the net. The concept of the open system and its most revolutionary component, the definition of the extended social field of directive correlations, short hand the L22, the environment, has come such a long way since then, we will jump to a more recent presentation before proceeding to the first practical application of it.

The basic building block of open systems theory (OST) is the **open system** which can also be expressed within the concept of directive correlation. It include the major components of **environment** and **people**. Although environment and people are components, their various natures are so critical to understanding Open Systems Thinking (Emery F 1981) that they must be dealt with as major building blocks in their own right.

Open Systems Thinking And Directive Correlation

The open system and directive correlation are different expressions of the reality of contextualism, an old model of human affairs. It is particularly applicable to today's uncertain world as it specifically acknowledges and uses **the environment as a variable in its own right**. This environment is governed by laws which are very different from the laws governing systems.

Angyal (1941b: 38) has given us the clearest exposition of an open system - "The logical formulation of a given system states the construction principle or the system principle of the whole. Every system has one and only one construction principle." The system principle expresses the unique relationship between the system and the environment. A system is therefore "a discriminable distinguishable invariant that can be identified amidst a host of different conditions and circumstances" (Jordan 1973: 60-1). A **system**, therefore, exists in an environment which is "a set of elements and their relevant properties, which elements are not part of the system, but a change in any of which can cause or produce a change in the state of the system" (Ackoff & Emery 1972: 19).

In *Thing & Medium*, Heider began the task of specifying the structure of the environment and concluded that it had a causal texture which underlies the distinction between objects and mediators, and is the basis of observed correlates between perceptions and thing events. Taking his argument further in 1930, he arrived firstly at "the performance of the perceptual apparatus is to a great extent determined by the structure of the environment" (p46) and in essence spelt out the death knell of sensationalism. It is not adequacy or richness of stimulation which determines perception, for perception is purposeful (p 51). "A function is called purposeful if it can be meaningfully referred to two different systems" (p52), or in more current terminology used below, perception is a purposeful function of an informational
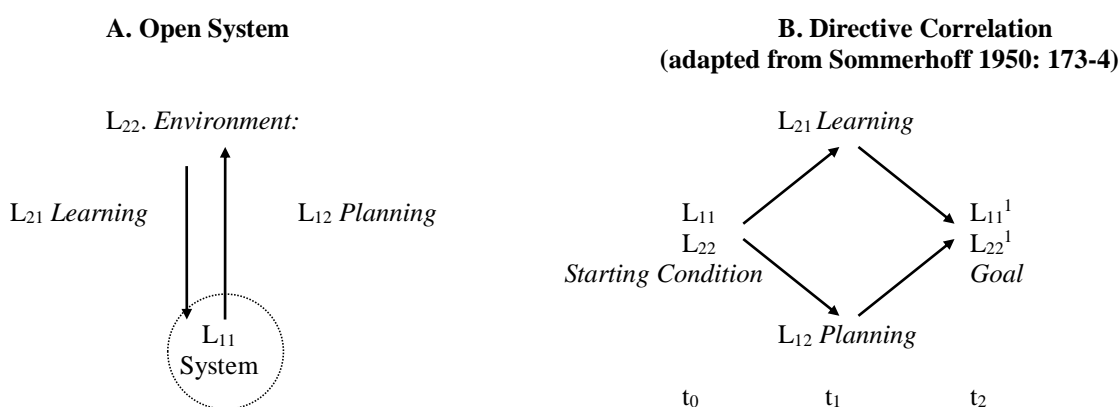
ecosystem. This is clear in his review of the Gestaltists' progress in perception where he concluded that they failed to account for "the fact that contact with the environment makes the organism more coordinated with it" (Heider 1939: 83). He thus also arrived at the concept of directive correlation (Sommerhoff 1969). (See Figure 1B).

Directive correlation expresses the mutual shaping of a system's behaviour and its environment towards an adaptive goal.

The basic open system (Figure 1A) expresses the view that system and environment and their interrelations are governed by laws (L) which are able to be known. The function of a system (designated '1') acts upon the environment (designated '2') This is the planning function (L_{12}). Environment acts upon the system and is known to us through the function of learning (L_{21}). L_{11} and L_{22} express the intrinsic nature of the system and environment respectively. The laws that govern them are implicitly learnt about in the Search Conference.

In the directive correlation model (Figure 1B), it is a necessary condition for the subsequent occurrence of a certain event or goal that two or more variables, environment and system, should at a given time be in exact correspondence or in an adaptive relationship. There must also have existed a previous point of time when there were at least two variables which define the starting conditions. There must also exist a set of values for each variable so that there are at least two possible functions for each variable, i.e. for environment and system. When all these conditions are satisfied, then those functions of environment and system are **directively correlated** in respect of the **goal** and the **starting conditions** (Sommerhoff 1969). In other words, system and environment are correlated in terms of direction. They are acting to bring about the same state of affairs from the same starting point. Searching produces **active** adaptation because it uses those trends in the environment which express the new culture and works out how to neutralize opposing trends.

