laetus in praesens

Alternative view of segmented documents via Kairos

13 June 2016 | Draft

Improvisation in Multivocal Poetic Discourse

Basque lauburu and bertsolaritza as catalysts of global significance

- / -

Introduction
Self-reflexive challenge of any presentation in a psychosocial context
Using the Lauburu to frame the challenges of multivocal improvisation
Challenging impoverishment of conventional discourse
Comprehensible clues to multivocal improvisation
Possible implications for 4-team ball-games-- 2-way football?
Nature of the "ball" -- in multivocal poetic improvisation
Competition and collaboration in memetic exchange
Relevance to poetizing dialogue, debate and intercourse
Challenging dynamic of multivocal poetic improvisation
Sustaining the attraction of endless pattern transformation -- to what end?
Paradoxical container for the uncontainable: prescriptive constraints on creativity
Transformation pathways in multivocal discourse
References

Prepared for the 2nd International Meeting Europa Bat-batean on World Improvised Verse Singing (Donostia/San Sebastián, July 2016) organized by the Mintzola Fundazioa -- with the Association of Friends of Bertsolaritza (Bertsozale Elkartea) and the University of the Basque Country. [Versions: PDF of this document; PPT of presentation imagery; PDF of presentation imagery (links to animations may be inoperative in these variants)].

Introduction

There are extensive references to improvisation, especially with respect to music and poetry. The focus is primarily on a single performer. Improvisation involving multiple instruments has however long been evident in jazz groups. Use of multiple voices in multipart singing is a notable feature of some folk cultures, although typically these feature traditional songs.

The concern here is with the possibility of multivocal improvisation, whether in poetry, music or song -- especially given the challenge of its creative self-organization in the absence (or redefinition) of "composer" or "conductor", or of any catalytic theme or mode (as might be provided from an audience). In practice this frames the challenge of recognition of optional patterns, amongst which improvisers may choose, or towards which they may converge -- and the communication of such patterns, rather than their imposition.

The particular interest of such possibilities is the manner in which they may prefigure new approaches to current challenges of governance in society. This relates to some references to the social and philosophical implications of improvisation in an open society -- and the significance for the individual, as succinctly

implied by the title of the classic work on improvisation by Vinko Globokar (*Individuum -- Collectivum*, 1986). It relates especially to the challenges of discourse between multiple voices in society -- typically exhibiting complex patterns of conflict and cooperation.

It is in this more general sense that the exploration here is concerned with patterns, pattern language, and the communication of patterns. In wider society this is especially challenging when both individual and group performers have a need to attract attention and recognition, and to impose patterns on others (or ensure their use of them). This is typically associated with problematic claims to exclusive ownership of those patterns framed as intellectual property, with consequent constraints on their use by others.

A particular merit of poetry, music and song for this exploration is that their aesthetic characteristics are especially important to the attraction and holding of attention. They are typically more memorable than articulations in the prose and text forms favoured in the multivocal discourse through which society is governed. These points have been argued separately (*Poetry-making and Policy-making: Arranging a Marriage between Beauty and the Beast*, 1993; *A Singable Earth Charter, EU Constitution or Global Ethic?* 2006). Especially important is the manner whereby the aesthetic characteristics render memorable the vital systemic associations which are otherwise readily forgotten -- potentially those which are a key to sustainability (whatever that may be understood to mean aesthetically).

The possibility merits exploration with respect to reframing current challenges of institutional reform (*Reframing the EU Reform Process -- through Song responding to the Irish challenge to the Lisbon Treaty*, 2008). However, of potentially greater significance is the relevance to the tragic challenges of current conflict (*Poetic Engagement with Afghanistan, Caucasus and Iran an unexplored strategic opportunity?* 2009; *Strategic Jousting through Poetic Wrestling: aesthetic reframing of the clash of civilizations*, 2009; *Strategic Dialogue through Poetic Improvisation: web resources and bibliography*, 2009).

It is in this sense that the verse singing skills cultivated by the Basque people through the bertsolaritza merit great appreciation and attention, as noted by Joxerra Garzia, Jon Sarasua and Andoni Ergaña (*The Art of Bertsolaritza: improvised basque verse singing*, 2001). By contrast, especially relevant is their recognition of the "dead-end analysis of oral art in terms of written poetics" in its deprecation of such improvisation. Such misunderstanding is effectively symptomatic of the aridity and impotence of many conventional methodologies in practice, however insightful they may be claimed to be. The plethora of commentary with respect to global crisis can be succinctly deprecated in terms of the famous statement by Jack Nicholson:

> *Look, you, I'm very intelligent. If you're gonna give me hope, you gotta do better than you're doing. I mean, if you can't be at least mildly interesting, then shut the hell up. I mean,* ***I'm drowning here, and you're describing the water!*** (*As Good As It Gets*, 1997).

The exploration here is a development of that previously articulated (*Multivocal Poetic Discourse Emphasizing Improvisation*, 2012). Suitably adapted with respect to the aspirations to multivocal improvisation, is there learning in the title of the book by James Hillman and Michael Ventura (*We've Had a Hundred Years of Psychotherapy -- And the World's Getting Worse*, 1992)? Or perhaps as indicated by the conclusion of Nicholas Rescher:

> For centuries, most philosophers who have reflected on the matter have been intimidated by the strife of systems. But the time has come to put this behind us -- not the strife, that is, which is ineliminable, but the felt need to somehow end it rather than simply accept it and take it in stride. (*The Strife of Systems: an essay on the grounds and implications of philosophical diversity*, 1985).

Where has all the poetry gone -- as might be implied by the widely known modern folk-song *Where Have All the Flowers Gone?* (in the *ubi sunt* tradition). Why is "flowery language" deprecated in preface to the focus on "bullet points" -- with all their unfortunate connotations (*Enhancing Sustainable Development Strategies through Avoidance of Military Metaphors*, 1998).

Self-reflexive challenge of any presentation in a psychosocial context

Multiplicity of improvisation studies: The presentation here of this argument in text form exemplifies the particular constraints which are usefully reframed by other modes to some degree. Hence the focus here on the memorability of diagrams and animations as catalysts for creativity in the succinct communication of imaginative patterns and their dynamics. It is these which offer a cognitive bridge to modes through which the patterns can be variously embodied. The text is therefore best recognized as commentary on those visualizations -- which may, or may not, be helpful. ***Once more into the breach?***

As listed separately, the many available references to improvisation variously lay claim to encompassing the challenges it represents (*Strategic Dialogue through Poetic Improvisation: web resources and bibliography*, 2009). This presentation could be readily understood as no exception. What more needs to be said and why? Can anything be said which is not a presumptuous re-presentation of what has already been said -- imitation and rehearsal rather than creativity and improvisation? It is highly ironic that the "hearse" of "rehearsal" recalls the vehicle in which a coffin is carried to the cemetery via a solemn commemorative ceremony -- in anticipation of a reincarnation. We have been here before!

Engaging with paradox and contradiction: The multiplicity of studies on improvisation suggests the need to engage otherwise with contradictions, with paradox as being more appropriate to clarifying the challenge, especially if the tendency is to rely on text, as is naturally the case with conventional articulation intended for publication in academic and other journals. Partly as a consequence of their constraints, it is striking how few graphic and diagrammatic presentations are used to render comprehensible the nature of the challenge -- especially given the advantages of animations and other "special effects". Clearly the interest they engender and sustain -- increasingly in virtual reality -- is worthy of the most careful attention (*Investing Attention Essential to Viable Growth: radical self-reflexive reappropriation of financial skills and insights*, 2014).

Metaphor: In a real sense the process of clarification is its own metaphor, as articulated by Gregory Bateson, in explaining why "we are our own metaphor" to a conference on the effects of conscious purpose on human adaptation:

> One reason why poetry is important for finding out about the world is because in poetry a set of relationships get mapped onto a level of diversity in us that we don't ordinarily have access to. We bring it out in poetry. We can give to each other in poetry the access to a set of relationships in the other person and in the world that we're not usually conscious of in ourselves. So we need poetry as knowledge about the world and about ourselves, because of this mapping from complexity to complexity. (Mary Catherine Bateson, *Our Own Metaphor*, 1972, pp. 288-289)

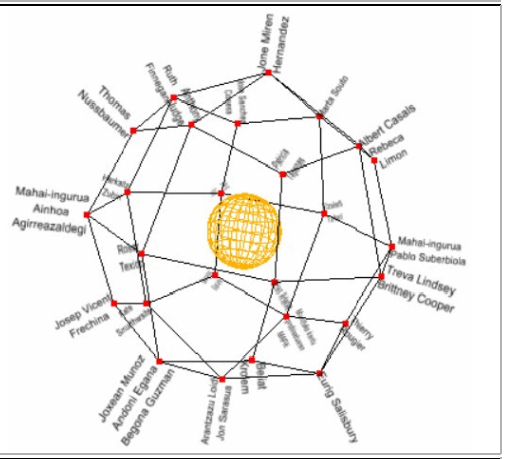
Bateson is thus pointing to the advantages of poetry in providing access to a level of complexity in people of which they are not normally aware. The irony of the ongoing tragic conflicts is the implication that their challenges reflect a form of cognitive "incarceration" within overly simplistic frames which offer little possibility of fruitful release.

Self-reflexivity: Especially in this problematic period, there is a need to reflect on engagement in any psychosocial process, including a gathering such as the one in which this presentation is made.

The relevance of self-reflexivity is indicated by the remarkable studies of Douglas Hofstadter and Emmanuel Sander (*Surfaces and Essences: analogy as the fuel and fire of thinking*, 2013), as a further development of Hofstadter's earlier work (*Gödel, Escher, Bach: an Eternal Golden Braid: a metaphorical fugue on minds and machines in the spirit of Lewis Carroll*, 1979; *I Am a Strange Loop*, 2007; *Fluid Concepts and Creative Analogies*, 1995).

As an illustration, this gathering, as with conferences generally, can itself be creatively reframed as a context for multivocal poetic improvisation -- rather than framed as a grid structure characteristic of the spreadsheets and matrices through social processes are currently governed so problematically. As a provocative exercise the names associated with the 26 slots on the conference programme are therefore represented in the following images and animations whether the 26 faces of the rhombicuboctahedron, or onto the 26 vertices of its dual, the deltoidal icositetrahedron (variously transformed to suggest conference

dynamics).

Representation of conference programme names on polyhedra	
Indivisible mapping (edges hidden) [animation]	Screen shot animation of multiple mappings [animation on deltoidal icositetrahedron alone]
	
Prepared with features of the *Stella Polyhedron Navigator* software package	

The approach derives from a preoccupation with the unexplored relevance of such mappings -- and their transformation to enable integrative discourse (*Embodying Global Hegemony through a Sustaining Pattern of Discourse: cognitive challenge of dominion over all one surveys*, 2015). The approach was applied experimentally to the programme of the conference of the International Peace Research Association (Leuven, 2008) -- *Building Sustainable Futures: Enacting Peace and Development* -- enhanced by photographs of the contributors and by the thematic content (*Polyhedral Conference Representation as a Catalyst for Innovation*, 2008).

Should the conference and its processes be recognized as collectively engendering a poem (*Being a Poem in the Making: engendering a multiverse through musing*, 2012)? More challenging is the fruitful sense in which the poem might be existentially dangerous (*World Futures Conference as Catastrophic Question: from performance to morphogenesis and transformation*, 2013).

Conference context: In a spirit of self-reflexivity it is then appropriate to question assumptions that may be associated with a conference context as a metaphor in its own right -- especially when the focus is on creativity and its appreciation. There is a strange irony to the assumption that the configuration of participants and speakers in a venue inspired by theatre architecture cannot be imagined otherwise -- or be recognized as the reflection of a very traditional modality, as argued separately (*The-O Ring and The Bull Ring as Spectacular Archetypes: dramatic correlation of theatre, theory, theorem, theology, and theosophy*, 2014).

With respect to future possibilities, given the many opportunities increasingly offered by technology, it is possible to imagine multivocal poetic improvisation as engendering its immediate conversion into visual form -- whether on a common screen or via the web. Meaningfully resonant associations -- poetic or otherwise -- could be represented as a network of insights, variously colour coded, to give an integrative sense of what is being engendered (*Enabling a Living Library: reconciling "free voices" and "intellectual propriety"*, 2006; *Complementary Knowledge Analysis / Mapping Process*, 2006). Participants, wherever they are located, could interactively enhance the display through acknowledgement of such associations in real time.

Could a network map of resonant associations be imaginatively recognized as a form of harp -- whether to be variously "plucked" or played by the "wind" of collective discourse (*Polarities as Pluckable Tensed Strings: hypercomprehension through harmonics of value-based choice-making*, 2006).

Lauburu as a fundamental quaternary pattern: The occasion of the presentation of this paper, in a country whose culture attaches particular importance to improvisation, justifies use of the central symbol of

that culture -- the Lauburu -- as a means of distinguishing and holding the concerns of the argument. Appropriately the neighbouring countries cultivate special insights into the transformation which multivocal improvisation might enable, namely *duende* and *saudade*.

Together with the Japanese sensitivity to *mono no aware*, the essential vulnerability of those insights, as with current threats to both bird song and flowers, suggests an aesthetic reframing of current opportunity, as separately discussed (*Flowering of Civilization -- Deflowering of Culture: flow as a necessarily complex experiential dynamic*, 2014; *Anticipating When Blackbirds Sing Chinese*, 2014).

The value of the Lauburu was explored in previous exercise of current relevance (*Playful Exploration of Ecopsychological Embodiment of Climate Change Pathways*, 2005; *Re-Emergence of the Language of the Birds through Twitter? Harmonising the configuration of pattern-breaking interjections and expletives*, 2010).

It is however curious to note that there seems to be no reference to the interplay between the Lauburu and the patterns which inspire *bertsolaritza* and the *bertsolari* duels.

Clues in the attraction of the familiar: Rather than focusing on new commentary and "explanation", **the argument here focuses far more on those familiar situations and processes already evoking widespread cognitive engagement**. The question addressed is which of these offer unexplored clues to multivocal improvisation -- through "re-cognizing" their implied patterns as metaphors with aesthetic implications?

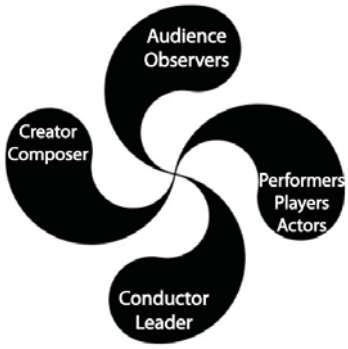
The argument is therefore primarily focused on identification of patterns which can catalyze imaginative approaches to improvisation of a multivocal poetic nature -- especially in the light of their potential significance for new insight into governance. The early work of Vinko Globokar appears especially valuable in that regard.

Are the "flowers" and "birds" now to be discovered as "hiding" otherwise, within other modalities? **The issue is less the nature of multivocal improvisation, rather it is why insights into its nature do not "translate" meaningfully into forms of governance of relevance to the tragedy of the times**.

The presumption of any conventional presentation on multivocal improvisation might then be usefully challenged in terms of the title of the insightful study by Pablo Triana (*Lecturing Birds on Flying*, 2009).

Using the Lauburu to frame the challenges of multivocal improvisation

A particularly problematic feature of the challenge is any effort to frame it in binary terms. It is for this reason that the form of the Lauburu is used as a kind of generative metaphor to transform the binary frame into quaternary and higher order terms. A quaternary system is typical of many psychological systems offering a degree of both variety and stability (Jungian types, the four ways of Matthew Fox: *positiva*, *negativa*, *creativa* and *transformativa*).



The dynamics and roles in this fourfold pattern are central to the dilemmas of improvisation given the conventional understanding that the performers should interpret the creative insights of the composer under the guidance of a conductor -- for the appreciation of the audience.

The pattern is clearly characteristic of many understandings of the governance of society at this time.

