



# laetus in praesens

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## Evoking Castalia as Envisaged, Entoned and Embodied the great game informed by the bertsolaritza cultural process?

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### Introduction

The nature and dynamics of Castalia have been imagined by [Hermann Hesse](#) in a work variously titled *The Glass Bead Game* (1943) or *Magister Ludi* -- notably contributing to his being awarded the [Nobel Prize in Literature](#) (1946). This has been an inspiration to others, leading to the development of various web-based initiatives with that theme ([Joshua Fost](#), *Toward the Glass Bead Game: a rhetorical invention*, 2004; [Paul Pilkington](#), *The Glass Bead Game*, 2011; [Charles Cameron](#), *HipBone: Glass Bead Games*, 1995; see also *Glass Bead Game Pplayable variants*). Other contemporary relevance is highlighted by [Peter Roberts](#) and [Michael A. Peters](#) (*From Castalia to Wikipedia: openness and closure in knowledge communities. E-earning and Digital Media*, 2011).

The poet [Robert Graves](#), shortlisted for the Nobel Prize, is renowned for his fictional articulation of a future utopia which explores the nature of poetry in a world governed by poet-magicians (*Seven Days in New Crete*, 1949). Poetry, music and song have long featured in science fiction. Arguably however, their role with respect to governance and organization -- rather than communication alone -- does not appear to have been explored, despite the urgency implied by imminent catastrophe and poignant titles such as *Songs of the Dying Earth* (2009).

By contrast, as discussed separately, the role of games has been extensively explored in science fiction (*Imaginal Education: game playing, science fiction, language, art and world-making*, 2003). For example game-playing has been skillfully presented as being fundamental to stabilizing a space-time ship during the process of its construction ([M. A. Foster](#), *The Game Players of Zan*, 1977). This could be understood as an analogue to the challenge of enabling [sustainability](#) through global governance. However little science fiction offers imaginative alternatives to the current patterns of governance -- seemingly so unfit for purpose.

There is always a case for enriching any such imagination in the light of subsequent insights and developments. The country of the Basques is not only reminiscent of the implied topography and culture of Castalia, but the process it cultivates through the periodic [bertsolaritza championships](#) can be seen as fruitfully informing the archetype through the evident popular attraction of their game-like dimensions. That it is not recognized as a member of the United Nations adds another dimension. Appropriate too, Basque is a language that none elsewhere can understand -- and whose origins remain a mystery.

The question here is how any such context can be imagined, whether at this time or in the future, through the pattern of improvised singing by which the mutually challenging bertsolaritza encounters are characterized. Can an event, as experienced, be reframed in sung poetic form?

Potentially more provocative is the imagined nature of discourse within any archetypal configuration of voices, as with the [12 Knights of the Round Table](#), the [12 Apostles at the Last Supper](#), or any governing Council of the Wise. To what extent might the transcendent coherence of their insight be enabled and articulated in poetic form -- or even sung -- as can be variously explored (*Implication of the 12*

## Imaginable aesthetic enactivism?

"**Poetizing**"? The possibility would be consistent with the argument of [Martin Heidegger](#) (*Introduction to Philosophy -- Thinking and Poetizing*, 2011), variously reviewed ([Frank Scalabrino](#), *Philosophy in Review*, 33, 2013, 4; [Katherine Withy](#), *Philosophical Reviews*, 2011). The latter notes Heidegger's effort at reconciliation:

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.

Since that time a trace of a new understanding of poetizing is now cultivated through the term [autopoiesis](#) -- clearly derived from [poiesis](#) -- recognized by science as the self-maintaining capacity of a complex 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).

"**Rhetoric**"? The current crises of governance -- globally, nationally and locally -- are marked by politically inspired speechifying of every kind, with very little indication that this is inspiring more coherent initiatives. There is an increasingly desperate quest for approaches that are widely attractive, meaningfully credible, as well as capable of enabling viable global connectivity (*Imagining Attractive Global Governance: questioning possibilities and constraints of well-boundedness*, 2013).

Given the importance of [figures of speech](#) to the articulation of attractive future possibilities, their traditional significance in that respect merits renewed attention, as argued here. Being fundamental to the traditional art of [rhetoric](#), highly developed in a range of cultures, **the very fact that "rhetoric" is now widely deprecated as a characteristic of sterile discourse calls for careful attention.**

The point is made [Paul Stob](#), professor of communication studies:

In rhetorical studies, we often deal with a similar issue... When people say things like 'rhetoric versus reality' or 'We want action, not rhetoric', they're making a rhetorical move that hinges upon the deprecation of rhetoric itself. So 'it's just politics' is a way of playing politics that seems to dismiss politics. (*Why 'it's just politics' is the ultimate political dodge*, *The Christian Science Monitor*, 26 August 2015)

That said, it is curious to note that an assessment in a leader by *The Economist* on the current crisis argues that:

Farewell, left versus right. The contest that matters now is open against closed... Countering the wall-builders will require stronger rhetoric, bolder politics and smarter tactics. First, the rhetoric. Defenders of the open world order need to make their case more forthrightly (*Globalisation and Politics: the new political divide*, 30 July 2016).

Less evident from this injunction is whether the requirement is for univocal rhetoric or that potentially characteristic of a sustainable [multipolar global society](#) having a "polycentric international architecture", as recently envisaged by [Sergey Lavrov](#), Foreign Minister of Russia (*Shift to multipolar world: Lavrov says Russia working to adjust foreign policy to new reality*, *RT*, April 2016).

In that respect, the same issue of *The Economist* frames rhetoric in surprisingly distinctive terms:

There is a Welsh style of political speech that owes more to the pulpit than the podium. It was born in the nonconformist Valleys, where mysticism, mining and Methodism mingled and produced a distinctively emotional and poetic religious culture. At its heart is *hwyl*, a hard-to-translate Welsh term implying the stirringly sentimental, bardic and gutsy. On the preacher's lips it means *cerdd dafod* (rhythm, or "tongue craft") and *cynganedd* (harmony). It has marked the speech of three of Britain's most acclaimed modern political orators, all sons of provincial Wales: David Lloyd George, Nye Bevan and Neil Kinnock. Of the latter's first speech as Labour Party leader one reporter admiringly wrote that he " *hwyled* and *hwyled* and *hwyled*". (*Rage against the dying of the light*, 30 July 2016)

Missing from such appreciation is the vital requirement for challenging aesthetic complement to monovocal rhetoric -- in order to constrain the prevailing tendency of speakers, poets and singers to be "too full of themselves" in their neglect of others (as with writers).

The focus below can be understood to follow from the case long made by [C. P. Snow](#) that the intellectual life of the whole of western society is now split into the titular two cultures -- the sciences and the humanities -- and that this is a major hindrance to solving the world's problems (*The Two Cultures*, 1959).

**Rhyme versus Reason?** This could be understood as a more general and fundamental framing of an argument later made by [Samuel P.](#)

Huntington that people's cultural and religious identities will be the primary source of future conflict (*The Clash of Civilizations?, Foreign Affairs*, Summer 1993). With respect to the quest for elusive global connectivity, this **clash of civilizations** argument might well be framed otherwise as that between "poetry" and "prose" -- or between "rhyme" and "reason".

What is to be expected of persuasive speech? **What connectivity requires "rhyme", rather than "reason" alone?** In the clarification of the question by Matthew S. McGlone et al. (*Birds of a feather flock conjointly (?): rhyme as reason in aphorisms, Psychological Science*, 2000), the authors note that:

In *The Gay Science*, Nietzsche (1878/1986) attributed the origin of poetry to a primitive belief that rhythm and rhyme could confer magical powers to the words of prayers, carrying them "closer to the ears of the gods". Although this superstition was dismissed long ago in most cultures, Nietzsche observed that "even now...the wisest among us are still occasionally fooled by rhythm -- if only insofar as *we sometimes consider an idea truer because it has a metrical form and presents itself with a divine spark and jump*" (pp. 139-140, emphasis added). Our results offer some support for Nietzsche's claim: Participants conflated the rhyme and perceived accuracy of aphorisms unless they were explicitly instructed to distinguish the statements' semantic content from their poetic qualities.

The current inadequacies of global governance, through the focus on "reason" at all costs, may be effectively exacerbated by having "thrown the baby out with the bathwater". Attractive, comprehensible connectivity may call for a measure of "rhyme". Any quest for "agreement" and "harmony" might then be understood in terms of such "consonance".

Furthermore, the quest for sustainability may indeed call for a degree of memorability with which "rhyme" is associated, as may be variously discussed (*In Quest of Mnemonic Catalysts -- for comprehension of complex psychosocial dynamics*, 2007; *Imagining the Real Challenge and Realizing the Imaginal Pathway of Sustainable Transformation*, 2007). The bertsolaritza process offers insights in that respect, as previously discussed (*Improvisation in Multivocal Poetic Discourse: Basque lauburu and bertsolaritza as catalysts of global significance*, 2016).

**Righteous rectitude:** How to bridge between perspectives whose adherents variously distinguish themselves by the claim to be unquestionably right, irrespective of the physical or symbolic violence which their differences engender? Added to this is the further irony of many being variously obsessed with protecting their righteous articulation of rectitude through duly enshrining it in exclusive copyright (*droit d'auteur*) -- typically behind a paywall. Equally curious, but far more problematic, is the association of the State with unquestionable rectitude, most notably in the sense that the State can do no wrong (as has long been the claim of organized religion).

This is most evident in French through the confusion of "law" (*droit*) and "right" (*droit*), as in current declarations regarding the *Etat de Droit* (or *Rechtsstaat* in German), as made by the French Prime Minister Manuel Valls (*Il y a une ligne infranchissable, l'Etat de droit, Le Monde*, 29 juillet 2016; *L'état d'urgence, c'est l'état de droit, France Inter*, 12 novembre 2015). A corresponding understanding has been articulated by Barack Obama to the effect that *There is no justification for violence against law enforcement. None* (*The Huffington Post*, 17 July 2016).

Is the cognitive challenge of "getting it together", and "holding it together", as much a matter of the enigmas of metapoetics as of metalogic? From the perspective of Castalia, the sciences and the arts as conventional cognitive enterprises are considered to have abandoned all hope with respect to any such cultural challenge.

**Enabling global governance through aesthetics?** It is then appropriate to ask whether policy can be enabled and enacted via more memorably elegant poetic and musical forms, as separately argued (*Poetry-making and Policy-making: arranging a marriage between Beauty and the Beast*, 1993; *A Singable Earth Charter, EU Constitution or Global Ethic?* 2006; *Aesthetics of Governance in the Year 2490*, 1990).

The potential relevance to ongoing conflicts also merits attention (*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).

The following exercise in reimagining an event follows from several previous exercises in envisaging future possibilities in such a context (*Gardening Sustainable Psycommunities: recognizing the psycho-social integrities of the future*, 1995; *Transdisciplinarity through Structured Dialogue: beyond sterile dualities in meetings to the challenge of participant impotence*, 1994; *World Futures Conference as Catastrophic Question: from performance to morphogenesis and transformation*, 2013).

**Emergent collective identity?** The implied collective cognitive challenge can also be framed more provocatively in terms of the emergence of a form of humanity distinct from *homo sapiens* -- with the further challenge of how its subtly distinctive nature might be recognized. The bertsolaritza process is consistent with naming this emergent species as *homo conjugens* or *homo undulans*. The latter is the focus of the penultimate chapter of an extensive study by Daniel Dervin (*Creativity and Culture: a psychoanalytic study of the creative process in the arts, sciences, and culture*, 1990). Possible characteristics of this potential modality are discussed separately (*Emergence of Homo undulans -- through a grokking dynamic?* 2013; *Authentic Grokking: emergence of Homo conjugens*, 2003).

**"Songlines"?** One lead is offered by the faintly intuited intimations as to the nature of that insight -- a pattern potentially understood in terms of a configuration of which the elusive **generative metaphor** is a focus of "higher order" in cognitive and cybernetic terms (*Engaging with Insight of a Higher Order*, 2014). The intuitions may be understood in terms of glimpses, elusive harmonies, or the like.

The ultimate challenge has traditionally been framed as hearing the **music of the spheres**, perhaps now to be nuanced otherwise in the light of the recent *magnum opus* of philosopher Peter Sloterdijk (*Spheres*, 2011-2014). Through a Holy Empire of Music, the theme features in the science fiction of Olaf Stapledon (*Last and First Men: a story of the near and far future*, 1930) later described as

becoming part of the very fabric of some early universes where all movement is musical rather than spatial (*Star Maker*, 1937).

**Re-imagining the present:** Despite assertions that everything is connected to everything, given the challenge of apparently disparate phenomena jeopardizing global governance, there is also a case for recognizing the lead offered by the possibility of re-inventing the experience of the present moment, as characteristic of improvised singing. In contrast to the many formal projections and plans for the future. The case for "re-imagining" can be fruitfully contrasted with that conventionally made for the Club of Rome and challenged separately (*Engendering 2052 through Re-imagining the Present*, 2012). This is a critical review of *2052: a Global Forecast for the Next Forty Years* (2012) by Jørgen Randers.

Given the development of the internet, can a generative metaphor of cognitive and cultural significance be more fruitfully explored, as framed for the Club of Budapest, the cultural counterpart to the Club of Rome (*Cultivating the Songlines of the Noosphere: from presentations by representatives to embodying presence in transformation*, 1996; *From Information Highways to Songlines of the Noosphere*, 1996) ?

## Reframing championships and the quest to conquer

**Cognitively transformative games?** There is now very extensive engagement with games of every form, notably enabled online. Most of these are appropriately defined as competitive in ways which can be recognized as surrogates for military engagement and the dominance or destruction of the other. Curiously it is these which are essentially attractive, in contrast to games which enable other modalities -- of which few are readily recognized. \*\*\* peace / cooperative games

The elusive nature of such a game has been remarkably articulated by Hermann Hesse who comments:

I suddenly realized that in the language, or at any rate in the spirit of the Glass Bead Game, everything actually was all-meaningful, that every symbol and combination of symbol led not hither and yon, not to single examples, experiments, and proofs, but into the center, the mystery and innermost heart of the world, into primal knowledge. Every transition from major to minor in a sonata, every transformation of a myth or a religious cult, every classical or artistic formulation was, I realized in that flashing moment, if seen with truly a meditative mind, nothing but a direct route into the interior of the cosmic mystery, where in the alternation between inhaling and exhaling, between heaven and earth, between Yin and Yang holiness is forever being created. (*The Glass Bead Game*, 1943)

These associations offer curious echoes to the elaboration of a "game of spheres" by Nicholas de Cusa (*De Ludo Globi*, 1463), written as a contribution to both a literature and a practice of moral game-playing. This formed part of the tradition of the forgotten chess-like game *Rithmomachia* ("The Battle of Numbers" or Rhythmomachy), which combined the pleasures of gaming with mathematical study and moral education. Intellectuals of the medieval and Renaissance periods who played this game were not only seeking to master the principles of *Boethian mathematics* but were striving to improve their own understanding of the secrets of the cosmos (Ann E. Moyer, *In The Philosophers' Game*, 2001).

This was undoubtedly an inspiration to the magnum opus of Hermann Hesse, as noted by Todd R. Harris (*The Interplay of Opposites, the Language of Experience, and the Geometry of Ascent: a comparison of Hermann Hesse's "Das Glasperlenspiel" and Nicholas of Cusa's "De Ludo Globi"*, 2001).

