



laetus in praesens

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Zen of Facticity: Bull, Ox or Otherwise?

Herding facts and their alternatives in a post-truth-era

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Despite the intentional ambiguity of the title, the document has also been separately publicised with a particular slant under the title *The Zen of Facticity -- Bullshit, Sacred Oxen, and Other Artifacts of a Civilization in Decline*, *Public Intelligence Blog*, 1 April 2017)

Introduction

In a post-truth period in which the very nature of facts has been called into question -- challenged as they are by alternative facts -- there is a case for exploring this condition by every means possible. Clearly there are implications for both global governance and how individuals can now best navigate daily life and its opportunities -- whether they prefer to indulge in the reality of "facts" or the surreality of "imagination".

The following exercise follows from the recommendation of [Johan Galtung](#) regarding the need to experiment with [Forms of Presentation](#) -- made in the context of the Goals, Processes and Indicators of Development Project (GPID) of the United Nations University, as variously discussed separately (*Forms of Presentation and the Future of Comprehension*, 1984).

The exercise interrelates implications from several disparate frameworks -- deliberately exploiting poetic licence and metaphor. It was inspired by the manner in which "alternative facts" can readily be defined as "bull" in popular jargon -- or even more explicitly, as distinctively clarified by the philosopher [Harry Frankfurt](#) (*On Bullshit*, 2005; *On Truth*, 2006). This had evoked the need to derive new insights from "bullfighting", metaphorically understood (*Viable Global Governance through Bullfighting: challenge of transcendence*, 2009).

Any response to "bull" also calls for recognition of the centuries of insight derived from the successive phases in the evolution of insight, as frequently depicted in Zen Buddhism by a traditional set of [Ten Bulls](#). Rather than as a "bull", of potential relevance is the extent to which the animal is ambiguously identified as an "ox" -- through a set of 10 "ox-herding" pictures, each with a brief commentary (cf D. T. Suzuki; Kubota Ji'un, *Ten Ox-herding Pictures with the Verses Composed by Kakuan Zenji*, 1996).

The bull/ox ambiguity offers an interesting implication for the manner in which the dangers of the bull in the chaotic reality of the wild may be tamed and domesticated through a cognitive form of "castration" ("emasculatation") -- as with other truths of reality held to be dangerous. The threat of any such animal also recalls the famous comment by [John Maynard Keynes](#) regarding the challenge of "animal spirits". As noted, for example, by Robert Shiller (*Animal Spirits Depend on Trust*, *Wall Street Journal*, 27 January 2009; George A. Akerlof and Robert J. Shiller, *Animal Spirits: how human psychology drives the economy, and why it matters for global capitalism*, 2008).

There is then of course the paradox as to the appropriateness of dealing with chaotic wildness forms of "domestication", recalling the argument of [Aldous Huxley](#):

To make biological survival possible, [Mind at Large](#) has to be funneled through the reducing valve of the brain and nervous system. What comes out at the other end is a measly trickle of the kind of consciousness which will help us to stay alive on the surface of this particular planet... Most people, most of the time, know only what comes through the reducing valve and is consecrated as genuinely real by the local language. (*The Doors of Perception*, 1954)

Donald Trump is now upheld as an exemplar of chaos, perhaps to be recognized as corresponding to the [trickster archetype](#) (Coyote, Loki, etc), as discussed separately (*Identity in question via Trump: Narcissus vs Loki?* 2016). The question here is whether the stages and possibilities of individual or collective insight (into the nature of facts and evidence) can be fruitfully reframed in relation to imaginative engagements with the surreal and with "bull" -- as an effective strategic response.

The surreal could be characterized by the many mutually contradictory declarations of politics, religions and the sciences, with their "creative" approaches to concrete proof in which people are insistently called upon to believe. These are echoed by insights into the [social construction of reality](#), and more especially through use of "fiat", as with the [fiat money](#) now characterized by previously deprecated [quantitative easing](#).

More specific use of the Zen 10-bull framework was previously made with respect to degrees of comprehension in governance of the global problematique (*Progressive integration of the shadow of non-self-reflexivity in Consciously Self-reflexive Global Initiatives: Renaissance zones, complex adaptive systems, and third order organizations*, 2007).

In implying degrees of self-reference here, the use below of the 10-bull framework, is further elaborated by the device of recursively embedding the cognitive challenges of each into each. Each of the 10 phases then constrains and colours understandings of the other 10 phases within that embedding -- making a potential set of 100 distinctions. However, rather than a linear sequence of "stages", of greater potential relevance are the dynamics between their emergence and co-existence in practice -- and how these might be understood in the present rather than in the hypothetical future. Hence the use of "phases".

The pattern as a whole then offers a fruitful means of exploring the variety of possible understandings of "fact", "existence" and credible "proof", notably as addressed by the philosophical concerns with [facticity](#). As might be expected, the latter has a multiplicity of meanings from "factuality" and "contingency" to the intractable conditions of human existence. The approach here is necessarily only suggestive and exploratory -- without any claim to definitive closure. Rather it could usefully evoke discussion as to whether the additional articulations are appropriately made or could be more meaningfully distributed otherwise.

The primary concern is how to engage with "bull" in this period, thereby calling into question the currently preferred use of fighting metaphors in response to Donald Trump, typical of "bull fighting" (*Enhancing Sustainable Development Strategies through Avoidance of Military Metaphors*, 1998). The ambiguity of "bull" in the Zen phases is succinctly indicative of the self-referential process of engaging with an emergent pattern of abstraction of greater subtlety -- both in terms of its intractable dynamic and its deprecation as a delusion or conceit from any more conventional perspective.

Tentative correspondences within a 10-bull framework

Previous uses and possibilities: The following indicate possible adaptations from other perspectives:

- **experience of action engendering new consciousness:** as articulated with extensive commentary on the first six images by Yong Zhi: *wandering in wilderness ; discover the path ; focus on the object ; engage the object ; control the object ; harmonious interplay between subject and object* (*Human Actions illustrated in Zen's Ox-Herding Pictures*, Humanities, 2012)
- **problem integration:** Phases in the sequence of cognitive *Integration of Perceived Problems* (commentary with respect to the World Problems Project of the *Encyclopedia of World Problems and Human Potential*)
- **progression to higher orders of consensus**, through which possibilities of integrating the shadow are embodied, as separately suggested in the context of the Global Strategies Project (*Strategic denial: Reframing the unknown*)
- **levels of dialogue:** Tentatively articulated as: *lowest level of dialogue ; the white knights now pursue the black knights ; a sense of system ; firming of the boundaries ; limitation ; relativity ; uncertainty* (*Tao of Dialogue*, 1996).
- **degrees of cognitive engagement:** Tentatively articulated as: *enjoining ; exemplifying / enabling / empowering ; imaginative world-making ; enminding: environmental challenges as a reflecting mirror ; embodying ; engendering through non-action ; perfection of what is: intelligent design? ; grounding alternative realities ; silence: the unsaid and the unsayable?* (*Creative Cognitive Engagement: beyond the limitations of descriptive patterning*, 2006)
- **closure in design:** (*Punctuated Evolution of Marks Questions -- in the intelligent design of numbers and Zen ox-herding pictures*, 2006; uncompleted)
- **configuration of nothingness:** *Experimental configuration of nothingness as an "eightfold way"* (in *Configuring the Varieties of Experiential Nothingness*, 2012)

The existentialist Martin Heidegger, the psychologists Carl Jung and Erich Fromm, and the musician John Cage, all acknowledge Suzuki's influence on their work and thought. Correspondences with other patterns of spiritual insight have been noted in the case of the Enneagram (João C. Fontes, *Enneagram, Jesus and the Way*, 2008) and the Kabbalah (Marek Bazgrzacki, *The Cabalah, Philosophy and Buddhism*, 2011).

Correspondences in this exercise: With respect to the phases of awareness distinguished in the following table, there are of course

many translations and related commentaries, accessible on the web as indicated by various indexes (*The Ox-Herding Series: collected from around the net*; *Oxherding Pictures Index*, *Terebass Online*). The latter provides valuable links to 13 sets of commentaries.

The images used here derive from the *Wikipedia* entry, with the verses (indicated below) deriving from Paul Reps and Nyogen Senzaki (*Zen Flesh, Zen Bones: a collection of Zen and pre-Zen writings*, 1957).

The concern here is to distinguish a set of functional correspondences with respect to each such stage. This is necessarily extremely tentative. The elaboration of such a set can of course be explored through the question of the number of such functions that can be distinguished -- especially when the number is constrained to ten. The set could of course be refined in the light of insights from a range of disciplines. The value of the Zen set is its appreciated coherence over centuries.

Consensus? It is unclear that there is any consensus on the variety of cognitive functions which might correspond to such a set -- especially given the emergence of elusive higher degrees of insight and self-reference which it endeavours to hold. Both "consensus" and "higher" may themselves be challenged as illusory -- as "bull" in their own right (*The Consensus Delusion: mysterious attractor undermining global civilization as currently imagined*, 2011; *Engaging with Insight of a Higher Order*, 2014).

The distinctions conventionally made by various disciplines are noted in *Wikipedia* entries such as: [Types of thought \(thinking\)](#), [Multiple intelligence modalities](#), [Cognitive development](#), [Developmental psychology](#), [Executive functions](#), [Eightfold path of policy analysis](#).

These are typically associated with the models proposed by particular schools of thought, notably those deriving from Jean Piaget and Carl Jung. The systemic coherence of a restricted set of functions distinguished may give rise to particular patterns (possibly non-linear), as with the [AQAL pattern](#) of Ken Wilber, the [Myers-Briggs Type Indicator](#), the [Team Role Inventory](#) of Meredith Belbin, the [enneagram of personality](#), and the like. It is unclear how well adapted these are to any engagement with the surreal nature of a post-truth era.

Aesthetics: Zen avoids the consequences of the conventional articulation of distinctions characteristic of academic discourse. Extensive use is instead made of aesthetic forms, whether images, poetry or enigmatic *koans* (*Configuring a Set of Zen Koan as a Wisdom Container: formatting the Gateless Gate for Twitter*, 2012). The question here is whether the ox-herding pictures are helpful in clarifying the distinctive modes of engagement with facts (and alternative facts) in a post-truth era in which conventional logic is effectively called into question. This can be otherwise expressed in terms of transcending the constraints of a logical [truth table](#), as separately argued (*Towards articulation of a "post-truth table"?* 2016).

As notes with respect to the *Oxherding Tale* (1982) by [Charles Johnson](#):

To be free of the illusory nature of "ontological dualism", however, one must journey through stages of increasing awareness, admirably depicted in the ten illustrations of the "Oxherding Pictures". From seeking a self (ox) that one thinks one has lost, to glimpsing the self that is first elusive and finally illusory, the seeker comes to realize that all identities are constructed and therefore temporary, including such notions as "race" and "self". (Richard Collins. *Honoring the Form: Zen Moves in Charles Johnson's Oxherding Tale. Religion and the Arts*, 14, 2010)

Related possibilities of visual depiction have been discussed separately (*Transformation of Global Governance through Bullfighting: visual symbols and geometric metaphors*, 2009). The approach taken here is to explore the use of the Zen 10-fold pattern. Subsequent commentary is then made on the cognitive constraints giving rise to the variety of patterns in the light of the much-cited insight of [George Miller](#) (*The Magical Number Seven, Plus or Minus Two: some limits on our capacity for processing information, Psychological Review*. 63, 1956), as discussed separately (*Comprehension of Numbers Challenging Global Civilization*, 2014).

Cognitive entanglement of corresponding "stories" of insight emergence

Degrees of insight: These might follow from recent studies, notably in the light of [insight phenomenology](#) ([Gary Klein](#), *Seeing What Others Don't: the remarkable ways we gain insights*, 2013; [R. J. Sternberg](#) and J. E. Davidson (Eds.), *The Nature of Insight*, 1995). The bias in this argument is in favour of mnemonic clues to enable more fruitful governance, as argued separately (*Imagining the Real Challenge and Realizing the Imaginal Pathway of Sustainable Transformation*, 2007).

As a [mnemonic catalyst](#), "bull" can be variously understood in the light of the following "stories" which might be framed in terms of a 10-bull context.

