

Reflections on practical organisation of transdisciplinary conferences*

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Challenges for the future

These reflections result from experience with a wide range of governmental and non-governmental meetings with interdisciplinary concerns. Available insights have been elaborated into a series of documents on "transformative conferencing" as part of the UIA's long-term concern with improving conference organization (Judge, 1991).

A. CONSTRAINTS

There is a widespread assumption, notably amongst professional conference organizers and facilitators, that the subject matter of conferences is of little relevance to the actual structure and processes of an event. This leads easily to the repeated use of conference structures and processes which have proved to be less than fruitful in the past even when applied to specialized themes.

It is perhaps ironic that the "Rules of Order" widely used in international meetings (and largely based on "Roberts Rules of Order") are rarely challenged as a means of articulating the more complex responses required of the current challenges to society.

Meeting participation is one of the few organized activities for which no training or qualifications are required. It is a basic assumption of democracy that all have the skills and right to participate equally once invited to a meeting (although some may have "observer" status, or not have the right to vote). Those with more experience in meeting participation and meeting skills have to apply them indirectly, "in the corridors" and "behind the scenes". This leads to situations in which many meetings are extensively pre-programmed, votes are arranged, conclusions are drafted in advance, questions are "planted". The meeting itself then develops the characteristics of a performance.

There is an easy routine in having some

form of chairperson, with a panel or a series of speakers, and some form of question time. Complaints about inadequate discussion and shortage of time may be met by "breaking into groups" which then "report back" through some system of rapporteurs, or possibly using a "multi-track programme". The conclusions are "synthesized" possibly through a special drafting committee, possibly assisted by a separate "declaration drafting committee" which may be especially responsive to the needs of the media. This pattern has not given rise to meetings that are remarkable for their transdisciplinary characteristics and insights.

Most potential participants at a meeting of any consequence have developed their personal habits and expectations of participation within the above framework. It is questionable whether it is possible or useful to challenge these habits, especially given the questionable successes of alternative models. This is notably the case where there are significant problems of protocol or where a participant's main goal is to communicate a particular (and often lengthy) message and to be seen to do so by as many people as possible.

Much effort has been devoted to moving beyond the rigidities of the above framework through various techniques of "facilitation". The hierarchical role of the "chairperson" in the conference structure is then wholly or partially replaced by the role of the "facilitator". It is a different approach to organizing the pattern or interactions. It is however far from being clear that it meets the needs of a transdisciplinary conference. One of its main limitations, as with a chairperson, is that the facilitator (through contractual arrangements) is effectively given a great deal of power and is usually quite insensitive to the inadequacies of the manner in which that power is used. Whereas a series of chairpersons can be used in a conference, it is less often the case that a series of facilitators can be used to alleviate this difficulty. Furthermore, those with facilitation skills often lack the linguistic skills and multi-cultural sensitivity necessary for a multi-lingual environment and are handicapped by the interpretation problem.

There is no proven way to organize an interdisciplinary, multi-cultural conference so as to reflect the complexities of the relationships within the subject matter and between the participants. As a result organizers are forced to rely on "tired and true" methods known to be inadequate in order to avoid any accusation that the conference is "disorganized" — irrespective of the questions that this raises in terms of chaos theory and the challenges of self-organization.

Logistical and budgetary constraints necessarily hinder efforts to implement any ideal solution — however ideal the conference environment itself.

B. SOME ORGANIZING PRINCIPLES AND PRACTICAL POSSIBILITIES

1. Possible characteristics of a transdisciplinary conference

(a) There are no clear images of a transdisciplinary conference. It is however important to avoid satisfaction with simplistic images through which any conference with a cluster of disciplines or cross-disciplinary concerns is labelled as "transdisciplinary". Although not sufficient, there is a clear requirement for a number of disciplines to be represented.