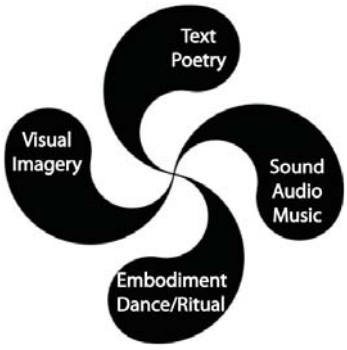
This understanding is variously challenged. In relation to improvisation, it is fruitfully challenged by Bruce Ellis Benson (*The Improvisation of Musical Dialogue: a phenomenology of music*, 2003). He asks:

-- what takes place when a composer creates a piece of music?
-- to what extent is a performer part of the creative process?
-- does the distinction between "creation" and "reproduction" reflect the reality of practice?

And how active is the audience in this process?

***

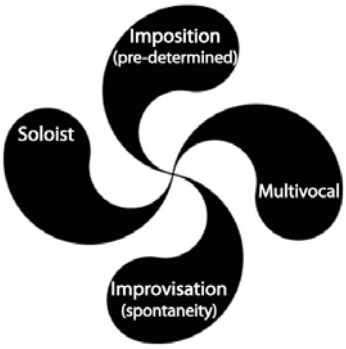
The challenges can be represented otherwise in the light of the various biases towards text, imagery, sound, or embodiment in movement. Clearly the predominant mode in governance is text, equally characteristic of academic presentations and publications. Articulation in poetic form is readily considered questionable -- except in some contexts, or in reframing textual preoccupations succinctly to communicate the most fundamental insights.



Use of visual imagery and sound is problematic in governance and representation of its insights and directives. These modes are much favoured by the "governed" -- the citizens of society. Movies, videos and the web make extensive use of "special effects".

Of special interest, however, are the cognitive implications of embodiment in movement, as notably articulated by The role of aesthetics in understanding is central to the argument of Mark Johnson (*The Meaning of the Body: aesthetics of human understanding*, 2007). However, cognitively, the emphasis is placed on an understanding "through" the body and its dynamics by both Johnson and by Maxine Sheets-Johnstone (*The Primacy of Movement*, 1999; *Movement and Mirror Neurons: a challenging and choice conversation*, *Phenomenology and the Cognitive Sciences*, 2012).

***



Prescription, through its imposition of a pattern, is the dominant paradigm -- characteristic of much discourse in governance, where texts are read by figures of authority. It is of course the predominant mode in the performance of music previously composed, whether for a solo or a multipart choral performance.

Improvisation in the moment is recognized as a particular speaking skill, although the form and content may be otherwise appreciated.

Clearly a solo performer can more readily shift between reference to any pre-defined script (however articulated) and improvisation. Multivocal articulation depends to a much higher degree on prescription -- although this may be far from the case in a duo in which each engages with the other (as in the skill of the bertolaria ***). A group may however offer themselves a degree of order, a method obviating the need for any detailed script. This is a primary characteristic of improvisation by a jazz group. It is also evident in team negotiation where each has recognized roles in developing the

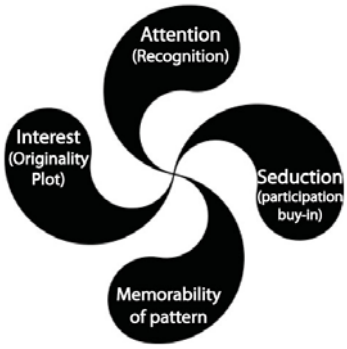
presentation.

More challenging and intriguing is the possibility of multivocal improvisation in the absence of any guidelines.

***

Irrespective of the form, there is the challenge of the meaning of the content in engaging those involved.

A primary focus may be on attracting attention and gaining recognition in consequence. This depends in part on the creative originality and the interest it evokes. This may however only be momentary. It is strongly related to that of eliciting participation on the part of others -- whether other performers or any audience. In marketing terms this engagement is expressed as "buy-in".



The longer term challenge is achieving memorability of a pattern, possibly a melody or a theme. How is any interesting articulation to be expressed sufficiently succinctly to be memorable.

These issues are equally evident in the extremes of conference speaking, religious homilies and in competitive mega-events like Eurovision.

***

Rather than theorize and speculate about what renders engagement attractive and memorable -- whether pre-scripted or improvised -- a far more fruitful approach is to recognize the clues offered by familiar modalities which are a focus of much attention.

Especially obvious is game-playing, most notably ball-games. Here the focus of attention is on movement and control of the ball between team members -- whether or not this results in scoring a goal. In practice this is exemplified by skills with respect to a set of passing patterns -- the focus of research and analysis in games like football and basketball (Marcus DiBernardo, *Professional Soccer Passing Patterns* and *Cognitive Soccer Passing Patterns*, YouTube, 2014; Don Herlan, *Passing Patterns*). These figure otherwise, and more evidently, in "passing" amongst a group of jugglers (illustrated in animations by *Wikipedia*).

In principle dialogue embodies complex sets of passing patterns, of which people are typically unconscious -- as detected in transactional analysis (Eric Berne, *Games People Play*, 1964). Here the point of a discussion may be understood as the "ball" variously passed between those partcipating.

Both game-playing and discourse may be understood more generally as involving patterns of "intercourse". The most familiar of these is of course sex which is potentially characterized by a wide set of patterns, of which creative use may be spontaneously made (or not). Articulations of such a set are offered in illustrated "sex manuals"

such (Alex Comfort, *The Joy of Sex*, 2008) or in classical texts like the *Kama Sutra*.

Whatever the form of game-playing or intercourse, much meaning and interest is derived from the interplay between competition and cooperation.

***

Clarification as to how participants, using different instruments, might improvise together within a group is offered in a key text by Vinko Globokar (*Reacting: role of a performer*, 1970).

Imitation: After a variable lapse of time, a performer reproduces exactly what is heard. This being the most direct and instinctive mode. Clearly, the spontaneity as well as the quality of the response will depend on the contents and character of the pattern, on the degree of its complexity and on the degree of its perceived difficulty.

Integration: Rather than imitation, it is possible for the performer to integrate into material serving as a pattern, to follow it, to embody it, to move in the direction it suggests. The performer can always find a possibility of doing so one way or the other, and so the degree of complexity of information does not play a decisive role.

Hesitation: This is the mode tending most to create distance and disengagement. Starting from being "tied" to a particular pattern, the performer reaches a mode of actively creating pauses -- extremely alive and tense. Parts of the pattern are taken and positioned in time, transformed subjectively. This may produce an inner tension in the performer which complete prescription would probably have been incapable of provoking. Idleness in music, which otherwise makes for a dead situation, then becomes extremely "constructive".

Countering: Contrary to the above, doing the opposite from might be expected by any pattern, the performer rapidly analyzes the situation to determine an alternative. Ultimately, he does not "choose" but reacts. A pattern characterized by maximum loudness, static, in a deep register, will be "opposed" according to the individuals in one, two or even all three parameters at the same time

***

Implied by the modes above is some qualitative finality.

Most obviously, however subtle the experience, this may be recognized as enjoyment, perhaps understood as recreation. Both lend themselves to re-cognition of "re-creation" and "en-joyment" (*En-joying the World through En-joying Oneself: eliciting the potential of globalization through cognitive radicalization*, 2011).

A particular pleasure may be sought in the processes of possession and exclusive ownership as this relates to intellectual or cultural property. This may be understood as a celebration of heritage or a

concern with legacy and making one's mark.

A profound sense of absence may be a feature of finality -- of what has been lost, or is missing -- as framed in nostalgia and the pathos of things, namely by *saudade* or *mono no aware*. Conceptually any such sense of the missing is now recognized as vital to transformation, as argued by neuroanthropologist Terrence Deacon (*Incomplete Nature: how mind emerged from matter*, 2011; *Symbolic Species*, 1997).

The sense of participative transformation potentially association with multivocal poetic improvisation may proves to be especially associated with the subtly elusive experience of *duende*, as may be variously discussed (*Daimon, Djinn, Muse and Duende: variations on a timeless experience*, 2007; *Dreamables, Deniables, Deliverables and Duende*, 2015).

Challenging impoverishment of conventional discourse

In the light of the above argument, it is useful to review the various contexts in which multivocal improvisation might be expected to have aesthetic characteristics, notably those to be qualified as poetic:

Panel sessions publicized by the broadcast media: The most evident explore to dialogue is that of panel and chat sessions on the broadcast media. Little is expected of their aesthetic quality in the quest quantitative ratings. Of interest is why such sessions do not exhibit, or aspire to exhibit, any resonance between their panelists and themes which could be interpreted as poetic in any way. The focus is on how points are competitively raised and scored by one panelist against another -- who, as a "loser", may not be invited onto future panel.

How might this increasingly arid process be fruitfully challenged? Why do such widely watched multivocal exchanges not seek to function as exemplary models of the most attractive possibilities of discourse? What patterns of discourse do their organizers see as most attractive, and why?

Conference panel sessions: Is it appropriate to recognize that the panels organized in many conferences echo the deficiencies of chat shows -- although employing more sophisticated discussants on more abstruse themes? What forces might encourage participants to function in other ways whose aesthetic characteristics could serve as a model? Why are such panels distinguished less by their aesthetic quality and more by forms of point-scoring readily to be compared with competitive game-playing indicated as indicated above?

Such panels can however be understood as modern echoes of the archetypal symposia of ancient Greece. Unfortunately the latter do not serve as an inspiration, as remarked by Owen Barfield (*Poetic Diction: a study in meaning*, 1928; *Worlds Apart: a dialogue of the 1960s*, 1963).

Round tables and dialogues: Offering greater potential are the carefully organized round tables and dialogue sessions -- occasionally acclaimed as "councils of the wise". Whilst much is expected of them in advance, it cannot be said that reports of their dynamics indicate a level of aesthetic integration which offers a model meriting replication. Little is said of the quality of dialogue in such contexts with the aim of enhancing it on subsequent occasions. The remarkable efforts of Arthur Koestler in organizing the series of Alpbach Symposia led him to question the learning experience in a provocatively titled novel (*The Call Girls*, 1973).

Unfortunately round tables of the wise tend to be characterized by promotional puffery in advance, and face-saving puffery after the event. There is little effort to distinguish the parameters which offer scope for their enhancement. With respect to the merits of aesthetic subtlety for insightful governance, the speculative account by Robert Graves merits attention (*Seven Days in New Crete*, 1949).

Setting such criticism aside, it is nevertheless the case that the possible dynamics of round tables, given their archetypal associations, merits continuing exploration (*Implication of the 12 Knights in any Strategic Round Table*, 2014).

Renowned dialogues: It is appropriate to note the appreciation associated with particular dialogues between two or three individuals, suggesting that their quality should be considered exemplary, however their aesthetic nature is to be recognized:

- Kenneth N. Cissna and Rob Anderson. *Buber, Rogers, and the Potential for Public Dialogue* (2012)
- J. Krishnamurti and David Bohm: *The Future of Humanity: a dialog between Krishnamurti and Bohm* (1990)
- Bohr-Einstein debates: Don Howard, *Revisiting the Einstein-Bohr Dialogue*, (*Science 2.0*, 2009)
- Jung-Pauli dialogue: S. Gieser, *Depth Psychology and Quantum Physics: Wolfgang Pauli's dialogue with C.G. Jung* (2005)

It is unclear to what extent such dialogues inspire replication or are subject to appreciative critiques leading to the improvement of their methodology.

Trialogues, tetralogues, pentalogues, etc.? Examples may however include thought experiments:

- Ralph Abraham, Terence McKenna and Ruper Sheldrake: *Trialogues at the Edge of the West: chaos, creativity, and the resacralization of the world* (1992)
- Daniel Fidel Ferrer: *Trialogue between Heidegger, Nietzsche, and Nagarjuna in Todtnauberg* (2011)
- Leonard Swidler, Khalid Duran and Reuven Firestone: *Trialogue: Jews, Christians, and Muslims in Dialogue* (2007)
- Timothy Williamson: *Tetralogue: I'm Right, You're Wrong* (2015)
- Petr Nawka and Charlene M. Reiss: *Integrating people who are stigmatized: the tetralogue model* (*World Psychiatry*, 2002)
- *Examples of Tetralogue Poetry*
- Andrew M. Colman, Susan Blackmore, Robert L. Morris, Richard Wiseman, and Christopher C. French: *Is the spirit willing? A pentalogue on parapsychology* (*The Psychologist*, Ausut 1996)
- *Best Pentalogue Poems*
- *Kostis Palamas and His Dodecalogue of the Gypsy* (1955)
- Ioannis Raptis: *A Dodecalogue of Basic Didactics from Applications of Abstract Differential Geometry to Quantum Gravity* (*International Journal of Theoretical Physics*, 2007)

Musical compositions with three, four, five, or more, instruments may be presented as trialogues, tetralogues, etc. With increasing numbers, there is however a shift from an implied "intercourse" to the use of such terms to frame declarations, injunctions, directives, or guiding principles, as with the Decalogue (otherwise known as the Ten Commandments), or any dodecalogue of fundamental principles. In the context of the European Commission, use has notably been made of Heptalogue and Decalogue to refer to Council/Commission arrangements. Such terminology seems not to be employed to distinguish the discourse at the Last Supper, with respect to any archetypal round table, or that of a jury.

Methods of dialogue: Is dialogue amongst poets renowned as an exemplar of poetic discourse -- if not, why not? Some particular methods include:

- ***Bohm Dialogue***: A freely-flowing group conversation in which participants attempt to reach a common understanding, experiencing everyone's point of view fully, equally and nonjudgementally (David Bohm, *On Dialogue*. 2004)
- ***Structured Dialogic Design (SDD)***: The dialogue and decision-making methodology used by the Institute for 21st Century Agoras and others in their 'co-laboratories of democracy.' Laboratories of Dialogue -- Co-Laboratories -- enable people to listen to each other on issues of common concern, going beyond what they think is important, to find the deep drivers that dynamically influence their situation. Armed with the knowledge of what is really driving their situation, they devise action plans with enthusiasm and commit to working together in carrying them out. The process, notably based on the work of Alexander Christakis, has been summarised by Kenneth Bausch (*With Reason and*

Vision: structural dialogic design, 2015).

- ***Structured Dialogue***: A means of mutual communication between young people and decision-makers in order to implement the priorities of European youth policy cooperation and to make young people's voice heard in the European policy-shaping process. It is a consultative process, implemented by the European Commission, that aims to increase cooperation with civil society and get firsthand input from young people.
- ***Syntegration***: This is the trademarked name of the proprietary methodology that delivers the syntegrity protocol in the context of complex organizational challenges. The methodology enables a large group of people to be networked together to achieve major insights, alignment and breakthroughs in condensed time frames (Martin Pfiffner, *From Workshop to Syntegration: the genetic code of effective communication*, 2004).
- ***Art of Dialogue***: Insights into the nature and practice of dialogue, in the light of the approaches of others, have been articulated by Anthony Blake (*The Supreme Art of Dialogue: structures of meaning*, 2008). This is understood as making meaning together -- a complex work of mutual adjustment and creativity. Distinctions are made between monalogue, dyalogue, trialogue, tetralogue, pentalogue, as part of a sequence of N-logues. Although no reference is made to the poetics of dialogue, multiple references are made to music.

Whilst there is relatively little comparison of methods of dialogue in general, of particular interest is the database on methods of facilitation maintained by the International Association of Facilitators. In a self-reflexive spirit, how is it that proponents of particular modes of dialogue tend to frame themselves in competitive opposition to other modes of dialogue -- with little interest in articulating an "ecology of modes of discourse" and communication?

Why is there so little suggestion that dialogue should be poetic, multivocal and open to improvisation -- especially following the speculative account by Robert Graves of relevance to issues of governance?