Whilst training games are extensively used in military and corporate environments, of greater interest is the extent to which transformation games are explored in environments cultivating alternative insights into human development, as with some intentional communities. Notable examples include the *Super Risk* game of Damanhur and the *Transformation Game* developed at Findhorn. The most recent adaptation of Hesse's variant by Paul Pilkington (*The Glass Bead Game*, 2011) is articulated in four volumes:

- **Volume 1 - Preface:** presents "A basic form of play, genealogy, and examples" including a short game concerning music and mathematics (*From acoustics to modern music*), architecture and I Ching, and many other examples including a game move linking a couplet of Arabic poetry, a theme from Bach's Art of Fugue, and an I Ching Hexagram (*Arabic : Bach : Change*).
- **Volume 2 - Preface:** presents a game involving gods, metals, planets and trees (particularly mercury and hazel), considers the evolution of naming and classification systems in each subject area (*Classification systems*), and the possibility of a root and centre of all knowledge (*The root of the tree*).
- **Volume 3 - Preface:** explores connections between war, poetry (*Poetry*), dance and cookery from before the dawn of man to the present day, through ideas of rhythm, order and what makes us human (*Rhythm, Structure and Order*).
- **Volume 4 - The Twitter Project**

**Infinite games:** Within the above context, it is intriguing to note the transformation of the traditional bertsolartitza quest for champions -- through periodic championships -- to one which embodies the contrasting understanding of "infinite games", as so notably articulated by James P. Carse (*Finite and Infinite Games: a vision of life as play and possibility*, 1987). These are helpfully distinguished in a commentary by Flemming Funch (*Finite and Infinite Games*):

- a finite game is a game that has fixed rules and boundaries, that is played for the purpose of winning and thereby ending the game.
- an infinite game has no fixed rules or boundaries. In an infinite game you play with the boundaries and the purpose is to continue the game.
- finite players are serious; infinite games are playful.
- finite players try to control the game, predict everything that will happen, and set the outcome in advance. They are serious and determined about getting that outcome. They try to fix the future based on the past.
- infinite players enjoy being surprised. Continuously running into something one didn't know will ensure that the game will go on.

The meaning of the past changes depending on what happens in the future.

Framing the quest for elusive understanding as embodied or implicit in a game is indeed fundamental to the cultural identity of Castalia (*Playing the Great Game with Intelligence*, 2013).

**Transcending the duality of duelling:** Rather than the traditional inspiration of a battle, even a series of battles, from which a single champion emerges, the challenging bertsolartitza encounters now embody a far subtler relationship between "one" and an "other". Sung verse is fundamental to this process. Rather than reinforcing the traditional understanding of a duel and its outcome -- readily framed as the verbal tennis characteristic of much debate -- the process transcends *dilemma* (and duality) by embodying the subtleties of *tetralemma*. (Kinhide Mushakoji, *Global Issues and Interparadigmatic Dialogue: essays on multipolar politics*, 1988).

The art of this remarkable transcendence lies in the ability to carry the expectations of the audience through the process. This ensures a degree of participation absent from detached observation of any duel -- characterized by vicarious identification with the winner and the dubious satisfaction of the annihilation of the loser.

The "contest" between rhyme and reason can then be fruitfully reframed in terms of a tetralemma: reason (without rhyme), rhyme (without reason), reason-and-rhyme, neither-rhyme-nor-reason. However any such comprehension can be further informed by the non-binary aesthetic implications of both *fuzzy logic* and the breakthroughs in *quantum computing* (Sarah Voss, *Fuzzy Logic in Health Care Settings: moral math for value-laden choices*, *Journal of Humanistic Mathematics*, 6, 2016; Cade Metz, *Quantum Computers Don't Make Sense -- but this one makes music*, *Wired*, 30 July 2016; Luke Dormehl, *A mezzo-soprano singing with a quantum computer is 2016's craziest duet*, *Digital Trends*, 4 August 2016). In a phrase with considerable sociopolitical implications at this time, succinctly stated in the *Wired* article:

... if you read a quantum system from here in the classical world, it "decoheres". It collapses from many states into a single state. When it collapses, a *qubit* no longer holds both a 0 and a 1. It holds only a 0 or a 1, like a classical *bit*.

Especially significant to this emergent transcendence is the contrast with the singularity implied by the often desperate quest for a single champion -- assumed to be the effective embodiment of unity and a symbolic resolution of the traumatic dimensions of duality and unresolved dilemma. This locked-in condition is only too evident in political and strategic quests for agreement on a single unifying plan, with the associated systematic suppression of alternatives. Rather than collapsing valuable diversity in this way, into what readily becomes a problematic oversimplification, poetic associations and tonal resonances are used to render diversity both coherent and memorable.

**Engendering a multiplicity of losers by loserships:** The desperation of the conventional quest for an unequivocal champion is only too evident in the current primary concern in some countries to "be great again" (most strikingly as a slogan in the current presidential campaign in USA). More generally this process can be seen in the quest for monopoly and hegemony, whether by countries, religions, philosophies, corporations, or sciences (*Embodying Global Hegemony through a Sustaining Pattern of Discourse: cognitive challenge of dominion over all one surveys*, 2015).

This pattern is otherwise typically evident in the preoccupation with rankings and "being number one" -- strangely recalling the various stages of sibling envy. The desperation can even be curiously seen as echoing the primordial competitive urge amongst sperm to fertilize the ovum -- thereby triumphantly framing the myriad of other sperm as "losers". The pattern is bizarrely consonant with a poorly acknowledged function of the International Olympic Committee (Carrie Weisman, *Judging From the Number of Condoms Awaiting Athletes*, *AlterNet*, 29 July 2016; Stephen Wade, *Athletes given 450,000 condoms at Rio 2016 Olympics, three times more than in London*, *Daily Mail*, 20 May 2016).

**Emergent singularity versus Emergent plurality?** The focus on the emergent singularity, and the implicit symbolism with which the process may be so fundamentally associated, only too conveniently distracts from the unintegrated multiplicity thereby framed as losers. These are effectively "remaindered", or "left behind", as can be variously explored in terms of the challenges more widely implied (*Reintegration of a Remaindered World: cognitive recycling of objects of systemic neglect*, 2011; *Social Remainders from Psychosocial Remaindering: review of current usage and implications*, 2011). The quest for a "supreme champion", and the associated media coverage, can then be recognized as obscuring any recognition of any "supreme loser", the "ultimate loser" in the championship process.

Sheila Petty, Garry Sherbert and Annie Gérin Wilfrid (Eds.). *Canadian Cultural Poesis: essays on Canadian culture*, 2006)

A truly democratic society must preserve the universal as an absence, or empty place, in order to protect and maintain the cultural plurality. The advantage of seeing the the absence of a full identity as an empty place to be temporarily filled in by some group representing the universal is that it not only allows different cultural groups to struggle for democratic control, or dominance, but it also keeps the national community open to cultural differences. (p. 20)

"Championship" psychology thus merits recognition in terms of its con-verse, as "losership". This is the process by which the maximum number of "losers" is engendered. By associating champion with all that is expected of leaders, the deprecation of the remaindered is further emphasized (Hans Nilsson, *Losership instead of Leadership*, *European Council for Energy Efficient Economy*, April 2008; *EU Leadership or Losership?* *Oxfam International*, 28 May 2009; *A new mandate for 'losership'*, *Financial Times*, 30 May 2005; *Entrenched Losership*, *Clarissa's Blog*, January 2016). This emphasizes the sense in which there is necessarily no way in which losers can win.

Writing at the time of the 2016 Olympic Games, with intense media focus on championship medals in many disciplines, should some recognition be given to the disproportionate number of losers thereby engendered so systematically? Is the worldwide pattern of loserships to be seen as curiously exemplified by "Olympic Loserships"?

## Con-taining significance in the con-quest of the moment

**Cognitive implications of "con":** Through framing its dynamics in a new space, transcending the duality of con-test, attention is variously focused in Castalia on the nature of the cognitive focusing process associated with "con". A championship could then be recognized as a test of "con" -- perhaps to be understood metaphorically as a form of [stress test](#). However this recognition also allowed the con-notation of a test of "con" as used in its variously deprecated senses, most notably that of the "con" of a [confidence trick](#) (and that of a "dummie" or "idiot" implied by the widespread use of [con](#) in French).

As noted separately, the prefix "con" would appear to be associated with a set of fundamental con-ditions and processes which in Castalia merit con-sideration together in con-textual systemic terms (*Primary Global Reserve Currency: the Con? Cognitive implications of a prefix for sustainable confidality*, 2011). The sustainable con-dition whose emergence it is sought to optimize through the processes of Castalia could indeed be understood in terms of an archetypal quest -- only too readily con-flated and con-fused with con-quest.

The perspective is con-sistent with any focus on:

- the extent to which terms prefixed by "con" are currently vital to con-ventional discourse (*Exploration of prefixes fundamental to global discourse*, 2011)
- the cognitive challenge of encompassing the dynamics of "con" (*Embodiment of Identity in Conscious Creativity*, 2011).

**Requisite constraint to transcend conflict:** The potential for dysfunctional con-flict, as evident in Castalia as elsewhere, can however be cognitively con-strained through recognition of an 8-fold pattern of implied "functions", in the light of an analysis of web usage (*Considerable Conglomeration of "Cons" of Global Concern: eightfold constraint on constructive conflict control?* 2012), as indicated by the following:

1. **"Con":**
  - "*contra*" (or *con*), in the sense of being against any proposed change or remedial initiative (as in the shorter version of the Latin *pro et contra*), with a preference for conservation of the *status quo* -- perhaps creatively reframed, as by "*neocons*".
  - "con" as widely used in French as an extremely derogatory expression to denote stupid people (*connard*).
2. **Confidence**, ambiguously:
  - *confidence* as experienced in relation to authority, institutions, the professions, society, community, and the future. It is this confidence which has been much abused in recent years, as widely noted in relation to the financial system and in the associated efforts at "confidence-building" (*Abuse of Faith in Governance*, 2009). The disastrous breakdown in confidence has had implications for the self-confidence of many.
  - *confidence trickery* ("con-game") recognized after the fact as being an exercise in deliberate deception, of which the [subprime mortgage scandal](#) and various [Ponzi schemes](#) are examples.
3. **Conviction**, as a consequence of belief, and confidence in that belief:
  - *conviction*, especially that arising from belief giving rise to the sense of being unquestionably right.
  - *condemnation*, is a consequence of conviction that the other is in the wrong.
4. **Consensus:**
  - *consensus*, as desperately sought in a variety of circumstances with respect to enabling remedial strategies.
  - *constitution*, as the legal formalization of collective consensus.
5. **Control:**
  - *control*, as the primary preoccupation of governance and any form of management, and hence the concern of the security services with "law and order".
  - *conspiracy*, as highlighted by the many [conspiracy theories](#) regarding the secretive operations of government, and even the existence of secret government, or secret government agencies.
6. **Consumption:**
  - *consumption*, as a major current concern in relation to increasing population numbers and the challenge to resources
  - *consummation*, understood in terms of the quest driving many lives, whether understood within the immediate context of (physical) relationships or as the ultimate qualitative achievement of a lifetime of struggle
7. **Conception**, ambiguously interpreted as:
  - *conception* of structures of every kind, whether with respect to construction of building, explanations, theoretical models, or images for public relations purposes, namely frames of reference, potentially "written in stone", and including processes promoted by consultants.
  - *conception* in the sense of unconstrained human reproduction, with its consequent call on increasingly limited resources and the much-challenged capacity to deliver them appropriately.
8. **Consideration**, in various senses of according attention, or not, to what is esteemed to be of importance:
  - *consideration*, understood more broadly as according attention and recognition to phenomena which may previously have been neglected -- or deliberately ignoring them. Many expect sympathetic consideration of their condition and circumstances by society and by authority, whether or not this calls for action.
  - *concern*, understood as (selective) recognition of a potential danger calling for further investigation and action. Many issues in society are formulated as a focus for action as a consequence of expressed concern, possibly grave concern.

**Poetizing the quest for "con":** A striking feature of the great game in Castalia could be remotely compared to the annual [Eurovision Song Contest](#). However its primary distinction lies in the playful quest for "con" -- as variously implied and expressed through a multitude of connotations of terms of which it is a prefix.

The contest could be compared to the periodic construction of an epic (like the *Kalevala* or the *Mahabharata*), or of a virtual temple (as with the periodic reconstruction of the [Ise Grand Shrine](#) in Japan). Through the collective process, Castalia is thereby periodically contained temporarily -- only to be recreated on a subsequent occasion.

Rather than the univocal emphasis of the Eurovision event, the contest as a game constitutes a vast exercise in multivocal improvisation. The art involves the creative interplay of the variety of insights and functions with which "con" is associated, and by which it is transformed and modulated.

Understood as a conceptual puzzle -- possibly as a riddle or a paradox -- the art lies in combining significance conventionally associated with the wide variety of terms of [word-roots prefixed with "con-"](#), as identified separately (*Exploration of Prefixes of Global Discourse: implications for sustainable confidelity*, 2011). A visual dimension to the process is depicted below in terms of a "[Concordian Mandala](#)", described separately (*Con-quest Aesthetically Reframed via the Concordian Mandala*, 2016).

The outcome on each occasion effectively constitutes a "test" of the integrity engendered by "con". In the absence of any conventional conclusion, the process reinforces recognition of the elusive nature of "con" and its challenge to habitual modes of thinking and definition. In this sense, the playful allusions to the nature of "con" resembles those of traditional quest of [alchemists](#) for [alkahest](#) -- understood as the universal solvent capable of dissolving any container.

The periodic contest thus explores the possible nature of such a container -- in dynamic cognitive terms, rather than in static physical terms -- thereby celebrating the identity of Castalia.

## Cognitive significance of a con-tainer

This has been remarkably explored with respect to shipping containers as the primary symbol of globalization and a container world ([Alexander Klose](#), *The Container Principle: how a box changes the way we think*, 2009). In a critical comment Klose notes:

Containers represent the impressive dynamics of modern capitalism and its fundamental optimism in the face of every crisis. At the same time, they represent the fears and objections to these dynamics when logistic are organized purely for optimization, forcibly converging and aligning formerly remote parts of the world through an exponential increase in transport and communications processes. The basic materiality of containers, the fact that they can be emptied just as easily as they can be filled, also seems to reveal an effect on the semantic level of stories and images. (p. ix)

Klose argues that:

Today the transport container has become ... a key image, a global [visiotype](#) that professes to make further explanations superfluous. The success of the metacontainer has brought about a metareality in which containers and globalization have always formed a firm and fast tautological unity... This metareality consists of a bastion of belief in progress and the apotheosis of rationality, regardless of whether this process is interpreted as philanthropic or branded as misanthropic. The reality is based on a mythical foundation that attributes technical and social development to ominous powers of the economy and the market. (pp. 74-75)

The argument is appropriately extended by Klose to include the cognitive preoccupations of [George Lakoff](#) and [Mark Johnson](#) (*Metaphors We Live By*, 1980) with the container as the primary subspecies in the genus of the ontological metaphor, citing:

Each of us is a container, with a bounding surface and an in-out orientation. We project our own in-out orientation onto other physical objects that are bounded by surfaces. Thus we also view them as containers with an inside and an outside. (p. 25)

**Organization of categories as containers:** Especially interesting is the recognition that the implications extend to the framing, organization and management of categories, classes (as in classification) and concepts -- as in knowledge management, categorization, classification and semantic mapping. In all such instances, concepts are conventionally represented as box-like containers. Klose draws particular attention to the [Matryoshka Principle](#):

[Matryoshkas](#), the colorfully painted wooden nesting Russian dolls, are among the most famous Russian exports. They serve as an organizational model for one of the most successful container principles, the Matryoshka Principle, which has found its way into highly varied contexts. In business management, in production and logistics, and also in communications and information, it refers to models of recursive organization. An object or a model is recursive if it contains itself as a part, just as each Russian doll contains a smaller mode of itself inside it. (p. 68-69)

Curiously no association is made by Klose to [fractal organization](#) and especially to the [Mandelbrot set](#) with its resemblance to a Matryoshka. The relevance to sustainability within any global container is discussed separately, with respect to transcendence of dilemmas (*Psycho-social Significance of the Mandelbrot Set: a sustainable boundary between chaos and order*, 2005; *Sustainability through the Dynamics of Strategic Dilemmas -- in the light of the coherence and visual form of the Mandelbrot set*, 2005).