From the original condition at t_0 which consists of the system and its environment, both system and environment are making changes at t_1. These result in a new set of conditions consisting of a changed system and a changed environment at t_2. In this case (Figure 3B) the changes are directively correlated and, therefore, adaptive. There are of course, an infinite number of cases in which system and environment are not directively correlated and, therefore, stand in a maladaptive relationship.

A. Open System

L_{22}. *Environment:*

L_{21} *Learning* L_{12} *Planning*

L_{11}
System

B. Directive Correlation
(adapted from Sommerhoff 1950: 173-4)

L_{21} *Learning*

L_{11} $L_{11}{}^1$
L_{22} $L_{22}{}^1$
Starting Condition   *Goal*

L_{12} *Planning*

t_0 t_1 t_2

Figure 1. The Basic Models of Open System and Directive Correlation

In Figure 1 the two models show how system and environment are coimplicated in any current state of affairs and act jointly to produce a new one. The critical differences between the two models are that:

- the open system is a picture of a point **in time** with change expressed through learning and planning while the directive correlation is a picture **over time**,

- ▪ the open system includes adaptive and maladaptive relations while the directive correlation expresses precisely when adaptation is or is not occurring.

Implications of Open Systems Thinking

Open systems thinking is quite different from linear causal or relational thinking. "In causal thinking and research the task is to single out, from a multitude of data, pairs of acts between which there is a necessary connection. In systems thinking the task is not to find direct relations between items but to find the super-ordinate system in which they are connected to define their positional value within such a system". (Emery 1981a.1: 10) The task then of an open systems thinker becomes that of identifying the system principle, that which generates, organises and gives meaning to the system, and also to the set of lawful relations which exist in the totality of the system-environment complex. Until this total set of lawful relations is understood, methods and strategies for diffusion will be inadequate.

It follows from this that open systems thinking is socioecological rather than disciplinary. It is by definition concerned with wholes rather than with parts. It links social science to major systems and sectors of social concern. The problems addressed almost always have a generic theme rather than merely specific. It is future oriented and comprehensive. Unlike the basically taxonomic approach to learning and diffusion (e.g. Rogers & Shoemaker 1971; Zaltman & Duncan 1977), particular questions cannot be isolated from their immediate and future practical context.

Because it is concerned with wholes, it is also by definition concerned with human ideals and values. These human dimensions are as essential as physical or economic properties. This together with its adisciplinary nature is sufficient to cast it as heresy in the eyes of the ruling disciplinary, 'objective consciousness' myth (Roszak 1968, 1971). But heresy regardless, open systems thinkers must work with ideals and values. This is critical if we are to achieve our practical goals. The reason that the sixties' revolution was not immediately translated into action was simply because there was not enough knowledge of the practical concepts relevant to the values. The dominant school of change was *human relations* and it is a closed system model.

Open Systems must then be elaborated in two ways, in terms of the nature of the L_{22} and in terms of the human systems, the people who comprise the econiches within it and their organizations (L_{11}). When these two critical components are explicated, it becomes easier to see how the concept of an open system coheres and is operationalised through the structure and process of Searching.

The Conceptualization Of Environments

Closed systems and the second law of thermodynamics were derived from the realm of the physical sciences and involved the concept of equilibrium. When biological systems came under the microscope so to speak, the laws and concepts of the physical sciences were shown to be inadequate for the task. Organisms are in all cases open systems exchanging energy and matter with their environments (L_{21}->L_{11}->L_{12}). Early versions of open systems (e.g. von Bertalanffy 1950) explicitly recognised that the environment must exist but left the equation open at the point at which the environment was specified. Until 1965, the open system was incomplete. Today's formulation is as explicit about the nature of the environment as it is about the system (Jordan 1973: 60-1) because Emery & Trist (1965) conceptualized the L_{22}, identifying its changing nature or causal texture over time, a texture which directly affects what systems can and cannot adaptively do. Baburoglu (1988) followed up and their formulations take directive correlation and adaptation out of the abstract, allowing precise answers to the question of 'adaptation to and for what?'
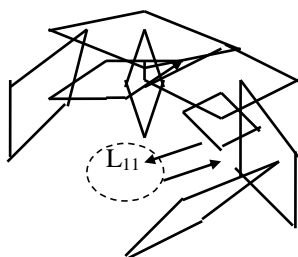
Directive Correlation, Environments and Adaptation

Emery & Trist defined the environment (L_{22}) as the extended social field of directive correlations. When there are many systems operating, their interdependencies constitute a richly interactive **field** of causation whereby a change in the nature of one system sets off effects in other systems which sets off, etc.