- **engagement with a goal or target ("bull's eye"):** with distinctions notably made by the philosopher [Eugen Herrigel](#) in the much-cited *Zen in the Art of Archery* (1948), which has been an inspiration for some 200 goal-oriented studies with similar titles
- **degrees of model comprehensiveness:** towards a [Theory of Everything](#), a hypothetical all-encompassing philosophical explanation of nature or reality; notably as a framework provided by Ken Wilber in explaining his "integral theory" (*A Theory of Everything*, 2001)
- **degrees of enlightenment:** exemplified by a range of studies ([John Daido Looi](#), *Riding the Ox Home: stages on the path of enlightenment*, 2002); notably highlighted by [Ken Wilber](#) (*The Spectrum of Consciousness*, 1977); possibly understood in terms of a succession of initiations or rebirths (*Varieties of Rebirth -- distinguishing ways of being "born again"*, 2004)
- **degrees of expertise, skill or education:** as exemplified by:
 - *degrees of certification and/or academic qualification*
 - *degrees of intelligence*
- **degrees of aesthetic appreciation:** notably as variously explored ([östen Axelsson](#), *Aesthetic Appreciation Explicated*, Stockholm University, 2011; [Helmut Leder](#), et al, *A model of aesthetic appreciation and aesthetic judgments, British Journal of Psychology*, 2004):

- *degrees of artistic creativity*: The musician [John Cage](#) is noted for the influence of the Zen distinctions on his compositions (Stephen Addiss and Ray Kass, *John Cage: Zen Ox-Herding Pictures*, 2009)
- *degrees of connoisseurship in art*: as variously implied (*Comments on Connoisseurship*, *Art History Today*, 31 August, 2012; John H. Brown, *Connoisseurship: conceptual and epistemological fundamentals*)
- *degrees of connoisseurship in gastronomy*
- *degrees of appreciation of music, song, poetry*
- *degrees of role embodiment in drama*
- ***degrees of abstraction***: as exemplified by the set of 11 lithograph prints of progressive abstraction by [Pablo Picasso](#) (*Abstraction examples: Picasso's bulls*, 1945; *Pablo Picasso - Bull: a Master class in Abstraction*) -- a celebration of his obsession with bullfights in which he saw *at work a force far beyond that reflected by other artistic expressions*.
- ***degrees of martial arts skill***: as implied by the set of 10 [dan ranks](#) (with some correspondence to rankings in the board games of [go](#) and [shogi](#)). Exemplified in use of the ox-herding images to discuss the spiritual and ethical dimensions of martial arts training (John J. Donohue, *Herding the Ox*, 1998)
- ***levels of threat and readiness***: as with the 5 alert states of the US ([DEFense readiness CONdition: DEFCON](#)) and the corresponding 5 [UK threat levels](#)
- ***degrees of engagement with corruption (evil)***: from detection, through temptation, struggle, triumph, to transcendence (evil -- live)
- ***degrees of illusion***: understood as [cognitive biases](#), an extensive range of these have been organized into four categories: biases that arise from too much information, not enough meaning, the need to act quickly, and the limits of memory (John Manoogian III, *Cognitive Bias Codex*). Such organization can be contrasted with the degrees of illusion highlighted in relation to [Maya](#) by Hinduism and Buddhism.
- ***degrees of credibility of claims***: there are degrees of credibility and incredibility (as noted by the *Credibility Weekly*) whether with respect to claims or sources, posing obvious issues of communication. In science credibility is framed in terms of degrees of [correlation](#) measured by a variety of coefficients with the consequent implication of degrees of belief in any model (Wen Jiang, *A correlation coefficient of belief functions*, 2016).
- ***degrees of engagement with the environment***: these range from "denaturing", through understandings of "light-green" / "dark-green" distinctions, to forms of cognitive participation indicated by [deep ecology](#) (*Internalizing the processes of nature through an eightfold way*, 2013; *"Intercourse with Nature"*; [Henryk Skolimowski](#), *The Participatory Mind: a new theory of knowledge and of the universe*, 1995; [David Abram](#), *The Spell of the Sensuous: perception and language in a more-than-human world*, 1996). Especially in relation to the engagement of indigenous peoples, a contrast might be made between:
 - *degrees of engagement with the wild* (wilderness, nature) more generally ([Darrell Posey](#) (Ed.), *Cultural and Spiritual Values of Biodiversity*, 1999).
 - *degrees of engagement "with the land"*, understood as a psycho-political preoccupation of some cultures with respect to their identity
- ***degrees of integration of the shadow***: understood as a phased process of integrating the [shadow](#) during the individuation process (as emphasized by Carl Jung), rather than a step change
- ***degrees of engagement with otherness***: as variously distinguished (*"Intercourse with the Other"*, 2007), most notably in the case of dialogue
- ***degrees of human bonding***:
 - *degrees of team bonding*
 - *degrees of friendship and mutual obligation*
 - *degrees of love-bonding*
- ***degrees of governance (control)***: from appreciation of the issues (whether problematic or otherwise) to embodiment of the causes of those represented
- ***degrees of lying (bias, spin, puffery)***: as discussed separately (*Dying to Live, Living to Die, Lying to Live, and Living a Lie: should American li(v)es be saved at all costs?*, 2015; media bias ***)
- degrees of speculation
- degrees of objectivity
- degrees of complexity
- degrees of self-reference
- degrees of belief / conversion / persuasion
- degrees of flow

All such patterns of distinction have implications for identity and communication (Luciano H. Tamargo, et al, *Sharing beliefs among agents with different degrees of credibility*, *Knowledge and Information Systems*, 2016, June; Patrick Krümpelmann, et al, *Forwarding Credible Information in Multi-agent Systems*, 2009).

Of potential relevance to the clarification of such a pattern is the work on [archetypal morphologies](#) as proposed in relation to [catastrophe theory](#) by [René Thom](#) (*Structural Stability and Morphogenesis: an outline of a general theory of models*, 1972) -- as discussed separately (*Metaphorical Insights from the Patterns of Academic Disciplines: learning from the Standard Model of Physics?* 2013).

Phases in the "re-cognition" of "bull" according to Zen?

The following phases are experimentally presented separately in an [Annex](#):

- Phase 1: In search of the "bull" -- as questionable "facts"
- Phase 2: Discovery of the footprints of the "bull" -- as traces of disruptive misrepresentation
- Phase 3: Perceiving the "bull" -- as the challenge it constitutes
- Phase 4: Catching the "bull" -- grasping its implications
- Phase 5: Taming the "bull" -- constraining its disruptive consequences
- Phase 6: Riding the "bull" home -- benefitting from its convenience
- Phase 7: The "bull" transcended -- moving beyond its constraints
- Phase 8: Both "bull" and self transcended -- and the illusion they together constitute
- Phase 9: Reaching the source of the "bull" -- and its self-referential implications
- Phase 0: Return to society -- knowing it for the first time

Common titles of the ox-herding pictures in English, and common themes of the associated prose, are indicated in the second and third columns. Given the concern with collective implications, in addition to the traditional individual preoccupation, clusters of synonyms are presented below to clarify interpretation of the function tentatively named in the fourth column.

Significance of the Ox-herding Images of Zen				
#	Stages traditionally distinguished in Zen		Functional clusters?	Clusters of functional synonyms?
	Version of Suzuki (Shubun)	Version of Paul Reps and Nyogen Senzaki		
1	Undisciplined	In search of the "bull" (aimless searching, only the sound of cicadas)	<i>Questioning</i>	<i>interrogating, evaluating, assessing, justice</i>
2	Discipline begun	Discovery of the footprints of the "bull" (a path to follow)	<i>Problematizing</i>	<i>blaming, criticizing, condemning</i>
3	In harness	Perceiving the "bull" (but only its rear, not its head)	<i>Modelling</i>	<i>explaining, comprehension, science</i>
4	Faced round	Catching the "bull" (a great struggle, the bull repeatedly escapes, discipline required)	<i>Acquiring</i>	<i>possessing, grasping: self-possession</i>
5	Tamed	Taming the "bull" (less straying, less discipline, bull becomes gentle and obedient)	<i>Protecting</i>	<i>defending, security, surveillance, status quo</i>
6	Unimpeded	Riding the "bull" home (great joy)	<i>Governing</i>	<i>politics, management, control</i>
7	Laissez faire	The "bull" transcended (once home, the bull is forgotten, discipline's whip is idle; stillness)	<i>Integrating</i>	<i>coordinating, configuring</i>
8	All forgotten	Both "bull" and self transcended (all forgotten and empty)	<i>Conscientizing</i>	<i>mirroring, shadow integration</i>
9	Solitary moon	Reaching the source of the "bull" (unconcerned with or without; the sound of cicadas)	<i>Believing</i>	<i>religion</i>
10	Both vanished	Return to society (crowded marketplace; spreading enlightenment by mingling with humankind)	<i>Communicating</i>	<i>persuading, educating indoctrination</i>

Clearly there are many contrasting efforts to distinguish degrees of "enlightenment". Of particular interest is that articulated in terms of degrees of self-reference in the light of insights into the cybernetics of a viable system (Maurice Yolles and Gerhard Fink, *A General Theory of Generic Modelling and Paradigm Shifts, Kybernetes*, 2015). Four of these cybernetic orders are discussed separately (*Consciously Self-reflexive Global Initiatives*, 2007). An interpretation of such distinctions is provided in the discussion of Cadell Last (*Towards a Big Historical Understanding of the Symbolic-Imaginary*, 2017):

- externally observed objects are modelled with an observer's noumenal view and voice that is systematically excluded from the "objective" model of the world to create the effect that the "true natural world" in-itself is looking and speaking at the subject [eg science]
- observer's noumenal view and voice of externally observed objects is included in the model thus creatively relativizing the observer's "objective" world model to the subjective locus producing it in order to study its effects in the ideational field structuring the motion of subject-object [eg deconstruction]
- observer of externally observed objects reflectively incorporates its own and subjective-multiplicities as a (virtual, estimate) object of analysis structured by an a priori frame of desire that unconsciously filters orientation, intervention, and understanding of subject-object entanglement [eg psychoanalysis]
- observer reflectively incorporates noumenal view and voice model(s) structured by a priori frames of desire as capable of overdetermining the virtually narrated images of externally observed objects ("the world") through transcendental reflection and creation [eg historical subjectivity]
- observer identifies the virtual ideational field composed of a multiplicity of self-relating and desiring world views and voice models as a universal agency ("scmiosphere") in-itself with asymmetrical and irreversible reflective and creative autonomy structuring the motion of subject-object entanglement [eg history itself]

In addition to studies of the philosophy of bullshit, there are now studies of its psychology (Gordon Pennycook, et al. *On the Reception*

and *Detection of Pseudo-profound Bullshit, Judgment and Decision Making*, 2015). The latter includes a **Bullshit Receptivity Scale** whose elaboration merits comparison with the distinctions made above. Of it the authors note:

The construction of a reliable index of bullshit receptivity is an important first step toward gaining a better understanding of the underlying cognitive and social mechanisms that determine if and when bullshit is detected. Our bullshit receptivity scale was associated with a relatively wide range of important psychological factors. This is a valuable first step toward gaining a better understanding of the psychology of bullshit.

With appropriate irony, the authors were awarded the **Ig Noble Peace Prize** (2016) for their research, as variously noted (Chris Pash, *An Ig Nobel Prize has been awarded for bullshit*, *Business Insider*, 23 September 2016; Stuart Winthrop, *Bullshit, lies, itches and flies: the 2016 Ig Nobel prizes*, *University of Melbourne blogs*, 2 October 2016).

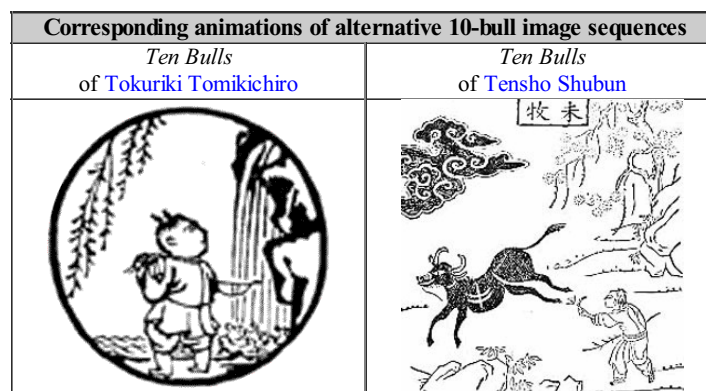
The Zen images are appreciated in that tradition because they avoid "verbose" articulations of a variety of coherent conditions of experience. Other verbal articulations could of course be matched with that set of images, notably levels of meta-distinction and abstraction in physics and metalogic. All such distinctions could be explored in terms of levels of dialogue (*Varieties of Dialogue Arenas and Styles*, 1997). It could be understood in terms of the phases of any **hero's journey** as distinguished by **Joseph Campbell** in terms of 17 stages (*The Hero with a Thousand Faces*, 1949). Such myths do not necessarily contain all 17 stages explicitly; some myths may focus on only one of the stages, while others may deal with the stages in a somewhat different order.

Perhaps more intriguing, the challenge could be framed by mixing musical and chemical metaphors (*Tuning a Periodic Table of Religions, Epistemologies and Spirituality*, 2007). There is a sense in which each column in such a table (termed a group) could be associated with the cognitive implications of a Zen "bull", progressing successively along the row towards a form of completion. The rows of the table then offer a means of holding subtler (and rarer) implications. The complexities of the table with respect to 8 or more groups, could then frame reflection on the complexities of "bull" (as discussed further below).

The preliminary attribution of text to the sub-phases of the following 10 phases is necessarily both **highly tentative and far from adequate** -- as evident from minimal or absent text in many cases. Extensive use of **"bull"** is employed as an **indicative code** for a complex of possible associations.

Implication in interwoven "bull" and "ox" themes

The images used in the animations below have been slightly adapted from those in the *Wikipedia* entry on *Ten Bulls* by **Tensho Shubun** (1444). That entry also offers the contrasting images of *Ten Bulls* by **Tokuriki Tomikichiro** (1902-99).



"Bull": as a complex of homonyms, synonyms and connotations: References to bull/ox are widely made in mythology (**Sacred bull**, **Cretan Bull**, **Chinese ox**, bearer of **Shiva** in Hinduism), especially in the case of **Europa** (Sarah Dejaegher, *Europa and the Bull: the significance of the myth in modern Europe*, *The New Federalist*, 13 June 2011). Ironically the symbolic significance of "sacred cows" in the Hindu tradition is currently a matter of concern; "cow vigilantism" is becoming a threat to communal harmony (Ronald Meinardus, *India's Noxious Cow Politics*, *The Globalist*, 24 April 2017).