**Thinking outside the box:** Significantly missing from the valuable review by Klose of "how a box changes the way we think" is any consideration of "[thinking outside the box](#)". This is widely used as a metaphor for thinking un-con-ventionally, most notably in the form of novel or creative thinking.

Given the magical surprise cultivated in the great game of Castalia, it is appropriate to note the unexpected association between the [Gilbreath Principle](#) and the Mandelbrot set, as specifically described through wordplay by [Persi Diaconis](#) and [Ron Graham](#) (*Magical Mathematics: the mathematical ideas that animate great magic tricks*, 2012):

One of the great new discoveries of modern card magic is called the Gilbreath Principle. It is a new invariant that lets the spectator shuffle a normal deck of cards and still concludes in a grand display of structure. One of the great new discoveries of

modern mathematics is called the Mandelbrot set. It's a new invariant that takes a "shuffle" of the plane and still concludes in a grand display of structure. (*From the Gilbreath Principle to the Mandelbrot Set*, chapter 5, pp. 61-83)

**Topological transformation of containers:** Given the ubiquity of the container box, within which most in urbanised societies now live and work (and probably think), the interest here is how the great game of Castalia constitutes a contrasting form of container -- and what this enables. The attractive focus traditionally offered by circular amphitheatres and arenas is indeed suggestive in this respect.

In a separate articulation, containers enabling cognitive processes are discussed in terms of: think tanks and incubators, conferences, virtual containers in cyberspace, and retreat centres for meditation (*Cognitive Containers*, 2011). Reference is also made there to the *BaGua* configuration as a container, and (metaphorically) to industrial reaction vessels. It is in the latter respect that the future adequacy of the box metaphor is challenged, given the unusual nature of the container required to enable the nuclear fusion on which hopes for a sustainable energy source are focused (*ITER: International Thermonuclear Experimental Reactor*).

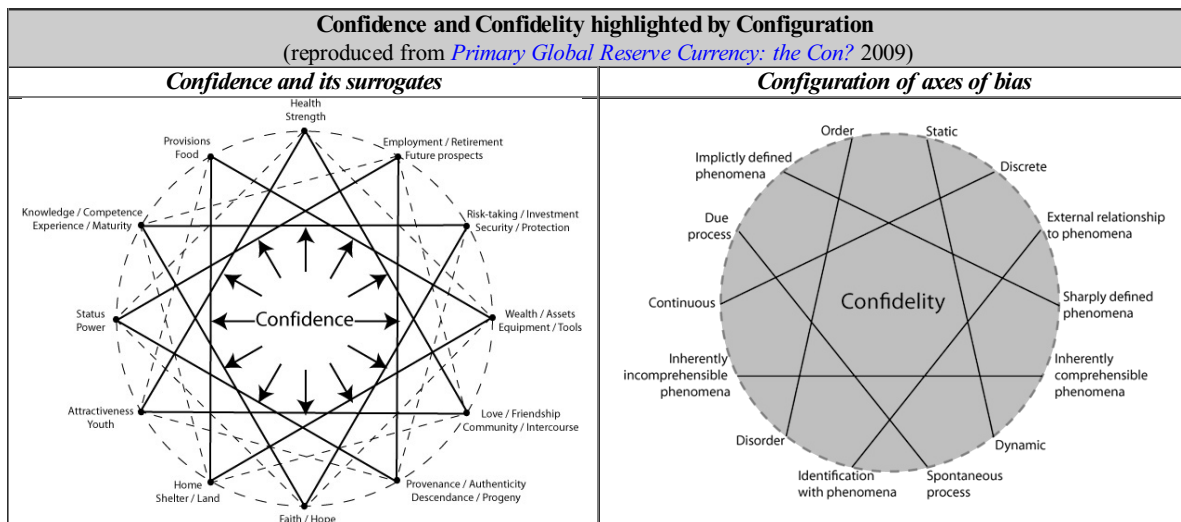
The primary characteristics of a container appropriate to this outcome is the requirement that the plasma it contains should not come into contact with the wall of the container. This is achieved by using a toroidal configuration of magnets to control the dynamics of the circulating plasma. Such a design, as separately described, constitutes one inspiration for the great game of Castalia (*Enactivating a Cognitive Fusion Reactor: Imaginal Transformation of Energy Resourcing (ITER-8)*, 2006).

The topological transformation from the materiality of a circular amphitheatre to the insubstantiality of a toroidal form as a container for psychosocial processes is inherently appropriate. It might otherwise be assumed that a spherical form -- reflecting the dynamics of a globalized integrity -- would constitute a more appropriate container. This assumption is helpfully called into question by the arguments through which this option was set aside in the design of a nuclear fusion reactor.

The question is how to gain greater understanding of what might be circulating within that form. One approach is through the traditional symbolism of the **circulation of light**, as discussed separately (*Circulation of the Light: essential metaphor of global sustainability?* 2010). Another approach is to imagine it as especially related to the dynamics of conviviality and confidence (*Confidelity Container Design*, 2011).

**Building confidence and conviviality:** Much is currently made of the challenge of confidence building, most obviously with respect to economics but increasingly with regard to the trustworthiness of authorities in general -- especially political authorities. The concerns are also expressed, perhaps to an even higher and more urgent degree, with respect to local community building. Such matters have most notably come to the fore in relation to "building the peace" in territories acclaimed ("triumphantly") as having been shattered by conquest -- or those in a state of increasing fearfulness, held ("incomprehensibly") to be the ("innocent") victims of terrorism.

In exploring the containers appropriate to the sustainability of confidence, as it might be currently enabled in Castalia, it is useful to review its possible surrogates, as discussed separately (*Varieties of Confidence Essential to Sustainability: surrogates and tokens obscuring the existential "gold standard"*, 2009). This included the following indicative configuration.



**Participative design of a cognitive container:** The great game central to the cultural dynamics of Castalia is appropriately recognized as a **con**-tainer for the processes whereby its identity and coherence are sustained. The notion of such a container is a reminder of the role played by the **amphitheatres con**-structed throughout the Roman Empire, and epitomized by the **Colosseum** and its gladiators. Their role gave rise to the critical phrase **bread and circuses** in recognition of the superficial appeasement characteristic of **con**-ventional politics, and the virtual amphitheatres created by **con**-temporary use of the broadcast media.

In Castalia the nature of the psychosocial **con**-tainer offered by the great game is imagined otherwise. In terms of the eight cognitive systemic functions highlighted above, it is understood as the **con**-fluence of **con**-fidence, **con**-sensus, **con**-trol, **con**-sumption, **con**-ception and **con**-sideration. However the very nature of that **con**-fluence is paradoxically challenged by the cognitively elusive underlying dynamics of "**con**" itself.

Metaphorically the challenge of this **con**-tainer can be provocatively explored through the dynamics in a **con**-troversial modern amphitheatre, namely **bullfighting** or taumachy, and the widespread use of **bull** as a euphemism (*Viable Global Governance through*

## Creative challenge of disparate organization of figures of speech

**Figures of speech:** As fundamental to persuasive rhetoric, it is curious, but potentially significant, that the variety of styles of speech is so notably framed by the term **figures of speech**. As a term which has both aesthetic and geometrical connotations, how are such "figures" to be understood -- especially in relation to imagining the great game of Castalia? They are of course fundamental to discourse - and to the public discourse central to governance, the processes of persuasion through argument, and to confidence building. The phrase "talking things up" is noteworthy in this respect.

For [Stephen Adams](#) (*Poetic Designs: an introduction to meters, verse forms, and figures of speech*, 1997):

Far from being artificial distortions of language, the figures have developed from patterns that naturally appear when language is used with great emotion and energy. As such they provide one means for identifying patterns that emerge in free verse and help give it formal organization... (p 108)

Especially pertinent, at a time when arguments presented in English are challenged by those presented, in Arabic is the reflection on figures of speech by [Hussein Abdul-Raof](#) (*Arabic Rhetoric: a pragmatic analysis*, 2006):

The traditional meaning of "figurative" has always involved a contrast with the "proper" meaning of a given word, its supposed meaning, the idea which comes to mind when the word is employed. Figures of speech twist the meaning of the word -- the Greek word for figures of speech is *trope* which means "turn, twist". **The figurative system of language has rhetorical and political force. The word is as powerful as a bullet. Thus figures of speech have psychological force and are the chief element of eloquence and the skill to convince your audience of the truth of your thesis....** [*emphasis added*]

In presenting a catalogue of the more common schemes and tropes (noted below), Adams specifically focuses on those to which reference is made in the "working critical vocabulary". He notes:

In the long history of rhetoric, different classifications of the figures have been used. One essential distinction is between schemes and tropes, that is between "figures of speech" and "figures of thought". In [Brian Vickers'](#) words, a trope "involves a change or transference of meaning and works on the conceptual level" while a scheme "essentially works on the physical level of the shape or structure of language... A trope affects the meaning of words: a [scheme] only affects their placing or repetition". Tropes have received abundant attention. The study of metaphor alone has reached staggering proportions. The lowlier schemes, however -- more closely related to patterning of the physical language like meter, rhyme, and stanza -- have been slighted (p. 108)

Recognizing the distinction, or conflating the two as virtually synonymous, remains a matter of continuing interest, perhaps best succinctly stated by [Silvae Rhetoricae](#) as:

- figures of speech are artful deviations from the ordinary arrangement of words.
- tropes are artful deviations from the ordinary or principal signification of a word.

**Classification of figures of speech:** The exposition of the variety of approaches to the classification of figures of speech is lengthy (and tedious) -- and is therefore presented as an annex (*Questionable Classification of Figures of Speech -- as fundamental to the need for powerful rhetoric in governance*, 2016). It is presented there to highlight what is so systematically neglected at a time when rhetoric has seemingly a vital role to play. A useful introductory summary is provided by Zhang Xiu Guo (*English Rhetoric*, 1991):

Literary interest in, and use of, figures of speech reached its zenith in the Renaissance: [Henry] Peacham's handbook [*The Garden of Eloquence*, 1577] lists nearly 200 different types (400 are listed in [Lee A.] Sonnino, 1968). Although a decline in the study of classics and a growing suspicion of the rhetoric have led to a decline in their use in literary composition and public speaking, a "hard core" of figures still persists, and some are known reasonably well by name. For example, devices of repetition are common in public speaking: and figurative language is generally characteristic of advertising.

**Main categories:** The problematic issues of classification (anticipating those implied below), are introduced by the main categories presented by *Wikipedia* as the **classical rhetorical operations** (*quadripartita ratio*):

- addition (*adiectio*), also called repetition/expansion/superabundance
- omission (*detractio*), also called subtraction/abridgement/lack
- transposition (*transmutatio*), also called transferring
- permutation (*immutatio*), also called switching/interchange/substitution/transmutation

**Categorization of figures of speech in non-western cultures:** Irrespective of ignoring the respective merits of alternative classification, the exercises above fail to take account of how figures of speech might be identified and clustered in other languages and cultures -- again, as with natural species.

Together with the other contrasts identified separately, it might be asked how the lack of attention to figures of speech informs and

distorts discourse at the highest level, most notably within the United Nations Security Council. Given the geometry implied by "figure", this neglect could be consistent with a related issue (*Unquestioned Bias in Governance from Direction of Reading? Political implications of reading from left-to-right, right-to-left, or top-down*, 2016).

## Enabling memorability through poetic self-reflexivity: metapoetics?

Together with the extensive range of figures of speech, the diversity of classification systems raises the question of how speakers are enabled to engage with them effectively in practice. Aspects of this issue have traditionally been fundamental to the art of rhetoric -- and its challenge of attracting and retaining the attention of an audience.

**Memorability and the art of memory:** According to *The Oxford Companion to Shakespeare* (2015):

As an academic pursuit in the "grammar schools" of the 16th century, rhetoric usually took the form of memorizing dozens of figures of speech as categorized in classical writings... It may be assumed, then, that Shakespeare and the educated section of his audience shared a highly codified knowledge of figurative language and of its persuasive uses... Shakespeare's own conscious exploitation of the range of such devices is evident not only in set-piece examples of dramatic oratory... but throughout his work. (p. 466)

The point is emphasized otherwise by Kate Emery Pogue (*Shakespeare's Education: how Shakespeare learned to write*, 2012), noting that boys in school had to learn 150 Latin figures of speech. Having memorized these figures, they then went on to learn aphorisms and to write themes based on them. How extensive is the array employed by the speakers in the public discourse of today?

The **memory skills** (*ars memoriae*) required of any speaker in that period have been remarkably articulated by Frances Yates (*The Art of Memory*, 1966) -- most notably with respect to the **method of loci**, memory gardens, memory palaces, and the theatre of memory of Giulio Camillo. For example, as summarized by Bernard de Lavineta (*Memory Loci for Rhetoric*, 1523):

A speaker must be able to make an impromptu speech on any given topic in an apt, distinct and attractive manner, especially on matters having to do with the public good, and worthy causes.

Given the need for insightful discourse, appropriately enhanced by a vast array of figures of speech, the challenge to memory in a globalised "**learning society**" clearly merits attentive consideration, as separately discussed (*Societal Learning and the Erosion of Collective Memory*, 1980). The latter took the form of a critique of a Club of Rome report (James W Botkin, et al, *No Limits to Learning; bridging the human gap*, 1979).

The possibility of enabling memorability of complexity is usefully illustrated (for students of biochemistry) by the widely known representation of metabolic pathways through song (Harold Baum, *Biochemists Songbook*, 1995; [MP3 files](#)). **Has any attempt been otherwise made to elaborate sung verse to encompass the variety of poetic forms?** It might be asked why this has not been attempted in the case of figures of speech -- **especially when that variety has long been framed in terms of ecosystemic metaphors such as "forests" or "gardens"** (*Knowledge Gardening through Music: patterns of coherence for future African management as an alternative to Project Logic*, 2000).

**Self-reflexivity:** In Castalia the challenge of disparate classification systems -- inherently unmemorable -- is completely reframed from a self-reflexive perspective. Whereas poetry is conventionally used in distinctive modes and styles to describe aspects of the human experience in particular contexts -- only implying their coherence and connectivity -- in Castalia **poetics is understood as fundamental to the organization of experience as a whole**.

The condition can be understood as analogous to the many distinctive **tuning systems** characteristic of expressions of musical harmony - - currently comparable only through the use of mathematical tools (incomprehensible to most) such as those of linear algebra, topology and group theory.

In Castalia (as noted below) an instrument has been developed to enable transitions and translations between alternative musical systems - - and between poetic styles and modes. Insights into beauty, otherwise treated as an academic preoccupation, are used to order and justify the contrasting preferences for classification. **In contrast to the logical conventions of knowledge "organization", this could be understood as knowledge "organ-ization"**.

Patterns of figures of speech are thus effectively contained through poetic "organ-ization". Insights into the design and operation of a musical **organ** then serve as metaphors, consistent with technomimicry as an analogue to biomimicry (*Technomimicry as Analogous to Biomimicry*, 2011; *Reimagining Tesla's Creativity through Technomimicry*, 2014).