Only three of the five environments identified concern us here as they have major practical significance for human affairs. The Type II environment called *placid clustered* contains goals and noxiants clustered in lawful ways which are congruent with the physical ecological environment. Values are stable. Most of human history has been spent in the Type II (see e.g. Graeber & Wengrow, 2021). The Type III called *disturbed reactive* emerged with the industrial revolution when new large identical bureaucratic systems began to compete, disturbing the previous Type II. It was the mechanistic epoch in the West but values were still stable. The Type III, however, was short lived. Because of inherent flaws, it rapidly transformed into the Type IV, the *turbulent* environment. Unlike the others, this environment is itself dynamic, not placid. Values undergo rapid shifts producing massive discontinuities in lines of development. Its characteristic feature is *relevant uncertainty* (Emery & Trist 1965; Emery F 1977).

When there is a placid clustered (Type II) or a disturbed, reactive (Type III) field, systems will be making aligned responses to the field, providing predictability and stability. Figure 4 shows the internal dynamics of the current Type IV. Each system is going in a different direction because they are responding to what they perceive to be the nature of the field. Unless systems do a full L_{22} scan, analysis and synthesis, their perceptions of the it will be incomplete and inaccurate. Trendy substitutes such as looking at the business environment will yield only an incomplete perception of the L_{22}. The directive correlations are, therefore, adapted to a fraction of the L_{22} but maladapted to the whole. That diversity of response further contributes to relevant uncertainty, i.e. to the Type IV. As these perceptions continue without benefit of learning about the L_{22} in its entirety, as an entity, systems tend to run faster from one fashionable recipe for change to another, intensifying the Type IV. For active adaptation to the Type IV, there must be knowledge about this field itself and every move the system makes must be coordinated, rising above fragmented reactions to the field.

L_{22} = extended social field of directive correlations.

Figure 2. The Type IV Extended Social Field of Directive Correlations

Adaptation cannot, therefore, be precisely specified without a specification of the nature of the environment. Adaptation is a property of ecosystems. (Johnston & Turvey 1980: 157-8) A human system stands in some relationship to some environment. It is just as legitimate to inquire into an environment's appropriateness as it is to inquire into the nature of a system's adaptation. An environment is only appropriate in relation to the systems within it (Johnston & Turvey, as above). Adaptation must also be specified over a time frame and as humans can consciously learn to change, I use Johnston and Turvey's medium term directive correlation which is specifically concerned with learning.

Characteristics are adaptive if they enable a system to survive (and reproduce) in its environment. To establish adaptation as both interdependence and characteristic, we have the specification of environmental type and a wealth of human cultural history and change as a guide. For Type III environments, the growth of Design Principle 1 structures and the emergence of western science as a dominant belief in mechanism can be seen as maladaptive. They were and are destructive of both the human ecosystem, the planet, and the Type II field which had preserved adaptation for so long. The fact that people behave differently within Design Principle 2 structures makes it clear that there are quite specific human characteristics which need to be mapped against environmental features in order to determine adaptivity over time.

Individual people can behave adaptively in any environment such as DP1 structures, but this does not mean that their behaviour will contribute to overall adaptation for all in the long term, particularly if it is passive adaptation (Emery & Purser 1996: 61-2).

If we work from Ackoff and Emery's (1972) definition of purposeful system, it follows that people can ensure that they stand in an adaptive relation to virtually any environment as long as it does not include some quite specific feature which exceeds their capacity to adapt. An example is the ubiquitous screen radiating light. We are not adapted to radiant light, only reflected light and, therefore, using these screens generates many forms of neurological difficulties including reduced capacity to process information, resulting in gross maladaptions of behaviour (Emery & Emery, 1976; Emery M 1986). Our capacity for purposeful behaviour is reduced.

Searching concerns a **process of adaptation**, one that produces an adaptive ecosystem as the totality of interdependence between a human system and its environment. We may or may not be sensitive to and conscious of the value of the original conditions in which we find ourselves today, the Type IV environment. But we can develop an appropriate response or function to that of the environment, an exact correspondence through direct perception and learning. Then through planning and implementing, we can attain and maintain it. This is active adaptation in practice. While individuals have different sensitivities to their environment, they collectively as a system have access to more relevant environmental data than they need. From this data they distil the critical response functions of themselves and their environment over a defined interval (say, 1995-2001) producing desirable and probable futures at both the global (L_{22}) and system (L_{11}) levels. By juxtaposing these data sets, participants can identify Desirable and Realistic Goals which by their nature and derivation represent the best possible approximation of correspondence of system and environment. Given that participants maintain the learning environment of the Search, active adaptation should approximate more and more closely the desired correspondence.