The calf/heifer complex remains fundamental to the Judaic tradition through the **Golden Calf**, most notably through the current focus on the ritual sacrifice of the **Red Heifer** by the **Temple Institute** in Israel. That focus is cited as the prime example of a **chok**, or biblical law, for which there is no apparent logic (Ed Greenstein, *Is it Possible to Make Sense of a Biblical Ritual (Chok)*, *The Torah*).

Curiously the rise of populism in Europe is associated with a desire to reject (or "sacrifice") the acclaimed achievements of the European project -- variously deprecated in terms of "bull" (Maarten Hillebrandt, *Rejection by Referendum: a new expression of discontent in the EU*, 2013; Chris van Dijk, *The Fragility of the European project*, *Open Democracy*, 20 March 2017)

Seemingly the most general sense of "bull" is associated with recognition of an unusual emergence, disrupting the anticipated flow of things. Thus a *Wikipedia* entry on the disambiguation of **bull** notes its use for decrees (whether the imperial **Golden bull**, or the **Papal bull**), with **bulletin** now having a similar etymological derivation. The use of tweets by Donald Trump might be seen as combining both the sense of decree and bulletin, as well as their deprecation as "bull". The term is also used in the financial markets as a particular form of **stock market speculation** (with its associated **bull market**).

Especially intriguing is the complex of associations evident in the etymology of **"bullet"** (as some form of projectile), a diminutive deriving

from the roundness of a ball -- especially a cannon ball. Noteworthy is its use in [bullet points](#) in the "projection" of the points in a presentation. A [bullet loan](#) is a mode of payment of a debt instrument (with which a [balloon payment](#) may be associated). The capacity to [bite the bullet](#) is understood to involve accepting the negative aspect of a situation and engaging realistically with it, whereas [dodging a bullet](#) is the avoidance of any such disaster. Astronomy distinguishes newly merging galaxies as a [bullet group](#).

The semantic field is rendered more complex by inclusion of [bullying](#), with ambiguities to its own etymology -- associated to some degree with "bull". The intimidation can be recognized in a complementary process, namely the blood sport of [bull-baiting](#). Given the manner in which people can be verbally bullied, of further interest is use of [bully pulpit](#) as a conspicuous position that provides an opportunity to speak out and be listened to. Extensive use of Twitter by Donald Trump could be understood in such terms.

In this period, with the increasing recourse to use of "bull", bullets and explosive "self-projection" in reaction to negligent indifference (and spurious argument), such complementary associations could offer a key to greater comprehension of the disruptive recourse to violence (*Global Incomprehension of Increasing Violence*, 2016). As a source of disruption, especially intriguing is the lack of focus on the source of "bull" in its various forms, exemplified in the case of projectiles (*Identification of Bullets: human right and human responsibility?* 2009).

The complex semantic field of "bull" is further enriched through the etymological and phonetic links to "ball", perhaps best exemplified by ["having a ball"](#). The spherical form may offer further complex associations between "bull" and "global", as may be speculatively explored (*Globallooning -- Strategic Inflation of Expectations and Inconsequential Drift: global, glo-bull, glow-ball, glow-bawl*, 2009).

Interwoven themes associated with the above images: The interplay between the following associations can be usefully borne in mind in distinguishing the various phases and sub-phases:

Themes associated with images of the "bull" in the Zen images	
"bull" as:	<ul style="list-style-type: none"> • misrepresentation (lies, fallacies, etc) • perception of chaotic danger/threat challenging accepted reality • latent or emergent force (potency / potential) • plasma (destructive of any container) • opposition (<i>not with us, but against us</i>) • reality -- perceived in reverse (back-to-front, vice versa, "arse about face", "hanged man", "wrong end of the stick") • bulls eye as target • tracing/indicating/markng a path/journey from initial confusion (magical thinking) to cognitive resolution and reconciliation
"ox" as:	<ul style="list-style-type: none"> • consequence of whitening of coloration of the bull • unnatural, constrained oversimplification of the complex dynamics of reality and nature • bull that has been systemically "cut" or "snipped" • artifact • dominated reality • impotency / sterility / eunuch • enforced docility • ally (having been <i>"got to yes"</i>) • cosmetic reality • container (of plasma) • oxymoron (especially in its relation to bull)
bull/ox transformation as	<ul style="list-style-type: none"> • duality • abstraction • alternation and its transcendence (a transformation process) • spirited vs dispirited (through "breaking the spirit") • imaginary object • cessation of notions (Myokyo-ni, <i>The Ceasing of Notions: an early Zen text</i>, 2013) • mirroring image • cosmetic • snake/rope (as in the Indian perceptual paradox) • eternal return / circularity of a "journey", seemingly echoed by implications of ITER
"herding" as	<ul style="list-style-type: none"> • getting act together -- coordinating, integrating, embodying • gathering/collecting facts together (notably as challenged by the dynamics of "herding cats") • ox-herding as framing of the process as a whole (but not bull-herding?)
"riding" as	<ul style="list-style-type: none"> • successful surmounting of difficulties and challenges • unquestioning acceptance of a convenient model / explanation • operation within an unchallenged comfort zone • transportation by a satisfactory vehicle / container • illusion of having got it together -- ultimate symbol of self-satisfaction • Don Quixote sustained in an illusion by Sancho Panza
"home" as	<ul style="list-style-type: none"> • achievement of imagined goal • comfort zone -- <i>Da ist Meine Heimat; Da bin Ich zu Hause</i> • a desirable "place to be" (cf Christopher Alexander, as characterized by "a quality without a name")

ring/circle symbolism as	<ul style="list-style-type: none"> • ring in the nose of both bull and ox • bullfighting in a ring of spectators • ringed images as lenses (however distorting) through which to view reality • getting them all into a circle, encycling -- circling the wagons • establishing an appropriately bounded system -- closure (Hilary Lawson, Closure: A Story of Everything, 2002) • all the phases together as a continuing circular process, not a culmination (guise) • circle of trust -- as with a group conceiving of itself as a circle • ring as eye (cf Eye of Horus) • halo
container / containment	<ul style="list-style-type: none"> • uncontained/contained • unencompassed/encompassed • unembodies/embodyed • unbounded/boundaries -- boundedness • taming as oversimplification • gerrymandering of dimensions of reality • (dis)closure) / (un)boundedness >>> degrees of freedom
liminality and aesthetics	<ul style="list-style-type: none"> • being neither bull nor ox (Living as an Imaginal Bridge between Worlds: global implications of "betwixt and between" and liminality, 2011) • indicative depiction of the flute player
implication of the missing	<ul style="list-style-type: none"> • notably as implied by the ring • challenging constraints of (masculine) hierarchical / sequential depiction -- notably from a feminine perspective • significance of the absent "cow", despite its importance in mythology; cow vs bull/ox; "cow" as a current deprecation of female (further exemplified by "sacred cow") • "cowshit" vs "bullshit" (as variously debated, most notably with respect to political correctness, and the obvious lack of any indication of "human shit") • the form taken by the spirit of the bull, after its vehicle has been transformed into an ox • the radical cognitive shift associated with the much-cited assertion to students that Buddha is a shit stick (Zen master Yunmen), inspiring recent references to the "shitting Buddha", and appropriated as the title of a digital album by Tom Spademan. No other religion reframes blasphemy in this way. As indicated by Joseph Grcic: <p>This is often interpreted to mean that the teachings of the Buddha are to be used as a means to enlightenment and then to be discarded, not to worship Buddha or his teachings as necessarily the absolute truth. The same idea is conveyed in the following question: <i>What should you do when you meet the Buddha on the road?</i> Answer: <i>Kill him</i>. That is, we should eventually be independent of the Buddha and all authorities and ideologies and think for ourselves. (Facing Reality: an introduction to philosophy, 2009, p. 208)</p> <p>More considered philosophical comment is offered under the title: Zen and the Art of Defecated Nitrogenous Waste Deposits</p>

The set of themes above suggests the possibility that further significance might be derived from ordering them in some manner -- possibly consistent with the Zen pattern.

Facticity, alternative facts and Zen?

Facticity is defined to be the condition or quality of being a fact.

Existentialism: As noted above, in philosophy, facticity has however a multiplicity of meanings from "factuality" and "contingency" to the intractable conditions of human existence. Any discussion of it is immediately embroiled in the subtle obscurities of phenomenology and existentialism, notably as framed by [Martin Heidegger](#) (*Ontology: the hermeneutics of facticity*, 2008) and [Edmund Husserl](#) (N. Depraz and D. Zahavi, *Alterity and Facticity: new perspectives on Husserl*, 1998). As noted by the *Stanford Encyclopedia of Philosophy* with respect to [Facticity and Transcendence](#):

Human existence, then, cannot be thought through categories appropriate to things: substance, event, process. There is something of an internal distinction in existence that undermines such attempts, a distinction that existential philosophers try to capture in the categories of "facticity" and "transcendence". To be is to co-ordinate these opposed moments in some way, and who I am, my essence, is nothing but my manner of co-ordinating them. In this sense human beings make themselves in situation: what I am cannot be separated from what I take myself to be...

Facticity includes all those properties that third-person investigation can establish about me: natural properties such as weight, height, and skin color; social facts such as race, class, and nationality; psychological properties such as my web of belief, desires, and character traits; historical facts such as my past actions, my family background, and my broader historical milieu; and so on. I am not originally aware of my facticity in this third-person way; rather, it is manifest in my moods as a kind of

burden, the weight of "having to be". However, I *can* adopt a third-person or objectifying stance toward my own being, and then these aspects of my facticity may appear precisely as that which defines or determines who I am.

In that context, facticity is a continuing focus of debate (François Raffoul and Eric Sean Nelson (Eds.), *Rethinking Facticity*, 2009). This has notably been extended to current political issues (Michael J. Shapiro, *Deforming American Political Thought: ethnicity, facticity, and genre*, 2006; Georgia Triolo, *Antigone Unmasked: fate/facticity/genetic fallability*, 2010).

Alternative facts and existence? The question here is whether the obviously elusive conceptualization of facticity is of value in considering the subtleties of engagement with "fact" as now variously undermined by recognition of "alternative facts". Instances of relevance at this time are the many assertions regarding the existence of entities such as the "international community" to which appeals are variously made, as separately noted (*International community as a divine surrogate?* ; *International community as an act of deception?* ; *Appeals to the international community (whether it exists or not)*).

With respect to the international community, Noam Chomsky has noted its use as referring to the United States and its client states and allies, most notably in the media of those countries:

The literal sense is reasonably clear; the U.N. General Assembly, or a substantial majority of it, is a fair approximation. But the term is regularly used in a technical sense to describe the United States joined by some allies and clients. (Henceforth, I will use the term "Intcom", in this technical sense.) Accordingly it is a logical impossibility for the United States to defy the international community (*The Crimes of 'Intcom'*, *Foreign Policy*, September, 2002)

Subsequently Chomsky is quoted as stating:

Where the term (international community) is used in the West, the international community refers to the United States and anyone who happens to be going along with it. If the world happens to be, most of the world is opposed, they're just not part of the international community (*Israel, US violators of international law*, *The News Tribe*, 14 June 2012).

Clearly such questions have implications for how individuals can be held to exist -- or be experienced as existing, whether by others or by themselves --- yesterday, today and tomorrow.

Facticity and alternative facts: The considerations above have obvious implications for the manner in which some humans are (or have been) framed as "nobodies", "subhuman", and/or "without souls". Such assessments, formally made, can be upheld as "facts" -- often with fatal consequences, as evident following the authoritative religious justification for genocidal massacre of indigenous peoples by colonial powers. Instances in other domains include:

- **religion:** The fatal interplay between the Abrahamic religions over centuries could be framed in terms of assertions of fact by each (in the light of the unquestionable Word of God embodied in their respective scriptures) and the condemnation as anathema of the alternative facts (promoted as fact) by their religious peers and siblings. Their tragedy, irrespective of the cost, is the complete inability to explore matters otherwise -- and a total lack of motivation to do so (*Systemic Reliance of World Religions on Human Sacrifice*, 2014). However it is possible that history will describe the fundamental constraint of science as having had its "nose pressed too firmly against the window" of facticity, just as religion has had its "nose pressed too firmly against the window" of its obverse.
- **figures of speech:** More intriguing is the case of widely appreciated imaginative figurative expression, as in poetry, fantasy, storytelling, or through the use of metaphor. This extends to the use of humour in reframing a situation. Are these the acceptable face of "alternative facts"? Poetry and humour are as irrelevant to the theories of science as they are to the arguments of theology. (*Questionable Classification of Figures of Speech*, 2016).
- **myths and legends -- stories:** More problematic is the case of myths and legends in which people variously believe and celebrate - as might include the predictions of astrology? As "superstition", are these alternative facts a "superposition" on factual reality -- an adulteration of it to be systematically deplored?
- **terrorism:** Currently of the greatest relevance is any assertion, as a "fact", that an individual is a terrorist -- when for some they may be upheld as freedom fighters, as history may uphold them to be. The heroic figures of many cultures and nations may well have been labelled terrorists, or would be claimed to be so by current criteria: George Washington, Nelson Mandela, Jomo Kenyatta, Menachem Begin, etc. At the time of writing the paradox is remarkably indicated by the case of [Martin McGuinness](#) (*McGuinness 'was a freedom fighter, not a terrorist'*, *BBC News*, 24 March 2017; *What Martin McGuinness's eulogisers would like to forget*, *The Spectator*, 25 March 2017). Which heroic national icons have not been so labelled? On the other hand many who engender terror are not framed as "terrorists", as in the case of bullies, racketeers, and the like -- as well as others who engage in intimidation through their positions of power in institutions (as with some employers, priests, and military superiors).
- **contradictions:** Such considerations raise the question as to whether "contradictions" constitute a more formal recognition of "alternative facts". The issue is most obvious in the case of unquestionable assertions of experts -- possibly qualified as being "professional opinions". Subtler variants could be understood in this light.