(b) Whatever is to be understood by transdisciplinarity should arise as a consequence of the manner in which the disciplinary insights are organized during the event. A distinction needs to be made between:

- organization of presentations and interventions into programme segments (reinforcing some form of "disciplined specialization", even if it relates to some aspect of transdisciplinarity)

- transfer of information between parts or segments of the conference (reinforcing

someform of multi- or cross-disciplinary communication, even if it relates to aspects of transdisciplinarity)

- cross-fertilization between different programme segments (reinforcing some interdisciplinary processes, even if they relate to aspects of transdisciplinarity)

- emergent insights arising from a measure of self-organization of the insights evoked by the conference process as a whole

- feedback of emergent self-organizing insights into the organization of the ongoing conference (possibly as an overlay or harmonic on its pre-planned features)

It is the last two phases which are the unique feature of transdisciplinarity. They can only be achieved by building on the conference structures and processes characteristic of the previous phases.

(c) Clearly a conference with transdisciplinary ambitions effectively embodies the challenges of transformative implementation. It is in a real sense a laboratory through which structures and processes can be transformed — even if this is more a question of perceiving old structures in a new light and as based on new patterns of relevance. It could be fruitful to explore a number of metaphors for this transformative process, even drawing upon alchemical symbolism.

2. Co-existence of emergent and conventional patterns

There is as yet no reliable alternative way to organize conferences to ensure the emergence of transdisciplinary dimensions. This means that it is necessary to rely on conventional patterns of meeting organization as the foundation for any transdisciplinary conference programme at this time.

The challenge is to ensure the emergence of alternative patterns which co-exist with con-

ventional forms of organization without disrupting them. In this way those who place greater emphasis on conventional patterns, and the security they offer in avoiding "disorganization", can be satisfied whilst at the same time those who attach greater importance to alternative, emergent patterns are also supported during the event.

It is useful to check the various aspects of the conference in the light of this perspective and their contribution to the different phases in support of transdisciplinarity.

5. Limiting any preponderance of pre-planned conference features

(a) Pre-planned presentations and interventions: There is great merit in exploring ways of allowing participants to make presentations of any appropriate length without monopolizing the attention time of other participants. Possibilities include:

- Distribution of written papers: This technique is satisfactory to a percentage of participants, provided it does not become apparent that those who did not prepare written papers are allowed to use a disproportionate amount of plenary time to "develop" their presentation.

- Minimum intervention time: This technique is useful to maximize the time allowed for discussion. It creates difficulty when there are presentations of major significance which merit more time.

« Video-presentations and interviews: This technique is useful as a way of allowing everybody to make lengthy presentations in front of a video-camera (possibly with a small audience). Copies of the presentation can then be made available to other participants on request — ideally for use in a special video room or even in hotel rooms (if these are equipped with VCRs). It is important to recognize the extent to which this serves as a safety valve for those who need to express themselves at some length.

(b) Flexibility in organization of pre-planned sessions: There is great merit in being able to modify the size, location, timing and theme of sessions. A balance needs to be struck between sessions which are completely pre-planned and those which can be adjusted in the light of the range and interests of participants actually present, as well as emerging patterns of interest. From the perspective of a conventional conference organizer such flexibility is a potential "nightmare". However if participants are treated as responsible adults willing and capable of organizing themselves to some degree (moving chairs, etc), then "redesigning" portions of the program then poses relatively little problem.

(c) Flexibility in thematic discussion: Practical room organization aside, the key issue is whether a transdisciplinary conference can reconfigure its conceptual focus in the light of emerging insights without disrupting all sense of organization. A balance needs to be struck between a measure of "conservatism" and a measure of "explorative innovation". Polarization between "reactionaries" and "anarchists" must be circumvented, even when some take up these positions.

4. Contextual safety-nets

(a) Support personnel (proportion and quality): The potential for the non-disruptive emergence of alternative patterns can be considerably increased by increasing the proportion of support personnel to participants, especially if the support personnel have the skills and mandate to be attentive to maximization of lateral communications unforeseen by any formal programme. Possibilities include:

- Facilitators whose role (like the traditional social hostess) is to introduce people in the light of the potential fruitfulness of their communications. This role can be taken seriously to the point at which the team of such people reviews the potential role of each participant on a periodic basis to ensure that no opportunities are lost.