Social salons, parties and receptions: The tradition of salons, organized with a judiciously selected group of potentially complementary participants, merits careful attention in terms of the quality of improvised multivocal discourse they may engender. Special attention has been given to more open salons by *The Utne Reade*r:

- Jaida N'ha and Jon Spade: *Salons: The Joy of Conversation* (2001)
- *The Salon-Keeper's Companion*
- Leif Utne: *Shall We Salon . . . Again?* (2002)
- Stephanie Mills: *Salons: How to Revive the Endangered Art of Conversation and Start a Revolution in Your Living Room* (1991)
- Utne Reader Neighborhood Salon Association

Puffery aside, a notable qualifier for salons of special significance (as with round tables)is their "magical" quality -- presumably suggesting qualities lending themselves to poetic descriptions (*Magic, Miracles and Image-building*, 1993). As noted in the latter,

> Poetry of course has a long association with "magic". The best poetry is "magical" in its effects. Kenneth Slessor states: *"Poetry is the result not of reason, not of intellect. It is the flow of magic."* But what of the discipline of magic whose deep influence on the poet Yeats has been so frequently studied? Science and medicine have finally had to admit that there was some merit in traditional techniques and remedies (acupuncture, herbs, etc). Is it possible that there are truths buried in the clutter and superstition surrounding magic? Is it possible that these truths might provide clues to the interface between the "effects" of poetry and the "effects" of policy- making? From a cognitive perspective, of greatest significance is the declared purpose of magic to manipulate images and understanding. This is clearly a concern of poetry. But in doing so magic also aims to "effect" some kind of transformation.

Social media: Clearly new possibilities and understandings of dialogue have been engendered by social media in their various forms (*Re-Emergence of the Language of the Birds through Twitter?* 2010; *Dynamically Gated Conceptual Communities: emergent patterns of isolation within knowledge society*,

2004).

Dinners, formal and otherwise: The intense focus on the culinary arts on TV, and the evaluation of restaurants in those terms, highlights the virtually total lack of focus on the quality of discourse around a table at which such food preparations are consumed. It is however the case that restaurants may be qualified as "soulless", just as private dinners may be experienced as alienating. This suggests an unexplored approach to discourse (*Dreamables, Deniables, Deliverables and Duende Global dynamics "at the table" inspired by dining and wining in practice*, 2015)

Legislative assemblies: Given the increasingly questionable decision-making capacity of legislative assemblies, it can be usefully asked whether their configuration and venues are "fir for purpose", as separately discussed (*Unquestioned Bias in Governance from Direction of Reading? Political implications of reading from left-to-right, right-to-left, or top-down*, 2016).

Comprehensible clues to multivocal improvisation

As indicated above, rather than focusing on any theoretical insight into multivocal improvisation, the concern here is to identify various familiar domains in which there is already recognition of what it may imply. The challenge is then how to "re-cognize" the familiar in terms of its aesthetic dimensions. Ironically there is a delightful contrast to Molière's *Bourgeois gentilhomme*, who discovered that:

> *Par ma foi ! il y a plus de quarante ans que je dis de la prose sans que j'en susse rien, et je vous suis le plus obligé du monde de m'avoir appris cela.*

... namely his capacity to ***faire de la prose sans le savoir*** (see various adaptations, applications and translations into English of that much-cited phrase). There is however the strange possibility that many are in fact ***making poetry without being aware of it*** -- whether individually or in challenging collaboration with others.

From a musical perspective this implies a cognitive process of "musicalizing" familiar patterns -- hearing the music they imply. From a dance perspective this can be framed by their choreography -- recognizing the dance they represent.

From a poetic perspective, this involves recognition of the poetry inherent in those patterns, as notably argued in an unfinished study by Martin Heidegger (*Introduction to Philosophy -- Thinking and Poetizing*, 2011, variously reviewed (Frank Scalambrino, *Philosophy in Review*, 33, 2013, 4; Katherine Withy, *Philosophical Reviews*, 2011). The latter notes Heidegger's efforts to reconcile:

> Our guides in this course are Nietzsche, the poetizing thinker of homelessness, and Hölderlin, the thoughtful poet of homecoming. An encounter with Nietzsche's poetizing thinking and with Hölderlin's thinking poetizing will guide us towards a dwelling in our essence....Heidegger privileges Nietzsche and Hölderlin in this text for several reasons. First, in each (yet in different ways), "poetizing and thinking are interwoven with one another in a single and wondrous way" (p. 13). Second, according to Heidegger, such interweaving has been seen before only at the beginning of the Western philosophical tradition -- in Plato and Parmenides, Pindar and Sophocles (pp. 6, 14). That we see it again now in Nietzsche and Hölderlin shows that this tradition has been completed. Thus a world-historical and philosophical necessity governs the interweaving of philosophy and poetry in these two figures.

A trace of an understanding of poetizing is cultivated through the term autopoiesis -- clearly derived from poiesis -- recognized by science as the self-maintaining capacity of a living system. This implies the possibility that sustainability, as the "holy grail" of current governance, might be best comprehended through poetry in some way -- through aesthetics (*In Quest of Sustainability as Holy Grail of Global Governance*, 2011).

The merit of an alternative approach is that, notably in the case of poiesis, these are characteristic of the

explanatory abstractions of academic discourse curiously divorced from the experiential dimension and the challenges of society.

Passing patterns in ball games and frisbee: As noted above, an understanding of such patterns is the focus of intensive study in sports such as basketball and football (in its various forms) -- possibly termed football plays. Arguably much of the worldwide fascination with such games lies in a degree of cognitive resonance with the patterns observed -- and possibly emulated. Given frequent allusion to the "spirit of the game", presumably this is elusively carried by such patterns.

The question is then how such patterns may echo the possibilities of multivocal improvisation in poetic terms. How is "poetry" recognized in the game -- if not "music" or "dance"? Conversely, how are the patterns suggestive of creative improvisation in poetry? How can they be understood as systems of notation?

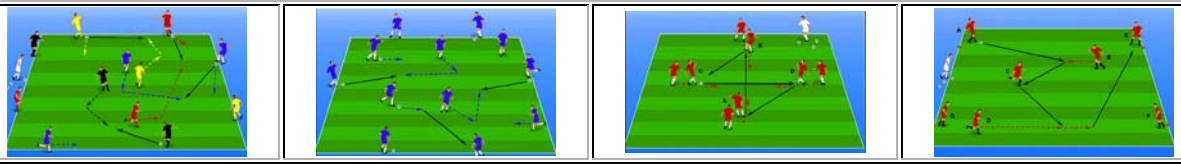
It would be presumptuous to seek to answer such questions in this context. The argument is that they merit attention and a call to re-read the patterns embodied in such games. Is the patterned movement of the ball suggestive of patterns of associations which might otherwise be embodied in poetry?

It is appropriate to indicate the set of resources of Marcus DiBernardo:

- *Cognitive Soccer Passing Pattern: developing players' problem solving skills, and soccer IQ*, Amazon Digital Services, 2014;
- T*iki Taka Passing Patterns and Exercises: improving players' passing speed and first touch*, 2014;
- T*he Science of Rondo: progressions,variations and transitions*, 2014;
- *Professional Soccer Passing Patterns: passing patterns that develop technical ability, increase coordination of player movements, establish timing and rhythm, increase passing accuracy and player focus*, 214).

As the subtitles indicate these are variously designed to improve collective team movement and rhythm and improve passing technique. Equivalent resources exist for rugby and basketball.

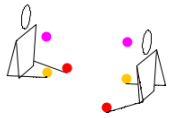
Snapshots of Soccer Passing Patterns



Reproduced from a presentation by Don Herlan (*Passing Patterns*, Smedley's Soccer site)
Diagrams created using *Tactics Manager* (Soccer Tutor.com)

Passing patterns in juggling: In this case, one *Wikipedia* entry helpfully clarifies (with animations) the wide variety of recognized one-person juggling patterns (including cascade, shower, fountain, columns, box, Mills mess, Burke's barrage, Rubenstein's revenge). A separate entry on passing clarifies the nature of juggling between two or more people, most commonly recognized as toss juggling, how "balls" may be passed between two players -- suggesting how significance ("memes"?) might be transferred in two-person intercourse.

Classic passing pattern 4-beat juggling passing with 2 jugglers and 6 balls.	**Selection of patterns**		
	Jugglers	Static	Dynamic

	3	6	9
	4	17	22
	5	7	11
	6	11	16
	7	7	3
	more	5	6
Animation made using Juggling Lab software (released under GNU licence), GFDL [reference]	*Patterns for 3 jugglers and more*		

Passing patterns between more people, with more "balls", are then highly suggestive of possibilities of multivocal poetic improvisation. In this respect a valuable resource is the extensive checklist of *Patterns for 3 jugglers and more* (including videos) in the Passing Database. Patterns are clustered in terms of number of participants from 3 to 7 (or more). The site also includes simulators in contrast to animations.

As offering a template for exploration of multivocal improvisation for the aesthetic exchange of memes, the website for the Juggling Lab software offers a wide range of resources which invite reframing in that sense:

- Animates all solo and passing siteswap patterns, including synchronous and multiplexed patterns, and patterns involving movement of the juggler bodies
- Support for bounced throws, including multiple bounces and hyperlift/hyperforce throws
- Can display stereo image pairs to provide depth perception
- XML-based pattern description language JML (Juggling Markup Language), permits fine-grained control of ball, hand, and body movements
- Graphical pattern editor
- Realistic hand model, with cubic spline hand paths that match the velocities of balls at throwing points
- Ability to save animated GIFs
- Integrated siteswap pattern generator

Of particular interest is the possibility of **switching between juggling patterns** ("on the fly") -- as being suggestive of how multivocal improvisation may shift between modes. From the patterns offered by juggling **it is however less evident whether the increase in the number of jugglers necessarily requires a higher degree of coordination -- thereby reducing the degree of improvisation**. Perhaps coordination and improvisation can be more skillfully combined.

In relation to the aesthetic dimension, it is appropriate to note the recognized association of juggling with meditation (*Juggling and Meditation*, *Literacy Portal*; Todd Strong, *Juggling and Flow*; Jessica Hamzelou, *Learning to juggle grows brain networks for good*, *New Scientist*, 11 October 2009). As may be the case with poetic improvisation, there is ongoing discussion as to whether meditation may enabling juggling skills (*Can meditation help you to learn to juggle?* *Wild Juggling*, 10 June 2013).

Card games, point to a range of possibilities of interaction between collaborating and competing parties in

which "improvisation" is integrated into game strategy. There are web sites under the theme "poker poetry". Dave Morice (*Poetry Poker: Misfit Improvisations on Language*, *Teachers and Writers*, 1992,) describes a strategy that allows a student to write a poem by playing cards.

The playing card metaphor has been explored separately in a way which is of some relevance to this argument (*Radical Localization in a Global Systemic Context: Distinguishing normality using playing card suits as a pattern language*, 2015).

Dance patterns: The possibilities of multivocal poetic improvisation could be readily informed by the variety of dances -- and of patterns employed in a given style of dance. These patterns may of course range from those which are highly formalized to those which involve a high degree of improvisation. The patterns may be variously "interpreted" by the dancers. In the case of a couple, the creativity may be exhibited by either (as "composer" of the movement), as with leadership (as "conductor" of the moment).

Dance is readily used as a metaphor for some forms of dialogue, as being descriptive of the process around a negotiating table -- and the invitation to "lets dance together" (Lisa Gilman, *The Dance of Politics*, 2009; David B. Magleby, *Dancing Without Partners: how candidates, parties, and interest groups interact in the presidential campaign*, 2007; Gary MacDougall, *The Political Dance of Necessity*, *The Guardian*, 18 April 2015).

Dance offers both a considerable range of dance moves (integrated into more complex dance patterns) as well as the possibility of improvisation (see *Glossary of dance moves*). Any codification of the patterns could be indicative of possibilities for poetic interaction within groups of different sizes whose contrasting perspectives were represented by distinct sub-groups. Square dances provide an example of formalized dance patterns.

As with juggling, there are extensive databases on dances and possible patterns within a dance. The could offer new approaches to multivocal improvisation, variously informed by different rhythms.

Sonification and auditory display: Sonification is the auditory display of data otherwise beyond the range of the human senses, or their capacity otherwise to resolve -- as explored by the International Community for Auditory Display on behalf of the US National Science Foundation (Sonification Report, 1997)**.** (*Sonification of Cognitive Resonance*, 2010).

Given the considerable advances in artificial intelligence, and the experimental adaptation to poetry, there is a case for imagining the conversion of arid prose into poetic form in order to render it memorable through highlighting patterns of associations, as discussed separately (*Convertor from Text to Poetry, Song or Music: computer-assisted aesthetic enhancement of treaties, declarations and agreements*, 2007).

George Rochberg (*The Aesthetics of Survival: a composer's view of twentieth-century music*, 2004):

> Any discussion of duration in music must necessarily probe the nature of duration itself, particularly as it relates to human experience. Without even the most limited understanding of the relationship between duration and existence, it becomes virtually impossible to comprehend how music becomes the living, dynamic, artistic embodiment of time; for music's great power over all men fundamentally derives from the engagement of the sense of duration in the listener, perceived as motion, as movement, as the occurrence of successive events which culminate in a sense of fullness of experience, of a sonorous content whose passage in time is rich and meaningful. (p. 61)

Carpets and pattern language: Insights from "pattern language", notably as developed by Christopher Alexander (*A Pattern Language*, 1977) as a part of a set of writings, themselves described as poetical (Jonathan Price, *What Technical Writers Can Learn from Christopher Alexander's Pattern Language*, 2001). One of its chapters is entitled *The Poetry of the Language*. In introducing the deep nature of patterns, Alexander comments (*The Nature of Order*, 2003):

> A pattern language is a created thing. It is a work of poetry, a work of art. It is potentially as profound in its way as a building can be.

But there seems to have been no attempts to associate the focus of Alexander's 253 interrelated patterns (see comment) -- most of which have long been a focus of poetry -- with any attempt at structuring poetic insight into the pattern they constitute as a whole. The comment however indicates how the set of physically-focused patterns has been used experimentally as a template for the elaboration of 4 additional sets of patterns (*5-fold Pattern Language*, 1984): an abstract variant, a socio-organizational analogue, a cognitive analogue, and an intra-personal analogue.

In the light of Alexander's particular interest in the symbolism of carpet design, there is a case for reframing the imaginative appeal of "magic carpets" (*Magic Carpets as Psychoactive System Diagrams*, 2010). Clearly any form of multivocal poetic improvisation lends itself to such imagery.

Multipart singing: as discussed separately, and despite the particular constraint of prescription, this offers many relevant insights, whether involving only distinct instrumental voices or the addition of lyrics in relation to the separate melodic voices (*Clues to Patterns of Dialogue from Song*, 2011; *All Blacks of Davos vs All Greens of Porto Alegre: reframing global strategic discord through polyphony?*. 2007). The earlier reference forms part of a more general discussion (*Enabling a 12-fold Pattern of Systemic Dialogue for Governance*, 2011).

Piston engine operation offers a more mechanical insight into the manner in which a cycle of creative "sparks" can be used as the motive power of a common vehicle. An engine can have many pistons. The challenge is to convert the insights from any such technical metaphor into valuable features of a poetic debate -- each participant functioning as a "piston" in the creative initiative. In all types of piston engine the linear movement of the piston is converted to a rotating movement (via a connecting rod and a crankshaft or by a swashplate); a flywheel is often used to ensure smooth rotation. The more cylinders a reciprocating piston engine has, generally, the more vibration-free (smoothly) it can operate. The power of a reciprocating engine is proportional to the volume of the combined pistons' displacement.

Transactional analysis: In principle dialogue embodies complex sets of passing patterns, of which people are typically unconscious -- as detected in transactional analysis (Eric Berne, *Games People Play*, 1964). Here the point of a discussion may be understood as the "ball" variously passed between those participating.

Martial arts: especially those inspired by Eastern philosophy (such as aikido), offer creative ways of combining useful rules, whatever they might be, with the possibility of a "no holds barred" approach that would avoid inhibiting creativity. The possible relation to poetry is discussed separately (*Ensuring Strategic Resilience through Haiku Patterns: reframing the scope of the "martial arts" in response to strategic threats*, 2006).