- **conspiracy:** As noted by Paul Ratner: Once a [conspiracy theory](#) becomes the accepted explanation, it stops being a conspiracy theory and becomes a fact of history. This certainly is one reason people continue to believe -- they hope their views will eventually be proven right (*America's 10 Most Popular Conspiracy Theories Big Think*, 19 March 2017).
- **advertising, image management:** As in the widespread use of hyperbole and superlatives in claims made. Irrespective of any cultivation of misunderstanding, misrepresentation is supposedly avoided through the technical legitimacy of [puffery](#). The issue relates to negative campaigning, scandal-mongering and "fake news". It is well-framed by the widely cited remark of Howard Hughes: *Never check an interesting fact.*
- **deception and disinformation:** These are considered vital to the process of engagement with any opponent. Slender facts are smothered with weighty assumptions and upon which are woven *a hefty garment of allegations, speculation and imagination fitting with the occupational predisposition to detect a spy* (Ray McGovern, *Another Hatchet Job on Snowden, Information Clearing House*, 5 March 2017). Similarly bluff and sleight of hand are variously accepted as a necessary skill in strategic undertakings, irrespective of any interpretation as [confidence trickery](#)
- **disagreement in debate:** Especially interesting is the possibility that disagreement in debate on many major strategic issues is characterized by the interplay of assertions of fact and alternative interpretations of their facticity, as evidenced by denial of climate change, environmental degradation, or overpopulation. Is the debating process an exploration of facticity -- particularly when themes are considered irrelevant to any consideration in that context.

Society would seem to be faced with an inherent paradox, recalling the classical articulation of the [liar paradox](#) by the Cretan Epimenides: *All Cretans are liars*. Are alternative facts also to be considered as facts -- in fact? It is asserted as a fact that *Alternative facts are not facts. They're falsehoods* (*Business Insider*, 22 January 2017). A comment in a web forum argues: *The narrative was false, but widely believed, and this lie reinforced it, thereby exhibited facticity within the framework* (*Why such anger over "alternative facts?"*, *Critical Theory*, 24 January 2017).

One philosophy forum addressed the question *Is there a logical way to look at "alternative facts"?* For Rosalinda H. Linares (*The New Information Literacy: clearing the fog of "alternative facts"*, *Center for Teaching Innovation and Excellence*, 23 January 2017):

Let's begin with Arendt's comment that *truth is neither given to nor disclosed to but produced by the human mind*. If "truth" is not "given," then we must understand that it is constructed and contextual, which means that even as it asserts its "facticity," it is not beyond interrogation. Let's consider this in the light of the [Student Learning Goals](#) adopted at Oberlin in 2015. The first goal, deepening understanding in specific fields, recognizes that *A deeper understanding of a specific field of study generates the potential for students to move beyond the skills of analyzing and evaluating information and towards the creation of new knowledge or approaches, or the production of original work.*

The issue framed by the Zen pattern would seem to be in the nature of that "deeper understanding". To what extent is a [logical fallacy](#) to be considered a fact when challenged by the potentially paradoxical nature of any deeper understanding -- if only in fundamental physics?

A lecture by [Sven Lütticken](#) on *Producing Facts: notes on the politics of concrete abstraction*, has been introduced as follows:

As the close etymological connection between terms such as facticity and factitiousness suggests, it is not easy to finely separate the factual from the fake. False concretions can be used to deny much more complex facts: a snowball "disproves" global warming, a sinister conspiracy distracts from systemic issues. As fake news and "alternative facts" triumph, the complexity of facticity is denied. However, ritualistic "fact checking" is in itself not a solution as the performativity of social media goes into overdrive. What is the potential of aesthetic and artifactual practices in this situation? (*Institute of Contemporary Art, Miami*, 30 March 2017)

"Deeper" understanding? Despite the implication of "higher", in addition to "deeper", other careful distinctions are made by [Alan Jay Levinovitz](#) (*It's Not All Relative: can a devotion to cultural tolerance lead to the triumph of alternative facts?* *The Chronicle of Higher Education*, 5 March 2017):

Although definitions vary, cultural relativism is characterized by a reluctance to take one culture's norms as authoritative, not only because there may be no such standard (the postmodern position), but also, and perhaps more importantly, because asserting such normative authority demeans other cultures. It's not that objective facts don't exist -- it's that asserting their existence is rude, oppressive, biased. The primary justification of relativism shifts from epistemology to ethics.... The notion of "truth as disrespect" powers the current assault on facts. Trump and much of his base reject the truth-making mechanisms of academic culture by appealing to anti-elitism, and sow uncertainty via indignation and cultural pride. Why should pompous experts get the last word on the truth when working-class folk have their own ideas about it? Tribal epistemology has met with severe resistance from journalists, who have shifted away from a hands-off approach to truth and started reporting explicitly on the facticity (or lack thereof) of claims.

It would seem that, at least for some, facticity is in no way an unquestionable indicator of truth and that facticity may be a matter of degree intimately related to belief and credibility through complex subtleties that each may be challenged to comprehend -- as implied by the process of engagement in the Zen ox-herding pattern. Creativity and inspiration may well require a denial of conventional facticity.

Identity may be especially associated with any particular sense of facticity.

The "taming" central to the sequence of Zen patterns merits consideration in the light of a reflection in his final years by Albert Einstein: *Every true theorist is a kind of tamed metaphysicist.* (Maria Popova, *In Praise of the Tamed Metaphysicist: Einstein on reality, rationality, and the human passion for comprehension*, *Brain Pickings*, 12 May 2016). This implies that the spirit of the bull is otherwise evident in the meta-perspective of the later images.

What really exists -- truthfully?

Collectivities? Such thinking thus frames the question of whether and how other collective entities exist, notably the "United Nations" and including the "United States" itself. This continues to be variously explored (*Does America even exist?* 31 December 2011; *Does America Still Exist?*; Richard Rodriguez, *Does America Still Exist?* Fudan University, 2012), most notably by Stephen Clarkson (*Does North America Exist? Governing the Continent after NAFTA and 9/11*, Woodrow Wilson Center, 2008).

The question with respect to the USA is currently of great relevance in the light of the ongoing debate regarding the [right to exist](#) of Palestine -- recognized as it is by the vast majority of countries ([John V. Whitbeck](#), *The State of Palestine Exists*, *The Huffington Post*, 1 September 2013). Given that debate, to what extent can the USA then be held to exist, or to have a right to exist? How could concrete proof be presented in support of that claim -- given such requirements with respect production of nuclear weapons by Iran, as discussed separately (*10 Demands for Concrete Proof by We the Peoples of the World*, 2012)?

Naming: Whilst a sense of existence invites naming, the process of naming can be deliberately used to determine existence and to appropriate what is so named. This recalls the psychosocial appropriation of a geopolitical space at the collective level described by the process of *land nam*, coined by [Ananda Coomaraswamy](#) (*The Rg Veda as Land-Nama Bok*, 1935), to refer to the Icelandic tradition of claiming ownership of uninhabited spaces through weaving together a metaphor of geography of place into a unique mythic story. This territorial appropriation process, notably practiced by the Navaho and the Vedic Aryans, was further described by [Joseph Campbell](#) (*The Inner Reaches of Outer Space: metaphor as myth and religion*, 2002):

Land nam ("land claiming or taking") was [the Norse] technical term for this way of sanctifying a region, converting it thereby into an at once psychologically and metaphysical Holy Land.... *Land nam*, mythologization, has been the universally practiced method to bring this intelligible kingdom to view in the mind's eye. The Promised Land, therefore, is any landscape recognized as mythologically transparent, and the method of acquisition of such territory is not by prosaic physical action, but poetically, by intelligence and the method of art; so that the human being should be dwelling in the two worlds simultaneously of the illuminated moon and the illuminating sun.

In the case of individual identity this may be effectively reframed by others through the attribution of nicknames, whether appreciated or not. The implications have been variously discussed separately (*Affinity, Diaspora, Identity, Reunification, Return: reimagining possibilities of engaging with place and time*, 2013).

Possession of property: Of current relevance is the extent to which colonial powers have established and affirmed possession through renaming locations previously named by indigenous cultures. The pattern is now notable in countries like Ireland and New Zealand where English is presented in conjunction with the traditional names. A more complex situation exists in bilingual cultures where places have quite distinctive names in two or more languages, as in Belgium -- suggestive of their apprehension otherwise in each.

"Fiat reality"? As noted above, these issues are echoed by insights into the [social construction of reality](#), and more especially through use of "fiat", as with [fiat money](#) and characterized by [quantitative easing](#). More generally it could be argued that any current reference to "alternative facts" can be understood as a declaration reality -- a "fiat reality".

To what degree is the formulation of any new "model" by science or religion then also to be understood in such terms -- when people are called upon to believe in it? Such "[reality bubbles](#)", as "[reality distortion fields](#)", could then be understood as "vehicles" within which (or on which) people can cognitively ride ([Christian de Quincey](#), *Reality bubbles: Can we know anything about the physical world?* *Journal of Consciousness Studies*, 2008; *Reality Bubbles Consciousness and the Problem of Matter*, Center for Creative Inquiry, 2008).

The point is made otherwise by the recognition of [filter bubbles](#) created by personalizing results from search engines ([Eli Pariser](#), *The Filter Bubble: what the internet is hiding from you*, 2011). This trend has been further exacerbated by the recognition of the extent to which search engines amplify the dissemination of fake news (*Google accused of spreading fake news*, *The Guardian*, 6 March 2017; *Fake news a real problem for Google, Facebook*, *San Francisco Chronicle*, 15 November 2016).

Facticity and belief: The two icons of cognitive science, Noam Chomsky and George Lakoff, continue to make unqualified assertions that Trump really lost the election -- clearly a belief to which they unquestionably subscribe. Is this tantamount to the elaboration of the kind of alternative fact of which Trump is so frequently mocked? Are human rights subject to misinterpretation in this way, as separately argued (*Cultivating the Myth of Human Equality: ignoring complicity in the contradictions thereby engendered*, 2016)?

Given calls for "[concrete proof](#)" with respect to nuclear programs in Iran, how are the "facts" formally announced to the UN Security Council in 2003 (regarding the existence of weapons of mass destruction in Iraq) to be compared with the "facts" justifying the missile attack in Syria in 2017? Will the inferences in both cases prove to have been equally unjustified?

As with the fact of any homicide, establishing responsibility and complicity merits elucidation according to the critical processes of a court of law rather than by a process of authoritative fiat in the absence of any presentation of credible evidence (*Russia Awaits US Evidence of Syrian Army Chemical Use in Idlib*, *Sputnik*, 7 April 2017; Michel Chossudovsky, *Washington False Flag: UN confirmed that Syria "rebels" were using chemical weapons*, *Global Research News*, 9 April 2017; Richard Brandt, *Media Goes Quiet as Russia*

Exposes US Lies at Security Council, *Information Clearing House*, April 2017; Jeffrey Marcus, *The Holes in Russia's Account of the Syria Chemical Attack*, *The New York Times*, 5 April 2017; Peter Hitchens, *It's WMD All Over Again: why don't you see it?* *Information Clearing House*, 5 April 2017).

As noted with respect to the 10-bull framework, the situation is provocatively reminiscent of *Don Quixote* -- complete with "tilting at windmills" -- as imaginatively explored by *Miguel de Cervantes* in 1615, as might be explored otherwise.

Unsurprisingly the implications for understanding Donald Trump have been variously recognized -- complete with reference to the windfarms of Scotland (Navin J. Antony, *Don, the quixotic*, *The Week*, 20 November 2016; *The Quixotic World of D. Trump*, *Trekking toward the Truth*, 17 February 2017; Katy Waldman, *Donald Quixote, Tilter at Wind Turbines*, *Slate*, 22 December 2016). Should any uncritical model of reality be recognized as "tilting at windmills" -- at least to some degree?

Facticity might then be explored through the manner in which facts are created as a focus for belief (Barbara Hanson, *The Research Process: creating facticity*, 1999; Ragini Elizabeth Michaels, *Facticity: a door to mental health and beyond*, 1991). Of further relevance is any sense of degrees of facticity as implied separately (*Towards articulation of a "post-truth table"?* 2016)

Zen of facticity? Concern with facticity has been variously associated with Zen, but seemingly not with the 10-bull pattern. Thus for *Thomas Merton* (*Mystics and Zen Masters*, 1999):

The Zen insight is a direct grasp of being in itself, but not an intuition of the nature of being. Nor can the Zen insight be described in psychological terms, and to think of it as a subjective experience "attainable" by some kind of process of mental purification is to doom oneself to error and absurdity (p. 29)

Merton then comments on Kierkegaard's critique of Christianity as:

... [transferring] into the religious sphere all the facticity, the routine, and the falsity of "abstract levelling". Instead of obeying the Word and Spirit of God living and active in His Church, the body of those who love one another precisely insofar as they have been freed from facticity and routine, one surrenders at the same time one's human and one's religious integrity. (p. 272).

David Storey (*Zen in Heidegger's Way*, *Journal of East-West Thought*, 2012, pp. 113-117) argues that:

... historical and comparative analyses of Heidegger and Zen Buddhism are motivated by three simple ideas: 1) Zen is uncompromisingly non-metaphysical; 2) its discourse is poetic and non-rational; and 3) it aims to provoke a radical transformation in the individual, not to provide a theoretical proof or demonstration of theses about the mind and/or the world. To sketch this picture of Heidegger's thought, I draw on the two texts from his later work that command the most attention from commentator's seeking resonance with Zen, and discuss how his treatments of death, fallenness, facticity, and temporality in *Being and Time* square with Zen philosophy.