- Mediators, as an extension of the previous role, such people could focus on the special tensions between opposing factions. It is important for them to avoid any simplistic understanding of the need to "resolve" such tensions when in fact they may be essential to the creative emergence of new transdisciplinary perspectives.

- Challengers, as an extension of the previous roles, such people would aim to introduce provocative and uncomfortable questions which it would otherwise be easier to ignore. A feature of this role is that of "advocatus diaboli". It is important that the conference as a whole not fall into a pattern of simplistic consensus.

- Leaveners / Humorists: As an extension of the previous role, such people would aim to challenge unnecessary artificial boundaries through forms of humour which create new kinds of bonds between people especially when it is possible to do this by associating new patterns of insight.

- "First-aid": In multi-cultural gatherings, involving participants from a variety of backgrounds and with a variety of agendas and expectations, it is to be expected that some will be alienated, or even "wounded", by the conference process — however well it is designed. It is especially important that some support personnel be sensitive to possibilities of responding to this condition and thus providing a "safety-net for the unhappy" who may otherwise engage in activity dysfunctional for the conference as a whole.

Clearly many of the above functions are often performed in part by the organizers and other participants in the absence of support personnel. Much more can be accomplished where people are especially mandated to focus on these matters.

- (b) Participant messaging: One low-cost technique to ensure communication across formal programme boundaries is a messaging system through which participants can comment

on ideas which it is difficult to express through the formal conference process. This can range from a message board to a periodic bulletin circulated to participants, in both cases carrying brief participant comments (McClaren, 1992). However for this procedure to be successful, rather than marginalized, both participants and organizers must be made aware of its complementary function.

- (c) Contextual organization: Conventional conference organization relies on pre-planning and pre-scripting to avoid "disorganization" and "chaos". Dependence on this principle of organization can be reduced by increasing the supportive nature of the framework ("scaffolding" or "matrix") within which the conference processes take place. There is a great difference between a conference with a participant/support-personnel ratio of 10:1 and one of 2:1 (or even 1:3), for example. But the preoccupations of the support personnel are also important (as the well-supported but unproductive "Summit" meetings indicate).

5. *Insight capture*

Using an alchemical metaphor, a transdisciplinary conference is a context (a retort) in which insights constantly bubble up and emerge. The challenge is to design a conference so that any such insights are appropriately captured and processed. In many conferences, where the context is uncontained ("open to the air"), the insights of the moment simply evaporate and cannot be recollected. There are a number of possibilities for improving this situation:

- "Insight collectors": This might be considered a creative redefinition of the role of minute and report writers. As presently defined, this role is to a large extent constrained by the administrative and protocol requirements that are often essential for some aspects of the credibility of the event. It is important to emphasize the role in relation to the "distillation" of ideas during the conference process. It is the most "volatile" insights which could be

considered of great value. These are of course the most difficult to isolate and "condense". The above-mentioned messaging system can perform a vital role in insight collection.

- Inter-relators: Insights may readily be treated in isolation. However a transdisciplinary perspective is necessarily dependent on giving form to "patterns which connect". This is a role which extends that of insight collectors and may call for other qualities. One of these may be an emphasis on mapping or visualization of some kind. Of special importance is the way in which such mapping can give a place to each of the perspectives and constituencies present at the conference (or significantly absent). Place in this sense is associated with function. Transdisciplinarity can be seen as the Gaia (or organizing principle) of the noosphere through which each discipline has a function in relation to the others (in contrast to the present isolationist emphasis).

- Configuration and self-constraint: It is readily assumed that the insights of a transdisciplinary conference can be mapped onto some form of checklist. There are strong arguments in favour of seeing a point-by-point outcome as the most simplistic, reductionist form of output — and very probably inadequate to the challenge of reflecting the subtler patterns of relationships between the emergent insights in any way that could be considered significantly transdisciplinary. There are arguments for exploring more complex "surfaces" (in the geometrical sense) onto which to project insights emerging from such an event. It is such surfaces which suggest relevance pathways between insights (conceptual "ley lines") and the patterns of constraint (between "opposing" perspectives) vital to the integrity of the surface as a whole. It is at this level that the emergent structure characteristic of transdisciplinarity can start to be described. Every effort should be made to propose a variety of mappings and projections to capture the variety of insights expressed. Such conceptual devices may even be usefully seen as performing a role analogous to that of antennae in capturing and resolving insights.