It is of course the case that fencing has long been used as a descriptive metaphor of 2-person dialogue -- verbal fencing. Given the highly articulated nature of the discipline, this could be adapted to poetic discourse, as discussed separately (*Metaphorical patterns through which to engage with memetic challenges*, 2010). It would be interesting to explore how those skills relate metaphorically to the bertso duel

> The Bertso duel is a special cultural event where poets, artists and singers improvise poetry (bertso) in Basque language on a particular theme. The bertsularis take the stage and must create a poem about a theme (not disclosed in advance), all within the constraints of a predetermined melody and beat. Bertsolari duels are organized within festivals or more formally at championships, bringing together the best of all the Basque Country. The exchanges take the form of singing jousts, during which improvisers keep the audience spellbound with their alertness and ability to spontaneously create poems, manipulating words and melody. The phenomenon holds a special place in the Basque society and bertsolaritza is becoming increasingly popular among the younger generations who perpetuate this tradition. (*Language Games*, *Discover the Basque Country*)

A similar point can be made in terms of jousting (*Strategic Jousting through Poetic Wrestling: aesthetic reframing of the clash of civilizations*, 2009).

Board games and video games: Although somewhat rare, some multiperson games offer both competitive modes and those in which players collaborate towards a common goal (Ernest Adams, *Fundamentals of Game Design*, 2013).

Pattern learning from games and artificial intelligence: Games offer a poorly recognized means of eliciting new knowledge, as might be desirable with respect to multivocal improvisation and its implications governance (Karen Schrier, *Knowledge Games: how playing games can solve problems, create insight, and make change*, 2016). A review of the latter notes their potential relevance to the solution of the so-called wicked problems of governance (Douglas Heaven, *Can video games really create new knowledge?* *New Scientist*, 25 May 2016).

Following its success with respect to chess, much has recently been made of the success of artificial intelligence with respect to the game of go (*Artificial intelligence: Google's AlphaGo beats Go master Lee Se-dol*, *BBC News*, 12 March 2016). Less attention has been accorded to the rapid development with respect to poetry (Samuel Gibbs, *Google AI project writes poetry which could make a Vogon proud*, *The Guardian*, 17 May 2016; Jane Wakefield *Intelligent Machines: AI art is taking on the experts*, *BBC News*, 18 September 2015; Samuel R. Bowman and Luke Vilnis, *Generating Sentences from a Continuous Space*, *arxiv*, 12 May 2016).

These examples suggest that artificial intelligence and neural learning, benefitting from the records of online gaming strategies of millions, may enable discovery of unsuspected patterns of considerable significance in terms of their memorability -- despite their complexity (Michael A. Nielsen, *Neural Networks and Deep Learning*, Determination Press, 2015).

Possible implications for 4-team ball-games -- 2-way football?

Competition vs Cooperation: There is a fundamental contrast between the high degree of **competition** cultivated in many 2-team ball games, as compared with the high degree of **cooperation** cultivated in multi-person juggling. It is of course the case that the governance of many countries is primarily inspired by the first, most obviously in 2-party systems of ruling (majority) party and opposition -- and the kind of competitive discourse characteristic of legislative assemblies.

Whilst the latter lend themselves to description in terms of game-playing, it would appear that they are far less "fit for purpose" than the times require. They could be understood as a continuing glorification of the pattern of duelling practiced over centuries, with the sole objective of fatally wounding the "other" -- if only symbolically and metaphorically. The practice was notably condemned by a Pope, as usefully described by Shaun McAfee (*This 1891 Encyclical on Dueling is Surprisingly Relevant Today*, *National Catholic Register*, 29 March 2016).

Curiously the card game of contract bridge (and its variants) is indicative of a strange combination of competition and cooperation, with four players in two competing partnerships, which could offer clues to exploration of 4-sided ball games.

Beyond binary games? It is therefore interesting to reflect speculatively on the possibility of 4-team ball games. Of equal interest, however, is exploration of the seeming total lack of incentive to their experimental development -- despite the multiplicity of forms of 2-team games (in terms of number of players per side). It would appear that there is a very heavy commitment to the continued glorification of the binary logic they embody as zero-sum games, and the kind of "energy" and interest they engender.

In contrast to frequent allusion to "the spirit of the game", zero-sum games clearly reinforce a pattern of violence -- currently exemplified by the violence between supporters at Euro 2016. More fundamentally, is there a contradiction between that spirit and the inequality engendered by the institutionalization of the quest for "champions"?

This would appear to be the case even though various books have been produced on the philosophical underpinnings of various ball games (Michael W. Austin, *Football and Philosophy*, 2009; Eric Bronson, *Baseball and Philosophy*, 2004; Jerry L. Walls, *Basketball and Philosophy*, 2008; Ted Richards, *Soccer*

and Philosophy, 2010). The problematic implications for world governance may well be indicated by other books (Sal Paolantonio, *How Football Explains America*, 2008; Franklin Foer, *How Soccer Explains the World: an unlikely theory of globalization*, 2004).

Modelling games: Widely studied as game theory, this is the mathematical modelling of conflict and cooperation between intelligent rational decision-makers. It is notably of relevance to economics, political science, and psychology, as well as logic, computer science, and biology -- and human behavioural relations in general. There is some interest in many player, N-person games, especially in the case of multi-stakeholder games. The *Wikipedia* list of games in game theory specifically distinguishes the number of players (sides) in those "most commonly studied". Of the 33 games listed, 21 are indicated as 2-sided games. 11 are indicated as N-sided, and one is indicated as 3-sided. Curiously the latter is termed truel, namely a duel amongst 3 parties -- related to a Mexican standoff.

In contrast to the practice of juggling (noted above), it is unclear how readily the preoccupations of game theory extend to 4-sided, 5-sided, 7-sided or 12-sided "games". Curiously the widely publicized process highlighted by Edward de Bono could be understood as a 6-sided game (*Six Thinking Hats*, 1985; *Six Action Shoes*, 1991; *Six Frames For Thinking About Information*, 2008). Similarly the common constraint on team size could be understood as framing these as 5- to 9- sided games (George Miller, *The Magical Number Seven, Plus or Minus Two: some limits on our capacity for processing information*, *Psychological Review*, 1956).

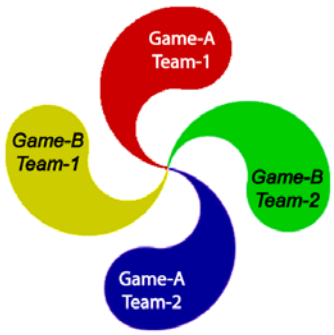
More intriguing is whether a 12-person jury, or the classical round table of the wise, could be understood as a 12-sided game of stakeholders. It is appropriate to note that these considerations are evident in some card games (*Card Games for Twelve Players*).

As indicated below, the challenges of governance suggest a consideration of tripolar and multipolar frames, as notably articulated by Kinhide Mushakoji (*Global Issues and Interparadigmatic Dialogue: essays on multipolar politics*, 1988; *Scientific Revolution and Interparadigmatic Dialogues*, 1979).

Four-sided football: Possibilities for consideration with respect to 4-team (2-way) ball games might include:

- rather than a single rectangular field defining two "sides" (defended by each team against the efforts of the other to score a goal), a second rectangular field is laid out at right angles to the first (over which a second 2-team plays in a similar manner). The two fields then form a cross, with the two 2-team sets play "across" each other.
- to clarify the pattern of the game(s), the 4 teams need to wear distinctive colours, but with those in each 2-team game wearing colours enabling them to be distinguished
- two balls would then be used -- one for each game -- coloured distinctively. What might a 3-ball game be like?
- the question would then be what rules would govern how those playing in either of the 2-team games could engage with the ball of the other game, or should this be recognized as a fault?
- could the 2 games effectively "swap" balls under some conditions -- perhaps allowing goals scored with the "other" balls to be counted differently?
- should the ball of one game be allowed outside "its" field, or be declared out of play?
- could the rules allow the ball from one game to score a goal on the field of the other?
- are there modalities in which a team from one game can support or undermine the strategies of a team in the other game, or that game as a whole?
- does the 2-way pattern allow for the possibility of contrasting games playing across each other? Perhaps, for example: a game of men across a game of women; a game of the highly skilled (adults?) across a game of the lesser skilled (adolescents? disabled?), or otherwise challenged (shorter? heavier?). This would help to address the ***spirit of inequality*** engendered and glorified through the victory of one team over another.

Curiously, and perhaps appropriately, the Lauburu frames reflection on such possibilities, as well as on their complexification.

Complexification of 2-way games in the light of the Lauburu	
	

Chess as an example: Clearly the extensive development of online gaming (and virtual reality) would enable 2-way, 3-way and N-way games to be variously explored -- bypassing any resistance formulated in terms of physical layout. The emergence of the clan-guild system in online gaming is already an indication of this. A valuable indication of the viability of such a possibility is the existence of four-player chess. and three-player chess (see *Chess variants: four-player chess*). Their rules could contribute to reflection on 4-team ball-games.

4-player chess	3-player chess
Images reproduced from relevant *Wikipedia* entries	

Three-sided football: Although no effort has seemingly been made to experiment with four-team football, three-sided football (also known as 3SF) has indeed been developed. This was done to articulate an understanding of triolectics (as a refinement of the concept of dialectics), and to disrupt everyday assumptions reinforced by conventional football (as argued above). Appropriate to the aesthetic dimension of this argument, the original initiative was associated with the philosophy of Situationist Art.

The three teams play over a hexagonal pitch (Geoff Andrews, *The Three Sided Football Revolution: football's new idea*, *Philosophy Football*, 9 June 2013; Sachin Nakrani, *Three-sided football gives players something to think about*. *The Guardian*, 7 May 2013; *A game of three halves*, *Philosophy Football*; see video and video).

In an event called "Thinking Football", aiming to reflect on the role of football in modern society, theAthletic de Bilbao Foundation organized a three-sided football championship in 2011 with 37 participant teams. Other events are organized within the framework of the International Three Sided Football Federation (founded 2009), which hosted the first World Cup in 2014.

The degree of association with philosophy recalls the early enthusiasm for Rithmomachy -- a board game previously rivalling chess -- otherwise known as the Philosophers' Game.

Use of artificial intelligence in game exploration: Given the increasing importance of online gaming and artificial intelligence, and their potential implications for governance, the exploration of N-sided games in a multipolar world merits careful attention. A valuable summary is offered by Miklos N. Szilagyi (*Investigation of N -Person Games by Agent-Based Modeling*, *Complex Systems*, 21, 2012).

In considering the aesthetics of multivocal poetic improvisation, Szilagyi notably offers an unusual summary of the possible personality characteristics of the players, understood as some combination of the following patterns (or styles of play):

Adventurous (Antisocial) Self -Confident (Narcissistic) Aggressive (Sadistic) Self -Sacrificing (Self -Defeating) Conscientious (Obsessive-Compulsive) Sensitive (Avoidant) Devoted (Dependent) Solitary (Schizoid)	Dramatic (Histrionic) Vigilant (Paranoid) Idiosyncratic (Schizotypal) Exuberant (Cyclothymiac) Leisurely (Passive-Aggressive) Serious (Depressive) Mercurial (Borderline) Inventive (Compensatory Narcissistic)

Nature of the "ball" -- in multivocal poetic improvisation

The ball is clearly, and naturally, a primary focus of attention in ball games. Given the implication for intercourse of various kinds, there is obviously a need to identify some of the associations of "ball", as it may be understood metaphorically in common usage, especially as a symbol.

If the ball is understood as corresponding to the focal significance of discourse -- **the point in play** -- its potentially complex nature merits the most careful attention with respect to its relevance to communication,. Of greater complexity is the situation when there are **several points in play** -- perhaps many. The ball as a whole, as with the point of a discourse, may then call for recognition as a potentially elusive configuration or nexus of points. The points identified on an agenda may then imply a larger point -- with the ball then to be understood as a kind of "meta-point". European discussion of the Brexit option has been framed as "existential", for example.

Metaphor: Well-known examples are of relevance to discourse. However in discourse, considerable focus is placed on the "point" being made, whether singly or understood as "bullet points" in Powerpoint-style presentations. As metaphors, the two may be juxtaposed.

"Ball"	"Point"
• the "ball in the court" of the other • "catching the ball" • "running with the ball" • "dropping the ball" • "controlling the ball" • "ball in play" and "ball out of play" • getting the ball "into the goal"	• "making a point" • "clarifying a point" • "sticking to the point" • "missing the point" • "understanding the point" • "scoring a point" • "taking my point"

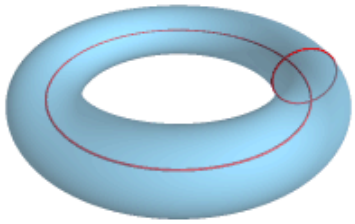
Symbolism: Recognized as a sphere, the ball offers further associations of significance to:

- the sun, as a central focal symbol for many cultures. As noted by *Wikipedia,* solar symbols can have significance in psychoanalysis, semiotics, astrology, religion, mythology, mysticism, divination, heraldry, and vexillology, among other fields.
- the integrity implied by global, globalization and globality -- in contrast to a "flat earth" understanding -- and inviting provocative exploration (*Globallooning -- Strategic Inflation of Expectations and Inconsequential Drift: Global, Glo-Bull, Glow-Ball, Glow-Bawl*, 2009).
- mirroring psychological integrity (*Psychosocial Implication of Without Within: enjoying going solar for oneself*, 2013)

Mathematics: In mathematics, especially geometry and topology, the sphere is a focus of considerable study in relation to other forms into which it may be variously transformed.

Animation of "degeneration" of a torus into a sphere

(Reproduced from *Wikipedia*)



As the distance to the axis of revolution decreases, the ring torus becomes a horn torus, then a spindle torus, and finally degenerates into a sphere

Notably in the light of metaphorical use of "point" and "line" in dialogue, other implications are explored separately (*Metaphorical Geometry in Quest of Globality -- in response to global governance challenges*, 2009).

Biological reproduction: In biology, and the reproductive symbolism explored by psychoanalysis, the ball is ambiguously associated with both:

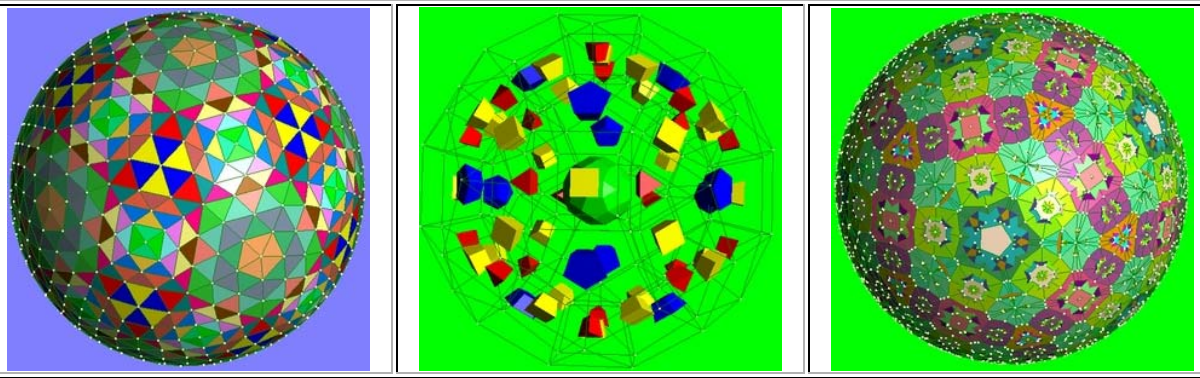
- the semen disseminated by the male from the testicles -- with their connotations of strength (cojones)
- the ovum born by the female, namely the target for delivery of the semen

Competition and collaboration in memetic exchange

The question is how the contrasting connotations of "balls" and "points" relate to the exchange of memes in poetized discourse. One possibility is to understand the ball so exchanged as undifferentiated and inherently precious.

Another is to imagine it as multifacetted, or composed of a multiplicity of balls held together by a web of integrative associations. This could be recognized as a memetic complex (by analogy with a complex of genes) -- perhaps to be understood as a gestalt in either case. Focus on any part of the complex then triggers resonant effects on the others -- as suggested in the case of a bell. The planet Earth has such characteristics.