Of relevance to the Zen mode of depiction, Storey has subsequently argued that:

... Heidegger's desire to deconstruct the West implies the deconstruction of conventional views of learning because both aim to undercut the representational nature of thinking in order to recover thinking as a form of contemplation. Consequently, education should not be conceived as the acquisition of a more or less correct mental picture, but suggests the opposite: the relinquishing of all images in a contemplative aporia. (*Heidegger East and West: philosophy as educative contemplation*, *Journal of Philosophy of Education*, 2015)

Carl Olson notes that:

The Zen ideal is to act spontaneously in the situation without first objectifying it in order to define one's role (*Zen and the Art of Postmodern Philosophy: two paths of liberation from the representational mode of thinking*, 2000, p. 141)

In a discussion of Zen in relation to facticity, F. Schalow notes:

The worldly orientation of religious experience becomes explicit by allowing an ironic tone, a twist of contrariness, to impede the believer's normal expectations. The religious dimension thrives on this novel attunement, this medium of conveyance. Indeed, it is the echo of uncanniness in the familiar which lends credence to religious motifs. For example, the aloofness of God before the plight of humanity, as depicted in the Old Testament's story of Job, points to the radical asymmetry between human expectations and the inscrutable if not aloof character of the Divine. Job's self-revelation reminds us of our vulnerability before the unconquerable facticity of our lives; and Job's suffering offers a signpost to what is most unfathomable about God's relation to us, a clue to the radical otherness of that mystery. (*Heidegger and the Quest for the Sacred: from thought to the sanctuary of faith*, 2013, p. 88):

Schalow's reference to a "twist of contrariness" is usefully indicated by the early encounter with the back-end of the bull in the Zen pattern. The associated paradox can be recognized otherwise in terms of a cognitive twist, as discussed separately (*Enantiodromia*:

[cycling through the "cognitive twist"](#), 2007).

Non-linear patterns of distinctions constrained by number

The concern in what follows is with challenges to comprehension and communication, especially as now exacerbated in a post-truth era. Anything can now be said and asserted to be "true" and a "fact". The Zen pattern suggests a means, framed by images, to indicate useful distinctions in navigating this reality.

Constraints and neglected functions: As noted above, the approach taken here is to explore the use of the Zen 10-fold pattern, given its acclaimed value in distinguishing degrees of insight -- consistent with degrees of self-reflexivity (Hilary Lawson, *Reflexivity: the post-modern predicament*, 1986). However a concern is how so many patterns of distinguished cognitive functions tend to identify only a limited number, conforming (suspiciously) to the much-cited insight of [George Miller](#) (*The Magical Number Seven, Plus or Minus Two: some limits on our capacity for processing information*, *Psychological Review*. 63, 1956).

The process is discussed separately (*Comprehension of Numbers Challenging Global Civilization*, 2014; *Patterns of N-foldness: comparison of integrated multi-set concept schemes as forms of presentation*, 1980). Clearly of relevance is the subsequent study, from a cognitive psychology perspective, by [George Lakoff](#) and [Rafael Nuñez](#) (*Where Mathematics Comes From: how the embodied mind brings mathematics into being*, 2001).

In the tentative exercise above, it is of course the case that the distinctions made could be variously conflated, further articulated or ordered otherwise. If a 10-fold pattern of insight emergence is of value, there is of course the question of how Miller's cognitive constraint of "plus or minus two" relates to any pattern of "nine" or less, and of how a further "one" is excluded. What distinctive cognitive "functions" are most readily neglected (or conflated) in patterns of 5, 6, 7, 8 and 9?

Understood otherwise, it would appear that there is a poorly explored constraint highlighted by conventional representations of numbers. The sequence "starts again" having reached a limit, most commonly 10 (see [List of numeral systems](#)). This contrasts with any alphabet enabling "verbose" articulation considered acceptably adequate, most notably in academic, religious and political discourse. Images are typically avoided, especially when dissemination of texts is subject to the economic constraints of journal and book publishers.

Challenge to linear sequence: Many articulations of the development of insight emphasize a linear process. For example, as noted by *The Oxford Handbook of Cognitive Literary Studies* (2014):

Instead of using a "top-down" metaphor for such past-to-present processing, however, linguists and cognitive scientists might better speak of "back-to-front" processing. Both metaphors are spatial, but only the second captures the temporal signature of cognition, our compelling sense that time flows along a horizontal line and not up or down a vertical one. Based on our embodied, "forward-looking" or prospective orientation in space, the "back-to-front" metaphor likewise improves upon conventional conceptualizations of time as something that "goes by" or that we "get through". Where these conventional metaphors represent future time as standing before or coming toward us and past time as disappearing behind us, the "back-to-front" metaphor captures a salient fact about the direction of time in the actual process, as opposed to the conceptual products, of cognition. In cognition as distinguished from conceptualization, time flows forward, with past informing present, and past-informed present prefiguring the future. (p. 594)

As discussed separately with respect to the possibility of a more complex [Periodic Pattern of Human Knowing](#) (2009), the articulation of [John Baez](#) (*The Dimensional Ladder*, 2005) regarding the "Periodic Table" (in the light of a "Ladder of n-Categories") is of particular interest, notably with respect to the relationships to physics (see also John Baez, *Categories, Quantization, and Much More*, 2006). The sequence of Zen pictures could then be seen as implying a degree of correspondence with the insight embodied in [Jacob's Ladder](#).

The appropriateness of any use of the "ladder" metaphor has of course been challenged from some perspectives, most notably by feminists concerned with the patterns of dominance implied by hierarchical metaphors. For example, Alison Bailey (*Locating Traitorous Identities: toward a view of privilege-cognizant white character*, In: Deborah Orr, et al. *Feminist Politics*, 2007) uses language that could appropriately inform a richer understanding of a Periodic Table of Life:

Not a climb up the ladder, but a discarding of the hierarchies and rigidities implicit in the ladder metaphor. It involves recognition of the plasticity and the thickness of identities, a new understanding of the ways in which identities interlock, being freed from old limitations, and the emergence of new possibilities....

Similar concerns could be raised with respect to the limitations of the "table" metaphor. given its inherent "flatness", as discussed separately (*Comprehension of Requisite Variety for Sustainable Psychosocial Dynamics: transforming a matrix classification onto intertwined tori*, 2006; *Irresponsible Dependence on a Flat Earth Mentality -- in response to global governance challenges*, 2008).

Magic square ordering? In relation to the Zen pattern, a potential response to the above constraints is the non-linear ordering offered by the simple 3x3 [magic square](#) -- of which there is only one (excluding rotations and reflections). Clearly this pattern provides a device for a tenth condition, then associated with the pattern as a whole. The central condition could be similarly excluded to provide a correspondence with the Chinese [BaGua](#) mirror pattern of 8 trigrams.

Comparison of Zen bull images with 3x3 magic square	
Magic square 3x3	Corresponding ordering of Zen stages?

<table border="1"> <tr><td>2</td><td>7</td><td>6</td><td>→15</td></tr> <tr><td>9</td><td>5</td><td>1</td><td>→15</td></tr> <tr><td>4</td><td>3</td><td>8</td><td>→15</td></tr> <tr><td>↓15</td><td>↓15</td><td>↓15</td><td>↓15</td></tr> </table>	2	7	6	→15	9	5	1	→15	4	3	8	→15	↓15	↓15	↓15	↓15	<table border="1"> <tr><td>traces (problematizing)</td><td>transcended (integrating)</td><td>riding (governing)</td></tr> <tr><td>source (believing)</td><td>taming (protecting)</td><td>search (questioning)</td></tr> <tr><td>catching (acquiring)</td><td>perceiving (modelling)</td><td>both transcended (conscientizing)</td></tr> </table>	traces (problematizing)	transcended (integrating)	riding (governing)	source (believing)	taming (protecting)	search (questioning)	catching (acquiring)	perceiving (modelling)	both transcended (conscientizing)
2	7	6	→15																							
9	5	1	→15																							
4	3	8	→15																							
↓15	↓15	↓15	↓15																							
traces (problematizing)	transcended (integrating)	riding (governing)																								
source (believing)	taming (protecting)	search (questioning)																								
catching (acquiring)	perceiving (modelling)	both transcended (conscientizing)																								

Possibly as a consequence of the human cognitive constraint, this simple magic square is indicative of an elusive form of interlocking between the numbers of perspectives characteristic of models variously preferred as "ways of looking", as separately exemplified (*Systems of Categories Distinguishing Cultural Biases*, 1993).

Whilst the 9+1 are held by the square (as suggested), there are 8 perspectives on it, each totalling to 15 (as indicated). Each of these is composed of three numbers, thereby recalling the distinctive composition of the 8 *BaGua* trigrams.

The flat 3x3 table could of course be enriched in 3D as a 3x3x3 matrix (as discussed below). Further implications for comprehension of subtle complexity are discussed separately (*Salvation Enabled by Systemic Comprehension -- via aesthetics of magic squares?* 2015).

Occluded functions: Especially intriguing is the sense in which the pattern might be reduced by neglectful exclusion of particular rows, columns or diagonals. Following Miller, a 10th and 9th order of insight might be "occluded" in a more comprehensive 10-fold pattern.

Magoroh Maruyama provides a further suggestion, if each cognitive modality is understood as an "eye", with the implication that a form of polyocular organization is required (*Peripheral Vision: polyocular vision or subunderstanding*, *Organization Studies*, 2004). This implies a dependence on multiple eyes (or lenses) to enable resolution (in the optical sense) of the subtlety of insight of a higher order (*Engaging with Insight of a Higher Order: reconciling complexity and simplicity through memorable metaphor*, 2014).

Bull, ox and/or cow? There is a possibility that any such configuration might be systemically relevant to a juxtaposition of "bull-as-misrepresentation" with "bull-as-disruptive" -- remarkably exemplified in this period by both the reality distortion of Donald Trump (and other leaders) and their justification of disruptive executive orders. They offer examples of the classic "bull in a china shop", whether understood tangibly or intangibly (Charles Duhigg, *White House Echoes Tech: 'Move Fast and Break Things'*, *The New York Times*, 8 March 2017).

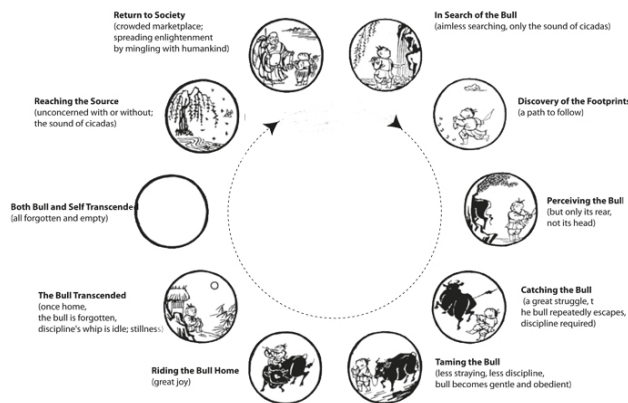
In the following tentative articulation, "ox" is understood as a deliberately imposed constraint, whether cognitive (as a form of reductionism) or physical -- both being consistent with an analogue to castration. Use is made of "cow" as a precursor condition to either the unpredictable wildness of "bull" or to the "ox" (however questionably domesticated or reduced). Alternative "calf" might be used. Both cow and calf have been distinctively valued in cultures of the past.

Interplay of "bull" and "ox" in the Zen images				
		disruption (tangible)		
		"bull" (unconstrained, unbounded)	"cow" (innocent disruption)	"ox" (deliberate disruption)
misrepresentation (truth distortion, "lying") (intangible)	"ox" (deliberate distortion)			
	"cow" (innocent distortion)			
	"bull" (inadvertent incoherence)			

Circular configuration of cognitive phases framing toroidal experience?

Configuration as a circle (of eternal return): As a further exemplification of the above argument, the traditional linear sequence of those "ox-herding" images can however be configured in a circle as follows -- as previously explored in the *Experimental configuration of nothingness as an "eightfold way"* (2012). The magic square might be understood as an approximation to this -- exemplifying other aspects of the connectivity vital to systemic comprehension.

Circular representation of the classic *Ten Ox-Herding Pictures* of Zen Buddhism



Adaptation into circular form of the traditional [linear version](#) in *Wikipedia*, as derived from [Nyogen Senzaki and Paul Reps, *Zen Flesh, Zen Bones: a collection of Zen and pre-Zen writings*](#) (Charles E. Tuttle, 1957)

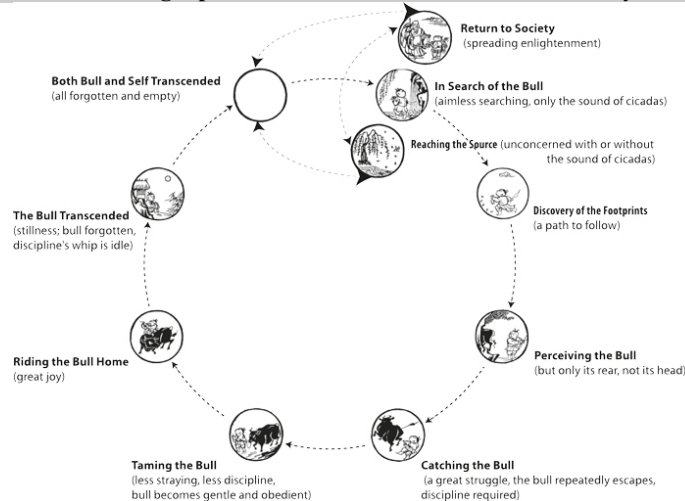
With respect to the above argument for an "eightfold way", it is appropriate to note that the last two images of the sequence relate to cognitive modalities transcending the 8 dynamics. These may be otherwise be held by a configuration of Möbius strips ([Experimental configuration of nothingness as an "eightfold way"](#), 2012). These are effectively subsequent to the cognitive modality of the eighth. They might be understood as relating to the two distinct axes of the toroidal form of the "necklace" -- that threading the individual strips together and that associated with its wearer.