**Metapoetics as complement to metalogic?** In contrast to conventional approaches to poetics, this creative innovation in Castalia responds directly to the challenge of the relevance of poetry-making to the organization of figures of speech as instruments of poesis. As a complement to conventions of logic informing preoccupation with **metalogic** (as the study of **logical systems**), the approach draws upon poetic insight to reframe the traditional preoccupation with **metapoetics**.

There is indeed an extensive literature on metapoetics, with a variety of emphases:

- insights "behind" particular modes of poetic expression, as effectively suggested by the title of various reviews (Graham Zanker, *Metapoetics, or Leaving the Poetry Behind? The Classical Review*, 1999; Christian P. Weber, *Beyond the Poem: strategies of metapoetic reflection*, *Goethe Yearbook*)

- approaches to defining poetics as indicated in the extensive listing under the title *Metapoetics: Definitions of Poetics* offered by Robert Sheppard (*The Necessity of Poetics*, 2000)
- poetry about poetry (especially particular poems and styles), as indicated in the extensive list by T. Nellen (*Poems on Poems*)
- identification and listing of poetic forms, as suggested by that of Robert Lee Brewer (*List of 50 Poetic Forms for Poets, Writer's Digest*, 4 August 2014). This suggests similar issues of classification to those highlighted above with respect to figures of speech.

Especially helpful in distinguishing the reframing of metapoetics in Castalia are the introductory distinctions made by Huda J. Fakhreddin (*Defining Metapoesis in the Abbasid Age, Journal of Arabic Literature*, 2011):

Meta-poetry -- poetry about poetry -- is often motivated by poets' preoccupation with their medium and their constant need to examine and justify using it. This is why many meta-poetic compositions often voice the anxieties of a poet towards his/her role and place in a tradition....

However, meta-poetry is not restricted to twentieth-century Modernism and can sometimes be much more than merely addressing poetry and poetics as themes in the poem. This is why it is important here to make the distinction between **thematic meta-poetry**, i.e. poems whose subject or theme is poetry (poetry about poetry), and a different, harder to define meta-poetry that can be deeper and much more critical in nature although it might not be signaled or marked as clearly as the former. I choose to call this second type **referential or contextual metapoesis** to reflect a consciousness apparent in the manner in which a poet responds to or engages poetic references, and the context of critical ideas and frameworks in which the poet writes. [*emphasis added*]

Of relevance to the attitude so obviously characteristic of the audience of a bertolaritza performance, Fakhreddin comments further:

Contextual metapoesis also requires a specifically alert and expectant audience. Consequently, a major shift in focus occurs in such meta-poetic compositions. The medium of the poem becomes an end and a statement in itself, regardless of the subject matter. This is why for the purposes of this paper, I will define metapoesis as a poet's creative reproduction of, or response to, his poetic heritage. It is a creative state in which a poet's self-awareness as participant in a project for poetic change is evident. However, he is constantly looking over his shoulder to see how his predecessors have done things, not to imitate them or necessarily break away from them but mainly to signal references; references against which his contributions become more obvious and meaningful. (pp. 205-206)

In Castalia the cognitive processes of metapoesis are taken further as implied above through the "organ-ization" of the array of figures and forms in general -- rather than being focused on a poet, a poem, a style or a period. There **the challenge is to engage with that which calls into question the very processes of poesis**. This contrasts with conventional metalogic and metapoesis which can be readily recognized as tending to the "incestuous" and avoiding the challenge of otherness.

Appropriately this engagement is informed and enabled by insights into **autopoiesis**, namely systems capable of organizing and reproducing themselves (*Poesis as a prerequisite for autopoiesis -- in psychosocial systems?* 2007; *Enabling autopoiesis through poesis*, 2011; Humberto Maturana and Francisco Varela, *Autopoiesis and Cognition: the realization of the living*, 1973).

**Encompassing complexity through poetry:** With respect to the complexity characteristic of the array of figures of speech, the approach is an extension of that articulated by **Gregory Bateson**, in explaining why "we are our own metaphor" to a conference on the effects of conscious purpose on human adaptation: alexand

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 later articulated the much cited insight: **The pattern which connects is a meta-pattern**. *It is a pattern of patterns. It is that meta-pattern which defines the vast generalization that, indeed, it is patterns which connect*. And it is from this perspective that he warns: **Break the pattern which connects the items of learning and you necessarily destroy all quality** (*Mind and Nature; a necessary unity*, 1979, pp. 8-11).

The requisite degree of self-reflexivity employed in Castalia, in order to engage with otherwise problematic difference, is further highlighted by the 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).

In this sense, for Castalia, poetics becomes its own metaphor -- with poets as its instrument.

**Poetics of order?** Further clarification of the approach in Castalia can be found in understandings of the "poetics of order" as it has been articulated from architectural and design perspectives. Framing his later development of a **pattern language** as a cognitive pointer to the core attractor of a "place to be", environmental designer **Christopher Alexander** stressed the need for recognition of a "quality without a name":

There is a central quality which is the root criterion of life and spirit in a man, a town, a building, or a wilderness. This quality is objective and precise, but it cannot be named., The search, which we make for this quality, in our own lives, is the central search of any person, and the crux of any individual person's story. It is the search for those moments and situations when we are most alive (*The Timeless Way of Building*, 1979)

In the light of Alexander's focus on pattern language, in Castalia it is "re-cognized" that Bateson's reference to the vast generalization that *it is patterns which connect* can be insightfully reframed as *it is patterns which communicate*. Especially when interwoven in poetic form, **figures of speech can then be understood as constituting a pattern language** (one of the oldest), namely as a meta-pattern which communicates. Through deprecation of the aesthetics of rhetoric, it is this meta-pattern "connecting the items of learning" which is in danger of being "broken" -- thereby destroying all quality. Reference to patterns which communicate can be further interpreted in terms of a "language of persuasion".

For Alexander Tzonis and Liane Lefaivre, the poetics of order is framed in the following terms:

It researches the generative rules, the poetics of composition that classical architecture shares with classical music, poetry, and drama, and is enriched by a variety of examples and an extensive analysis of compositional rules. The 205 line drawings make up a discourse of their own, a pictorial text that serves as an introductory theory of composition or basic design aid. Drawing from Vitruvius, the poetics of Aristotle, the theories of classical architecture, music, and poetry since the Renaissance, and the poetics of the Russian formalists, the authors present classical architecture as a coherent system of architectural thinking that is capable of producing a tragic humanistic discourse, a public art with critical, moral, and philosophical meaning. (*Classical Architecture: the poetics of order*. 1986)

Optimistically, any such possibility may be framed as described by Felicia Bonaparte (*The Poetics of Poesis: the making of nineteenth-century English fiction*, 2016):

Finding in the new ideas of the early German Romantics a theory precisely designed for the remaking of the world, these novelists accepted Friedrich Schlegel's challenge to create a form that would render such a remaking possible. They spoke of their theory as *poesis*, etymologically "a making," to distinguish it from the mimesis associated with "realism." Its purpose, however, was not only to embody, as George Eliot put it in *Middlemarch*, "the idealistic in the real," giving as faithful an account of the real as observation can yield, but also to embody in that conception of the real a discussion of ideas that are its "symbolic signification," as Edward Bulwer-Lytton described it in one of his essays.

The difficulty is that this seldom means what the wording might be held to imply, or only to the most attenuated degree.

**Erosion of self-reflexivity and learning capacity:** The question here is whether **the cognitive failure is of a quite different nature**, better framed by the significance of the [mirror self-recognition test](#). Rather than limiting this to its simplest conventional form, are higher orders of "mirror test" to be envisaged? This was previously explored with respect to the hypothetical encounter with extraterrestrials who, in cognitive terms, might well be comparable to angels (*Self-reflective Embodiment of Transdisciplinary Integration (SETI): the universal criterion of species maturity?* 2008; *Sensing Epiterrestrial Intelligence (SETI) Embedding of "extraterrestrials" in epistemic dynamics?* 2013).

Exploiting the aesthetic implications of angels, the cognitive failure could be framed in terms of a "fall", as separately discussed (*Recognizing failure of viable cognitive self-reflexivity as "angel falling"*, 2016).

Requisite insight and distinctions might then be fruitfully derived from "reason" given the tendency to conflation and confusion in the aesthetics of "rhyme". Such "higher orders" could be explored in the light of [knowledge cybernetics](#), effectively as higher orders of self-reflexivity, as articulated by Maurice Yolles (*Knowledge cybernetics: a new metaphor for social collectives*, *Journal of Organisational Transformation and Social Change*, 3, 2006, 1; *A General Theory of Generic Modelling and Paradigm Shift: cybernetic orders*, *Kybernetes*, 44, 2015). Varying degrees of self-reflexivity are distinguished there, meriting exploration and recognition. As phrased in the latter:

- **First-order cybernetic feedback** is typically seen to be associated with Newtonian mechanical objectivity. It is therefore positivist, centring on systemic objects being observed by some external objective observer
- **Second-order cybernetics** embraces radical constructivism, allowing for instrumental learning and agnosticism towards objective reality..
- **Third-order simplex cybernetic spaces** should be seen to represent the observed and observing systems together forming another system, from which a new relativistic interactive worldview arises from self-observing viewers that have self-observed worldviews. Third-order cybernetics is also characterised by the way it resolves undecidabilities, these being constituted in the logic of the present moment by the anticipations of the system.
- It is possible to formulate a statement of **fourth order cybernetics** in terms of the higher levels of relationship between observed and observing systems.... However, a more pragmatic and satisfactory... approach allows one to respond to the variety in a complex situation with an invariant generic construct more capable of generating requisite variety. Higher orders of simplex modelling have this capability since they provide new ways of explaining complexity by representing external influences as internal imperatives, thereby creating greater complexity for the immanent agency dynamics, but reducing undecidability. To explain the use of higher order models, rather than use observers relationships, a more minimal way is to adopt a concept of generic loop

learning..., even if this redirects us away from... adaptability. Here then, fourth order cybernetics could be represented as triple loop generic learning (beyond the double loop generic learning of third cybernetics), referring to the way in which knowledge is not only acquired but also identified.

- On the way to developing our general theory, the paper gave examples of first, second, third and fourth order simplicity. Higher orders of simplex modelling under complexity exist through the conceptual generic concepts that define them. This is the result of conceptual emergence, important to processes of systemic modelling. So far we have not attempted to move beyond fourth order simplicity, awaiting for new concepts able to generate **fifth and higher orders of simplicity**. However, we have shown that higher order simplex models can be generated through the use of recursion.

The obvious difficulty is that such language is far from enabling the understanding of self-reflexivity suggested by the possibility of more complex forms of mirror test. As noted, further difficulties are suggested by the process of "falling" from a higher to a lower order, as might be recognized (and experienced) through the aging process or abuse of narcotics. Especially perverse is the deliberate instigation of any such fall through [dumbing down](#).

In these terms **the concern in Castalia is the cultivation of third, fourth and higher orders of poetics understood as degrees of self-reflexivity** -- however this may be articulated through metaphor

**Musica poetica**: Processes in Castalia have been significantly inspired by the work on musical-rhetorical figure theory of [Joachim Burmeister](#) (and his successors), as noted in *The Harvard Dictionary of Music* (2003):

It was during the 17th and 18th centuries that rhetorical models came to dominate discourse about music theory. Among the most important treaties of the period were Burmeister's *Musica autoschediastike* (1601) and *Musica poetica* (1606). Building on earlier writers, Burmeister transformed the various figures of speech invoked by rhetoricians to elaborate ideas (i.e. elaboratio), and he created a complex system of stereotypical musical figures that connected particular words or phrases in a text to their musical setting... Later writers followed Burmeister's lead, adding new figures of their own... Just as some theorists used the rhetorical concept of figures to explain details of text setting, so they also incorporated them into various classifications of musical style. (p. 722).

As indicated in *Silva Rhetoricae*:

Introduced by Listenius in his *Rudimenta musica* (1533) to designate a new division of musical theory, joining the Boethian *musica theoretica* and *musica practica*, the term *musica poetica* treats of the relationship of music and words, and of a style of musical composition based not only in the quadrivial mathematics, but also in oratory and rhetoric. Joachim Burmeister's systematic exposition of the musical-rhetorical style, culminating in his *Musica poetica* (1606), established the first vocabulary of musical figures, parallels of their rhetorical counterparts, and essential building-blocks of the practice of *musica poetica* for the succeeding two centuries.

As noted by *Wikipedia*, *Musica poetica* became a term commonly applied to the art of composing music in sixteenth- and seventeenth-century German schools and universities. Analogies between music and the rhetorical arts were made on several levels. Most significantly, special melodic, harmonic, or technical devices in music began to be associated with the figures of classical oratory: for example, a rising or falling sequence in music was usually called climax in the associated literature.

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). Some 3,040 such airs have been classified by Joanito Dorronsoro (*Bertso Doimutegia*, 1995). 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).

It is in this sense that Castalia accords particular attention to the role of music and song -- potentially explored as "knowledge gardening". This has been traditionally anticipated in some indigenous communities -- exemplified in Australia by "singing the land" in relation to a pattern of "songlines" (*Knowledge Gardening through Music: patterns of coherence for future African management as an alternative to Project Logic*, 2000). From this perspective Castalia could be understood as an exploration of singing psychosocial transformation -- and the skillful navigation of the changes implied. To a far more limited degree, this has been variously anticipated in certain religious traditions.

## Aesthetic "re-membrance" of the whole through cognitive "skins"

**Challenging of integrative insight**: The argument here has highlighted mutually challenging fundamental issues, with their implications for global governance. These are epitomized by:

- the strife of essentially **incommensurable cognitive systems**, aggravated "in rhetoric" by the diversity of figures of speech and "in reason" by the integrative failure of its disciplines -- notably as concluded by [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).

- the challenge of achieving and **sustaining coherence**, however this may be understood, as argued separately (*Wholth as Sustaining Dynamic of Health and Wealth: cognitive dynamics sustaining the meta-pattern that connects*, 2013).
- the challenge of **rendering potential attractive** as a sustainable focus for attention (*Investing Attention Essential to Viable Growth: radical self-reflexive reappropriation of financial skills and insights*, 2014; *Imagining Attractive Global Governance*, 2013).
- the challenge of **making any integrative point succinctly**, when the requirement is for extensive argument to render any such point credible within a diversity of cognitive systems
- the challenge of **memorability** -- notably of relevant systemic links -- in a "blip culture", anticated by Alvin Toffler and Peter Drucker
- the challenge of **incomprehension** and surprise in the face of continuing conflict and unforeseen crises, most notably with respect to violence (Nassim Nicholas Taleb, *The Black Swan: the impact of the highly improbable*, 2007; Karen A. Cerulo: *Never Saw It Coming: cultural challenges to envisioning the worst*, 2006)

In this context the contrasting understandings of succinct attractiveness of rhyme (metapoetics?) and reason (metalogic?) merit careful attention. Science lays particular claim to its unique understanding of beauty through complex symmetries. On the other hand it could be claimed, from the perspective of poesis, that all that is attractive is essentially poetic. However neither appears capable of integrating the diversity of its insights -- nor the challenge posed by the other. Given a degree of association of the iconic exponents of each with the divine, provocatively the matter can also be reviewed in terms of mathematical theology, understood as a self-reflexive global reframing to enable faith-based governance (*Mathematical Theology: future science of confidence in belief*, 2011).