* Metaphors: Transdisciplinarity of any significance must necessarily pose real challenges to comprehension and communication, both within the conference and to the outside world. One of the few vehicles to capture transdisciplinary insights and modes of conceptual operation, with minimum deformation and maximum communicability, is metaphor. Arguably the most fruitful outcome of a transdisciplinary conference would be new metaphors. Encouraging participants to articulate their insights in the form of metaphors, and to sharpen them by confronting opposing or complementary metaphors, therefore offers a significant way forward that bypasses many conventional conceptual traps (terminology, doctrine, etc). Within the alchemical metaphor, metaphor itself may perhaps be seen as the transformative principle emerging from a successful transdisciplinary process.

6. Self-organizing posture

As stressed above, there is at present little available insight as to how to "organize" a transdisciplinary conference in advance. It may however be hypothesized that it is by maintaining a self-organizing "posture" that transdisciplinary harmonics become most probable in the moment. This is consistent with insights from chaos theory.

The question remains how to sense alternative patterns of order and higher orders of consensus without disrupting whatever minimal organization is required to maintain the conference as a system.

It can be argued that there is what might be termed a "holographic paradox" associated with the presentation of particular insights on transdisciplinarity during any such event. In a sense any efforts by a participant to articulate an understanding of the whole should exert pressure on the re-organization of the conference consistent with that perception. In this sense potential re-orderings of the whole are embedded within the part.

The emphasis here is on using support roles (possibly undertaken by key participants) to enable those participants who wish to do so to respond to such alternative patterns as and when their emergence becomes probable during an event. Such alternative patterns may emerge only briefly, collapsing back as suggested by David Bohm. Participants are therefore to be encouraged to work responsibly with the dynamics of the event whilst recognizing that few will be served by completely disrupting the pre-planned organization.

7. *Quiet space*

It is useful to hypothesize some degree of isomorphism between an undefined central conceptual space (within the conceptual universe of the conference) and a similarly undefined central psychic space within individual participants. In various ways this undefined space may be understood as the source of creative intuition and insight. As suggested by Bohm, conceptual patterns may usefully be understood as emerging from this zone of undefinedness as well as collapsing back into it.

This space may be usefully honoured and given form by providing for a quiet physical space in which people can be free of the intellectual interactions so characteristic of many conferences.

C. CONCEPTUAL DESIGN CHALLENGE

In what follows the emphasis is placed on a meeting which is designed in advance. There is however also the possibility that the structure of a meeting could emerge as the result of a self-organization process, if participants could develop understanding of how to sense the emergence of a higher level of ordering during the course of a meeting. In such a process participants would progressively "discover" this higher order through the meeting process. In this sense the meeting design would be pro-

gressively complexified by participants as a result of recognition of structuring features of their interaction (tendencies to form factions, polarization, etc).

1. *Design stages*

1. Determine a suitable number of themes to be explored (not too many, not too few)
2. Allocate thematic labels to the themes
3. Clarify content of each theme and relationship between them
 - revising labels as necessary
 - increasing or decreasing number as required
 - establishing tentative affinities and clusterings
4. Sharpen thematic focus by determining whether a fundamental paradox, polarization or incommensurability (essential to any transdisciplinary emphasis) is to be
 - fundamental to each theme or
 - characteristic of the relationships between polarized pairs of themes
5. Given the number of themes chosen (and the tentatively established affinities), endeavour to map the themes onto a regular polyhedral structure with
 - themes as nodes, if the paradox lies within the nodes
 - themes as edges, if the paradox lies between the nodes
6. Revise the thematic design
 - if greater coherence is required
 - if the need to incorporate new thematic variants becomes apparent ("test" the design by envisioning the inclusion or exclusion of one or more themes)
 - ensure that the themes constitute a set of complementary functions, namely a complete set
7. Seen globally, consider whether the structure's features adequately map vital lines of communication or meaningful challenges

between the themes:

- circles around the polyhedral structure
- axes of symmetry
- presence of complementary opposing themes
- maintenance of distinctions
- « functional relationships and pathways between themes

2. Structuring features of partial incomprehension

Note that although the structure appears to be purely geometric it is effectively mapping challenges to understanding and comprehension:

- people strongly identifying with any one theme on the structure will have some difficulty in relating to any other parts of the structure
- the structure is difficult to comprehend in its entirety, although it has been elaborated in part by essentially rational design methods
- the centre of the structure is empty representing a perspective inaccessible from any part of the surface structure although all parts are visible from it
- if the number of themes is relatively low, the conceptual "discontinuity" between them (represented by the angles at the edges) is sharp; this discontinuity can be reduced by increasing the number of themes which will progressively become more closely related to their neighbouring themes
- the structure effectively "holds" the relationship between mutually challenging (possibly incommensurable) perspectives which would otherwise disassociate into isolation

Note that the parts of such a structure could possibly also be used to identify features of any global or plenary debate:

- a "point" made in any argument will tend to be associated with a particular node on the structure
- a "line" of argument will tend to follow one of the lines of the structure
- a "field" or "area" of discussion may be defined by areas on the surface of the structure

An interesting argument has been presented by those who have endeavoured to construct polyhedral structures in practice. These structures are unstable and tend to collapse unless special attention is given to the nodes. This argument suggests that the constructional problem can be seen as a useful metaphor of the problems of constructing relationships at the conceptual level, where "collapse" and loss of coherence are also a risk. One solution is to build structures based on tensional integrity, where differences are used to provide strength to an emergent structure:

- incompressible differences can be represented by solid rods or sticks, perhaps to be seen as representing mutually challenging polarities
- associative links drawing distant nodes together can be represented by flexible ropes
- the polyhedral structure then emerges in 3 dimensions from a suitable combination of the solid and the flexible 2-dimensional elements (as with tensegrity structures basic to the practical design of geodesic domes)

A polyhedral structure underlying the design of a transdisciplinary meeting can be seen as a kind of 3-dimensional *mándala* indicating the distribution and relationships between the functional energies of that meeting. Like a *mándala* it is not a "definitive" structure, rather it is "indicative" requiring continuing interpretation of the significance of its constitutive elements. What the components signify cannot be usefully subject to closure, except for temporary purposes. Also like a *mándala*, many alternative versions may be used to articulate the patterning of the energies of the whole, whether in greater or lesser detail. Such structures may be used as conceptual scaffolding onto which much may be projected experimentally during a meeting.

5. Dialogue and its transformation

A polyhedral structure may be seen as an articulation of the most probable features of the transdisciplinary dialogue within the meeting.

In this sense it is a probabilistic map of the salient features of that dialogue resulting from the initial choice of the number of themes. As a scaffolding the structure "disciplines" the dialogue. This permits the complementary freedom associated with the open-ended interpretation of the elements themselves and especially of the paradoxical or conceptually discontinuous relationships between the elements. Without the scaffolding, as so often happens, the dialogue "decays" or "collapses" into its component 2-dimensional elements. The scaffolding holds their relationship in a 3-dimensional configuration that transcends the 2-dimensionality of a multiplicity of polarized discourse between opposing perspectives that is so characteristic of conventional dialogue. It is at such a transcendent level that the characteristics of transdisciplinarity can be found.

It should not be forgotten that corresponding to any geometric perspective is the symbolic perspective. According to the number of themes initially chosen a particular set of symbolic complexes is configured. Thus four themes evokes the many 4-fold symbol sets with their continuing challenge to interpretation and comprehension, and especially in the way in which they may be integrated in a higher order insight. The same is true of eight themes and the many 8-fold symbol sets. The implied symbolic qualities may of course be ignored by those discussing within any one of the themes, but those qualities will tend to "colour" and affect the quality of that discussion. They will also affect the relationship of that theme to other themes in particular ways.