The circular configuration of 10 images could then be reconfigured (as below) into an 8-fold pattern with the two additional modalities (or dimensions) represented as overlapping, encompassing or englobing the first in the original sequence. The possible correspondence between the 10-fold pattern and an 8-fold pattern is further highlighted by the existence of references such as the following ([The Eight Ox Herding Pictures](#), 2012; [The Eight Ox Herding Pictures: a Chan/Zen allegory](#)).

It has been argued that the original set of the ox-herding pictures ended with the eighth "drawing" -- a blank space, indicating that anything that was depicted above the eighth and final stage would be misleading ([How to Practice Zen](#), 2014). This could be considered to be consistent with arguments for "unsaying", notably as characteristic of [apophatic discourse](#) (Michael A. Sells, [Mystical Languages of Unsaying](#), 1994).

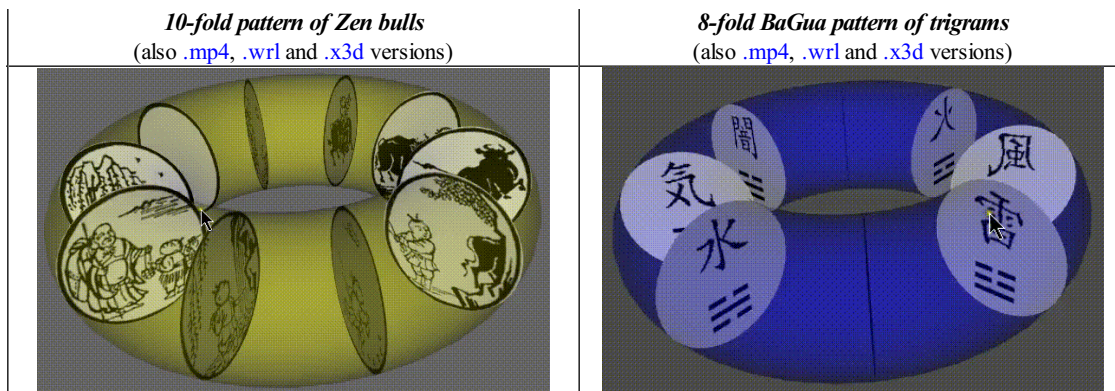
Silence on certain matters has traditionally been highly recommended -- even framed as basic to civilized discourse. The core study by [Ludwig Wittgenstein \(*Tractatus Logico-Philosophicus*, 1921\)](#) concludes with the much-cited phrase: *Whereof one cannot speak, thereof one must pass over in silence*. The most fundamentally significant experiences of life may indeed be those of which nothing can be said. Nothing that can be said is worth saying?

Suggestive reconfiguration of the above 10-fold circular ox-herding representation into the form of an "8-fold way"



Configuration as a torus: In terms of comprehensibility and memorability, of interest is the possibility of presenting the above pattern within a torus (as shown below, left). The same approach may be used for any potential correspondence with the *BaGua* trigram pattern (below right). Such a depiction, especially when animated, evokes other ways of thinking about both in dynamic rather than static terms, as **phases in a cycle** rather than as stages in a linear progression. The representation is also helpful in suggesting the manner in which **the phases may coexist, if only potentially**, rather than each being superceded by the next. Any assumption of non-reversibility of time may also be called into question.

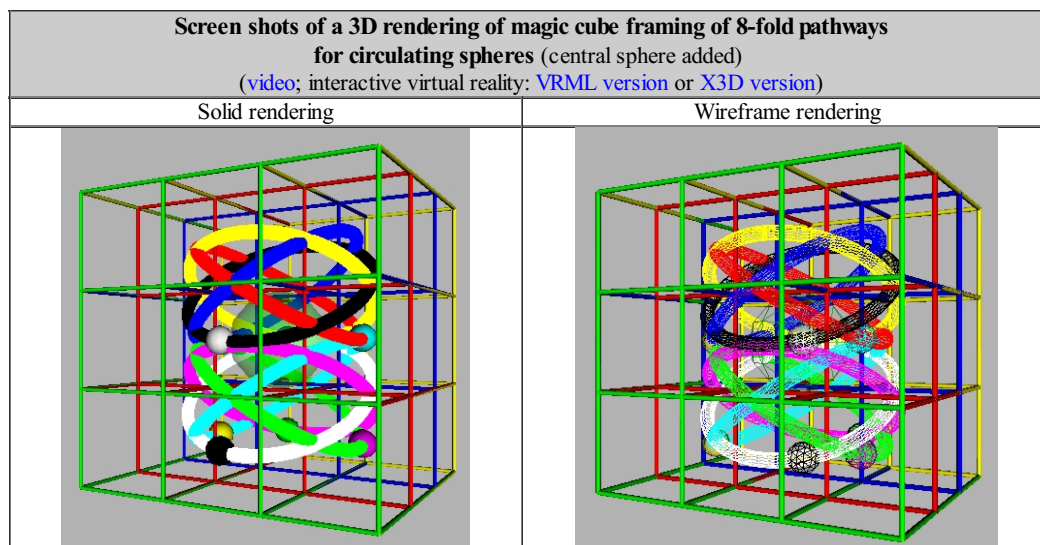
Variants of the animation may then enhance imaginative consideration of this possibility, as implied by other variants which could be produced (as noted below).



Options for disk dynamics within the torus – with cognitive implications
rotation of torus with disks in fixed position (and reversal of that rotation)
spin disks on their axis in a fixed position within the torus
disks moved independently through the torus whether in a coordinated manner or randomly
move disks such that some are periodically merged/conflated (thereby reducing the number of distinctions made)
rotate disks in a fixed position such as to function as valves (opening and closing) in relation to notional circulation through the torus
increase/decrease diameter of disks
move disks across torus – inserted into new positions (as with Earlier and Later Heaven arrangements of <i>BaGua</i>)

Use of the torus usefully frames the question as to what might be understood as circulating through the "tunnel", as can be variously discussed (*Circulation of the Light: essential metaphor of global sustainability?* 2010; *Enactivating a Cognitive Fusion Reactor: Imaginal Transformation of Energy Resourcing (ITER-8)*, 2006). The forces channelled through the major axis are well-illustrated metaphorically in the case of electromagnetism with the operation of a [solenoid](#).

Configuration as interlocking pathways in 3D: The following animations derive from a previous exercise ("*Magic" and "auspiciousness" framed by ambiguity of the swastika*, 2015; *Integrative relevance of magical globality in 3D and 4D*, 2015)



Further implications are suggested by two exploration of mappings of 3x3 patterns in 3D:

- As developed by [James Grime](#), inspired by the widely-famed [Rubik's Magic Cube](#) (3x3x3), the question is whether the 2D magic square can be fruitfully incorporated into such a form. As extensively described by Katie Steckles (*The Maths of the Grime Cube, The Aperiodical*, 15 December 2016), the resulting [Grime Cube](#) is based upon the so-called [perimeter magic square](#). This is an arrangement of the numbers 1-8 such that the three numbers on each edge sum to the same total (in this case 12). Only six valid perimeter magic squares exist for the numbers 1-8 -- with the consequence that when any two such patterns are overlaid they then sum to 9 as indicated below

$$\begin{array}{cccc}
 8 & 1 & 6 & 1 & 8 & 3 & 9 & 9 & 9 \\
 4 & & 2 & + & 5 & & 7 & = & 9 & 9 \\
 3 & 5 & 7 & & 6 & 4 & 2 & & 9 & 9 & 9
 \end{array}$$

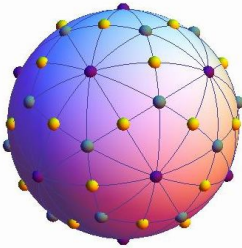
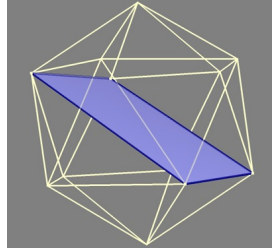
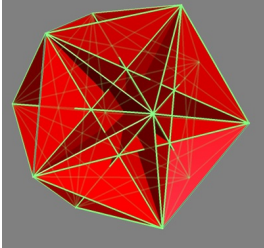
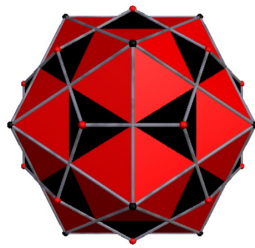
- Use of a simple dice to hold the pattern of a 3x3 magic square. As discussed by the mathematicians Ie-Bin Lian and Vini Wu (*Paradoxes on Chinese Dice and Magic Square*, 2003) the equal-sum property of the columns, rows and diagonals on magic

squares are mapped to sets of equal-expectation dice, thereby highlighting the associated paradoxes. The numbers in each row, column or diagonal of the magic square are assigned as the number of dots on faces on a dice. For a 3 by 3 magic square, an easy way is to assign each of the three numbers to two faces of a regular dice.

The configuration of 10 and 15 can be most fruitfully held by various mappings in 3-dimensions on the icosahedron (as discussed below). Further insight may be obtained from a discussion of the enneagram in relation to the magic square and the *BaGua* pattern ([Introducing the Celtic Enneagram](#))

Configuration as polyhedral great circles: The cognitive coherence of any potentially dynamic coexistence of the different conditions of the Zen pattern (or of any 8-fold trigram correspondence) can be fruitfully explored through polyhedral configurations. This would of course then have implications for any sense of facticity. The **icosahedron** (or its **dodecahedral** dual) are especially useful for this purpose. Of particular interest to any such mapping are the groups of associated **great circles** (as [separately described and illustrated](#)) [Ref: 'Geodesic Math And How To Use It, pp. 50-51, fig 7.6-7.8]:

- **Family I: 6 great circles:** Opposing **vertices** are used for the poles of spin. This creates six great circles which subdivide each face of the spherical icosahedron. This marks on the sphere the spherical equivalent of the icosidodecahedron with 20 spherical triangles and 12 spherical pentagons.
- **Family II: 15 great circles:** Opposing **mid-edge** points are used for poles of spin -- creating 15 great circles which outline every icosahedral face and slice through each three ways.
- **Family III: 10 great circles:** Opposing **mid-face** points are used for poles of spin -- creating 10 great circles; each one leaving the midpoint of a face edge to cross the next face edge at right angles. The circles are normal to the 10 axes of the corresponding dodecahedron. This enables one mapping of the Zen images (as shown below). The circles can be understood as dividing the icosahedral circumsphere into 20 distinct hemispheres; dividing the surface of that sphere into a total of 92 regions: 60 triangles, 20 hexagons, and 12 pentagons (*N Points On Sphere all in One Hemisphere, MathPages*).

Icosahedron			
15 Great circles (click for dynamic variant from Wolfram)	Showing single golden rectangle (made with Stella Polyhedron Navigator)	Showing all 15 golden rectangles (made with Stella Polyhedron Navigator)	Showing dodecahedral dual (made with Stella Polyhedron Navigator)
			

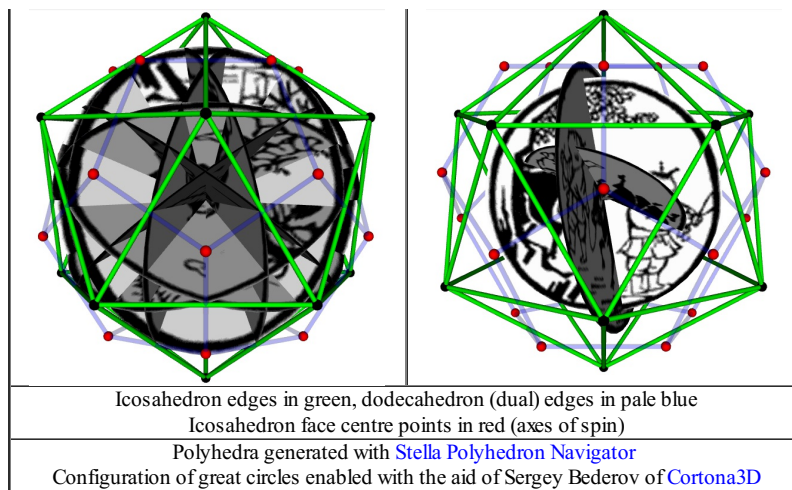
In embodying so explicitly the 10-fold and 15-fold within a coherent framework, the icosahedron (or its dual) presents the challenge of how the relationship between such mappings is to be comprehended. These raise intriguing questions as to the relationship of the 10 to the 15, as previously suggested by the 3x3 magic square -- and to the 8-fold *Bagua* set. The fundamental implications are suggested by the building block of life, namely the carbon atom:

- **allotropes of carbon:** 8 are notably distinguished: diamond, graphite, lonsdaleite, C60 (Buckminsterfullerene or buckyball), C540, C70, amorphous carbon, and single-walled carbon nanotube (or buckytube).
- **isotopes of carbon:** 15 are currently distinguished (with half-lives ranging from nanoseconds to thousands of years), of which only 3 are naturally occurring

Of particular interest in this respect is how the cognitive significance of the Zen 10-fold pattern might be understood as related to the set of 15 transformations articulated by Christopher Alexander as discussed separately ([Harmony-Comprehension and Wholeness-Engendering eliciting psychosocial transformational principles from design](#), 2010).