As adaptation is the property of an ecosystem, we are behaving adaptively when there is perfect symmetry between the information states or events of the environment and our psychological states, events or behaviour. The concepts of **affordance** and **effectivity** are central. Affordances are properties of the environment relative to a system, the acts or behaviours permitted by objects, places and events. They define what the environment means to a perceiver, what he or she can do with it. "It is the affordance that is perceived" (Gibson 1967; Reed & Jones 1982; Michaels & Carello 1981: 42). Affordances do not change as a perceiver's needs change. They are therefore real and persistent properties, objectively defined over the components of an ecosystem regardless of time to time use. An affordance is therefore not a force in the field but the basis of a potential directive correlation.

The concept of effectivity is derived from the term used by John von Neumann to mean purposive activities (Shaw & McIntyre 1974: 307). An effectivity is the potential purposive behaviour of a perceiver in the field, and again is relative to the field. For perception to be valuable it must be manifested in appropriate and effective actions on the environment.

Similarly, for actions to be appropriate and effective they must be constrained by accurate perception of the environment (Michaels & Corello 1981: 47). Affordance and effectivities are species-specific (Reed & Jones 410). What a desert affords to a snake which is temperature sensitive is very different to what it affords to a human being (Michaels & Corello 1981). For an animal the effectivity is a goal-directed act, for the person, an intentional act (Fowler & Turvey 1982). It is similarly environmentally constrained, but clearly also defined in relation to a hierarchical set of goals, purposes and ideals. Taken together, affordances and effectivities for a human being express the process of living in a meaningful world where "Meaning is a property of the ecosystem and individually, the animal and the environment constitute partial systems with reference to meaning" (Turvey & Shaw 1979: 209).

The invention of the Search marked the practical recognition of the L_{22} and its affordances. In today's world, it is essential to focus on understanding its current internal dynamic of interdependence and change. A system can be moved towards its strategic goals only as far as the environment will allow. Without this focus it is possible to make beautiful plans which have no chance of implementation. The current L_{22} is a ground of value shifts and possible sharp discontinuities, a mine field for planners who follow linear logic and/or concentrate only on the L_{11} and L_{12}.
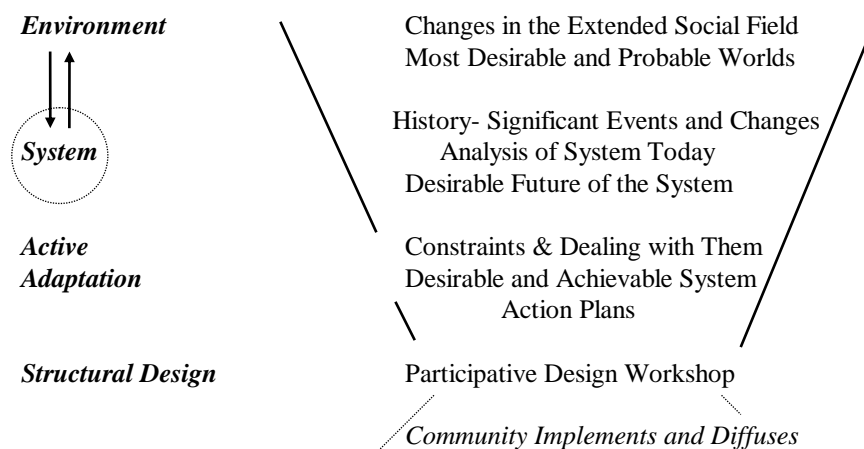
Searching: The Search Conference

Searching is the translation of a system of understandings into practice to extend the emerging culture and to bring it under conscious control. As it is the theory in practice so it is demanding of attention to all detail of its underlying dimensions. Since the first SC in 1959 (Trist & Emery 1960) theory and practice have undergone intensive integrated development.

The SC is the intensive blip in the middle of an extended period of preparation and planning and an infinite implementation. Its success depends upon the quality of the preparation and the structures consciously understood and built into the implementation phase as well as design and management of the event itself. A Participative Design Workshop modified to design rather than redesign organizational structures is included at the end to increase the probability of successful implementation.