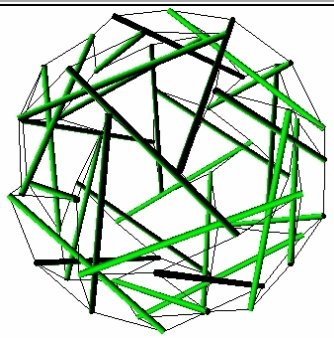
Experimental articulation of the international declarations of human rights in 3D and 4D (Universal, Arab and European)



Selection of images from *Dynamic Exploration of Value Configurations: polyhedral animation of conventional value frameworks* (2008)
prepared with features of the *Stella Polyhedron Navigator* software package

Given the example of juggling, of particular interest is how a multiplicity of points are juggled together in a

dynamic process, rather than vainly striving to hold them in a static configuration. This has been extensively studied as "problem jostling" by management cybernetician Stafford Beer, who mapped distinct problems onto an icosahedron (*Beyond Dispute: the invention of team syntegrity*, 1994). Beer related the pattern of tension and compression to that of a tensegrity structure, as shown below. The ball is then to be understood as a dynamic complex reminiscent of the many atoms distinguished by the relative complexity of their orbiting electrons. A tensegrity offers a way of thinking about a cognitive complex of resonant associations. The dynamics are reminiscent of the spherical representation by Vinko Globokar (*Individuum-Collectivum*, 1986, p. 9c), adapted below as an indicative animation.

Indicative animations	
Tensegrity	Globokar's improvisation sound spectrum
	

There is a curious contrast between any such complexity, eluding simplistic comprehension, and the ball which figures so unambiguously in ball games. Part of the irony (as noted in the *Wikipedia* entry) lies in the fact that the stitching pattern on the soccer football has long been that of the truncated icosahedron -- one of the 13 Archimedean semi-regular polyhedra. That so much attention should be focused worldwide on the movement of such a form amongst groups of people may well invite particular commentary in the future. As a close approximation to a sphere, the interweaving of its 12 pentagonal faces and 20 hexagonal faces merits particular attention as an integrative pattern of a multiplicity of perspectives, as may be variously discussed (***).

What is it that people are so fascinated to throw around -- and why? How is movement of the ball effectively mirroring movement along neural pathways of the individual and collective unconscious. Is the explicit nature of a ball game a surrogate for the poetry made without being aware of it -- adapting the insight of Moliere's *Bourgeois gentilhomme*?

Relevance to poetizing dialogue, debate and intercourse

Improvised poetry: Insights into multivocal poetic discourse can of course be elicited from the traditional practices of poetic dialogue between several participants -- as is characteristic of improvised oral poetry, whether sung or accompanied by music. The obvious example in the context of this presentation is work on the thriving Basque *bertsolaritza* is extensive, as documented by Linda White (*Orality and Basque Nationalism: dancing with the devil or waltzing into the future? Oral Tradition*, 2001). As she notes:

> The artists (*bertsolariak*), often called 'Basque troubadours,' perform in competitions broadcast on television and become regional celebrities. The audience does not need to read Euskara in order to enjoy the 'sport of words,' as it is called.... The verses created by the *bertsolari* must comply with specific rhyme patterns. When aficionados discuss *bertsolaritza*, such rhyme patterns are often at the center of their evaluation of an artist's creative production. To the novice, it can often seem as though these oral artists are faced with the onerous task of counting rhymes and syllables as they versify. However, the rhyme patterns and syllable counts per line are an intimate part of the melody being used for a particular verse, and the music is what makes it possible for a *bertsolari* to keep all these schemes in mind...

Aesthetics of debate: Insights from contexts in which there is an appreciation of the "**rhythm of debate**" or "rhythm in debate" as in the educational process in Buddhist philosophy. In mathematical physics,

Andrew Warwick (*Masters of Theory: Cambridge and the Rise of Mathematical Physics*, 2003) highlights the unfortunate consequence of the shift from the formal procedure of a disputation (with the rhythm of public debate between opponent and respondent by "Wranglers") to the written examination. Related to this is the significant issue of the balance between qualitative and quantitative perspectives in any adversarial assessment process, as discussed by John Danvers (*Assessment in the Arts: qualitative and quantitative approaches*):

> These differences emerge as the result of the adversarial process of advocacy and argument that characterises most assessment meetings. This process is a mixture of negotiation, rational argument and peer pressure, centred on subjective opinions about the degree to which students have achieved particular learning outcomes, as manifested in the artwork or texts presented for assessment. In most assessment meetings there is an alternating pattern of convergence and divergence of opinions, interpretations, prejudices and insights - energised by the particular dynamics of the group. However this rhythm of debate and open-ended exchange is always constrained by the need to arrive at a definitive single mark, the holy grail of quantitative assessment. In some ways the process would be much more transparent and informative to the student if the marks of each assessor were published and a cluster of marks were awarded for each unit of assessment - not one mark! This would reflect the variety of evaluations and suggest that the process, and the mark, is conditional rather than absolute.

Traditional poetical rhetoric: Insights from that tradition are aptly introduced in terms of historical understanding of the problematic relationship between poets and philosophers by Stanley Rosen (*Plato's Republic: A Study*, 2005):

> The philosopher...uses poetical rhetoric for purposes of persuasion, but at least his or her rhetoric is informed by the truth....The poet... produces copies of the items of genesis, or what one could call simulacra (images of images). The poet thus deludes us into believing that he or she knows the truth, and this illusory knowledge is more attractive to the general populace than is the rigorous and genuine truth of philosophy. To make a long story short, if they are not checked, the poets will become the unacknowledged legislators of society, thereby usurping a role that ought to be filled by philosophers. (p. 3)

This matter is of some relevance given the current appreciation of the "poetic rhetoric" of Barack Obama as President of the USA. However, any implication that philosophers are especially endowed with the truth is radically undermined by their own inability to dialogue fruitfully with each other, as noted by the philosopher, Nicholas Rescher (*The Strife of Systems: an essay on the grounds and implications of philosophical diversity*, 1985). He responded to their distinctly unintegrative conflict by concluding:

> For centuries, most philosophers who have reflected on the matter have been intimidated by the strife of systems. But the time has come to put this behind us -- not the strife, that is, which is ineliminable, but the felt need to somehow end it rather than simply accept it and take it in stride.

It is perhaps the interplay of poetry and philosophy that could be more fruitfully envisaged, through patterns as suggested below.

Poetic resonance: Insights from understandings in relation to the landscape with which any myth of cultural identity is associated and cultivated, notably as highlighted in commentaries on José Lezama Lima's *La Expresión Americana* (1957) -- who, as a poet, contrasts North and Latin American understandings that are of great political significance. For example, William Rowlandson (*'Un mito es una imagen participada'*, *Bulletin of Hispanic Studies*, 2010) notes:

> Periods of history that fail to awaken in the interpreter the awe of *la imago* fail to achieve the poetical resonance that we see characterised in the historical reconstruction of *La expresión americana*. Similarly, *la imago* itself becomes the animistic heart of the poetic (and historic) moment... Furthermore, it is not simply the historical moment that becomes the interactive text to be interpreted; a similar signifying process takes place converting the '*espacio gnóstico*' that

> is '*naturaleza*' into the defining text that is '*paisaje*'. Much has been written on this process of transformation from nature to landscape... Nature itself is the unwritten text that awaits the creative participation of the subject to transform it into a meaningful entity, and by extension into a cultural construct.... the epistemological dimension of the creative interpretation of both landscape and history. The subjective interaction with nature becomes a hermeneutic process - one of interpreting - and such a process is integrally linked to the processes by which we gain knowledge.

Such perspectives may be valuable in challenging the assumptions of the foreign policy of the USA (and the West in general) regarding cultures like those of Afghanistan (and the Middle East in general).

Challenging dynamic of multivocal poetic improvisation

There is an intriguing dynamic to be explored between "multivocal", "poetic", and "improvisation" -- and with their contraries "univocal", "unpoetic" and "patterned".

Extremely valuable points are succinctly made by Vinko Globokar in discussing the role of the performer and interdependence with that of the composer (*Reacting*, 1970), notably:

- We would like him to engage himself totally, not just use his technical proficiency about the work but also his capability of inventions, his ability for decisions and more or less spontaneous reactions, in one word - his "psychic contents".
- Nevertheless, we would like to preserve the possibility of being able to "conduct" - to canalise - the different forms of this participation.
- We have already made an experiment: the more we are transferring the responsibility of composing to the performer, the more we run the risk of creating musical situations which will jeopardise our aesthetic view.
- This is why we are looking for some technical means which primarily stimulate the performer to an extremely engaged participation and which at the same time eliminate this most frequent fault: the use of personal clichés which he puts into play as soon as you appeal to his invention.
- On the other hand this technique must allow for a dynamic change back and forth between those situations having a maximum of responsibility from the side of the performer and those in which the performer does nothing but reproducing a totally fixed/composed music.

Globokar's approach experimented with inviting the performer to choose between a number of possibilities. He concluded however that that t**his leads in most cases to a demonstration of open disinterest by the performer in the offer to participate in choice of the composition**:

> The act of choosing is above all an intellectual operation. Experience has showed us that the performer is especially interested in those operations which are more directly musical, more interested in tasks putting him directly into contact with the sounding material and thus excluding operations based on decision, choice or a reasoning which has been pushed too far.

In continuing his response to this challenge, Globokar presented his conclusions in an extremely valuable study, enhanced by an unusual proportion of diagrammatic presentations of the improvisation process in terms of "models" (*Individuum-Collectivum*, 1986). His use of model is understood more generally here in terms of pattern.

The question is how to reflect the dynamics between the normative/prescriptive role of a self-selected composer with that of the performer/interpreter encourage to engage fully in the creative process. As Globokar recognized, this challenging dilemma is fundamental to governance of society at this time and provides a remarkable metaphor of that challenge. Understanding of it has long been cause for reflection, as noted in the compilation by Sigrid Müller and Cornelia Schweiger (*Between Creativity and Norm-Making: tensions in the early modern era*, 2012). It is of course echoed in the challenge of any more radical thinking to the norms upheld as "normal" by conventional modes of governance (***).

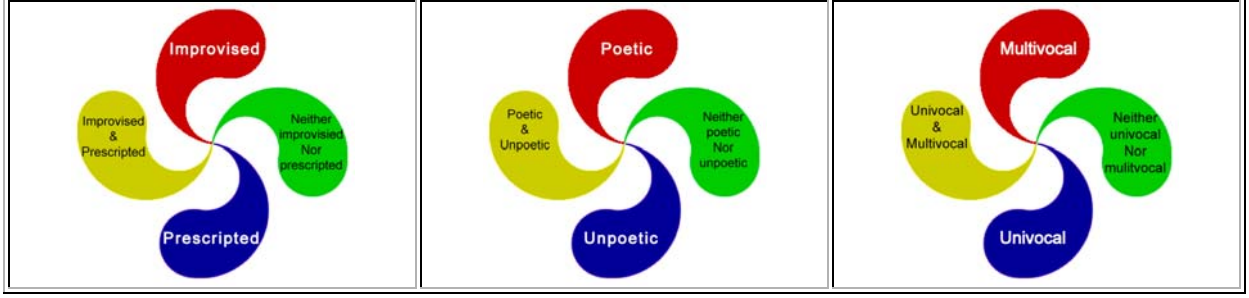
In developing the argument here, it is vital to avoid premature closure on conventional categories, notably

those inspired by binary logic. There is therefore a case for switching to the tetralemma, notably articulated by Kinhide Mushakoji (*Global Issues and Interparadigmatic Dialogue: essays on multipolar politics*, 1988; *Scientific Revolution and Interparadigmatic Dialogues*, 1979). The latter notes the contrast with the holistic insight of non-western scientific traditions, as articulated by Keiji Yamada (*Patterns, Recognition, and Creation: the intellectual climate of Chinese science*, 1975), through which an effort was made to grasp the network of meaning of the totality of the objective world -- not through a theoretical system but through a classification of the types of transformation of a few basic patterns into their variants.

On this basis. Mushakoji contrasts: "***A***", "***not-A***", "***A and not-A***", with "***neither A nor not-A***". This device may be used to suggest the need for more subtle approaches to the dilemma -- and notably with respect to governance. If "***A***" is the proposal of the governors (or the condictor/composer), "***not-A***" is too readily framed as a threatening alternative -- recalling the much-challenged slogan of Margarest Thatcher: ***There Is No Alternative*** (TINA).

The tetralemma can be used to enrich the discussion through the following 3-fold "decomposition":

Use of Lauburu to map 3 variants of 4-fold distinction

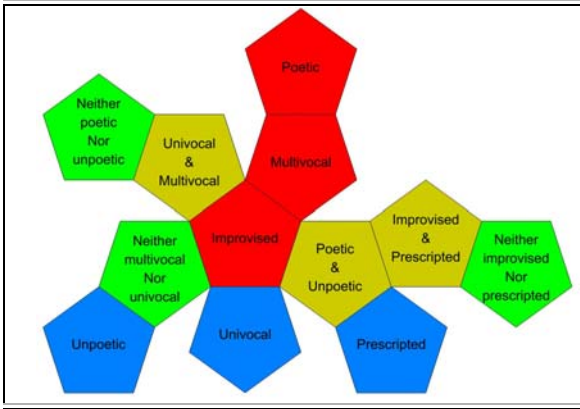


The issue is then how to interrelate these complementary patterns, recognizing that any meta-pattern raises even greater challenges to comprehension. It is very possible that these can only be resolved through the integrative potential of aesthetics -- requiring their cognitive embodiment in some way. Diagrams are merely indicative of this possibility -- although there aesthetic properties may facilities this.

In the following, the 4 modes indicated in the 3 diagrams above are configured in the 12-fold dodecahedron below. The suggestion being that, in addition to alternation within the 4-fold pattern of the Lauburu above, there is a need to alternate within the 12-fold pattern. The argument with regard to that configuration is further developed below in relation to the 5-fold dynamics of the *Wu Xing*. The issue is how these distinction could be most meaningfully mapped.

Mapping of 3 variants of 4-fold distinctions onto 12 faces of dodecahedron

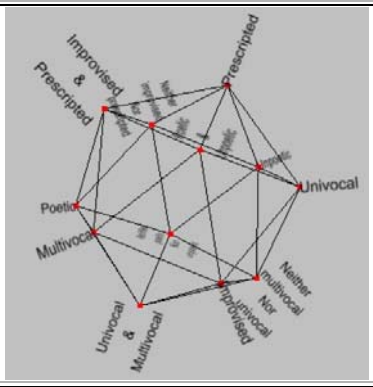
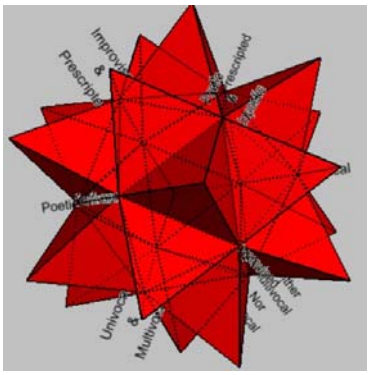
Unfolded version	Folded version



Prepared with features of the *Stella Polyhedron Navigator* software package

The properties of the dodecahedron in relation to other patterns can then be exploited to facilitate imaginative engagement with the 12-fold cognitive content. However, to what extent can such visualization

elicit creative imagination, rather than the kind of rejection so significantly noted by Globokar?

Mapping of 3 variants of 4-fold distinctions onto 12 vertices of icosahedron (dual of dodecahedron)	
Faces transparent	Augmented variant
	
Prepared with features of the *Stella Polyhedron Navigator* software package	

Sustaining the attraction of endless pattern transformation -- to what end?

Contexts of attraction: Using the examples noted above, the question is how to derive insight from the attraction they may each engender, recognizing that the attraction may vary from person to person, with each focus being readily experienced as boring by others. Curiously there does however seem to be an elusive commonality to the patterns explored in each context. They may appear to be exclusive to each context, but their articulation would seem to suggest that each might well be mapped into the other -- with some articulations being currently more complex than others -- and lending themselves more readily to formalization.