**Configurative reframing of versification, wordplay and song:** In Casalia the question is addressed in terms of eliciting "re-membrance" -- understood as a cognitive engagement with connectivity in all its variety.

With respect to an understanding of the dynamics of Castalia, of particular interest is the number of "figures of speech" that may be readily used and understood, especially in the process of acquiring competence in "eloquent speech" and being attentive to its problematic manipulation by the unscrupulous. Clearly this is of the greatest relevance when people are exposed to skilled media presentations, or to leaders such as Donald Trump and Boris Johnson, or to those which have preceded them, such as Tony Blair.

Given the example of the systematic [classification of species](#) in nature, and its relevance to the understanding of the dynamics of ecosystems, it might be expected that a high degree of clarity would already have emerged with respect to the classification of figures of speech and the nature of their interrelationship in discourse -- especially in that of the highest order. A similar argument could be made with respect to the classification of chemical elements in a [periodic table](#). This does not appear to be the case. The systematic listings, like those of *Wikipedia*, seem not to be clustered in any systemically meaningful way -- or to a degree corresponding to the need in practice.

The comparison with the classification of species (and of chemical elements) is a reminder of the probability that any classification is the focus of controversy, notably with respect to the chosen clusters, their number, and to allocation to any particular cluster. This is evident in the allocation of some figures of speech to several clusters above.

As the epitome of insight into ordered relationships, the question can be asked of the *Mathematics Subject Classification*, as discussed separately (*Is the House of Mathematics in Order? Are there vital insights from its design*, 2000). This could well have implications for cognitive order (*Towards a Periodic Table of Ways of Knowing in the light of metaphors of mathematics*, 2009).

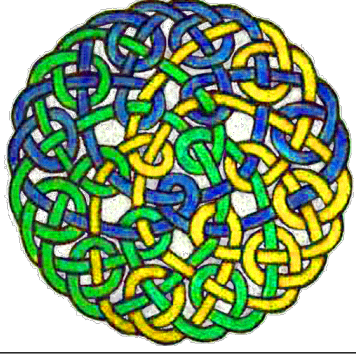

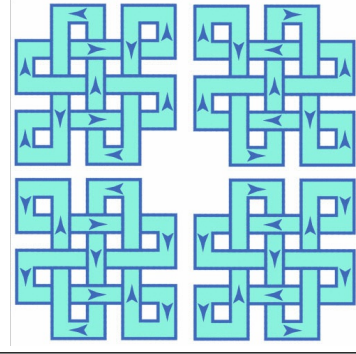
As with the many species natural to the environment, their abstruse (even meaningless) denomination (in Latin, English or Greek) is in no way an indication that they are not widespread and significant to the psychosocial ecosystem as a whole. This is of course irrespective of ignorance regarding their existence (as recognized by specialists). The point can be similarly stressed through the case of chemical elements (and their numerous isotopes) -- curiously of the same order numerically as the the figures of speech.

**"Cognitive skins":** Especially integrative "metapatterns" have long been variously elaborated -- although, as might be expected, each may be upheld by others as symbolic of the unacceptable.


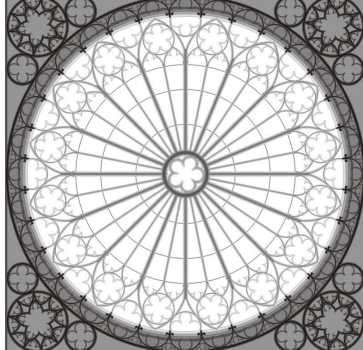
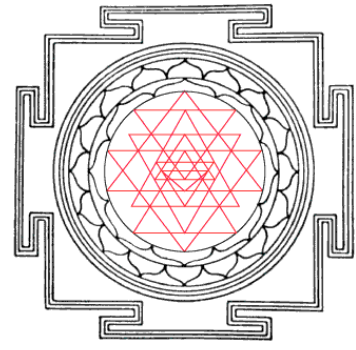
In the light of current development of web technology and the associated knowledge management possibilities, Castalia has taken the unusual initiative of treating traditional metapatterns as "skins", or visual styles. These are custom graphical appearance preset packages achieved by the use of a [graphical user interface](#) (GUI) that can be applied to specific computer software, operating system, and websites to suit the purpose, topic, or tastes of different users. Such a skin can completely change the look and feel and navigation interface of a piece of application software or operating system.

Examples of such skins include the following traditional patterns, understood as each offering a particular form of order -- effectively a content map ordered in a particular way. Beyond the conventional function of skins as associated with site maps, the set of metapatterns can be better understood as a set of mind maps, semantic maps or concept maps.

The following animations serve to reinforce the argument regarding the dynamic nature of daimonic reality and the cognitive "flows" which contain it through momentary mnemonic associations, as separately discussed (*Radicalisation of Existence and Identity*:

Animations indicative of the dynamic nature of daimonic reality and the associated cognitive "flows"		
Celtic knot (colour animation)	Islamic-style patterns (animation)	Endless knot reflections (directional animation)
		

A more complex Celtic knot animation is presented [below](#). The animated rendering of the set of *I Ching* patterns below derives from discussion of other more complex variants (*Experimental Revolutionary Animations of a Chinese Pattern of Metaphors*, 2015; *Dynamic Exploration of Value Configurations*, 2008). The *Shri Yantra* animation below derives from consideration of the relevance to the insights of Nikola Tesla (*Reimagining Tesla's Creativity through Technomimicry*, 2014).

Traditional representations of the dynamic nature of daimonic reality and the associated cognitive "flows"		
Relating 64 patterns of engagement (animation of <i>I Ching</i> hexagrams)	Cathedral rose window	Experimental Shri Yantra (8-phase animation)
		

In terms of a geographical mapping metaphor, as cognitive skins the approach effectively allows users to switch amongst a variety of "global projections" -- in the light of those distinguished by Wikipedia (*List of map projections*). This offers a means of addressing the challenge of the disparate classifications of figures of speech, and (by extension) the variety of poetic forms and modes of expression variously favoured in different cultures. As an approach to knowledge management, this anticipates, and underlies, the development of the instrument described below

## Enhancing aesthetic appreciation through augmenting immersive reality

**Mathematics and art:** The cultivation and appreciation of the great game in Castalia is significantly enhanced through the further development of a variety of familiar mobile and web-enabled applications -- in addition to those cited above.

These notably reflect the aesthetic possibilities highlighted periodically at the annual conferences of [The Bridges Organization](#) on the connections between art and mathematics, extended in 2016 to include poetry (Kristof Fenyvesi, *Bridges: A World Community for Mathematical Art, The Mathematical Intelligencer*, 2015).

Despite a degree of recognition of [mathematical beauty](#), mathematics is however inherently indifferent to aesthetics other than in terms of elegance as an imputed characteristic of any formal articulation (Philip J. Davis and Reuben Hersh, *The Mathematical Experience*, 1995). As a method, mathematics is however also inherently indifferent to comprehension of its complexities, as separately argued (*Dynamics of Symmetry Group Theorizing: comprehension of psycho-social implication*, 2008).

In Castalia, however, the cultivation of the experience of mathematics was fundamental to its aesthetic "organ-ization". The implications for collective engagement with conceptual structures had long been inspired by the early explorations of [Douglas Engelbart](#) (*Augmenting Human Intellect: a conceptual approach*, 1962).

**Confluence of technologies:** Such developments transformed conventional observation of the game into a higher order of cognitive engagement with it -- partly to be understood by public appreciation of chess and go. Some understanding can be suggested in terms of an unusual confluence of technologies including:

- video recording for purposes of web-casting to local and remote devices

- virtual reality devices, as heralded by their rapid deployment in 2016
- simultaneous interpretation and transcription of oral formulations, enabling multilingual web-casting
- enhanced tracking of:
  - body movement, as extensively developed for purposes of animation and special effects
  - tonal and melodic forms in use
  - "passing patterns" in the exchange of memes between participants, variously challenging or reinforcing each others perspectives
- inter-modal "translation" between oral, graphic and textual forms, notably reflecting the sonification techniques of the International Community of Auditory Display -- and suggestive of the possibility of [decoding tweets into tonal and melodic form](#)
- a variety of enhanced mapping techniques, whether into visual or soundscape forms
- a variety of classification techniques through which categories could be ordered and re-ordered (as a creative process in its own right), notably with respect to:
  - thematic content
  - melodic and tonal structure
  - rhyme and metre
- pattern recognition and fitting, notably constrained to enhance memorability
- evolution of artificial intelligence, with the possibility of encompassing sung versification as a mode of communication (*Forthcoming Major Revolution in Global Dialogue: challenging new world order of interactive communication*, 2013)

**Poetizing systems diagrams and systematizing symbolic patterns?** In formal design terms, there is a remarkable degree of resemblance between conventional systems diagrams and the integrative patterns elaborated within various cultural traditions (of which examples are depicted above).

Reference was made above to the use of song as a mnemonic aid to comprehension of the pattern of metabolic pathways. In Castalia **the possibility is taken further through use of the intricate symbolic imagery** (as depicted above), notably the [Celtic knots](#) as featured within the *Book of Kells*. Such imagery was associated in Celtic tradition with song, although any direct relation is considered to have been lost, especially the secret of generic rhyme.

In Castalia it is assumed that **Celtic knots can be sung and in fact constitute an aesthetic system of notation** -- of which many [musical variants](#) already exist. Especially intriguing in Castalia is the recognition of the intricacy of Celtic knots as encoding the Welsh poetic constraints of *cynganedd*. With the latter understood as "harmony" or "chiming", a correspondence was thereby established between the visual symmetry of such a knot and that associated with a poem, whether sung or not.

Technically the association derived from decoding the pattern in topological terms, in the light of the extensive application of topology to the mathematical [theory of knots](#) of which an especially valuable articulation is provided by Jessica Connor and Nick Ward (*Celtic Knot Theory*, University of Edinburgh, 2012). This provides a proof that Celtic knots are alternating, and that alternating knots are Celtic. They notably conclude that: *The connection between pure maths and something based entirely upon aesthetics was particularly interesting.*

Of relevance is the recognition by mathematics of a form of [musical isomorphism](#). The innovative insight in Castalia lay in associating the pattern of crossings and contrasting orientations with the complex rules of *cynganedd*, regarding usage of vowels and consonants and the rhyming conventions.

This understanding then allowed conventional systems diagrams and concept maps to be rendered (and comprehended) in poetic verse form -- enabling them to be sung. This offered a new approach in Castalia to the elaboration of complex patterns of (dis)agreement fundamental to its social organization -- potentially a pattern of wider relevance, as noted above (*A Singable Earth Charter, EU Constitution or Global Ethic?* 2006).

The role of alternation in aesthetics is recognized as especially relevant as a requirement of sustainability in governance, as separately argued (*Development through Alternation*, 1983). Understanding of the fundamental challenges of governance within Castalia then invites exploration in terms of higher dimensional knots and their comprehension, both in mathematical and psychosocial terms (Andrew Ranicki, *High-dimensional Knot Theory*, 1998; R. D. Laing, *Knots*, 1972). Lines of an introductory "poem" from the latter include:

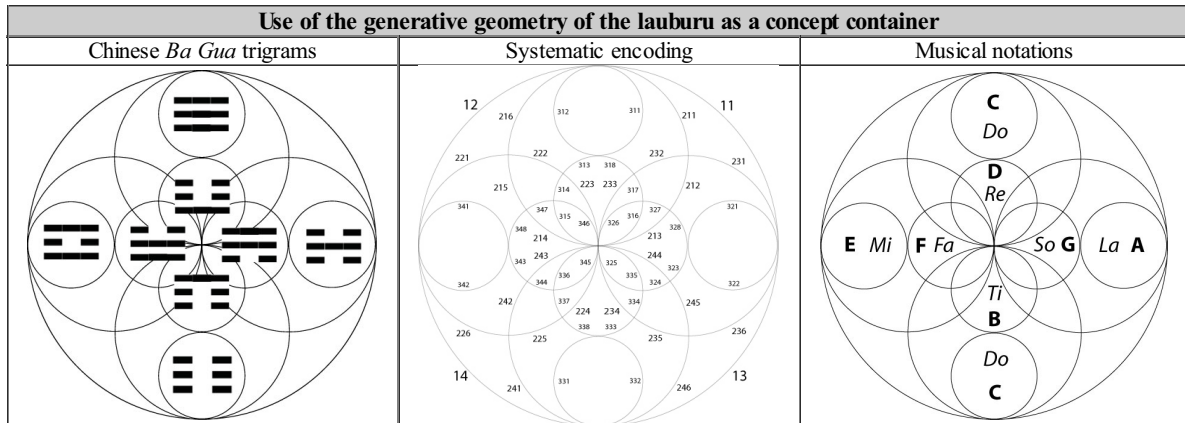
The patterns delineated here have not yet been classified by a Linnaeus of human bondage.  
 They are all, perhaps, strangely, familiar.  
 In these pages I have confined myself to laying out only some of those I actually have seen.  
 Words that come to mind to name them are: knots, tangles, fankles, impasses, disjunctions, whirligogs, binds.  
 I could have remained closer to the 'raw' data in which these patterns appear.  
 I could have distilled them further towards an abstract logico-mathematical calculus.  
 I hope they are not so schematized that one may not refer back to the very specific experiences from which they derive; yet that they are sufficiently independent of 'content', for one to divine the final formal elegance in these webs of maya.

**Lauburu as a generative metaphor:** Especially intriguing is the manner in which the generic form of the Basque lauburu is effectively used as a template onto which the dynamics of the game can be mapped and tracked.

However, rather than being understood as a fixed mapping surface, this is better recognized as a strangely elusive form of "instrument" to be variously "played" by adjusting parameters in order to enable and enhance comprehension. Rather than fixed, the "form" is then to be understood as "plastic" -- possibly to be compared metaphorically to a standing wave or a resonance hybrid. The instrument is then what the player makes of it as an interface for engagement with the game -- possibly via virtual reality.

The images below indicate how the form of the lauburu can be used as a mapping template in two dimensions. In contrast to conventional use of category **boxes** linked by **lines**, here the emphasis is switched to areas bounded by curves or variously associated with curves -- of global rather than local significance in engendering the form.

The encircled zones can be used as conceptual containers -- or concepts can be associated with curves, readily segmented within the pattern to handle greater detail. Consistent with the sense of cognitive "skins" described above, concepts are associated with zones in two of the images, whereas the possibility of distinguishing the curves (and their parts) by number is indicated in the third.



The widespread use of mobile devices helps to clarify further distinction:

- possession of the device
- connectivity of the device (to a local server or the web)
- access to online facilities (constrained by paywalls, copyright, and security)
- relative skill in use of the device
- specific skill with respect to a particular application
- ability to reprogram the device or applications
- handheld mobile

**Lauburu and cognitive organ-ization:** Use of this strange device, especially by the skilled, then enables the process of poetic or sung expression to be followed visually as evolving aesthetic patterns in the moment. These can then in turn be interactively "played", notably through their transformation into other modes -- however shared (if at all).



In this sense the device might be described metaphorically as a "cognitive wind harp". The harp metaphor is usefully reminiscent of a role-playing game *Harp SF* (separately reviewed). As noted by *The Encyclopedia of Science Fiction*, other such musical devices have been imagined by science fiction -- although with relatively little development of the cognitive implications. Some have been extensively explored in the dystopian novel by the poet *Anna Smaill (The Chimes, 2016)*. There life is orchestrated by a vast musical instrument that renders people unable to form new memories. For *Kim Stanley Robinson*, a vast calliope-like instrument with a single player -- a great interplanetary "orchestra" -- features as part of a complex metaphor, combining music and mathematics, in which musical structure and cosmic structure are seen as analogous (*The Memory of Whiteness, 1985*). Such imagery is also evoked by *David Zindell (Neverness, 1988)*.