Searching includes all of the critical concepts. It is an operationalization of open systems thinking, uses ecological learning and the second design principle which together produce the 'creative working mode'. It establishes the conditions for influential communication and rationalizes conflict, celebrating diversity and producing diffusion through positive affect. It focuses on action plans embedded in the Strategy of the Indirect Approach and effective structures for successful implementation. Translating the open system into practice provides its characteristic schematic or minimal **external structure or design.** (Figure 3)

System (L_{11}), environment (L_{22}) and their integration for adaptation provide the **content.** The **process** consists of the 'transport equations' across the system-environment boundary, the functions of learning (L_{21}) and planning (L_{12}). The V or 'funnel' is symbolic of the creativity inherent in the process as all possibilities are searched, not merely the probabilities. By the time the desirable future of the system (its set of strategic goals) is decided, every possible variable pertaining to that future has been considered. All dimensions cohere into a wholistic, systemic internal structure and process. Taken together they form a unique entity. Searching as econiche provides maximally conducive conditions for the development of learning, planning 'communities', those which continue to take responsibility for control and coordination of their own affairs. The ultimate goal is a productive, psychologically healthy and therefore creative, pocket of learners.

Environment ... Changes in the Extended Social Field
Most Desirable and Probable Worlds

System ... History- Significant Events and Changes
Analysis of System Today
Desirable Future of the System

Active
Adaptation ... Constraints & Dealing with Them
Desirable and Achievable System
Action Plans

Structural Design ... Participative Design Workshop

Community Implements and Diffuses

Figure 3. Schematic structure of 2 stage model

Searching requires theoretical and practical knowledge of the design, organization and management of dynamic open learning environments. Theoretical understanding is critical. The SC is a **large** group method requiring knowledge about and experience with the total set of concepts, their internally consistent nature and the dynamics they produce. The long developmental history of the SC has shown that there are, unfortunately, no short cuts. It is also demanding of a high level of maturity and responsibility in collaboration with participants. There is both equality and a strict division of labour between managers and participants. Participants are wholly responsible for the content and the outcomes. Managers are responsible for the design and management of the learning environment and process until such time as the community becomes self managing. A good manager produces a totally self managing community.

The SC is, therefore, an environment or econiche specifically designed and managed for learning and the emergence of ideal seeking. Those observing a Search for the first time are struck by the profound differences in behaviour during the event from that 'normally' seen in everyday life. This is simply because the organizations within which we conduct most of our everyday life are structured on DP1, and consequentlynot conducive to learning, ideal seeking or taking control of our futures. *The Search is quite explicitly an experience of participative democracy*. The learning required here is that of ecological and puzzle learning within DP2 structures. It includes learning about the nature and effects of these structures themselves. Participants see a large group producing a vast amount of creative work and learning, efficiently and responsibly with good order and with energy, humour and positive affects. They are reassured that participative democracy does not mean anarchy or chaos, laissez faire. It has a tight functional DP2 structure which fulfils task and people at one and the same time.

Such awareness is not, however, an adequate substitute for direct conceptual knowledge of organizational design and the design principles underlying it. The 2 stage model incorporates the **Participative Design Workshop** (PDW) which has been developed for that purpose. At the end of the 2 stage model, the community not only has a strategic plan for active adaptation, it also has an effective democratic structure to carry it through implementation.

Because the framework of the Search is conceptual rather than mechanistic as in a fixed series of steps, it provides enormous flexibility in its design and application. New issues will constantly arise and demand attention. People must know how to define systems and draw

appropriate boundaries for effective new systems to take responsibility for these issues. Similarly, as existing systems themselves coalesce or fragment, new systems emerge demanding open systems knowledge and design skills. Searching is a wholehearted and consistent commitment to and demonstration and learning of contextualism. It sharpens the choice faced by all of us (Emery F 1985) and creates through its practice a higher probability of a new contextualist future.

We see from this that Searching is one discrete method amongst an infinite variety of participative events. It is not just a name that one applies to one's current activities because it is a label in good currency, nor does an activity or intervention become a Search simply because you wish to search. It is neither a technique such as 'brain storming' (Sheehan 1969) nor an event designed to improve relationships or communication, or simply gather information. It will do all of these but they occur in the process of building a community which will implement its action plans for its own desirable future. In this chapter and the next, we discuss practice as the translation of the theory.