Category	Pattern context	Appreciating	Personal enjoyment	Outcome -- then what?
Performing arts	dance	the "moves" of others	participation	when the dance is over?
	music (opera, etc)	skills and variations		
	ritual			
	humour	the joke	making jokes	after the joke?
	juggling	the possible "passes"		
	sex	performance and variations	(mutual) enjoyment	post coital tristesse?
Games and sports	ball-games (tennis, football, etc)	the skills of players		after the game?
	board-games (chess, go, etc)	the "moves" of players		after the game?
	martial arts, fencing	the "moves" of combatants		after the combat?
	online role-playing			
Arts and crafts	knots	possible transformations		
	sewing, knitting	possible variants		
	cooking (gourmet, etc)	possible preparations	enjoying the meal	after meal is over?

	perfumery	skills and varieties	enjoying odours	
	painting	skills and effects	enjoying the process	
	gardening	(sacred) garden arrangements		
	flower arrangement	appreciation (ikebana)	enjoying arrangement	
Maths	geometry	the possible transformations		

Renewable attraction: The mystery would seem to lie in how patterns and their transformation are experienced as attractive and fascinating -- and how that attraction can be (endlessly) renewed -- or not. The marketing media constantly struggle for ever more distinctively attractive "visual effects" to ensure "return custom". The point is most obviously made with respect to sexual intercourse. and its description using the football metaphor of "scoring". This may be further emphasized in the attraction so evident in courtship routines and coloration of birds -- variously echoed in the human equivalent.

How is the contrast to be explored **between serial appreciation in the short-term and longer-term sustainability** -- as exemplified in interpersonal relationships?

The argument can be given greater focus through the distinction between:

- **cleverness and skilled performance** (recognized in music assessment as "technique"), however it may result in "winning", possibly understood as "getting to yes"
- elusive qualities typically characterized by terms such as **"spirit" or "soul"** (recognized in music assessment as "musicality")

The first may well result in recognition as champion -- being "Number 1" -- a fundamental motivating factor for many at many levels of society, rewarded by prizes, medals, and acclaim. The second is associated more clearly with long-term recognition as a cultural exemplar.

Relevance to dialogue: Seemingly missing is the understanding of attraction as it might be associated with multivocal poetic improvisation. Can it be usefully suggested that such recognition is multiply challenged:

- ***univocality*** is widely evident and appreciated through "soloists" in every domain, with "multivocality" more appreciated (in the short term) when the participants "speak with one voice" and "sing from the same hymn sheet". This effectively eliminates the diversity by which the multivocal might be more creatively and sustainably associated over the longer term
- ***unpoetic discourse*** is more characteristic of the times, with any "poetic" quality only associated with dramatic style (as exemplified by Donald Trump). The unpoetic is the primary mode of short-term formal communication. The poetic is more subtly evident and appreciated through humour and aphorisms.
- ***prescripted communication*** is now the dominant mode. Improvisation is evident as the mode reconciling the failure of prescripted communication to engender coherence -- except in the shorter-term. The value of improvisation can be recognized in appreciation of "muddling though".

These "contradictions" suggest that the nature of the requisite pattern language for multivocal poetic improvisation has yet to become evident.

Sustainable discourse for a sustainable society? Beyond articulation and skills, there is then the question of how to consider the sustainable use of patterns -- moving beyond "soullessness", as increasingly used to deprecate some highly professional venues and experiences. Valuable insights are offered by:

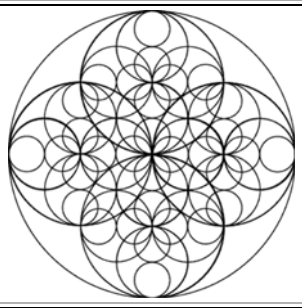
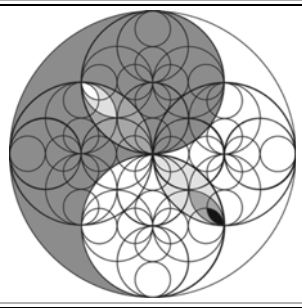
- ***Infnite games***, namely the contrast clarified by James P. Carse (*Finite and Infinite Games: a vision of life as play and possibility*, 1987). A finite game is played for the purpose of winning, an infinite game for the purpose of continuing the play. As its name suggests, a finite game has a definitive end and a defined number of players. Infinite games in contrast transcend time and invite anyone who is willing to play to join in.
- ***Patterns of transformation***, as identified by Christopher Alexander (*Harmony-Seeking Computations: a science of non-classical dynamics based on the progressive evolution of the larger whole*, *International Journal for Unconventional Computing (IJUC)*, 5, 2009). This followed from seminal earlier work (*A Pattern Language*, 1977). Alexander identified 15 fundamental patterns of transformation, as discussed separately (*Harmony-Comprehension and Wholeness-Engendering eliciting psychosocial transformational principles from design*, 2010). There they are tentatively adapted to the psychosocial realm with a suggestion of how they might be configured together.
- ***Archetypes of morphogenesis***, namely the 16 archetypal interaction morphologies distinguished by Rene Thom, most notably in relation to his work on semiophysics (*Structural Stability and Morphogenesis: an outline of a general theory of models*, 1972; *Esquisse d'une Sémiophysique*, 1988). Given the continuing attraction of pattern-breaking "catastrophe", this could offer insight a sustainable process (Maximilian Mrotzek and Günther Ossimitz, *Catastrophe Archetypes: using system dynamics to build an integrated systemic theory of catastrophes*, 2008).
- ***Indirection and avoidance of closure***, notably in the light of apophasis and the via negativa. In this case the art lies in implication rather than explicitation, namely the (seductive) veiling of truth, as may be variously discussed (*Being What You Want:problematic kataphatic identity vs. potential of apophatic identity?* 2008; *¿ Embodying a Way Round Pointlessness ?* 2012; *Paradoxes of Engaging with the Ultimate in any Guise: living life penultimately*, 2012)
- ***Verbal "vitamins"?*** What might be understood as "cognitive vitamins" through which discourse collective discourse is rendered sustainable? Obvious candidates are humour and word play, as may be variously explored (*Humour and Play-Fullness Essential integrative processes in governance, religion and transdisciplinarity*, 2005). The question is whether there is a larger array to be explored (*Memetic Analogue to the 20 Amino Acids as vital to Psychosocial Life?* 2015).
- ***Plots***: Another approach is through the documented variety of dramatic plots through which attention is evoked and held (*Taxonomies of Dramatic Situations, 2009*). The question is how is that variety meaningfully configured?
- ***Wu Xing***: This fundamental pattern is explored further below.
- ***Holes***: Rather than deploring the lack of an explicit focal insight for discourse -- or its ungraspability -- there is a case for recognizing what is missing as being vital to transformation, as argued by neuroanthropologist Terrence Deacon (*Incomplete Nature: how mind emerged from matter*, 2011; *Symbolic Species*, 1997). The very nature of the mysterious fascination of a "hole" (as in any argument) can be fruitfully challenged, as remarkably discussed by Roberto Casati and Achille C. Varzi (*Holes and Other Superficialities*, 1994). Their argument with respect to the borderlines of metaphysics, everyday geometry, and the theory of perception is summarized in the entry on holes in the *Stanford Encyclopedia of Philosophy.* Deacon explores the paradoxical incompleteness of semiotic and teleological phenomena in terms of information to demonstrate how specific absences (or constraints) play the critical causal role in the organization of physical processes that generates these properties.
- ***Adaptive cycle and impermanence***: Rather than framing the sustainability of discourse as inherently and preferably "upbeat" -- as is common -- there is a case for recognizing the necessary incorporation of a downside, as with the cyclic pattern of seasons. This can be explored in terms of the resilience of the adaptive cycle, as discussed by Thomas Homer-Dixon (*The Upside of Down: catastrophe, creativity, and the renewal of civilization*. 2006).
- ***Cognitive origin of patterns***: Given that the patterns characteristic of the varieties of discourse -- aesthetic or otherwise -- can potentially be explored and encoded by mathematics, the fundamental implications can be reframed from the perspective of cognitive science, as argued by George Lakoff and Rafael Núñez (*Where Mathematics Comes From: how the embodied mind brings mathematics into being*, 2000).

Paradoxical container for the uncontainable: prescriptive constraints on creativity

Whether understood through through the Lauburu as a tetralemma, or otherwise, the fundamental cognitive interplay between externally "proposed" patterns and internally "engendered" patterns is essentially paradoxical, irrespective of how this paradox is set aside through opting for one in preference to the other. There is an ironic, but fundamentally problematic, process in which each endeavours to "contain" or encompass the other -- as is only too evident in the relation between any "governor" and those perceived as needing to be "governed". Any performer may, in that sense, aspire to "govern" the attention of the audience -- potentially in defiance of conventional authority.

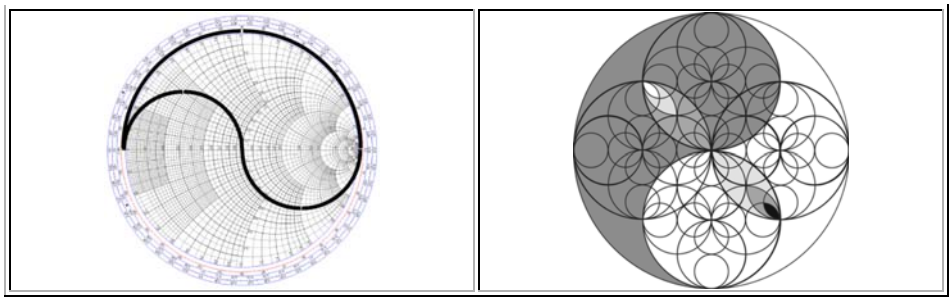
The dilemma recalls the traditional aspiration of some alchemists, namely to discover (or design) a container for the universal solvent (alkahest) -- one capable of dissolving anything, **including the container itself**. That quest can now be understood as the essential task of plasma containment in designing a container for nuclear plasma in order to achieve a fusion reaction as a sustainable source of energy -- given that the plasma is capable of destroying any conventional container. The design challenge may be used as a valuable metaphor for that of cognitive fusion (*Enactivating a Cognitive Fusion Reactor: Imaginal Transformation of Energy Resourcing (ITER-8)*, 2006). The design is based on a toroidal container -- with electromagnets preventing the plasma from contacting it.

Tao symbol: One approach to such a paradoxical container is through the classical symbol of the Tao -- with the challenge of relating it meaningfully to the pattern of the Lauburu. This is discussed separately as another means of transforming "periodic tabulation characteristic of the archetypal table of chemical elements into a "periodic container" as discussed separately (*Eightfold Configuration of Nested Cycles of Cognitive Transformations: meta-pattern of connectivity through a hypersphere?* 2012). A smaller version of the larger image of the Lauburu can be mapped into the branches of the larger image -- recursively engendering a fractal form. Two such recursive mappings are illustrated in the following

Superposition of a reduced version of the geometrical construction of the Lauburu as a whole **within** each branch of the Lauburu (as with a fractal)	Shading of the geometry of the Lauburu (left-hand image) to highlight one orientation of the Tao symbol and emergence of its traditional "eyes" from the geometry
	

Electrical metaphors of communication: Animation of the image on the right potentially offers further insights, as explored separately (*In Quest of a Dynamic Pattern of Transformations: sensing the strange attractor of an emerging Rosetta Stone*, 2012). The argument with respect to modulating cognitive transformations is taken further there in terms of a "*yin-yang*" switching perspective through metaphorical use of the widely used Smith Chart, invented by the electrical engineer Phillip H. Smith (and independently by Kaneyuki Kurokawa, a Japanese engineer). This is a graphical aid for electrical and electronics engineers specializing in radio frequency engineering to assist in solving problems with transmission lines and matching circuits. (Randy Rhea (*The Yin-Yang of Matching*, *High Frequency Electronics*, 2006).

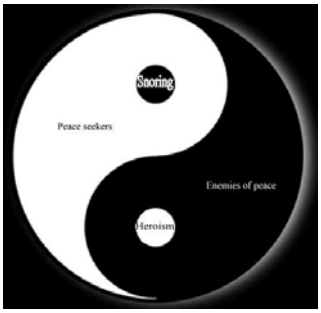
Dynamic pattern of transformations (through experimental animation of the 8 types on a Smith Chart)	**Possibility of more complex transformations** (animation of the right-hand image above with rotation of the nested structures of smaller scale)



Use of electrical metaphors is consistent with their fundamental significance for communication, especially when understood in wave terms are intuitively more consistent with experiential reality, as discussed separately (*Encountering Otherness as a Waveform In the light of a wave theory of being*, 2013).

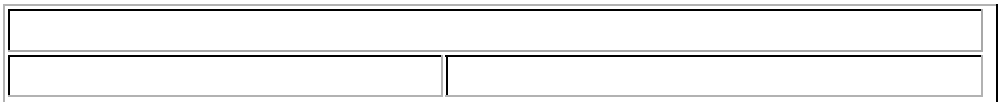
Tao of snoring? Although obviously a form of communication, snoring could be considered to be the antithesis of any aspiration to multivocal poetic improvisation -- although dormitory accommodation can offer "multivocal" forms with distinctive rhythms, possibly to be understood as "poetic", if not creatively "improvised".

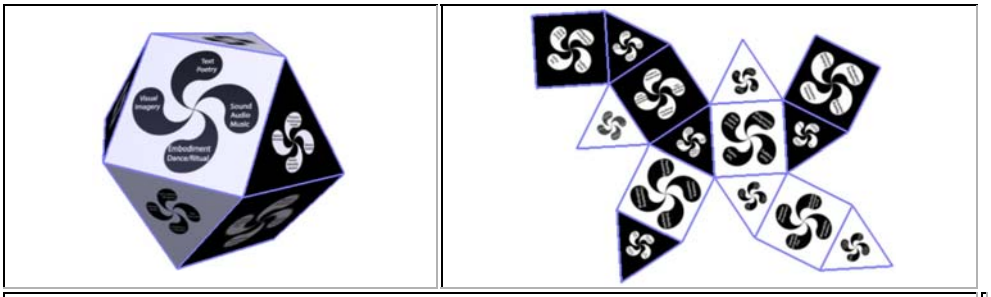
However snoring offers unusual clues to the relationship between what is valued and what is deprecated -- given the manner in which the snorer may be unconscious of that communication and even deny its existence. With the common reference to people and groups being "asleep", this offers a useful self-reflexive challenge to the paradoxical dynamics of awareness of one's personal condition, as discussed separately (*Snoring of The Other: a politically relevant psycho-spiritual metaphor?* 2006). Reference is made there both to the Tao symbol and to the Lauburu.



Another metaphor offering similar insight into the paradoxical nature of alienating communication is that of odour, as separately (*Epistemological Challenge of Cognitive Body Odour: exploring the underside of dialogue*, 2006). Both metaphors are indicative of how failure to understand how one may be part of the problem may ensure failure to understand the nature of the solution required.

Polyhedral mapping: With respect to the "containment" of creativity (as explored here), there is a case for developing the argument through mapping the dimensions identified onto a necessarily unusual form -- one which is itself a challenge to comprehension. Recognizing the need to hold the complex dynamics associated with multivocal poetic improvisation (as identified above), one approach is to map the seven dimensions (each identified distinctively by a Lauburu) onto a symmetrical form. This becomes possible by allowing each Lauburu to take two alternative forms reflective of the dynamics embodied. A suitable form is then the cuboctahedron, as shown below.





