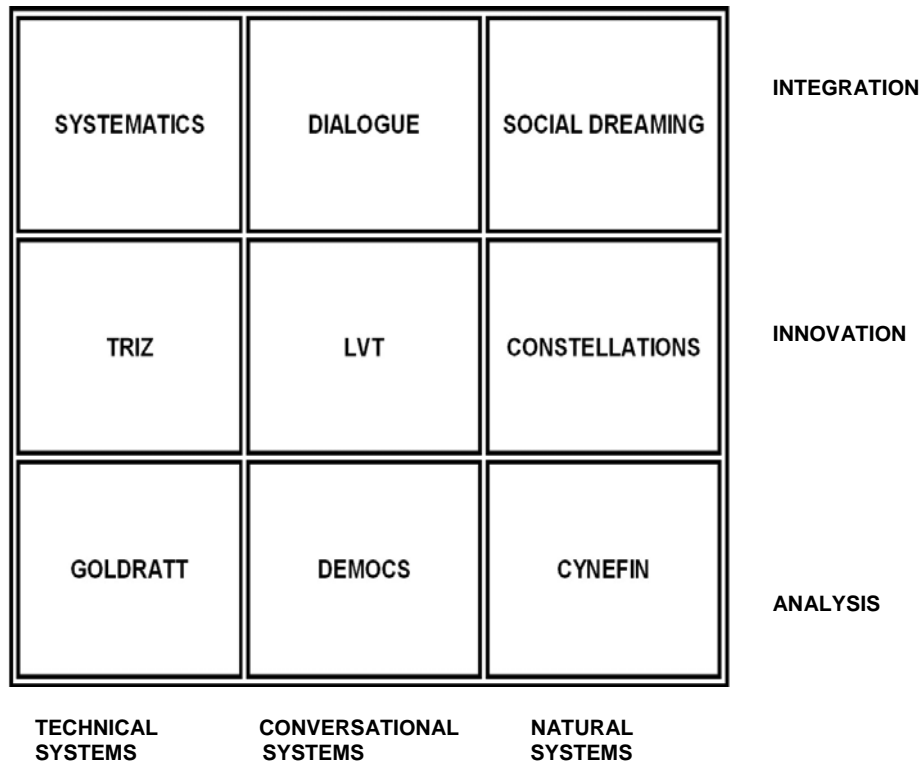


SYSTEMATICS AND LVT



Organized Complexity

Our thought must take account of complexity; reduction to 'simple laws' is inadequate even in physical science. Complexity is not the same as chaos, everywhere it is complemented by organization. Practical activities, such as modern technology, have forced people to recognize the irreducibility of complexity, but have also lead to a search for structural modes of thought. Two-valued logic, simple laws, and ordinary language, especially the Indo-European, are inadequate tools for enabling us to describe organized complexities. The concept of multi-term systems can take us further.

The grasp of structures is not a matter of knowledge alone, but requires an intuitive insight that can be called 'understanding'. Knowledge is the accumulation of data concerning the behaviour of things. The step to understanding requires a consciousness of structure that is synthetic and not analytic. Up to now, no technique for understanding has ever been proposed. This is, in part, because understanding and knowledge are not clearly distinguished. Knowledge and understanding are mental acts of quite different kinds. They require quite different methods of development, though productive thinking requires their cooperative working.

In order to know, there must always be some grasp of structure, but it need be of only limited extent. On the other hand, the depth of human experience exceeds what can be concretely grasped by any single human mind. This is why creative acts are needed for advances in human thinking. The discipline that has been called Systematics serves as a bridge between our limited and only implicit grasp of structure and the concrete experience, by introducing certain simplifications which enable us to proceed by way of an integrative progression.

<http://www.toutley.uklinux.net/systematicsbooklet.htm>

The discipline of systematics as a method of thinking was developed by the philosopher and educationalist John Bennett about fifty years ago. It is the study of *multi-term systems*, which distinguishes it from most systems thinking. A multi-term system is a set of independent but mutually relevant terms and the *number* of its terms is its crucial feature. This supposes that there can be 'relations' between more than two terms 'at a time'.

There is a reciprocal relation between the number of the terms and the *kind* of terms they are. In the language of systematics, the terms of a dyad (two terms) are 'poles'. Those of a triad (three term) are 'impulses' and those of a tetrad (four term) are 'sources'. And so on.

The main purpose of systematics was to aid thinking that went beyond binary distinctions, classical logic and linear connections. It supposed that there was no inherent limit to the succession of *different degrees of wholeness*. That is to say, it made the bold claim that wholeness had different degrees, which could be ordered according to the series of the integers. Bennett elaborated a series of generic meanings for the systems, thus:

- Monad – universality
- Dyad – complementarity
- Triad – dynamism
- Tetrad – activity
- Pentad – significance
- Hexad – coalescence
- Heptad – transformation
- Octad – completedness

The higher systems beyond the octad (eight terms) were only sketched out. As the number of terms increases, the depth of discrimination required to understand them also increases. We think in terms of differences and, for example, the difference between dyad (2) and triad (3) is far more graspable than that between the undecad (11) and the duodecad (12). So there are psychological limits to our grasp of systems.