Many people have learnt to design and manage SC's. There is nothing mystical or magical about the method as Wheatley (1992) proposed. The theory explains it thoroughly and theoretical understanding is critical for good management. The temptation for an inexperienced manager, particularly if the work seems not to be going well, is to throw in something from the past, to dip into their facilitative and OD tool box, without realising that many of these accumulated tools are inimical to the SC and its purpose of helping the community learn to get on with their own work. Many of these tools are based on DP1 and the first educational paradigm. By using these, you mix design principles or educational paradigms and this creates confusion, frustration and evokes a basic group assumption which indicates a refusal to engage in creative learning. We saw this many times at *Workplace Australia* in 1991 where inexperienced managers pulled 'games' out of their tool kits, predominantly to get themselves out of a tight spot. They commonly exacerbated the dynamic. The SC does not use games or exercises. It is totally task oriented and asks only questions appropriate to the current state of the work. This does not mean that it is deadly dull 'serious' work. Far from it. It does mean, however, that much previous learning about 'facilitating' groups must be unlearnt in order to appropriately manage a Search (Emery & Purser 1996: 210-3). Once managers understand their task, both conceptually and practically, they can successfully implement quite difficult designs in difficult circumstances. Because it is based on a concept, it is very flexible in both design and management. There is no recipe, no formula, no definite number of steps. There is a minimum design template which flows from the open system and there is learning concerning the nature of tasks and their introduction that is good practice because it has proven maximally effective to task accomplishment. It is also not a vehicle for teaching the theory.

The Design and Structure of the Search as Learning Environment

A SC is a carefully designed integration of external, internal structure and process which functions to provide a DP2 environment for the practice of ecological learning. Each of the major conceptual frameworks are integrated into an internally consistent practice.
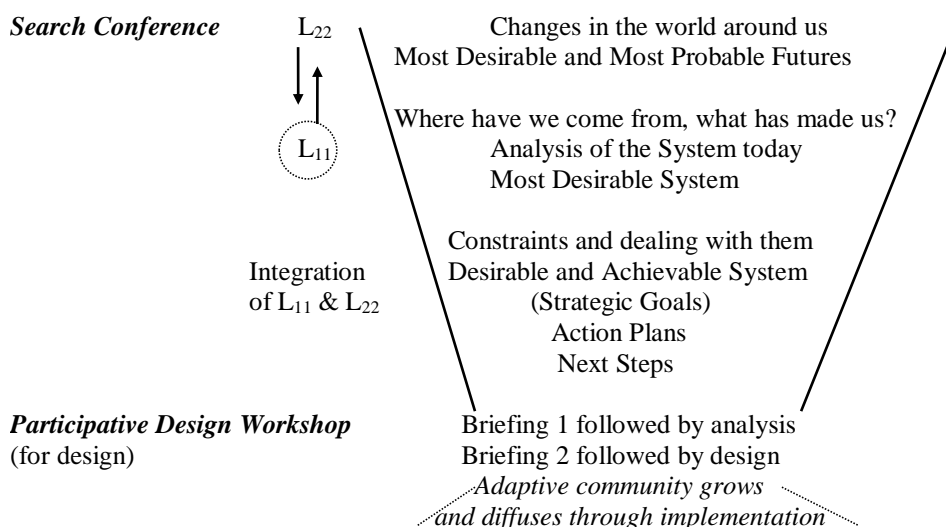
External Structure or Design

External structure is essentially the translation of the concept of open system into a design. The minimum classical design for the 2 stage model is seen in Figure 4. This is a more detailed presentation of Figure 3, including the actual conceptually based tasks for each stage.

Usually, phase 1 of the Search is data collection about the current nature of and changes in the L_{22}, followed by analysis and synthesis of that data into Most Desirable and Most Probable Worlds. Phase 2 consists of a similarly thorough examination of the L_{11},

encompassing again data collection, analysis and synthesis. This consists of a history session, an analysis of the system today and a construction of the Most Desirable System. Phase 3 integrates the learning from phases 1 and 2 firstly into an exploration of constraints and how to neutralize them, secondly into an examination of aspects of both L_{22} and L_{11} that can be used or mobilized to help with action plans. The **content**, therefore, derives from the nature of environment and system. The **process** is integrated puzzle learning (L_{21}) and active adaptive planning (L_{12}) as discussed above. The learnings from both phases 1 and 2 are literally returned to and scrutinized for the integration process. This may happen more than twice in some cases depending on the progress of the work. It is clear, therefore, that the SC is not a linear method but a recursive one.

Search Conference　　L_{22}　　　　Changes in the world around us
Most Desirable and Most Probable Futures

L_{11}　　Where have we come from, what has made us?
Analysis of the System today
Most Desirable System

Constraints and dealing with them
Integration　　Desirable and Achievable System
of L_{11} & L_{22}　　(Strategic Goals)
Action Plans
Next Steps

Participative Design Workshop　　Briefing 1 followed by analysis
(for design)　　Briefing 2 followed by design
Adaptive community grows
and diffuses through implementation

**Figure 4. The Conceptual Design of the Complete (2 stage) Model**

Common Variations

The external structure shown in Figure 4 is a guideline only. Each SC is custom designed, elaborated from the above irreducible minimum. For example, for green field sites and issue Searches where the SC is being used to bring into being a new organization, there is no history or system analysis sessions because there is no system. There maybe, however, examples of previously failed efforts and it may be worth spending some time on these in order to learn from the history of others. Time should be spent making sure that everybody knows why and how the present effort came about.