Prepared with features of the *Stella Polyhedron Navigator* software package

Consistent with this approach is the identification of 7 axes of bias variously engendering difference, disagreement, and distinctive identity, as presented by W. T. Jones (The Romantic Syndrome: toward a new method in cultural anthropology and the history of ideas, 1961). This distinguishes 14 extreme conditions of relevance to poetic discourse -- ordered by 7 axes, as summarized separately (*Axes of Bias in Inter-Cultural Dialogue*, 1993):

- *Order vs disorder:* Namely the range between a preference for system, structure, conceptual clarity, etc. and a preference for fluidity, muddle chaos, etc.
- *Static vs dynamic:* Namely the range between a preference for the changeless, eternal, etc. and a preference for movement, for explanation in genetic and process terms, etc.
- *Continuity vs discreteness:* Namely the range between a preference for wholeness, unity, etc and a preference for discreteness, plurality, diversity, etc.
- *Inner vs outer:* Namely the range between a preference for being able to project oneself into the objects of one's experience (to experience them as one experiences oneself), and a preference for a relatively external, objective relation to them.
- *Sharp focus vs soft focus:* Namely the range between a preference for clear, direct experience and a preference for threshold experiences, felt to be saturated with more meaning than is immediately present.
- *This world vs other world:* Namely the range between preference for belief in the patio-temporal world as self-explanatory and preference for belief that it is not and can only be comprehended in terms of other frames.
- *Spontaneity vs process:* Namely the range between a preference for chance, freedom, accident, etc and a preference for explanations subject to laws and definable processes.

Although these can be readily associated with the cuboctahedron, and memorably integrated by it, there is a case for challenging this "regularity" by looking for a more unique and unusual form consistent with the quest for the elusive nature of multivocal poetic improvisation. Seemingly there is a need for a form consistent with the insight articulated in a much-cited short poem.

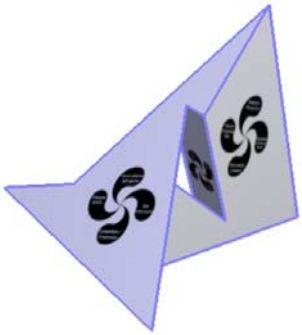
Multivocal poetic improvisation
symbolised by a "strange device" ?

The shades of night
were falling fast,
As through an Alpine
village passed
A youth, who bore,
'mid snow and ice,
A banner with the
strange device,
Excelsior!

Poem by Henry Wadsworth Longfellow
(1841)

One unique form which strangely embodies such characteristics is the Szilassi polyhedron. This is

topologically a torus but has 7 hexagonal faces -- onto which the 7 distinguished variants of the Lauburu could each be mapped -- as indicative of 7 axes of bias. Highly unusual is the fact that each face shares an edge with each other face -- with implications for the communication process in dialogue. As a result, it requires seven colours to colour each adjacent face. Its 14 vertices can then be associated with the 14 extremes of the 7 axes of communication bias.

Szilassi polyhedron		
Alternative representation	Multicoloured faces (rotation)	Alternative representation
		
Prepared with features of the *Stella Polyhedron Navigator* software package		

Exploring the relevance of "strangeness" as a metaphor would appear to be appropriate given the significance attached to strangeness in approaches to unification in fundamental physics.

Transformation pathways in multivocal discourse

The argument to this point has highlighted the value of framing the multidimensionalty (or hyperdimensionality) of the context of multivocal dscourse -- whether poetized or improvised. It is clearly important to associate this framing with a sense of the transformation pathways through that space -- as they may be relevant to the recognition of interest and originality as attractors of attention.

Pathways patterned by polyhedra: Beyond their use as mapping surfaces, it is appropriate to recognize how polyhedral geometry offers an especially valuable mnemonic aid in a spirit artfully emphasized (Frances Yates, *The Art of Memory* 1966; Marie-Louise von Franz, *Number and Time: reflections leading toward a unification of depth psychology and physics*, 1986).

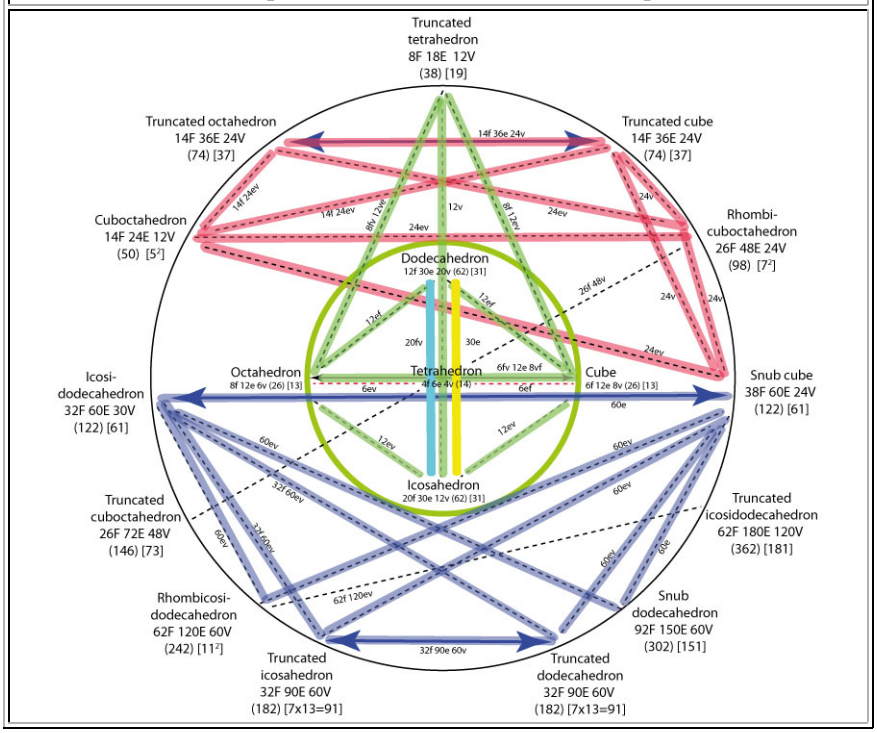
As a mnemonic device a polyhedron can be understood as follows:

- A **vertex** (or point) in the geometry can be usefully associated with one or more **focal points of poetic discourse**.
- Any **edge** (or line) can be suggestive of "activated" **poetic connotations, associations and resonances**.
- A **face** (or side) can identify a thematic field, delimited by a configuration of lines and points.
- Together the configuration can circumscribe and imply or frame a singular focal theme (especially if symmetrical) -- but essentially inaccessible to explicitation

The geometry is then also suggestive of the distinctions made by Globokar in improvisation between imitation (reflection), opposition (complementarity), integration through embodiment (of an axis of symmetry), and hesitation (in relation to the timing of morphing between polyhedral forms).

These implications can be used to identify a pattern of potential transformation pathways, as discussed separately (*Changing Patterns using Transformation Pathways*, 2015; *Memetic Analogue to the 20 Amino Acids as vital to Psychosocial Life? Number 37 as indicative of fruitful pathways of transformation?* 2015). There is then particular relevance to the indication by Joxerra Garzia of the number of rhyming words used by a bertsolaris as a resource in the improvisation of a bertsos (*The Art of Bertsolaritza: improvised basque verse singing*. 2001).

Map highlighting distinctive relationships pathways between spherically symmetrical polyhedra (regular and semi-regular)
F=faces, E=edges, V=vertices (Total of these in parenthesis)
[Total reduced to prime number, other than 2, in square brackets]



Knight's move, Swastika and blame-game: In framing further exploration, particular consideration is appropriate to the problematic aspects of originality and surprise, as it is typically used to gain competitive advantage. This may be highlighted through relating the pattern of the Knight's move in chess (or its equivalent in go) with that of the Swastika -- with which the Lauburu has been controversially associated (Santiago de Pablo, *El Lauburu: política, cu lturae identidad nacional en torno a un símbolo del País Vasco*. *Memoria y Civilización*, 12 , 2009).

The relationship has been discussed separately and related to the widespread prevalence of the so-called blame-game (*Swastika as Dynamic Pattern Underlying Psychosocial Power Processes: implicate order of Knight's move game-playing sustaining creativity, exploitation and impunity*, 2012; *Collective Mea Culpa? You Must be Joking ! Them is to blame, Not us !* 2015).

In a discussion of the current disruptive dynamics of global governance, termed "monkeying" for the purpose, a case was made for *Reframing "monkeying" in terms of Knight's move patterns* (2011). As discussed in another context (*Navigating the psychological forces of "communication space"*, 2003), the Knight's moves in chess are especially interesting given their potential significance as the moves of a Knight -- as a "noble" rather than as a "commoner".

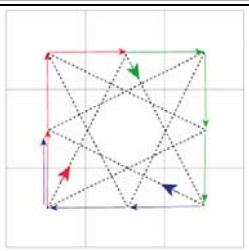
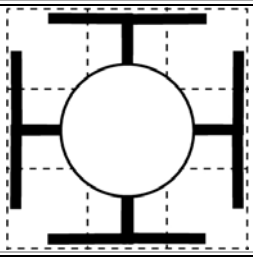
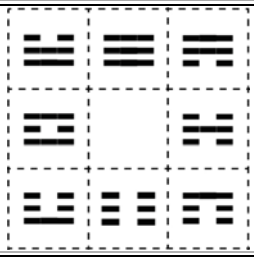
The counter-intuitive strangeness of the Knight's move, and its numerical symbolism, has traditionally been the focus of hypotheses connecting the origins and structure of chess with secret magical and religious rituals of ancient India. The operation of a pattern of Knight's moves at an archetypal round table of the wise and/or influential is especially interesting (*Implication of the 12 Knights in any Strategic Round Table*, 2014)

Further insight into the contrast between *Predictability and pattern-breaking* with respect to the Knight's move, was the focus of a subsequent exploration (*Implication of Toroidal Transformation of the Crown of Thorns: design challenge to enable integrative comprehension of global dynamics*, 2011). This notably featured in the following animation (left below).

The question here is how the Knight's move can also be associated with the "cognitive twist" offered in the

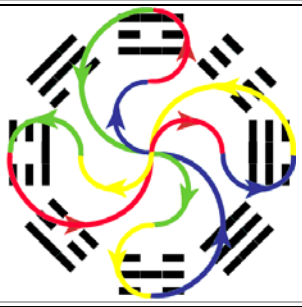
(potentially humorous) word-play and verbal juggling of the bertsolaritza. It is then appropriate to explore **the pattern of Knight's moves as the resource mined in the process of poetic improvisation**. The pattern is potentially helpful with respect to avoidance of a central integrative perspective. This is notably the case with respect to the blame-game, given the avoidance of the centre characteristic of strategic discussions, as illustrated by the animations below.

Especially interesting is experimental mapping of the pattern onto the traditional *BaGua* pattern of Chinese cosmology (right below). Note the switch in colour and direction -- to the "other" Swastika -- following each "move"

Animation of 8 of the Knight's moves (potentially suggestive of dynamics within the blame game and amongst the Knights of the Round Table)	**Animation cycle showing emergence of "avoidance container"** from merged Swastikas (left- and right-facing)	**Animation of succession of Knight's moves across the *BaGua*** engendering both forms of Swastika: left-facing (green) and right-facing (red)
		

In the light of the controversial association of the variants of the Swastika with the variants of the Lauburu, the latter may be substituted for the former in the animation on the right above. The *BaGua* pattern can however be presented in the traditional circular manner rather than as a grid pattern. The two variants of that pattern are used (below) over which two variants of the Lauburu are mapped and rotated. Each branch of the Lauburu can then be usefully understood as a distinctive Knight's move -- each offering a distinctive cognitive twist to be appreciated in any pattern of discourse.

To be stressed as relevant to this exploration, each trigram in either *BaGua* pattern traditionally has fundamental metaphorical associations -- with the encoding indicative of how these are understood to transform into each other. Associating the Lauburu dynamically in the animations is suggestive of how its "deconstruction" is able to hold 12 distinctive sub-transformations.

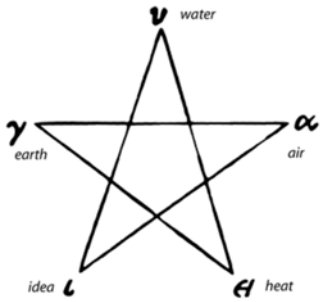
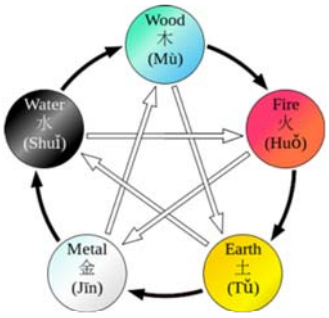
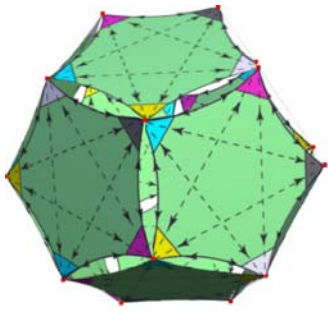
Experimental rotation of alternative Lauburu patterns over alternative BaGua patterns	
Anti-clockwise over King Wen pattern	Clockwise over Fuxi pattern
	

The 3-fold distinctive colour-coding of each branch of the Lauburu is reminiscent of the codon triplets of the genetic code -- of which there are 64 variants (variously compared with the pattern of the *I Ching*). Only a sub-set is indicated by the following two animations. The patterns can be explored metaphorically as indicative of the metabolic pathways of "cognitive metabolism". Of relevance to the aesthetic preoccupation of this argument, the challenge of their memorable comprehension in microbiology has been framed by a set of songs (Harold Baum, *Biochemists' Song Book*, 1995; *The Biochemists' Songbook MP3 Files*).

With regard to the play on words characteristic of poetic improvisation, notably as practiced by *bertsolaritza*, it is appropriate to note the analysis by William S Huff (*Homonym, Homonym and Homonym, and Other Word Pairs*, *Symmetry: Culture and Science*, 1992). He has made creative use of the 8 trigrams of the Chinese *BaGua* system to distinguish 8 types of word pair (such as "peace" and "piece") according to *meaning*, *pronunciation* and *spelling*, as discussed separately (*Discovering Richer Patterns of Comprehension to Reframe Polarization*, 1998).

12-fold configuration of 5-fold dynamics: Of particular interest is the classical use of a 5-fold "container", namely the Hygeia (the original association with hygiene and health) and the Chinese *Wu Xing* processes, as discussed separately with respect to current use of such configurations (*Memorable Dynamics of Living and Dying: Hygeia and Wu Xing*, 2014; *Cycles of Enstoning Forming Mnemonic Pentagrams: Hygiea and Wu Xing*, 2012). Such a pattern of processes can be distinctively mapped onto the 12-faced dodecahedron, as used above in exploring the relationship between poetic, multivocal and improvisation.

Distinctive mapping of 5-fold processes onto dodecahedron

Hugieia Pentagram of Pythagoreans	Chinese 5-phase Wu Xing cycle	Application to dodecahedron
		
Reproduced from Hygiea entry in *Wikipedia* (G. J. Allman *Greek Geometry From Thales to Euclid*, 1889, p.26) **with labels added**	Adapted from Wu Xing entry in *Wikipedia* **Interaction arrows:** black=generating; white= overcoming	Prepared with features of the *Stella Polyhedron Navigator* software package

Mapping of 12 distinctive conditions onto unfolded dodecahedron

Each face of the dodecahedron offers an indication of 10 unidirectional processes (as indicated in the *Wu Xing* diagram above), or 20 reversible (bidirectional) processes.

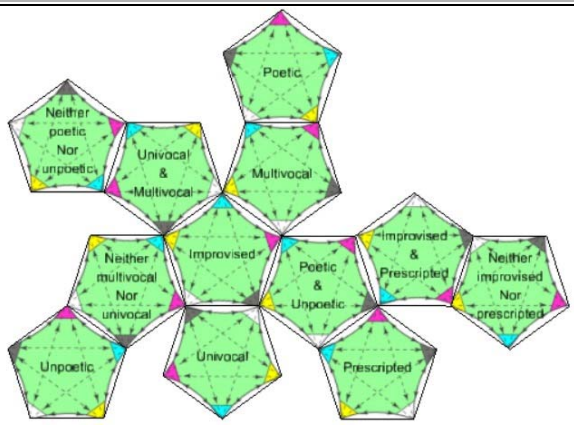
The challenge is to configure the 3 colours at the vertices shared between contiguous pentagram faces such that the colour combinations are distinctive.

Given that there are 5 corner colours, of which 3 are shared at a vertex, this gives only 10 possibilities if there is no repetition and the order is not significant. However the dodecahedron has 20 vertices to be distinguished. The question is then how to allow for a distinctive second set of 10 vertices.