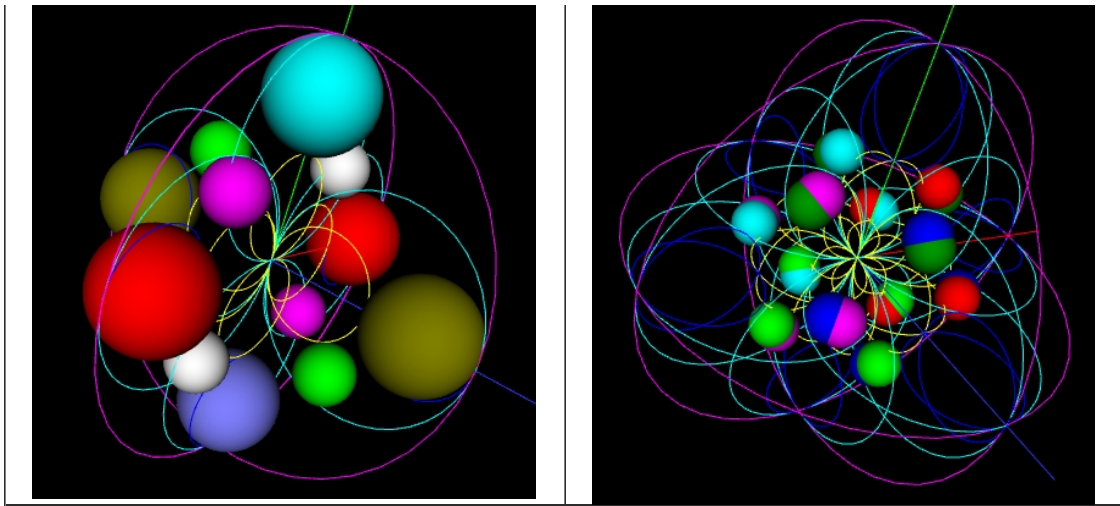
Further insight into the nature of the device can be gained by considering various ways of using the lauburu as a mapping "surface" in two or three dimensions -- or more, as explored by topology. The map is then potentially to be understood as a dynamically engendered "soundscape", for example, rather than a fixed "landscape". What is mapped onto it may however be largely a matter for the participant-beholder as co-creator.

Such consideration can be usefully framed by recognizing potential cognitive correspondences with similar forms, possibly more familiar (although equally elusive in their implications) -- and into which (or between which) any mapping could be transformed. Such transformation would be consistent with the conventional understanding of map projections. The appropriateness of correspondences is of course variously appreciated and disputed (*Theories of Correspondences -- and potential equivalences between them in correlative thinking, 2007*) as with viable transformation pathways and their embodiment

**Cognitive implication through immersion in augmented reality:** Development of use of the lauburu is taken further in Castalia through its articulation in three and more dimensions. This offers a richer array of mapping contexts -- planes and volumes -- with which cognitive operations can be associated. The capacity to benefit from these depends to some degree on *augmented reality* technology, especially when this offers immersive experience through which interlocuteurs can engage with each other, as variously described (*Project Anywhere: digital route to an out-of-body experience, The Observer, 7 January 2015*). Such augmentation is essential when dealing with higher dimensional topologies -- landscapes over which more complex discourse takes place.

The following images of elaboration of the lauburu in three dimensions to hold the dynamics between 6 or 24 "voices".

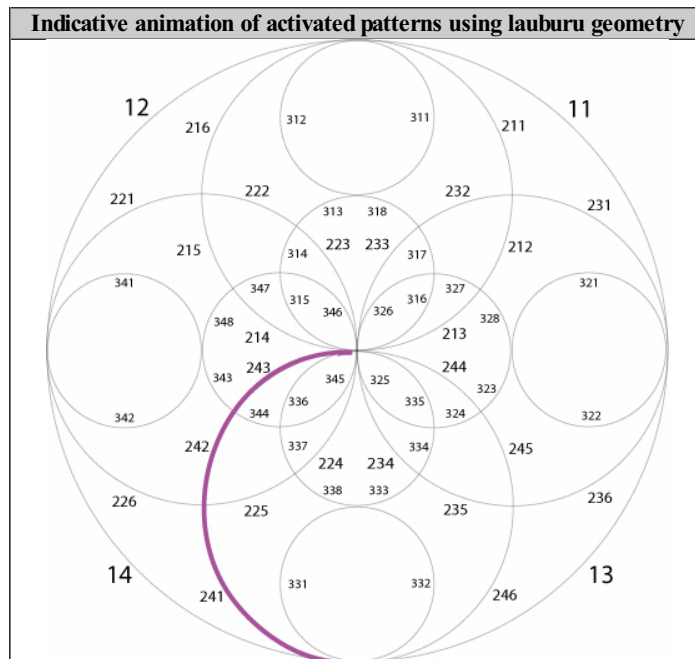
Screen shots of 3D variants of lauburu	
Representation of 6 "voices"	Representation of 24 "voices"
	



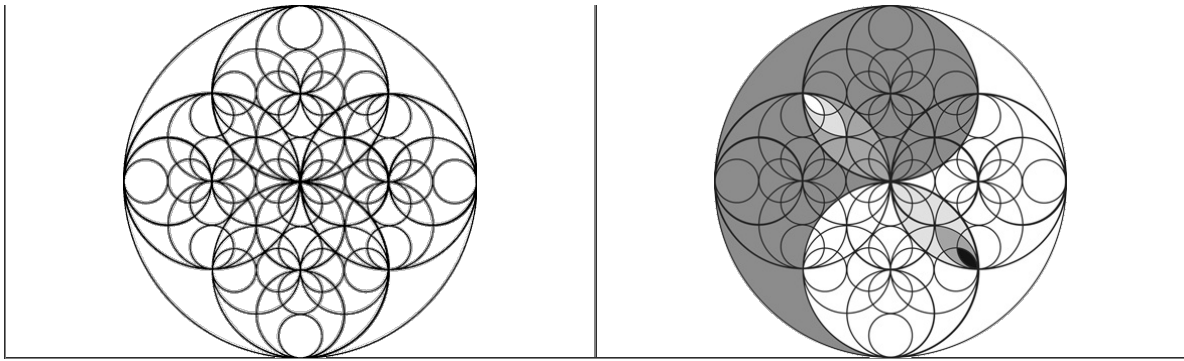
Potential implication of such patterns can be distinguished as follows, in the light of a separate discussion ([Metaphorical Geometry in Quest of Globality in response to global governance challenges](#), 2009). Of particular relevance is the consideration of lines as strings (*Polarities as Pluckable Tensed Strings: hypercomprehension through harmonics of value-based choice-making*, 2006).

Cognitive implications in 2D	Cognitive implications in 3D
<p>Lines</p> <ul style="list-style-type: none"> <li>• strings as in stringed instruments</li> <li>• psychological and aesthetic associations (rhyming, etc)</li> <li>• correspondences (especially following from parallelism)</li> <li>• systemic links, feedback loops</li> <li>• transformation pathways, by analogy to metabolic pathways</li> <li>• sine curves ****</li> </ul>	<p>Planes</p> <ul style="list-style-type: none"> <li>• sounding boards, exemplified by metaphorical use of drumming</li> <li>• sides, exemplified by taking sides in an argument</li> </ul>
<p>Circles</p> <ul style="list-style-type: none"> <li>• categories, as in cognitive and other forms mind mapping</li> <li>• representation of tones or "voices"</li> </ul>	<p>Spheres</p> <ul style="list-style-type: none"> <li>• resonance chambers</li> <li>• world views and cognitive domains</li> <li>• spheres of cognitive influence (Sloterdijk, 20014-2016)</li> </ul>

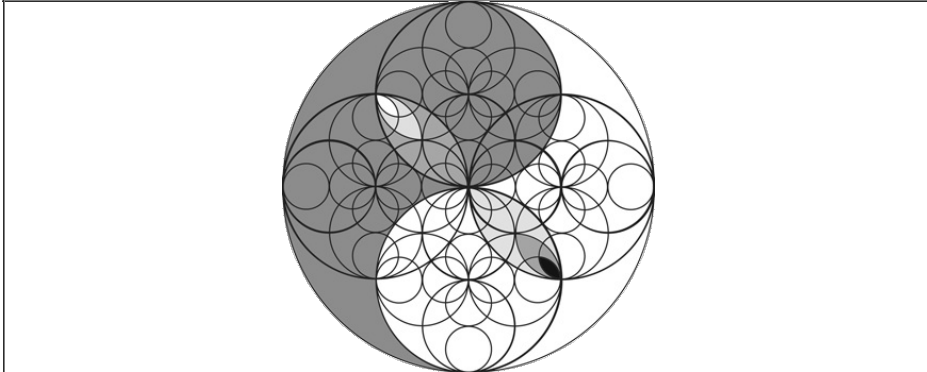
**Encoding dynamics:** In Castalia the form of the lauburu is used to hold the dynamics of the variety of patterns, whilst suggesting the cognitive shifts and twists of any process, understood as a dance or otherwise. Especially intriguing is an extension of the meaning long associated with "[surfing the web](#)" to surfing the "songlines of the noosphere" (as noted earlier). The value of the metaphor lies in the cognitive engagement with waves of information and the skill with which this may be done -- as effectively encoded in the complex of skills of sea surfing.



<p>Superposition of a reduced version of the geometrical construction of the lauburu as a whole <b>within</b> each branch of the lauburu (as with a fractal)</p>	<p>Shading of the geometry of the lauburu (left-hand image) to highlight one orientation of the Tao symbol and emergence of the "eyes" from the geometry</p>
--	--



**Experimental animation of the right-hand image above between 8 orientations**  
 indicative of the possibility of more complex animations with rotation of the nested structures of  
 smaller scale



## Containing embodiment dynamically: conceptual boxes versus cognitive waves?

Attention was drawn above to the constraint implied by conventional understandings of containers -- especially as boxes, and especially in relationship to concepts. That argument was developed in relation to the current significance of "boxes" with respect to understandings of globalization, conventionally understood.

Clearly it may be extended to forms of globalization understood in terms of the intangibles of integration more generally (*Future Generation through Global Conversation: in quest of collective well-being through conversation in the present moment*, 1997). As such it may also be applied to the manner in which personal identity is comprehended and contained -- whether in physical terms, in administrative terms, or in any systemic model. Arguably this implies an undue degree of "incarceration" of what may take other conceptual forms. This is unfortunately reflected in the "incarceration" of knowledge by exclusive copyright, secrecy and paywalls.

**Opening versus Closing:** In contrast to the enclosure associated with box-like containers, much has been made of the contrast between openness, as exemplified by [open society](#) and [open source](#). The relevance to the preoccupations of Castalia has been noted by Peter Roberts and Michael A. Peters (*From Castalia to Wikipedia: openness and closure in knowledge communities*, *E-Learning and Digital Media*, 8, 2011, 1).

Related arguments have been variously developed ([Orrin Klapp](#), *Opening and Closing: strategies of information adaptation in society*, 1978; [Eric S. Raymond](#), *The Cathedral and the Bazaar: musings on Linux and Open Source by an accidental revolutionary*, 1999; [Karl Popper](#), *The Open Society and Its Enemies*, 1945). As highlighted above, a leader in *The Economist* has recently stressed: **The contest that matters now is open against closed** (*Globalisation and Politics: the new political divide*, 30 July 2016).

**"Enstoning" versus Embodying:** As containers, the enclosed form of boxes is especially tempting as a characteristic of unambiguously comprehensible definition -- especially when in some way tangible, as discussed above. Their additional value can be recognized with respect to their memorability -- exemplified by the complex ordered movement of containers around the world. Subjects and topics as handled by systems of knowledge management offer similar facility.

Far more challenging however is the process of rendering complex patterns meaningful as a whole. Curiously this can be explored through the manner in which these are variously transformed into memorials in stone -- effectively "enstoned", as discussed separately (*Fivefold Clustering of Ways of Being Stoned: Imagination, Promise, Rocks, Memorials, Petrification*, 2012).

These modalities of enstoning highlight the distinction between cognitive embodiment and being rendered into a form so tangible that it no longer serves as a container for living identity. The argument is reinforced by the manner in which definitions, constitutions, dogma, and the like, are effectively understood to be "set in stone".

**Closure and enclosure by containers?** The implications of closure by any form of container have been fruitfully explored by [Hilary Lawson](#) (*Closure: a story of everything*, 2001), as an extension of his fruitful concern with reflexivity (*Reflexivity: the post-modern predicament*, 1985). The latter features notably in the work of [Hofstadter](#) (1979), as noted above.

In aesthetic terms, if not in the light of the obsession with explanatory closure of modern science, there is a curious case for the avoidance of definitive closure (*Beyond Harassment of Reality and Grasping Future Possibilities: learnings from sexual harassment as a metaphor*, 1996).

This avoidance is fundamental to the cognitive dynamics of Castalia. Insights as to its nature can be recognized in the theological traditions of apophysis, as notably discussed by Michael A. Sells (*Mystical Languages of Unsayings*, 1994). The elusive implications can be indicated otherwise (*Paradoxes of Engaging with the Ultimate in any Guise: living life penultimately*, 2012).

**Cognitive implications of particle versus wave:** Curiously there is a useful comparison to be made between box-like containers and the particles so fundamental to understanding of physical reality. However paradoxical, a radical complementarity has long been recognized between particles (as the ultimate physical containers) and the wave modality through which understanding is also required.

In Castalia an analogue to this paradoxical understanding through the [uncertainty principle](#) is used to frame psychosocial reality and the nature of "individual" identity within that "community". An early inspiration for this was the argument of [Garrison Sposito](#) (*Does a generalized Heisenberg principle operate in the social sciences?* *Inquiry*, 12, 1969).

The implications of the argument can be speculatively developed otherwise (*Encountering Otherness as a Waveform -- in the light of a wave theory of being*, 2013; *Being a Waveform of Potential as an Experiential Choice: emergent dynamic qualities of identity and integrity*, 2013; *Being Neither a-Waving Nor a-Parting: cognitive implications of wave-particle duality in the light of science and spirituality*, 2013).

**Phenomenological implications of quantum theory:** Mamuka Dolidze (*The Phenomenological Conception of Quantum Theory and the Polyphony of Modern Fiction, Culture and Philosophy: a journal for phenomenological inquiry*, 2009, pp. 40-57)

By treating the following assertions on the basis of existential phenomenology we try to reveal how consciousness, as a stream of existence, acts in both the physical and artistic realms. All this reflects modern scientific thinking and the art of fiction; it highlights an important feature of contemporary thinking - the appearance of polyphonic forms in the existential unity of human consciousness... Thus, the analogy between quantum theory and polyphony in fiction is not coincidental, for it has a philosophical ground -- both endeavours use the same phenomenological method. One deals with the construction of the objects of science and the other with the creation of artistic form. As we see, in modern science as well as in modern literature there exist similar forms of polyphonic thinking, which reject the omniscient subject as a common ground of determination and are based on the phenomenological principle of subject-object integration.

The possible representation of 24 "voices", through a 3D variant of the lauburu (as depicted above), suggests that these might offer a way of rendering comprehensible the discussion of the psychosocial implication of the number of dimensions of [superstring theory](#).

## Variety radically intoned through versification and wordplay

**"Re-cognizing" dynamics in enhancing rhetoric:** The images above respond to the challenge of alternative classifications of the figures of speech employed in rhetoric. They do not address the dynamics of the shifts from one figure to another in any rhetorical process -- and in response to figures deployed by challenging interlocutors, as in any duel or joust.