There are occasions when a Most Probable Future of the system needs to be included. Such a task is useful particularly in organizational Searches designed to produce guidelines for structural change, where it is known or suspected that resistance to such change exists. A Most Probable Future, a linear projection from the recent past and present, usually shows that without systemic, structural change, the organization has little or no future. It may show productivity, cash flows, market share or morale declining past the point of no return. Such a participative demonstration can radically reduce resistance.

In many organizational, industry and issue Searches, another level of environment may need to be included. This is the Task Environment (Williams, 1982) which lies between the L_{22} and the L_{11} (Figure 5). That is, it is a slice selected out of the L_{22} because of its closer relevance to and impact on the day to day operation of the system. Commonly, this task environment consists of the industry in which the organization or issue is embedded. But it may be the geographical region of a community or organization. For the marketing division

of a organization, it may be the total organization. This shows that in complex situations, time is needed to guarantee that there is a shared knowledge of the system in all its various contexts where a system at one level (e.g. the total organization within the L_{22}) becomes an environment for the smaller system (the local branch) within it.
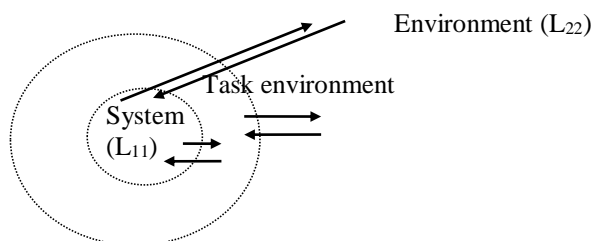
Figure 5. Relation of Task Environment to L_{22} and L_{11}

There are other cases in which there are clearly two or more relevant task environments and this raises serious debates in the design phase about what can best be accomplished in the SC or through other means. It involves judgement and the necessity for trade offs between adequacy of design and the time and human resources required to work through it. For example, a regional university was experiencing changes in its region and also existed in the rapidly changing world of Australian higher education policy. There was long debate about which or both task environments should be included in the design. The higher education task environment was finally chosen. Constraints dictated that only one could be included, government policy was changing more rapidly than the region, presenting a more urgent need for analysis, and there were other opportunities to gather and analyse data about changes in the region.

A task environment is handled in the same way as the L_{22}, namely, data about changes is collected and then analysed and resynthesized into whatever form is of greatest value to the purpose of the SC. Most usually, only the Most Probable Future of the task environment needs to be done as this provides the SC community and thus the system, with the essential strategic knowledge of what it actively adapting to. An organization involved in the computer industry will need a well informed and thoughtful view of major directions and changes within that fast moving industry. These may involve information about customer demand for and usage of products and services as these will indicate possibly significant value shifts amongst consumers and, therefore, a search for better received products and services. It will also need an appreciation of new and possible innovations which have the potential for radical redirection which could render the organization's current product range obsolete. Such a task is obviously demanding of serious consideration and, therefore, time.

There will be cases where an organization is a market leader in a particular industry or product line within it. In these cases, the organization may choose to do a Most Desirable task environment as well as a Most Probable because that organization is in a position to direct that industry. Again this work will add significantly to the time required for the Search.

There will be occasions on when it is necessary to do two levels of Most Desirable System or strategic goals. When a reasonably short time frame has been set, it is sometimes clear that the desirable system cannot be attained in that time. That does not invalidate the strategic goals. It simply means that another step is interpolated to translate the long term goals into a set which is realistic for the planning period and which forms a stepping stone to attainment of the longer term set.

There have been other cases where a philosophy or mission statement is required. The SC for New Directions for Remedial Education in Victoria incorporated their philosophy

statement after their set of strategic goals, the most appropriate place for it. It is very simple and easy to spell out a philosophy or mission statement after all the work deciding on the Most Desirable Future of the System is done.

There have also been cases such as the Future of the Canning Peach industry in the Murrumbidgee Irrigation Area where the action plans were split between short and long term. Growers wanted guarantees that plans requiring action by the management would be implemented. Management promised to immediately fix many small but important long standing problems and thus satisfied, all parties continued to work on long term plans.