Potential concurrence of cognitive conditions: The animations below emphasize the manner in which the cognitive conditions distinguished by the Zen pattern may be to some degree co-existent or activated in some complex sequence -- with some only emerging very briefly (as with the half-life of some carbon isotopes). This would contrast with the traditional sense in which the images are associated with a linear cognitive development, typically as a consequence of a lifetime of meditative experience, if at all.

Icosahedron as a container for 10 Zen images mapped onto 10 great circles	
animation of cycle in .mp4 format: vertical , expanding . Also x3d source	
screenshot of vertical animation (10 images)	screenshot of expanding animation (5 images)



Options for image dynamics within the icosahedron – with cognitive implications
rotate icosahedron as a whole -- vertically or horizontally
change transparency/visibility of images -- at different rates
increase/decrease image diameter -- at different rates
rotate images -- at different rates
colour images distinctively -- at different rates
reverse images (making 10x2 = 20) -- at different rates
combine any of the above (possibly with rhythmic phasing)

The visualization options engender a complex cycle of images suggesting that their greatest value for the viewer might derive from interactively switching between such options according to their appeal, most notably between rapid rates ("busy") and slower rates ("meditative"). It should be emphasized that (in their x3d or wrl versions) changes to the source files can be readily made with a simple text editor.

With regard to any such concurrency, [Conrad Pritscher](#) quotes Thomas Merton to the effect that:

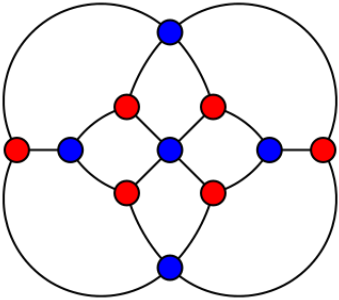
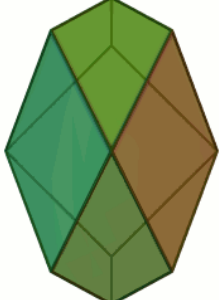
Enlightenment is not a matter of trifling with the facticity of ordinary life and spirting it all away. As the Buddhists say, nirvana is found in the midst of the world around us, and truth is not somewhere else. To be here and now where we are in our "suchness" is to be in nirvana, but unfortunately as long as we have thirst (desire or craving) we falsify our own situation and cannot realize it as nirvana. (*Einstein and Zen: learning to learn*, 2010, p. 138)

Mapping onto other polyhedra: Given the division of the circumsphere of an icosahedron into 92 regions (as noted above), it is appropriate to note the possibility of mappings onto a limited group of the [Johnson solids](#) (92 strictly [convex polyhedra](#) that have [regular](#) faces but are not uniform).

Polyhedra offering a coherent reconciliation of mapping patterns of 8, 9 and 15		
Tridiminished icosahedron (8 faces, 9 vertices, 15 edges)	Elongated triangular dipyramid (9 faces, 8 vertices, 15 edges)	Triangular cupola (8 faces, 9 vertices, 15 edges)

The central image is an [enneahedron](#), one of 2606. Seemingly also of great significance to the possibility of any such mapping is the much-studied [Herschel graph](#) (with numerous social) and the enneahedron derived from it. That polyhedron has only recently been visualized following the work of Christian Lawson-Perfect (*An Enneahedron for Herschel*, *The Aperiodical*, 1 October 2013). As he describes the graph:

It's the smallest [non-Hamiltonian](#) polyhedral graph -- you can't draw a path on it that visits each vertex exactly once, but you can make a polyhedron whose vertices and edges correspond with the graph exactly. It's also bipartite -- you can colour the vertices using two colours so that edges only connect vertices of different colours. The graph's automorphism group -- its symmetries -- is D_6 -- the symmetry group of the hexagon. That means that there's threefold rotational symmetry, as well as a couple of lines of reflection.

Herschel graph (reproduced from Wikipedia)	Herschel enneahedron (animation from Wikipedia)
11 vertices, 18 edges	11 vertices, 9 faces, 18 edges
	

Using the forms of carbon as a potential guideline to psychosocial organization, of particular interest is the alternation of bonding most notable in the benzene molecule fundamental to the structure of organic tissue. This alternation is termed [resonance](#). It is then relevant to think of the possibility that distinctive mappings onto polyhedra, variously highlighting 8, 9, 10 and 15 (for example), may be associated with a dynamic process of "morphing" between such forms. Rather than any singular polyhedron providing privileged comprehension of the phase transitions exemplified by the Zen images, a variety of such polyhedra may be of significance to such comprehension and its communication.

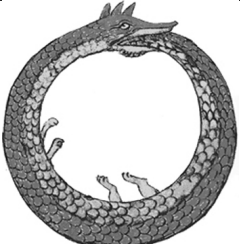
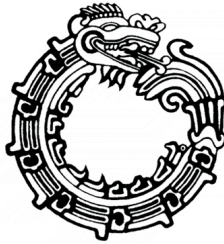
As a container for comprehension, any ultimately integrative the "grail" may be a resonant dynamic rather than a singular structure (*In Quest of Sustainability as Holy Grail of Global Governance*, 2011; *Interrelating Cognitive Catastrophes in a Grail-chalice Proto-model: implications of WH-questions for self-reflexivity and dialogue*, 2006).

Engaging with the missing – however encircled or encycled

Ring as symbolic of coherence: What is encircled by a ring? How is forming a circle or a ring understood as a container -- especially one with symbolic or magical implications? Formation of a [circle of trust](#)? What of defensively [circling the wagons](#)? The strategic implication has been extended to configuring problems in cyclic terms (*Encycling, Enwholing and Wholth*, 2014; *Encycling Problematic Wickedness for Potential Humanity*, 2014). The boundaries established by a ring are basic to the definition of any system -- cognitively framing what is relevant and what is to be considered irrelevant.

Whilst the circle can indeed be used in the configuration of the Zen pattern as a whole (through the torus), it is curious to note the emphasis placed on the ring in engaging with the bull, and in the process of controlling its wildness and taming it for domestic purposes. What insight is associated with the [nose ring](#) of the bull/ox -- especially now that the fashion for body piercing notably includes such a [nose ring](#), widely used in cultures of the past? Significant value of course continues to be attached to the [finger ring](#), [necklace](#), bracelet, or [torc](#). The value may be most implicit in the ritual use of circlets of beads (*Designing Cultural Rosaries and Meaning Malas to Sustain Associations within the Pattern that Connects*, 2000).

Why is a ring so central to epics of recent times, whether Wagner's "ring cycle" (*The Ring of the Nibelung*) or Tolkien's *The Lord of the Rings*? Any such ring pattern can be understood as echoing other traditional images, namely that of the [Ouroboros](#) or [Quetzalcoatl](#) -- the dragon "biting" its tale -- as a symbol of cyclical recurrence, understood cognitively.

Traditional symbolic rings	
Ouroboros	Quetzalcoatl
	

Missing feminine? Using the device of the Zen ox-herding pictures curiously highlights -- perhaps most appropriately -- what is not explicitly highlighted or indicated in any way. Whether bull or ox, it is difficult to imagine any more masculine-oriented pattern with its depiction of the male figures in the images, including the encounter in the final picture between the questionably enlarged epitome of wisdom and the diminutive neophyte.

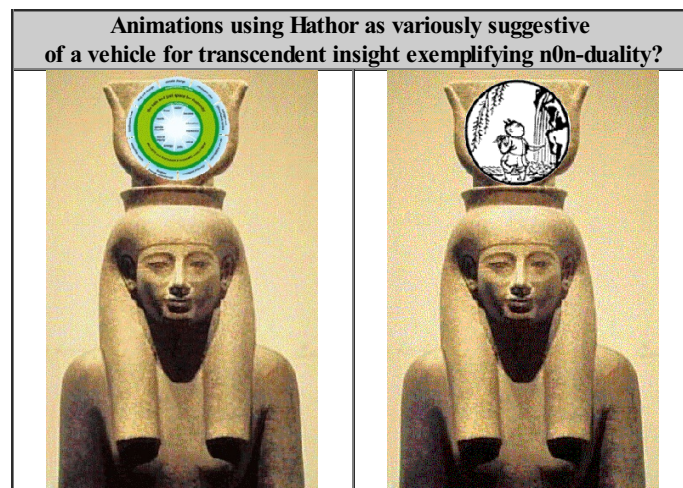
How does the feminine relate to the set of pictures? Is there an "invisible cow" implied in some way, as humourously challenged by [Andy Martin](#) (*Invisible Cows on Top of a Mountain - a load of bull or has religion got it down pat?* *The Independent*, 15 March 2015). This notably uses a mountain in Hawaii to argue that it is its invisible dimensions which render it the "tallest" mountain in the world. Framed by the [O-ring](#) rendered famous by [Richard Feynman](#), the challenge of the missing can also be explored through a speculative exercise (*The-O ring: Theory, Theorem, Theology, Theosophy? a playful intercultural quest for fruitful complementarity*, 2014). The cognitive interplay between O-ring and bull ring can be similarly explored otherwise (*The-O Ring and The Bull Ring as Spectacular Archetypes: dramatic correlation of theatre, theory, theorem, theology, and theosophy*, 2014).

The consequence of deliberately omitting, or unconsciously missing, a dimension essential to systemic viability can be reviewed and further justified by the work of the biological anthropologist [Terrence Deacon](#) (*Incomplete Nature: how mind emerged from matter*, 2012; *The Symbolic Species: the co-evolution of language and the brain*, 1997). He explores the paradoxical incompleteness of semiotic and teleological phenomena in terms of information in order to demonstrate how specific absences (or constraints) play the critical causal role in the organization of physical processes that generates these properties, as discussed separately (*Necessary incompleteness*, 2014; *Cognitive mystery of holes, lacunae and incompleteness*, 2014).

With respect to any assumptions of the normality of male dominance, the matter can be explored with respect to the *Underside of Normality?* (2015), Especially relevant is the place then accorded to the "normality" of unacknowledged behaviours (abuse in domestic life, bullying in institutions, prison violence, etc) and the curious normality of injustice as experienced by many and ensured by some through patterns of [structural violence](#). As an "underside", this has been fruitfully explored by [Elise Boulding](#) (*The Underside of History: a view of women through time*, 1976), although the metaphor can also be applied to scientific neglect (*Knowledge Processes Neglected by Science*, 2012; *Epistemological Challenge of Cognitive Body Odour: exploring the underside of dialogue*, 2006).

Implied "feminine" complement as container metaphor: Use of the "bull" as the central symbol of the Zen pattern favoured in an Eastern culture recalls the importance attached to [bull-related symbolism](#) in early Egyptian culture -- in which the feminine was celebrated, most notably through the cow-goddess [Hathor](#), typically depicted with horns. As noted above, any such implication is conventionally deprecated through reference to "[sacred cows](#)" -- whether to be understood as evident or unquestionable.

Using a depiction of the mythological complement to [Horus](#), the following animation then suggests a provocative reframing of the cognitive dynamic for the above argument developed through the bull-pattern. The animation (on the left) was previously developed to suggest the "twinkle" in the strategic third eye of sustainability (*Embodiment of Identity in Conscious Creativity: challenge of encompassing "con"*, 2011). The subtitle of that document emphasized the necessary cognitive vigilance to transcend the confidence games -- the "bull" -- so typical of conventional approaches to strategic governance.



Although any evocation of Hathor may be readily considered extraordinarily inappropriate in this period, it is remarkable to note the value attached to a complex of insights with which it is specifically associated by speculative freemasonry. Given the leadership role attributed to Freemasonry in governance, whether as claimed by Freemasons or suspected by conspiracy theorists, in the current context it is also remarkable to note the significance attached by them to magic squares (*Speculation on the symbol of the Square and Compasses: the Freemasons' Magic Square Square, Review of Freemasonry*). This is discussed separately, notably with respect to implications of the seemingly missing feminine dimension (*Magic square integrity and implications for the US Constitution*, 2015).

Complementing that engagement with magic squares, Freemasonry also attached particular importance to 9-fold organization, as separately described (*Concordian Mandala as a Symbolic Nexus: insights from dynamics of a pentagonal configuration of nonagons in 3D*, 2016)

Eliciting the "pattern that connects" via "bull"?

The argument above addresses the challenge of clarifying subtle distinctions, rendering them memorable, and configuring them usefully. There is however the fundamental issue of the transitions between such distinctions, the pathways these may imply, and their complementarity under a variety of conditions.

This can be framed as the "pattern that connects", as highlighted by [Gregory Bateson](#) with respect to *Steps to an Ecology of Mind* (1972), and widely discussed (*The Pattern That Connects, Expanding Your World; The Pattern That Connects, Global Vision Foundation; Søren Brier, Bateson and Peirce on the Pattern that Connects and the Sacred*, 2008). It can be variously discussed (*Hyperspace Clues to the Psychology of the Pattern that Connects*, 2003; *Walking Elven Pathways: enactivating the pattern that connects*, 2006).