Examples of dyads, triads and tetrads abound in all fields of human endeavour. As *archetypes* they were discussed by Carl Jung and his pupil Marie Louise von Franz. Triadic thinking appears in TRIZ, partly because of its roots in *dialectical materialism* that, following Marx and Hegel, centred itself on threeness. Tetrads abound in management science because the four-fold structure is inherent in all kinds of *mapping*: the co-ordinate system stems from the ancient sense of the significance of the four directions of the world.

Bennett's systems can be seen as a higher order equivalent to the inventive principles of TRIZ. They, too, are generalisations from diverse experience. In particular, they span the range from physical, technical manifestations to psychological, social ones. Their descriptions range from a single word – such as 'dynamism' for the triadic *system* – to articulations of their terms – such as 'active', 'receptive' and 'reconciling' for the *terms* of the triad – and their 'sub-systems' – such as the three mutualities of the three terms, 'decision', 'consent' and 'generation'. The whole picture is then:

SYSTEMIC ATTRIBUTE

SUB-SYSTEMS of mutual relevance between sub-sets of the terms
TERMS

The number of possible sub-systems rapidly escalates as the number of terms increases.

Each system also has a range of manifestation. For example, the dyad has its 'ideal' in complementarity (a word taken from Niels Bohr's interpretation of quantum mechanics) but its 'non-ideal' in conflict. The triad has its ideal form in 'agreement' but its non-ideal in unpredictability (as in the famous three-body problem of physics). The ideal form of a system corresponds to the co-equal status of its terms in balance with each other, so to say 'co-operating' together. The non-ideal form is when there is lack of balance. This then means that the highest degree of wholeness in the system is not realised.

The TRIZ concept of Ideality is a more concrete version of the same kind of thinking.

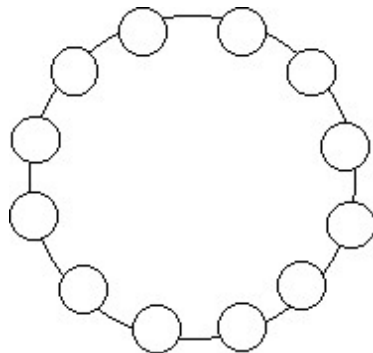
Relevance of LVT

In LVT, a 'bottom-up' process, we begin with a set of MMs (molecules of meaning) from which we derive more meaningful wholes. The MMs are not per se 'terms' of systems but the LVT process turns out to provide ways of making them so.

First of all, MMs can be grouped (Organise) into proto sub-systems as in the basic clustering procedure.

Secondly, the new MMs thereby produced can serve as a basis for considering systems.

The step into systems takes place at the stage of Integrating. A typical procedure is to take the new MMs produced through Organise and arrange them in a *circle*.



Such a circle is called a *monadic ring* because each of the elements is an aspect of the whole and the whole circle then represents the *monad* or one-term system. The sequence of MMs around the circle is made by participants according to various guidelines, such as forming an intelligible *narrative*. Thus, which comes 'first', what 'leads to' what, and so on. There can of course be many versions of the sequence and we can simply look for 'degrees of similarity' that can then be translated into degrees of proximity.

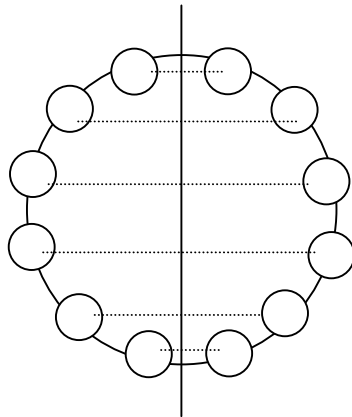
The MMs round the circle are the meanings we have found for 'clusters' of the MMs we start with. In a typical exercise, there are too many basic MMs to deal with and so they are reduced to make a smaller number. However, this reduction should also be an enhancement, because we look for *new* meanings in the clusters that we form.

These are inductive, going beyond the components of the clusters. They can be thought of as 'proto-terms'.

Once the monadic ring is made it then becomes possible to look for 'cross-relations' across the circle. Every new MM is simply a sub-whole of the whole, representing it as a piece of a hologram that can represent the whole.

In this diagram, we show twelve new molecules of meaning.

To then consider the *dyad*, we make pairs as shown here. However, in order to do this, we need an axis of division. This means that we have to arrange the MMs in a sequential order around the circle.



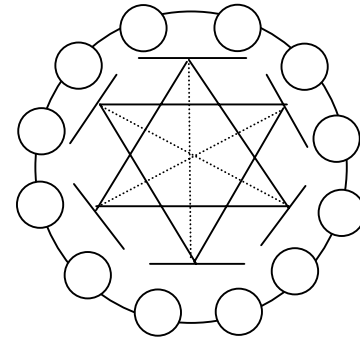
After doing this, we take the pairs as shown and consider the meaning of each as a manifestation of the dyad.