More Complex Designs

The cardinal rule about design is 'keep it simple' but there are cases where more complex structures must be introduced. The Future of Democratization in New Zealand and Australia was called to accelerate democratization and strengthen the cross Tasman network. The Search worked as a community during phase 1 but split into a 'mirror group' structure for history and L_{11} analysis sessions. The function of a 'mirror group' is to work with the focal group and ask the questions that a group may not ask of itself, for the very good reason that long standing matters are taken for granted. The histories and experiences of democratization in New Zealand and Australia were separate and different. The Aussies questioned as the Kiwis talked and vice versa. Then the total community self selected into task forces to do the action plans for making it all happen because the goals were common.

Variations in Sequence

A wide variety of designs have been tried over time but the V, the triangle or funnel has been retained through most. It is significant. It says that in a Type IV environment we must examine possibilities (rather than just probabilities) and then gradually narrow into the agreed set of strategic goals. It is only within possibilities that creativity lies and innovative futures and pathways grasped. Also it is the opposite of the bureaucratic pyramid. Constraints must be left until the SC community is established in the working mode, has decided upon its desirable future and is confident of its identity and strength. Introducing constraints earlier than this can destabilise an immature community, because it all looks too difficult. The sequence of these components is not totally immutable but it cannot deviate from the logic of the open system without destroying its nature as a SC. In some form the design will encompass elements of learning about:

the extended social field (L_{22});

- expression of ideals (most desirable futures);
- organization or community character distilled from history, present character and perhaps distinctive competence (probability of choice) analysed and desirable continuities agreed, new desirable characteristics created to produce the most desirable system; (L_{11})
- what we must take into account in our strategic planning such as constraints drawn from both the L_{22} and L_{11}, particularly the most probable future and L_{11} analysis
- making action plans

Surveying the significant historical events and changes is a critical phase for any pre-existing community, network, organization or industry. Gaining a shared appreciation of where they have come from, what has made the system what it is today, and implicitly extracting system character or 'personality' is as important a part of the context of people's planning as is their sharing of perceptions of the L_{22}. The common assumption that most people know their history and share an interpretation of significant turning points is, almost inevitably, found to be false. There may also be quite different interpretations of history. But

unless the picture can be put together so that a pattern emerges - a point made by Pirsig (1974: 168), there is little chance that headway can be made in deciding which characteristic features are to be kept and which discarded. Leaving this phase out altogether leaves the group at risk of designing guidelines for the future which contain so little continuity as to be totally unable to be realised in practice. This of course is one of the reason that standard plans developed by outsiders are never implemented. The people who have to live with them cannot recognize themselves in the plan, it simply isn't theirs. Character, like ideals, must be brought to consciousness and used.

Don't try and attempt to move straight from the environmental scan, desirable and probable futures (separately) and history, to desirable **and** achievable futures. Without explicitly acknowledging features to be retained or rejected, the task is too abstract. The result is fight/flight. The community must be able to move between modes, from ideal seeking to reality to ideal seeking etc. It can never be overstressed that time spent ensuring that these contextual tasks are adequately done is never wasted, and results in a more efficient pace of work further along as well as the best possible approximation to active adaptation.

There have been examples where a manager has reversed the normal order of L_{22} and history, usually because they felt that history provided an easier, less threatening point of entry. This must be weighed against the disadvantages of not immediately setting the broadest climate of possibilities and not benefiting from the rule that 'all perceptions are valid', that rule which confers equality. It must also be weighed against the chance that the history may be conflicted, in which case you prejudice the building of community by risking fight/flight. Or in some indigenous settings, the history may be owned, i.e. only one or more elders may be permitted to tell it. Here you also prejudice community building by starting with a pre-existing status structure (DP1) and dependency.

As the design is only a plan, it is impossible beforehand to do other than notionally time the phases. The community may return to earlier phases if it is perceived that they need more work and designs are sometimes changed during the SC. External structure then is flexible within limits. These limits are:
all components such as most desirable and most probable worlds must be included;
- but while each discrete component must be present, its final position in the flow of work should add to understanding the future of the **system-in-environment;**
- any component part may be reworked at any stage to overcome incompleteness or provide a more adaptive emphasis as the perceived need for this develops. This is 'recycling' and is a typical feature of working in an oral culture, 'retracing' around a spiral with seeming redundancy but providing a condition for insight (McLuhan 1964: 26);
- as with other dimensions of the Search Conference, the quality of the external structure is at the mercy of quality of preparation, experience and judgement;
- flexibility in the latter stages will be exercised **by the search community** towards its emerging purposes. Remember that after much intensive, creative work the originally stated purposes of the Search may have changed in emphasis, taken shape in a previously unsuspected form.

This is only a sample of the practical uses to which the open system has been put. It is literally present in every task, theoretical and practical that we undertake. If it were not, the work could be said to be a closed systems approach as there are no half way houses.

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