The real challenge of dialogue in a transdisciplinary meeting lies in the ability to transform the polyhedral structure itself. In a sense a single structure maps what might be called Transdisciplinarity I, whereas the transformation between such structures might be seen as based on a higher order dynamic structure that could be called Transdisciplinarity II. There might be a range of types of Transdisciplinarity I corresponding to the different regular polyhedrons. There might be only very few sets of transformation pathways linking such struc-

tures, with each set corresponding to Transdisciplinarity II.

The shift in perspective to Transdisciplinarity II is vital to capture and contain the responses of participants to the polyhedral structure initially chosen. For there will be some that find the number of themes too great and who will want to regroup them into a smaller number. Then during the discussion within a particular theme, there will be others who will want to split that theme into more themes and variants. Both these tendencies call for transformation of the initial structure. Initially at least, it is important that such transformation should be based on a sense of continuity and structural invariance, rather than simply on an alternative which raises the question of its relationship to the original rejected structure.

The transformation between different polyhedral structures is not free from constraints. Extra themes cannot be added in arbitrarily. There are issues of symmetry and balance that need to be respected if some measure of continuity and invariance is to be preserved. Then there is the question of excessive rigidity when participants in one theme want to split into sub-themes, and those in another do not. This suggests the need for "variable geometries" and the need to provide for the co-existence of pressures towards complexification and towards simplification.

Studies indicate that there are well-defined pathways permitting transformation between structures such as:

- tetrahedron, configuring 6 polarizing arguments
- octahedron, configuring 12 polarizing arguments
- cuboctahedron, configuring 24 polarizing arguments
- icosahedron, configuring 30 polarizing arguments

But if the meeting was characterized by 8 polarizing arguments, then a structure like the cube (with 8 apices) would need to be interpreted with each apex as being the nexus of such opposition, and the transformations to and

from the cube would need to be considered. Clearly in a meeting the transdisciplinary nature of the dialogue might then be best described by some form of oscillation or alternation between more or less complex structures onto which the polarizing perspectives could be mapped according to the comprehension needs of different participants. There are clearly many advantages to the use of a computer graphics display to facilitate such representation and its continuous modification.

The ability to shift between mappings of the dialogue at different levels of complexification would then offer ways of further disciplining the dialogue to distinguish what is truly transdisciplinary from the interdisciplinary dialogues necessary to sustain it.

4. Identifying the challenge

The above approach makes deliberate structural use of the features of conventional dialogue which normally destroy any possibility of transdisciplinarity. In effect it uses dyadic polarization as a structural element basic to the emergence of a higher order of consensus. From this perspective, lower order consensus, like simple harmony in music, is an obstacle to the emergence of higher orders of consensus that embody various forms of dissonance characteristic of the non-ideal interactions of real world dialogue. The emphasis is on the harmonies that it is possible to create from the apparent imperfections associated with a multiplicity of polarized dialogues.

Polarization and disagreement are thus vital symbols of conceptual diversity. But they are only valuable if they can be integrated into a transcendent structure which respects the conceptual dilemmas that they represent. Polyhedral structures provide an important point of departure in any such exploration.

On the practical matter of relating such conceptual links between meeting themes to the actual communication and feedback processes between groups discussing such

themes, a pragmatic approach is essential. Whilst it could be relatively easy to organize communication protocols in e-mail systems in the light of such variable polyhedral geometries, arranging corresponding communication between theme rooms in a conference centre is another matter. In the latter case it is useful to organize any communication or monitoring experiments in parallel with thematic discussions so that in the event of their failure (as an experimental possibility) the disruptive effect on the thematic discussions is minimal. However it is also necessary to ensure that discussion participants do not neglect the challenge of experimental breakthroughs in facilitating the emergence of transdisciplinary dialogue — otherwise the meeting as a whole will decay into a relatively uninteresting pattern of inter-disciplinary exchanges. Unfortunately this may meet the expectations of many participants habituated to this mode.

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