A further step is to then coalesce the several versions into one. By doing this, we allow for diversity in the dyad (carried over from the monad) while attaining a unity, or one best expression of the dyad as a whole.

Movement into the triad is shown below. We note that, in this case, we use *pairs* of MMs so that the 'terms' of the dyad are not carried over into the triad. When it comes to the tetrad, we use *triplets* of MMs, following the same principle. So it goes on. The

point of this technique is to give a facility of forming the higher systems from the *same units* that constitute the monad.

The investigation of the structural features of the monadic ring belongs to the stage *Integrating*. It can aid participants in seeing, for example, (a) what may be *missing* from the picture, and (b) where there are issues of balance (viz. conflict v. co-operation). This can feed into a realization of *Ideality*. The final structure is not a representation of the existing state of affairs from which the investigation began but of its possible evolution. It thereby provides a *theory* to guide action.

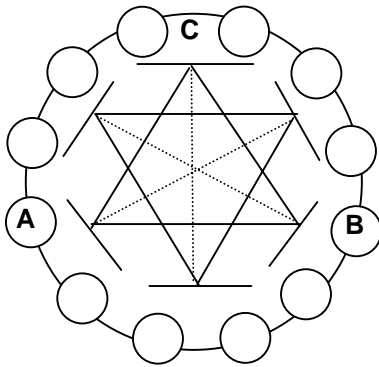


Generic Principle of Types of Togetherness

The separation of types of wholeness that systematics provides greatly assists people in tackling complex problems. Just as the basic LVT process enables people to handle large numbers of MMs, so systematics can help them handle ways in which they can 'act together'. Dealing with pairs of MMs is not the same as dealing with triplets, or with quaternaries. But a further step is needed to combine the various degrees of togetherness into one structure for a given purpose.

In the simplest case, the stage of *Gather* deals with the issue as a *monad*. The variety of MMs brought together have no relation to each other besides their relevance to the topic. They are displayed at random particularly to discourage habitual linkages: habitual complexes have to be 'disintegrated'.

At *Organise*, we have at least to deal with *dyads*. These appear as pairings of MMs that have a meaning to the participants. They can exhibit various degrees of wholeness along a spectrum. At one extreme they will be expressions of a conflict or contradiction, while at another they will be in an ideal relation of complementarity. When their relation is weak, they can be simply 'similar' in which case it will not be until the next stage that real dyadic features make their appearance.

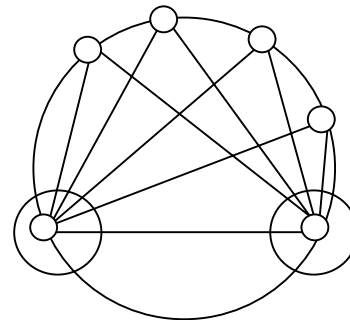


When it comes to *Integrate* and the monadic ring, we can investigate *triads*. The visual arrangement makes it possible to look at three terms in relation to each other. Triadic relations pervade our experience but are often not articulated as such because of our mental inertia of thinking of only two terms at a time. The logovisual display can help us a great deal in this respect.

For example, we could have found a tension between two terms A and B. The visual form

leads us to look for a possible resolution through the region C. There are two sets of options. The first set concerns modifications in A and/or B (as by fusing them with neighbouring terms). The second set concerns identifying a reconciling term C, which might be anywhere around the circle.

If the circular sequence does reflect some inherent property of the whole *then* the simple symmetries of the ring will yield meaningful results. This also means that *if* we find asymmetrical solutions, *then* our circular arrangement is flawed. In either case, starting from a monadic ring makes everything clearly visible and the technology of LVT makes it easily possible to change the arrangements.



If a set of meaningful triads is generated then a next step is to locate them within a *tetrad*. The principles of systematics thus enable us to process complex information through a series of steps. The final step is to incorporate all previous steps into one structural representation. This can include material which has mapped out *pathways* and *transformations* linking different regions of the whole.

Effective Visions of the Whole

There are countless numbers of 'ideal models' in management theory. One of the problems with these that is that people have to 'buy into' them if they are to be of use to them. We adopt the principle that if people make a model for themselves then they will tend to follow it and make use of it. At the same time, people need to be 'stretched' to get them thinking outside the box.

Systematics offers tools to help people think in an expanded way. It does not impose any set model but gives guidance to *looking for new meanings* in what is known. By enabling people to look at pairs, triplets, etc. of terms in distinct steps, they can manage more complexity than otherwise.

LVT further assists the discovery of visions of the whole in a way that adjusts to the capacity of the people involved. They can go as far as they can manage. Even an examination of the simple pairings across the circle or 'ring' can yield important results.

LVT is a bottom-up process that does not start with any model of the situation but enables it to emerge in the language of the participants. Further, by engaging in a method that fosters the 'making of new meanings from old' people acquire a capacity of flexibility of mind that is of great benefit in dealing with uncertain and changing circumstances. The simplicity of integers gives a handle on complexity.