This could be done by using 6 reflections of the *Wu Xing* ordering, thereby reversing the colour sequence around the pentagram vertices in the second set. This provides 2 sets of 10, namely offering a means of duplicating the 3-fold colour combination. Presumably these duplicates would be on opposite sides of the polyhedron -- as the extremes of the 10 axes through the 20 vertices. *[The illustration on the right is only indicative; **it remains to be completed**]*

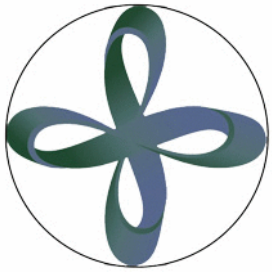
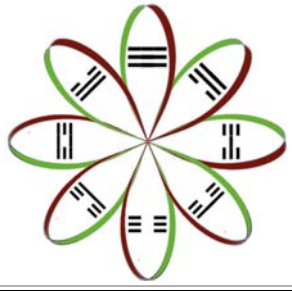
The pattern of processes can then be explored as a map of "cognitive metabolism" -- metabolic pathways in which the vertices constitute "cognitive vitamins". ***How the***

Patterns distinguished by colouring of 3-fold vertices



labels are to be appropriately positioned requires further consideration	

Embodying paradox in paradoxical geometry: The Möbius strip is widely used to hold a paradoxical relationship between opposites through a cognitive twist. Curiously opposite branches of the Lauburu can be understood as implying such a twist, with the Lauburu as a whole effectively constituting two interwoven Möbius strips. This suggests an animation (left below), potentially relating to the *BaGua* configuration (right below).

Interweaving Möbius strips as "paradox containers"		
Animation of 2 interwoven strips	Subject/Objective pattern through 2 interwoven strips	BaGua FuXi arrangement embodied within 4 interwoven strips
		

Rotation of "electromagnetic field" as source of insight: The acknowledged focus of the work of Nikola Tesla was on electromagnetism -- more specifically on electricity. There is the possibility that his insights can be reframed and/or generalized, as discussed separately in relation to creativity (*Reimagining Tesla's Creativity through Technomimicry: psychosocial empowerment by imagining charged conditions otherwise*, 2014). Using a variety of animations, this notably includes discussions of:

- *Imagining a method for adapting Tesla's insights to a psychosocial context*
- *Detecting a meta-pattern of connectivity amongst Tesla's insights*
- *Potential implications of alternation and rotation in psychosocial fields*

Clarification from an avant-garde perspective: For Vinko Globokar (*Drama and Correspondences*. Harmonia Mundi, 20 21803-1), regarding the principle of mutual psychological reactions and attempts to "join" four participants with each other and to make them increasingly dependent on each other. There are four levels:

- The musical material is entirely fixed, but the choice of instruments is left open.
- Each musician possesses only incomplete instructions. In order to be able to play, each musician must search for missing material in the performance of the neighbour (pitches from the first, length from the second, etc) and react to it in different ways: imitate, adapt himself to it (if need be, further develop), do the opposite, become disinterested or something else (something 'unheard of').
- The composed material is completely substituted by the description of the possibility arising from the reactions of the performers to their neighbours.
- On the last level, it is left up to the performers whether to cease playing or to continue; for not even the selection of reactions is now necessary

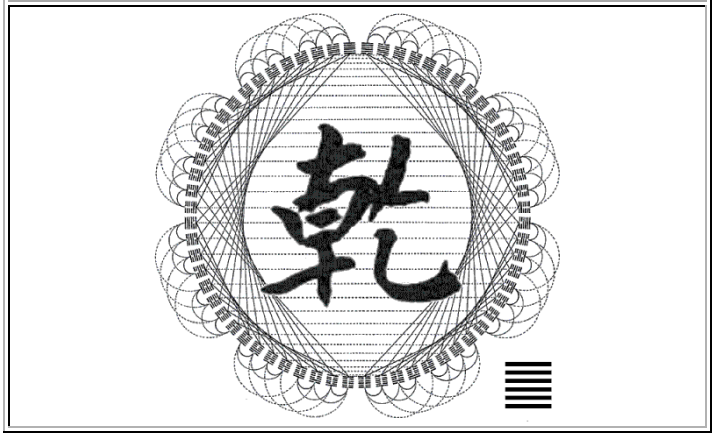
Clarification from a bertsolaritza perspective: As variously noted 6 modalities are commonly recognized in this tradition:

- *Hasierako Agurra*: "The Initial Greeting": the bertsolari has to address the audience at the start of the day's competition, usually with a free choice of metre and topicGartzelako Lana "Prison Cell Task": the bertsolari has to compose and sing a bertso to a given topic.
- *Elkarrizketa "Conversation"*: two bertsolaris have to deal with the topic together, singing the stanzas in turns and responding to the previous statement. Again the topic is given.

- *Puntua Jarrita "Point Given"*: the jartzaile sings a puntu and the bertsolari has to complete it, staying within the given tune and metre.
- *Hitza Emanda*: "Word Given": the jartzaile gives a key word to the bertsolari who has to compose a bertso containing this word.
- *Oinak Emanda*: "Rhymes Given": the bertsolari is given the four (or more, depending on the metre required) rhyming words and is required to compose the bertso "around" these rhyming words.
- *Txapeldunaren Agurra*: "The Winner's Farewell": here the bertsolari is allowed to compose their farewell to the audience.

Poetizing comprehensive insight of relevance to governance: The following experimental animation of the *I Ching*, uses the relevant Chinese character to imply a cognitive stance in the dance. An interpretation of the 64 conditions and the transformations between them is provided separately (*Transformation Metaphors -- derived experimentally from the Chinese Book of Changes (I Ching) for sustainable dialogue, vision, conferencing, policy, network, community and lifestyle*, 1997). The pattern has also been the focus of an experimental animation (*Dynamic Exploration of Value Configurations: interrelating traditional cultural symbols through animation*, 2008).

Pattern suggesting 64 contrasting styles of engagement with otherness
(corresponding hexagram from the circle indicated bottom right)



Notes:

- (*Being a Poem in the Making: engendering a multiverse through musing*, 2012)
- (*Enactivating Multiversal Community: hearing a pattern of voices in the global wilderness*, 2012)
- (*Living as an Imaginal Bridge between Worlds: global implications of "betwixt and between" and liminality*, 2011)
- (*Secret sharing, Shapeshifting and Embodiment: reintegration of a remaindered world*, 2011) ***
- (*Multivocal Poetic Discourse Emphasizing Improvisation: clarification of possibilities for the future*, 2012)
- philosophy of listening and silence
- embalming -- emblaming
- klein bottle
- riding a reverse bike
- Musical improvisation
- Inspired by jamming in jazz groups, internalizing the polar tensions between musical score and improvisation, such possibilities have been used by John Kao (*Jamming: the art and discipline of business*, 1997). A jam session is a musical act where musicians gather and play (or "jam") without extensive preparation or predefined arrangements.

References

Ernest Adams. Fundamentals of Game Design. New Riders, 2013

Christopher Alexander:

- A Pattern Language. Oxford University Press, 1977 [summary]
- The Nature of Order: an essay on the art of building and the nature of the universe. Center for Environmental Structure, 2003-4. [summary]
- New Concepts in Complexity Theory: an overview of the four books of the Nature of Order with emphasis on the scientific problems which are raised. 2003 [text]
- Harmony-Seeking Computations: a science of non-classical dynamics based on the progressive evolution of the larger whole. *International Journal for Unconventional Computing (IJUC)*, 5, 2009 [text]

Michael W. Austin (Ed.). Football and Philosophy: going deep. University Press of Kentucky, 2009

Harold Baum. Biochemists' Song Book. Taylor and Francis, 1995 [review]

Kenneth Bausch (Ed.). With Reason and Vision: structural dialogic design. Ongoing Emergence Press, 2015

Stafford Beer. Beyond Dispute: the invention of team syntegrity. Wiley, 1994

Bruce Ellis Benson: The Improvisation of Musical Dialogue: a phenomenology of music. Cambridge University Press, 2003

Eric Berne. Games People Play. Grove Press, 1964 [summary]

Anthony Blake. The Supreme Art of Dialogue: structures of meaning. Duversity Publications, 2008 [contents]

David Bohm. On Dialogue. Routledge, 2004

Eric Bronson (Ed.). Baseball and Philosophy: thinking outside the batter's box. Open Court, 2004

James P. Carse. Finite and Infinite Games: a vision of life as play and possibility. Ballantine, 1987 [summary]

Roberto Casati and Achille C. Varzi:

- Holes and Other Superficialities. MIT Press, 1994
- Insurmountable Simplicities: thirty-nine philosophical conundrums. Columbia University Press, 2008

Renee Coulombe, The Tao of Free Improvisation. *Open Space Magazine,* 5, 2003, pp. 56-69

Mihaly Csikszentmihalyi and Grant Jewell Rich. Musical Improvisation: a systems approach. In Sawyer, R. Keith. 1997. Creativity in Perf ormance. Ablex Publishing Group, 1997, pp. 43-66.

Mihaly Csikszentmihalyi. Flow: the psychology of optimal experience. Harper and Row, 1990.

Santiago de Pablo. El Lauburu: política, cu lturae identidad nacional en torno a un símbolo del País Vasco. Memoria y Civilización, 12 , 2009, pp. 109-153 [text]

Terrence Deacon:

- Incomplete Nature: how mind emerged from matter. W. W. Norton, 2011 [summary]
- Symbolic Species: the co-evolution of language and the brain. W. W. Norton, 1997 [summary]

European Free Improvisation [website]

Daniel Fischlin and Ajay Heble (Eds). The Other Side of Nowhere: jazz, improvisation, and communities in dialogue. Wesleyan University Press, 2004.

Gemma Corradi Fiumara. . The Other Side of Language: a philosophy of listening. Routledge, 1990.

Franklin Foer. How Soccer Explains the World: an unlikely theory of globalization. Harper, 2004 [review]

J. Foley. Basque Oral Poetry Championship. *Oral Tradition*, 22, 2008, 2, pp. 3-11.

Garzia Garmendia, J. (2008). History of Improvised Bertsolaritza: A Proposal.Oral Tradition, 22(2), 77-115.

Joxerra Garzia, Jon Sarasua and Andoni Ergaña. The Art of Bertsolaritza: improvised basque verse singing. Bertsozale Elkartea, 2001

Vinko Globokar:

- Individuum-Collectivum. Quaderni di BeQuadro, 1986. [text]
- Réflexions sur l'improvisation, le point de vue d'un praticien. *Analyse musicale*, 14, 1989, pp. 9-14 [text]
- Reflexiones sobre la improvisación, Pauta, U.A. Metropolitana, 1982, 2
- Reflexionen über Improvisation. *Improvisation Und Neue Musik: Acht Kongressreferate*, edited by Reinhold Brinkmann, 1979.
- Reacting: role of a performer. International Improvised Music Archive, 1970 [text]
- Vom Reagieren. *Melos,* 2, 1971. Same text, in German. Logos Anthology. London (Experimental Music Catalogue), 1973.

Robert Graves. Seven Days in New Crete. Cassell, 1949 [summary]

Edward T. Hall. Improvisation as an Acquired, Multilevel Process. *Ethnomusicology,* 36, , 1992, 2, pp. 223-235.

Andy Hamilton. The Art of Improvisation and the Aesthetics of Imperfection. *British Iournal of Aesthetics*, 40, 2000, 1, pp. 168-185.

Heidegger, Martin:

- What is Called Thinking. Harper and Row, 1968
- Introduction to Philosophy -- Thinking and Poetizing. Indiana University Press, 2011 [review]

Douglas Hofstadter:

- Gödel, Escher, Bach: an Eternal Golden Braid: a metaphorical fugue on minds and machines in the spirit of Lewis Carroll. Basic Books, 1979 [summary]
- I Am a Strange Loop, 2007 [summary]

Douglas Hofstadter and Emmanuel Sander. Surfaces and Essences: analogy as the fuel and fire of thinking. Basic Books, 2013

Thomas Homer-Dixon. The Upside of Down: catastrophe, creativity, and the renewal of civilization. Island Press, 2006

Johan Huizinga. Homo Ludens: a sudy of the play-element in culture. 1938 [summary]

Suguru Ishizaki. Improvisational Design. MIT Press, 2003.

Albert Xin Jiang, Kevin Leyton-Brown and Nando De Freitas. N-Body Games. 2005 [text]

John Kao. Jamming: the art and discipline of business creativity. HarperBusiness, 1996

Arthur Koestler:

- The Call Girls, Random House. 1973
- The Act of Creation. Hutchinson, 1964 [summary]

W. T. Jones. The Romantic Syndrome: toward a new method in cultural anthropology and the history of ideas. Martinus Nijhoff, 1961

George Lakoff and Rafael Núñez. Where Mathematics Comes From: how the embodied mind brings mathematics into being. Basic Books, 2000 [summary]

Wolfgang Konig. Vinko Globokar: Komposition und Improvisation. Breitkopf und Hartel, 1977

Sigrid Müller and Cornelia Schweiger (Eds.). Between Creativity and Norm-Making: tensions in the early modern era. Brill, 2012

Kinhide Mushakoji:

- Global Issues and Interparadigmatic Dialogue: essays on multipolar politics. Meynier, 1988;
- Scientific Revolution and Interparadigmatic Dialogues. 1979 [text]

Godfried-Willem Raes:

- Improvisation and Jan Broeckx's Thesis on reason, emotion and music. In: Apostel.L, Sabbe, H.,Vandamme, F (ed.): Reason, Emotion and Music, s.395-404. Gent, 1981.
- Kreatief musiceren in een anti-kreatieve maatschappij?, Volksopvoeding. Belgisch-Nederlands tijdschrift vol. 25 nr. 5/6 (p.289-345), 1976.

Nicholas Rescher:

- Aporetics: rational deliberation in the face of inconsistency. University of Pittsburgh Press, 2009
- Unknowability: an inquiry into the limits of knowledge. Lexington Books, 2009
- Paradoxes: their roots, range, and resolution. Open Court, 2001
- The Strife of Systems: an essay on the grounds and implications of philosophical diversity. University of Pittsburgh Press, 1985

Ted Richards (Ed.). Soccer and Philosophy: beautiful thoughts on the beautiful game. Open Court, 2010

George Rochberg. The Aesthetics of Survival: a composer's view of twentieth-century music. University of Michigan Press, 2004

R. K. Sawyer:

- Improvised Conversation: music, collaboration and development. *Psychology of Music*, 27, 1999, 2, pp. 192-216.
- Improvisation and the Creative Process: Dewey, Colliingwood, and the aesthetics of spontaneity. *Journal of Aesthetics and Art Criticism*, 58, 2000, 2, pp. 149-161.

Maxine Sheets-Johnstone:

- Movement and Mirror Neurons: a challenging and choice conversation. *Phenomenology and the Cognitive Sciences*, 11, 2012, 3, pp. 385-401 [abstract]
- The Primacy of Movement. John Benjamins, 2011
- Kinesthetic experience: understanding movement inside and out. *Body, Movement and Dance in Psychotherapy*, 5, 2010, 2, pp. 111-127 [text]
- The Corporeal Turn: an interdisciplinary reader. Imprint Academic, 2009

Miklos N. Szilagyi. Investigation of N -Person Games by Agent-Based Modeling. *Complex Systems*, 21, 2012 [text]

Marie-Louise von Franz:

- Number and Time: reflections leading toward a unification of depth psychology and physics. Northwestern University Press, 1986
- Psyche and Matter. Shambhala, 1992

Jerry L. Walls and Gregory Bassham. Basketball and Philosophy: thinking outside the paint. University Press of Kentucky, 2008

Keiji Yamada. Konton no Umi e: Chugoku-teki Shiko no Kozo (ln a Sea of Chaos: the structure of Chinese thinking). Tokyo, 1975

Frances Yates. The Art of Memory. Routledge and Kegan Paul, 1966 [summary]

---

this work is licenced under a creative commons licence.