**Dance:** Using an alternative metaphor, the patterns may be understood as "dancing" (*Sustainability through Magically Dancing Patterns 8x8, 9x9, 19x19 -- I Ching, Tao Te Ching / T'ai Hsüan Ching, Wéiqi (Go)*, 2008). Discourse can of course be readily compared to a dance, especially as recognized in sustained repartee and wordplay -- also understood as game playing.

Use of this metaphor recalls the various notations of movements in dance, otherwise known as kinetography, most notably [Labanotation](#). More generally, systematic description of body movement in other disciplines (acrobacy, skatboarding, etc) suggests a degree of relationship with cognitive transformation effectively encoded by distinctive patterns of movement (Maxine Sheets-Johnstone, *The Primacy of Movement*, 2011). \*\*\* kinaesthetic intelligence

**Wordplay:** An extensive description of [forms of wordplay](#) is offered by *Wikipedia* and summarized below. The issue here is how these are combined into comprehensible patterns.

Forms of word play	
phonetic values of words	<a href="#">mondegreen</a> , <a href="#">onomatopoeia</a> , <a href="#">rhyme</a> (alliteration, <a href="#">assonance</a> , <a href="#">consonance</a> ., <a href="#">holorime</a> ), <a href="#">spoonerism</a> , <a href="#">januism</a>
letters	<a href="#">acronym</a> , <a href="#">acrostic</a> (mesostic, <a href="#">word square</a> ), <a href="#">backronym</a> , <a href="#">anagram</a> ( <a href="#">ambigram</a> , <a href="#">blanagram</a> , <a href="#">letter bank</a> , <a href="#">jumble</a> ), <a href="#">chronogram</a> , <a href="#">lipogram</a> , <a href="#">palindrome</a> , <a href="#">pangram</a> , <a href="#">tautogram</a>
semantics and choice of words	<a href="#">anglish</a> , <a href="#">auto-antonym</a> , <a href="#">autogram</a> , <a href="#">malapropism</a> , <a href="#">neologism</a> ( <a href="#">portmanteau</a> , <a href="#">retronym</a> ), <a href="#">oxymoron</a> , <a href="#">pun</a> , <a href="#">slang</a>
manipulation of the entire sentence or passage	<a href="#">Dog Latin</a> , <a href="#">language game</a>
formation of a name	<a href="#">anonym</a> , <a href="#">apronym</a> , <a href="#">charactonym</a> , <a href="#">eponym</a> , <a href="#">pseudonym</a> , <a href="#">sobriquet</a>
figure of speech	<a href="#">conversion</a> (word formation), <a href="#">dysphemism</a> , <a href="#">euphemism</a> , <a href="#">kenning</a> (or <a href="#">circumlocution</a> ), <a href="#">paraprosookian</a>

Typical in wordplay is the manner, through the dynamics, in which the other is reframed, placed at a disadvantage (off-footed), or "set up".

**Transactional games and plots:** Wordplay may well be a feature of the set of transactional games identified by [transactional analysis](#). (Eric Berne, *Games People Play: the basic hand book of transactional analysis*, 1964). Whether considered counterproductive or not, these may be understood in relation to the set of dramatic plots (as presented by the media) -- and more generally in terms of the [theory of games](#).

Seemingly, as "games", these transactions have not lent themselves to a systematic listing. With the focus on analysis, the implied pattern language is elusive. This contrasts with efforts to provide a descriptive list of dramatic plots ([Christopher Booker](#), *The Seven Basic Plots: why we tell stories*, 2004; [Georges Polti](#), *The Thirty-Six Dramatic Situations*). Equally elusive, however, is any richer and more general

listing which might have been expected from the extensive development of game theory (*List of games in game theory*). The types of game distinguished in that context are:

Irrespective of "transactional games", game theory distinguishes the following types of games:

Cooperative / Non-cooperative	Symmetric / Asymmetric	Zero-sum / Non-zero-sum
Simultaneous / Sequential	Perfect information and imperfect information	Combinatorial games
Infinitely long games	Discrete and continuous games	Differential games
Many-player and population games	Stochastic outcomes	Metagames
Pooling games		

The question of how many types of game can be played is addressed otherwise in the case of board games (such as chess and go).

**Rhyme and rhythm:** In contrast with any analytical approach, the recognition of pattern is significantly enabled in Castalia through the aesthetic connectivity associated with a sense of rhyme and rhythm. Connectivity is thus recognized through aesthetic correspondences. As distinguished by *Wikipedia*, the [varieties of rhyme](#) are:

- [perfect rhymes](#) (distinguished by the number of syllables included in the rhyme): single, double, dactylic
- [general rhymes](#) (distinguished by various kinds of phonetic similarity between words): syllabic, imperfect, weak (or unaccented), semirhyme, forced (or oblique), assonance, consonance, half rhyme (or slant rhyme), pararhyme, alliteration (or head rhyme).
- [identical rhymes](#) (typically through homophones and homonyms)
- [eye rhymes](#) (namely similarity in spelling)
- [mind rhymes](#) (similar to rhyming slang)

The significance and appeal of rhyme is further affected by:

- [position of the rhyme in the verse](#): tail rhyme (or end rhyme), internal rhyme, off-centered rhyme (or misplaced rhyme), holorime, broken rhyme, cross rhyme
- [distinctive styles characteristic of particular languages](#):

**Tone of voice and intonation:** Just as Castalia has been influenced by the alternative understandings of figures of speech in other cultures, this extended to the cognitive implications associated with [tonal languages](#). As noted in the summary by *Wikipedia*:

In the most widely spoken tonal language, [Mandarin Chinese](#), tones are distinguished by their distinctive shape, known as contour, with each tone having a different internal pattern of rising and falling pitch. Many words, especially monosyllabic ones, are differentiated solely by tone...

Contour systems are typical of languages of the Mainland Southeast Asia linguistic area... [some] languages spoken in Africa are dominated by register systems. Some languages combine both systems, such as Cantonese, which produces three varieties of contour tone at three different pitch levels...

Languages may distinguish up to five levels of pitch. Since tone contours may involve up to two shifts in pitch, there are theoretically 125 distinct tones for a language with five registers (namely  $5 \times 5 \times 5$ ). However, the most that are actually used in a language is a tenth of that number.

As reviewed by Aijun Li, et al. (*Emotional Intonation in a Tone Language: experimental evidence from Chinese*, Chinese Academy of Social Sciences, 2011):

Chinese is a tonal language. How lexical tones and intonation interplay with each other is an interesting question. In this study, we investigated emotional intonations by analyzing monosyllabic utterances from two speakers. We found that the tonal space, the edge tone and the duration differ greatly across 7 emotions, and that different speakers showed consistent production patterns. The speakers expressed "Disgust" or "Angry" by using a kind of "Falling" successive addition tone, and "Happy" or "Surprise" by a kind of "Rising" successive addition tone, as pointed out by Chao.

More conventionally, in western aesthetic terms, the focus is on [emotional prosody](#), namely as characterized as an individual's [tone of voice](#) in speech that is conveyed through changes in [pitch](#), [loudness](#), [timbre](#), speech rate, and [pauses](#) which is different from linguistic and [semantic](#) information. This frames the possibility of an [Emotional tone scale](#), as developed by scientology and the possibility of [Abstracting Emotions Using Frequency Modulated Tones](#)

For Eliezer Rapoport (*Emotional Expression Code in Opera and Lied Singing*, Zainea)

Emotional expression in singing is encoded at the microlevel of the single individual tone, and is deciphered by FFT (Fast Fourier Transform) analysis. FFT spectrograms of vocal tones, from recordings of opera arias and lieder sung by famous artists, reveal a large variety of (tonal) temporal structures, composed of several initial stages, that are correlated in a very systematic way with the emotions expressed in the text and the music. Over 50 distinct types of vocal tone structures (to be called modes) were identified, and classified into eight main categories: Neutral-Soft, Calm, Expressive, Transitional-Multistage, Intermediate, Short, Excited, and Virtuoso, in a very well-defined hierarchical scheme. These various types of temporal structures, and in particular the tone beginnings, are controlled by the interplay of seven mechanisms: 1) onset of phonation (voicing); 2) vibrato; 3) excitation of higher harmonic partials, (particularly the singing formant); 4) transition - a gradual pitch increase from the onset to the sustained stage; 5) sforzando - an abrupt pitch increase at the very onset of the tone; 6) pitch change within the tone; and 7)

unit pulse.

The large number and variety of these temporal structures (modes) are so shaped deliberately (but unawares), by the singers for expressing the large richness and variety of emotions from sadness to joy, and from happiness to anger. Furthermore, these modes indeed constitute the language of emotional expression in singing deciphered in the present study. A notation, based on the operating mechanisms was developed, and is in effect the alphabet. The various modes are the vocabulary, and the categories and their use in the melodic phrase constitute the grammar and syntax rules of this language.

Especially intriguing is the manner in which tonal and melodic sequences are associated dynamically with the geometry, as an instrument in play -- notably the resonances between lines as "strings", or between resonance chambers. As potentially suggested by the Book of Kells, the constraints and possibilities of poetic coherence may be determined by the intersection of lines governing structural rules.

As the geometry may be read, it can be understood as a meta-pattern framing possible variations reversals as explored in music. Thus classic composers, including Mozart, Bach and Haydn created pieces in which time, pitch and/or melody was reversed at some point -- a technique known as [crab canon](#) -- leading to studies on retrograde performance (Yingshou Xing, et al, [Mozart, Mozart Rhythm and Retrograde Mozart Effects: evidences from behaviours and neurobiology bases](#), *Scientific Reports* 6, 2016).

As noted by the Riemenschneider Bach Institute, in three canons, including the *Crucigeros*, Bach employs an especially rigorous procedure in which intervals not only reverse direction but also strictly maintain quality as well as number. The follower voice of these "mirror" canons may be discerned, quite literally, in the reflected images of their leaders (*The Crown of Thorns*, 1997). Given the significance of the sets of variations, it is unclear what musical significance their reversal can be interpreted to have, as separately explored (*Reversing the Anthem of Europe to Signal Distress: transcending crises of governance via reverse music and reverse speech?* 2016).

Given the importance attached to Beethoven's musical insight, the argument invites attention to the perspective from which the [32 Variations on an Original Theme in C minor](#) (1806) were created, following the earlier initiative of [Johann Sebastian Bach](#) ([30 Goldberg Variations](#), 1741). These were a notably feature of the study on self-reflexivity by [Douglas Hofstadter](#) (*Gödel, Escher, Bach: an eternal golden braid*, 1979). From what is the coherence of the pattern composed and produced by composer Benjamin Mapochi (*La Folia 72 Variations*)?

## Embodying complexity through aesthetics of multivocal sung rhetoric

As noted above, in Castalia particular emphasis is given to poetizing the quest for "con". It is therefore appropriate to embody this focus in a conclusion and the concentration of attention that focus implies. This can be usefully done through a threefold configuration.

**Configuring conceptualization of cognitive processes:** This preoccupation drew upon the correlation between the following:

- cognitive insights into the human capacity to conceive order, as notably explored by George Lakoff and Rafael Núñez (*Where Mathematics Comes From: how the embodied mind brings mathematics into being*, 2000).
- the work on how the brain engages and encodes music, as explored by Dmitri Tymoczko (*A Geometry of Music*, 2011; *The Geometry of Musical Chords*. *Science*, 2006).
- the findings of neurophysiology (how neurons produce subjective feeling), neuropsychology (how the human cerebral hemispheres undertake complementary information-processing), intonation studies (how the emotions are encoded in the tone of voice), and music perception (how human beings hear and feel harmony), notably as synthesized by Norman D. Cook (*Tone of Voice and Mind: the connections between intonation, emotion, cognition and consciousness*, 2002)
- the work arising from recognition by [Rene Thom](#) of 16 [archetypal interaction morphologies](#) distinguished by Rene Thom, most notably in relation to his focus on [semiophysics](#) (*Structural Stability and Morphogenesis: an outline of a general theory of models*, 1972; *Esquisse d'une Sémiophysique*, 1988).
- insights from the extensive explorations of creativity, exemplified by those of Daniel Dervin (*Creativity and Culture: a psychoanalytic study of the creative process in the arts, sciences, and culture*, 1990)
- emerging understandings of [synaesthesia](#)

**Configuring consonance in rhetoric:** As implied by the references above to use of figures of speech in versification in relation to tone, rhyme and rhythm, their cognitive interplay is of particular concern in Castalia. Central to this was how the various possibilities of change and transformation could be "sung".

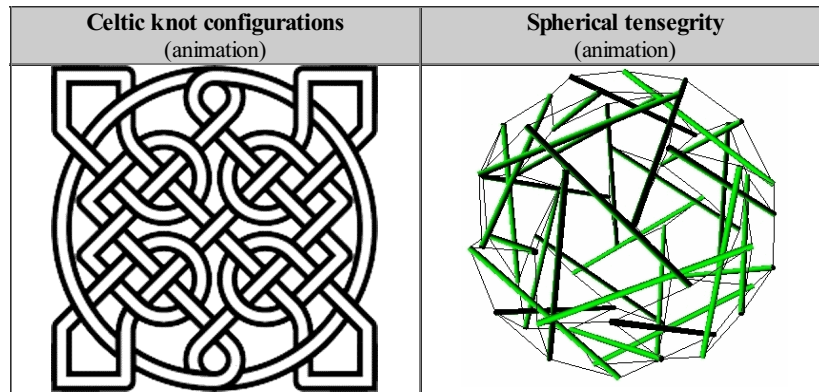
Partly inspired by the order implied by the periodic table of chemical element, a sense is given to the articulation and comprehension of this periodicity versification and musical terms. More generally, the process of classification of all features of the environment is explored in terms of melodic structure -- giving rise to "melodies of classification", of considerable value to mnemonic engagement with complexity (*Periodic Pattern of Human Knowing: implication of the Periodic Table as metaphor of elementary order*, 2009).

The interplay implied necessarily requires that the dynamics be embodied rather than simply presented in static terms -- hence a focus on play consistent with the game-playing arguments for *homo ludens* ([Johan Huizinga](#), 1938), understood as consistent with the arguments for *homo undulans* (Dervin, 1990). Game-playing, whether through wordplay or otherwise, is seen as fundamentally related to the role of humour, as variously recognized (*Humour and Play-Fullness: essential integrative processes in governance, religion and transdisciplinarity*, 2005; *Enacting Transformative Integral Thinking through Playful Elegance*, 2010)

**Configuring concentration on patterning of complexity:** In Castalia a complex argument is recognized to be like a long length of string. As such it is essentially unmemorable (and instantly forgettable) unless transformed into a Celtic knot (or some equivalent). The challenge in Castalia is thus to engage with ever more complex knots. As indicated above, understanding of the fundamental challenges of

governance within Castalia then invites exploration in terms of higher dimensional knots and their comprehension, both in mathematical and psychosocial terms (Andrew Ranicki, *High-dimensional Knot Theory*, 1998; R. D. Laing, *Knots*, 1972).

Of particular relevance is recognition of the mathematical correspondence between the alternation characteristic of Celtic knots (as noted above) and the spherically symmetrical tensegrity structures in three dimensions explored in terms of management cybernetics by [Stafford Beer](#) (*Beyond Dispute: the invention of team synteegrity*, 1994).



Such configurations are then further explored in terms of the legendary [Gordian knot](#) which continues to be framed as a challenge for global governance, as discussed separately, notably in relation to [Borromean rings](#). This suggests a degree of relevance to the cybernetics of governance as a system of control, dependent on feedback loops, variously subject to failure, as discussed separately (*Variety of System Failures Engendered by Negligent Distinctions*, 2016).

**Concordian mandala:** In a period of remarkable discord, attention has been controversially given to the provocative *Principia Discordia* elaborated by [Greg Hill](#) with [Kerry Wendell](#). As its focal symbol, this contains a *Discordian Mandala* to which reference is made in the *Wikipedia* entry on Borromean rings. It can be understood as depicting cycles that are moving not in union; but in resonance, such that even in the discord, there is balance and equilibrium.

As discussed separately with respect to the form of the mandala presented below (*Cognitive Cycles Vital to Sustainable Self-Governance*, 2009), it is made of five interlaced irregular nonagons, fitted within an overall pentagon. No two nonagons are directly interlinked, but any three adjacent nonagons (for example, yellow, green and blue) are in a Borromean rings configuration. The structure is sufficiently complex to be suggestive of a pattern that might be used to hold the complete set of Polti's 36 plots characteristic of human drama (as mentioned above). These are presumably exemplified by the problematic dynamics of global governance -- effectively the pattern of narrative tunnels through which globality is variously imagined. The extent to which it achieves this may be indicative of its power as an attractor.

As noted above, with respect to the challenge in Castalia of poetizing usage of "con" -- in its reframing of the "con-quest" -- part of the game involves attributing to segments of the image words with "con" as a prefix. The goal is to engender meaning from the global systemic configuration through ensuring that words in parallels rhyme in some way, and that the labyrinthine journey tells a memorable tale that can be sung in the quest for the mysteriously elusive "con". Rhyming conquer with concur is one indication of possibilities.

<p style="text-align: center;"><b>Concordian Mandala</b>                      indication of a stage in the iterative adaptation                      of the Discordian Mandala in the periodic Castalian con-quests</p>
<div style="height: 300px; border: 1px solid black;"></div>



is through the pattern of musical tones that the significance of the *Rg Veda* is to be found:

Therefore, from a linguistic and cultural perspective, we have to be aware that we are dealing with a language where tonal and arithmetical relations establish the epistemological invariances... Language grounded in music is grounded thereby on context dependency; any tone can have any possible relation to other tones, and the shift from one tone to another, which alone makes melody possible, is a shift in perspective which the singer himself embodies. Any perspective (tone) must be "sacrificed" for a new one to come into being; the song is a radical activity which requires innovation while maintaining continuity, and the "world" is the creation of the singer, who shares its dimensions with the song. (*Meditations through the Rg Veda*, 1978, p. 57)

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## References

Hussein Abdul-Raof. *Arabic Rhetoric: a pragmatic analysis*. Routledge, 2006

Stephen Adams. *Poetic Designs: an introduction to meters, verse forms, and figures of speech*. Broadview Press, 1997

Sylvia Adamson, Gavin Alexander and Katrin Ettenhuber. *Renaissance Figures of Speech*. Cambridge University Press, 2007

Wye Jamison Allanbrook. *Rhythmic Gesture in Mozart: Le nozze di Figaro and Don Giovanni*. University of Chicago Press, 1983

Dietrich Bartel. *Musica poetica: musical-rhetorical figures in German baroque music*. University of Nebraska Press, 1997

Gregory Bateson. *Mind and Nature; a necessary unity*. Dutton, 1979

Mary Catherine Bateson. *Our Own Metaphor: a personal account of a conference on the effects of conscious purpose on human adaptation*. Knopf, 1972.

Harold Baum. *Biochemists Songbook*. CRC Press, 1995

Stafford Beer:

- *Beyond Dispute: the invention of team synteegrity*. John Wiley, 1994
- *Platform for Change*. John Wiley, 1978

Vincent Benitez. *Musical-Rhetorical Figures in the Orgelbüchlein of J. S. Bach*. *Bach*, 18, 1987, pp. 3-21.

Felicia Bonaparte. *The Poetics of Poesis: the making of nineteenth-century English fiction*. University of Virginia Press, 2016

Mark Evan Bonds:

- *Absolute Music: the history of an idea*. Oxford University Press, 2014
- *Wordless Rhetoric: musical form and the metaphor of the oration*. Harvard University Press, 1991.

James W Botkin, Mahdi Elmandjra and Mircea Malitza. *No Limits to Learning; bridging the human gap*. Pergamon, 1979

Siglind Bruhn:

- *The Musical Order of the World: Kepler, Hesse, Hindemith*. Pendragon Press, 2005
- *Musical Ekphrasis: composers responding to poetry and painting*. Pendragon Press, 2000

Joachim Burmeister:

- *Hypomnematum musicae poeticae*. S. Myliander, 1599.
- *Musica autoschediastike*. C. Reusner, 1601.
- *Musica poetica*. S. Myliander, 1606.
- *Musical Poetics*. Yale University Press, 1993

Gideon O. Burton. *Silva rhetoricae*. Brigham Young University. 1996-2003

James P. Carse. *Finite and Infinite Games: a vision of life as play and possibility*. Ballantine Books, 1987.

Bruce Chatwin. *The Songlines*. Harmondsworth, Penguin Books, 1988

Ralph Alan Cohen. *Shakespeare and How to Cure It: a handbook for teaching Shakespeare*. Prestwich House, 2007.

Norman D. Cook. *Tone of Voice and Mind: the connections between intonation, emotion, cognition and consciousness*. John Benjamins, 2002

Philip J. Davis and Reuben Hersh. *The Mathematical Experience*. Birkhäuser, 1995 [[review](#)]

Edward de Bono. *New Thinking for the New Millennium*. Penguin, 2000

Luc De Brabandere and Alan Iny. *Thinking in New Boxes: a new paradigm for business creativity*. Random House, 2013

V. S. M. de Guinzbourg. *Wit and Wisdom of the United Nations*. United Nations, 1961

Antonio de Nicolas. *Meditations through the Rg Veda*. Shambhala, 1978

Daniel Dervin. *Creativity and Culture: a psychoanalytic study of the creative process in the arts, sciences, and culture*. Fairleigh

Dickinson University Press, 1990 [\[summary\]](#)

Persi Diaconis and Ron Graham. *Magical Mathematics: the mathematical ideas that animate great magic tricks*. Princeton University Press, 2012

K.J. Donnelly and Philip Hayward (Eds.). *Music in Science Fiction Television: tuned to the future*. Routledge, 2012 [\[review\]](#)

Joanito Dorronsoro. Bertso Doinutegia. Elkar, 1995 [\[summary\]](#)

Mikel Dufrenne *The Phenomenology of Aesthetic Experience*. Northwestern University Press, 1973

Ann Elias. *Useless Beauty: flowers and Australian art*. Cambridge Scholars Publishing, 2015 [\[contents\]](#)

Douglas Engelbart. *Augmenting Human Intellect: a conceptual approach*. Stanford Research Institute, 1962 [\[text\]](#)

Huda J. Fakhreddin. Defining Metapoesis in the Abbasid Age. *Journal of Arabic Literature*, 42, 2011, pp. 205-235 [\[text\]](#)

John Miles Foley. Basque Oral Poetry Championship. *Oral Tradition*, 22, 2008, 2, pp. 3-11 [\[text\]](#)

Joscelyn Godwin. *The Harmony of the Spheres: the Pythagorean tradition in music*. Inner Traditions/Bear, 1992

J. Garzia Garmendia. History of Improvised Bertsoaritza: a proposal. *Oral Tradition*, 22, 2007, 2, pp. 77-115 [\[text\]](#)

Joxerra Garzia, Jon Sarasua and Andoni Ergaña. *The Art of Bertsoaritza: improvised basque verse singing*. Bertsozale Elkarte, 2001

Robert Graves. *Seven Days in New Crete*. Cassell, 1949 [\[summary\]](#)

Zhang Xiu Guo. *English Rhetoric*. Tsinghua University Press, 1991

Willibald Gurlitt. Music und Rhetorik: Hinweise auf ihre geschichtliche Grundlageneinheit. *Helicon*, V, 1943 (1944), pp. 67-86.

Don Harran. Toward a Rhetorical Code of Early Music Performance. *The Journal of Musicology*, 15, 1997, 1, pp. 19-42.

P. A. Heelan. The Logic of Changing Classificatory Frameworks. In: J A Wojciechowski (Ed). *Conceptual Basis of the Classification of Knowledge*. K G Saur, 1974, pp. 260-274

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. Basic Books, 2007 [\[summary\]](#)

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

William B. Irvine. *Aha: the moments of insight that shape our world*. Oxford University Press, 2015

Orrin E. Klapp:

- *Opening and Closing: strategies of information adaptation in society*. Cambridge University Press, 1978
- *Overload and Boredom: essays on the quality of life in the information society*. Praeger, 1986

Alexander Klose. *The Container Principle: how a box changes the way we think*. MIT Press, 2009

R. D. Laing. *Knots*. Vintage Press, 1972

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

George Lakoff and Mark Johnson. *Philosophy In The Flesh: the embodied mind and its challenge to western thought*. Basic Books, 1999

Hilary Lawson:

- *Closure: a story of everything*. Routledge, 2001
- *Reflexivity: the post-modern predicament*. HarperCollins, 1985

Bernard Lewis. *What Went Wrong?: Western Impact and Middle Eastern Response*. Oxford University Press, 2002

Sergey Markov. Theories of Creativity. *Geniuses*, 23 May 2012 [\[text\]](#)

Marilyn McEntyre. *Caring for Words in a Culture of Lies*. Eerdmans, 2009

E G. McClain:

- *The Myth of Invariance: the origins of the gods, mathematics and music from the Rg Veda to Plato*. Shambhala, 1976
- *Pythagorean Paper Folding: a study in tuning and temperament*. *The Mathematics Teacher*, 63, 1970, pp. 233-237.

Kinhide Mushakoji:

- *Global Issues and Interparadigmatic Dialogue: essays on multipolar politics*. Meynier, 1988
- *Scientific Revolution and Interparadigmatic Dialogues*. 1979 [\[text\]](#)

John Passmore. *The Perfectibility of Man*. Liberty Fund, 1969 [\[text\]](#)

Henry Peacham:

- The Garden of Eloquence [of 1577]. Menston, 1971
- The Compleat Gentleman [of 1627]. Michigan, 1990

Sheila Petty, Garry Sherbert and Annie Gérin Wilfrid (Eds.). Canadian Cultural Poesis: essays on Canadian culture. Laurier University Press, 2006

Paul Pilkington:

- The Glass Bead Game: A Basic Form of Play, Genealogy, and Examples. Abine Publications, 2011
- The Glass Bead Game: Mercury and Hazel. Abine Publications, 2011
- The Glass Bead Game: Wardancing. Abine Publications, 2011

Kate Emery Pogue. Shakespeare's Education: how Shakespeare learned to write. PublishAmerica, 2012

Graham E. Poliner and Daniel P. W. Ellis. A Classification Approach to Melody Transcription. 2005 [[text](#)]

Karl Popper. The Open Society and Its Enemies. Routledge, 1945

Alex Preminger (Ed). Princeton Encyclopedia of Poetry and Poetics. Princeton University Press, 1974

Jørgen Randers. 2052: A Global Forecast for the Next Forty Years. Chelsea Green, 2012

Andrew Ranicki. High-dimensional Knot Theory. Springer, 1998

Patricia M. Ranum. The Harmonic Orator: the phrasing and rhetoric of the melody in French Baroque airs. Pendragon Press, 2001

Eric S. Raymond. The Cathedral and the Bazaar: musings on Linux and Open Source by an accidental revolutionary. O'Reilly Media, 1999

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

Peter Roberts:

- Conscientisation in Castalia: a Freirean reading of Hermann Hesse's The Glass Bead Game. *Studies in Philosophy and Education*, 26, 2007, 6, pp. 509-523 [[abstract](#)].
- The Dream of a Journey to the East: mystery, ritual and education in Hermann Hesse's penultimate novel. *Paideusis: Journal of the Canadian Philosophy of Education Society* 17, 2008, pp. 45-58 [[abstract](#)]

Peter Roberts and Michael A. Peters. From Castalia to Wikipedia: openness and closure in knowledge communities. *E-Learning and Digital Media*, 8, 2011, 1 [[text](#)]

Jon Sarasua. Social Features of Bertsolaritza. *Oral Tradition*, 22, 2007, 2, pp. 33-46 [[text](#)].

Michael A. Sells. Mystical Languages of Unsayings. University of Chicago Press, 1994

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

Henryk Skolimowski. The Participatory Mind: a new theory of knowledge and of the universe. Penguin/Arkana, 1994

Peter Sloterdijk:

- Bubbles: Spheres Volume I: Microspherology. Semiotext(e), 2011.
- Globes: Spheres Volume II: Macrospherology. Semiotext(e), 2014
- Foams: Spheres Volume III: Plural Spherology. Semiotext(e), 2016 [[review](#)]

Anna Smaill. The Chimes. Quercus, 2016 [[reviews](#)]

C. P. Snow. The Two Cultures. Cambridge University Press, 1959

Lee A. Sonnino. A Handbook to Sixteenth-Century Rhetoric. Routledge and Kegan Paul, 1968

Joan Stambaugh:

- Music as a Temporal Form. *The Journal of Philosophy*, 61, 1964, 9, pp. 265-280
- The Real is Not the Rational. State University of New York Press, 1986

Judy Tarling. The Weapons of Rhetoric: a guide for musicians and audiences. Corda Music, 2004 [[contents](#)]

Rene Thom:

- Structural Stability and Morphogenesis: an outline of a general theory of models. Benjamin, 1972
- Morphogenèse et imaginaire. *Méthodologie de l'imaginaire*, 8-9, 1978
- Esquisse d'une Sémiophysique: physique aristotélicienne et théorie des catastrophes. Interéditions, 1989
- Apologie du logos. Hachette, 1990

Alexander Tzonis and Liane Lefaivre. Classical Architecture: the poetics of order. MIT Press, 1986 [[review](#)]

Dmitri Tymoczko:

- The Geometry of Musical Chords. *Science*, 313, 5783, 7 July 2006, pp. 72-74 [[text](#)]
- A Geometry of Music: harmony and counterpoint in the extended common practice. Oxford University Press, 2011

Brian Vickers. In Defence of Rhetoric. Oxford University Press, 1988

Caroline Voet. The Poetics of Order: Dom Hans van der Laan's architectonic space. *Architectural Research Quarterly*, 16, 2012, 2 pp. 137-154 [[text](#)].

Michael Wachtel. The Cambridge Introduction to Russian Poetry. Cambridge University Press, 2004

D. P. Walker. Spiritual and Demonic Magic from Ficino to Campanella. Pennsylvania State University Press, 2000.

P. Williams. The Snares and Delusions of Musical Rhetoric: some examples from recent writings on J. S. Bach. In: P. Reidemeister and V. Gutman (Eds), *Alte Musik: Praxis und Reflexion*, Amadeus, 1983, pp. 230-240.

James Anderson Winn . Unsuspected Eloquence: a history of the relations between poetry and music. Yale University Press, 1981.

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

Maurice Yolles:

- Knowledge Cybernetics: a metaphor for post-normal science, 2006 [[text](#)]
- Knowledge cybernetics: a new metaphor for social collectives. *Journal of Organisational Transformation and Social Change*, 3, 2006, 1
- A General Theory of Generic Modelling and Paradigm Shift: cybernetic orders *Kybernetes*, 44, 2015 [[abstract](#)]

Yun Yue. Rhetoric: A Tale of Two Cultures. *The International Journal of Language Society and Culture*, 28, 2009 [[text](#)]



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