Muck? Given the cognitive equivalent of "muck", so characteristic of the present times, it is appropriate to recall that the so-called [industrial revolution](#) in England can be recognized as having been framed by the slogan *Where there's muck there's brass* (Liam Brunt, *"Where There's Muck There's Brass": the market for manure in the Industrial Revolution*, 2000). Ironically the slogan currently features in advocacy for new approaches to the environment.

Of interest, however, are the implications of "muck" -- understood here as "bull" -- for the next cognitive revolution and paradigm shift. It could well be that the challenge "lies" in the "bull" in which one believes (if not a "sacred cow") -- especially including a belief in nothing (*Emerging Significance of Nothing*, 2012). There is a sense in which if one does not understand how one is part of the problem, one cannot understand the nature of the solution required. There is then good cause for epistemological panic (*Epistemological Panic in the face of Nonduality: Does nothing matter?* 2010).

"Magic" squares? As commonly framed, there is no lack of "bull" in the argument above, especially through the manner in which it touches on symbolism and numerology. This is highlighted in the case of "magic squares", despite the considerable importance associated with them from a mathematical perspective, most notably with respect to number theory. Thus for *Ezra Brown* (*Magic Squares, Finite Planes, and Points of Inflection on Elliptic Curves*, *College Mathematics Journal / Mathematical Association of America*, September 2001):

I came across a little gem of a result that ties many mathematical threads together, threads that originate in several different areas of mathematics. The result is that every **elliptic curve** has nine **points of inflection** which can be arranged, in a very natural way, to form a 3 x 3 magic square.

[Note generalizations of this argument (Edray Herber Coins, *Semi-Magic Squares and Elliptic Curves*. *arxiv.org*, 2009; B L Kaul, et al., *Generalization of Magic Square (Numerical Logic) 3x3 and its Multiples (3x3) x (3x3)*, *International Journal of Intelligent Systems and Applications*, 2013) and summary of implications for communication (*Elliptic curve cryptography*; Meenu Sahni and D.B. Ojha, *Magic Square and Cryptography*, *Journal of Global Research in Computer Science*, 2017; Nitin Pandey, et al., *Secure Communication with Magic Square*, *Journal of Global Research in Computer Science*, 2012)].

Correspondences: Of relevance, as noted above, is then the question of the cognitive implication of mathematical insight (George Lakoff and Rafael Nuñez, *Where Mathematics Comes From: how the embodied mind brings mathematics into being*, 2001). How is **number theory** to be distinguished from the "muck" with which **numerology** is variously associated?

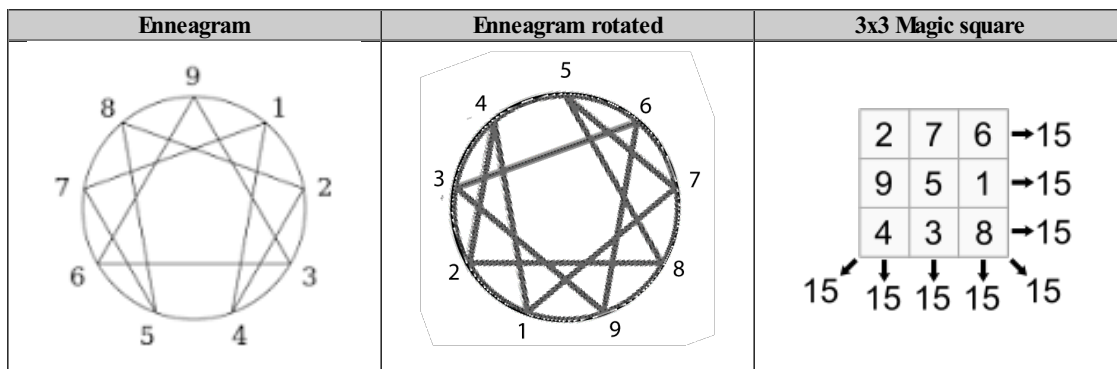
The challenge of dubious **correspondences** has been highlighted with respect to what mathematicians themselves have caricatured as **moonshine theory**, through which the high order symmetries of the so-called **monster group** were discovered. As discussed separately, how then to consider the possibility of analogous correspondences enabling discoveries of significance to a paradigm shift (*Theories of Correspondences -- and potential equivalences between them in correlative thinking*, 2007; *Potential Psychosocial Significance of Monstrous Moonshine: an exceptional form of symmetry as a Rosetta stone for cognitive frameworks*, 2007).

Obscurantism? In navigating facticity, how is it that the order so valued by mathematicians has been so systematically dissociated from the significance valued by individuals and in their governance -- as discussed separately (*Dynamics of Symmetry Group Theorizing: comprehension of psycho-social implication*, 2008)?

Can mathematicians be accused of indulging in deliberate obscurantism, as is evident from answers to questions raised in various fora (*How do I study and conduct research in the areas of elliptic curves and modular forms?* Quora, 2014; *What is so special about elliptic curves?* *Physics Forums*, 2013). Self-reflexively, are elliptic curves themselves relevant to the challenge of comprehension, in the light of some responses offered: *Elliptic curves are interesting because they are the simplest algebraic structure that is not yet completely understood; The problem I fear is that's it's not going to be easy to understand if we're not already familiar with the subject.*

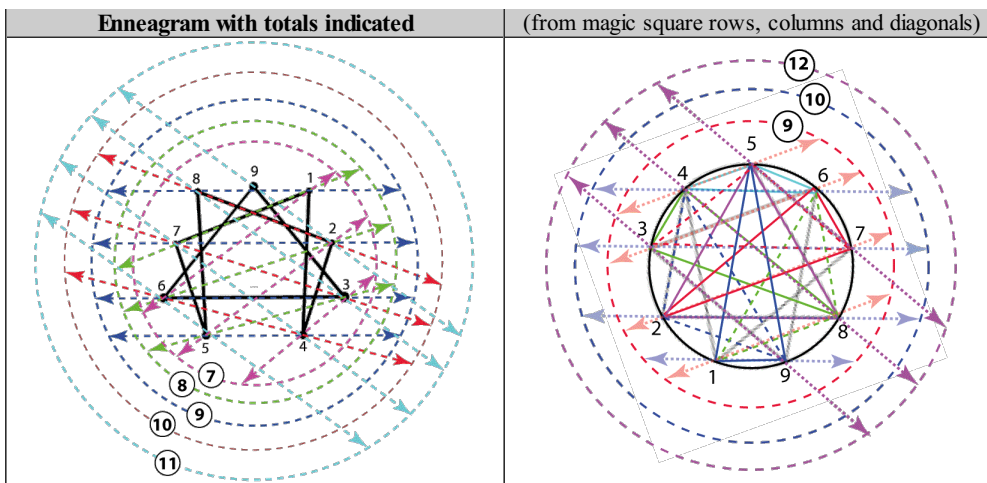
Given the early slogan of the industrial revolution, what indeed is the "manure" from which "brass" can be derived? Appropriately "brass" was then a reference to money -- and is therefore relevant to the fundamental issues of confidence which are now proving so critical with respect to facticity.

Connectivity: enneagram vs magic square: If the issue is one of comprehensible connectivity, one exercise deriving from the above argument is to confront the connectivity of the enneagram with that of the magic square.



Numbers in corresponding positions in the enneagram sum to 7, 8, 9, 10 or 11, as indicated in the image on the left (below). If the corresponding numbers in the columns, rows or diagonals from the magic square are summed, they give the totals 9, 10, and 12, as indicated in the image on the right -- based on their relative positions in the enneagram. The areas in that diagram are then necessarily indicative of the 15 to which the three numbers total in each case (as a property of the magic square indicated above). Note that these results would have been visually identical had the enneagram been rotated in the other direction.

Rotated enneagram with indication of totals



Such patterns are indicative of the connectivity within which the transitions between the Zen insight phases could be understood to be embedded. Especially intriguing as an indication of comprehensibility are the various symmetries in the image on the right (above) which are more apparent in the images which follow.

The enneagram is otherwise valued for mapping cognitive styles (A. G. E. Blake, *The Intelligent Enneagram*, 1996). As a management cybernetician concerned with integration processes, Stafford Beer has however noted the manner in which a 3D variant of it "hangs within the icosahedron" (*Beyond Dispute: the invention of team syntegrity*, 1994). This is discussed and represented separately (*Correspondences between Traditional Constellations and Pattern Languages*, 2014). A representation of the image above could be developed in 3D. The relevance of Knight's move thinking (from chess) is discussed separately with animations (*Knight's move thinking: appreciated or deprecated*, 2012; *Knight's move thinking in relation to magic squares*, 2015).

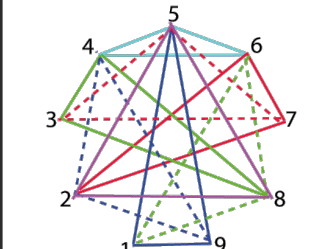
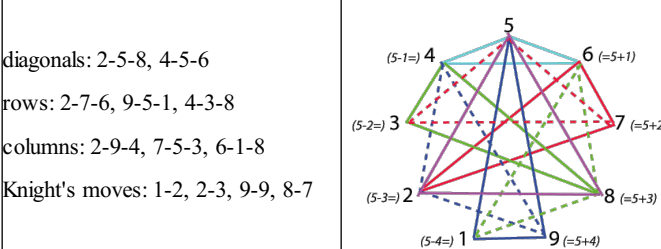
Points of inflection and a 3x3 magic square: The above-mentioned exploration of magic squares by Ezra Brown suggests an unexpected convergence of threads relevant to this argument. He frames a **Magic Square Theorem**:

Every elliptic curve has nine points of inflection, and these points form an affine plane of order 3. That is, each point of inflection lies on exactly four lines, each of which contains two other points of inflection -- making 12 lines in all -- and each pair of points of inflection determines a unique line (*Magic Squares, Finite Planes, and Points of Inflection on Elliptic Curves*, 2001)

Five "plus or minus four"? Noting the resemblance to the argument of Viktor Prasolov and Yuri Solviev (*Elliptic Functions and Elliptic Integrals*, American Mathematical Society, 1997), Ezra Brown concludes by showing how the 9 inflection points can be arranged as a 3x3 magic square (left half of table below). He argues that this result ties together threads from finite geometry, recreational mathematics, combinatorics, calculus, algebra, and number theory.

Magic theorem (Brown, 2001)			3x3 Magic square		
B	-A	-D	2 (=5-3)	7 (5+2)	6 (=5+1)
C	O	-C	9 (=5+4)	5	1 (=5-4)
D	A	-B	4 (=5-1)	3 (=5-2)	8 (=5+3)

From these correspondences, in Brown's pattern on the left (above): A=2, B=3, C=4 and D=1. This suggests that "5, plus or minus 4" might be usefully explored as an alternative to 7 in the classic paper cited above (George Miller, *The Magical Number Seven, Plus or Minus Two: some limits on our capacity for processing information*, *Psychological Review*. 63, 1956). Given the use of the torus as a framework for the Zen images, it is appropriate to note that elliptic curves defined over the **complex numbers** correspond to embeddings of the **torus** into the **complex projective plane**.

Indication of relation between enneagram mapping and magic square		
Enneagram mapping	Magic square	Indications on base 5
	diagonals: 2-5-8, 4-5-6 rows: 2-7-6, 9-5-1, 4-3-8 columns: 2-9-4, 7-5-3, 6-1-8 Knight's moves: 1-2, 2-3, 9-9, 8-7	

Memorability: foldability and degeneracy? With respect to learning or insight, why 5 rather than 7? Intuitively interrelation of 5 points is already a challenge, as with comprehension of the subtleties of orders of feedback and self-reference greater than 3 -- with 5 at the limit of current cybernetic considerations. The sense in which 5-fold comprehension "decays" to 5-1, 5-2, 5-3 or 5-4 comprehension can be readily recognized, with dysfunctional polarization the most common of psychosocial processes, and with the concerns regarding

the unitary assertion of fact being the focus of the above argument. Potentially relevant is the coherence associated with the [five points determining a conic](#) in projective geometry.

Could this "entropic decay" in cognitive capacity be compared with mathematical use of "degenerate" -- in contrast with the complexity implied by its opposite? Similarly intriguing is the sense in which the icosahedral great circles are understood as fundamental to the foldability of polyhedral structures, as explored in a presentation to the Interdisciplinary Conference of the International Society of the Arts, Mathematics, and Architecture, by C. J. Fearnley (*Exploring Foldable Great Circle Geometries*, Synergetics Collaborative, 2009). It also features in a study within the Cluster of Excellence of the [Image Knowledge Gestaltung: An Interdisciplinary Laboratory](#) by Michael Friedman and Joachim Krausse (*Folding and Geometry: Buckminster Fuller's provocation of thinking*, 2016) in which the authors conclude:

... folding suggests an interlacing of thought and contemplation together with a materialized geometry and partially overlapping events. This enables Fuller to tie together his conception of geometry as a material mathematical science -- a point is a place where two lines pass through but not at the same time -- and the scenario as a form of thinking. Folding, weaving and interlacing engender this form of thinking.

To what extent might "foldability" be relevant to the coherent organization of memory with respect to different levels of complexity?

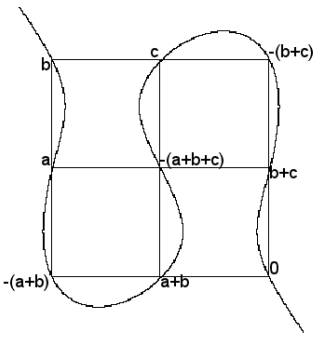
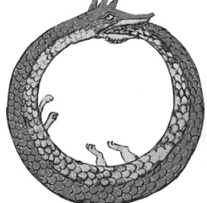
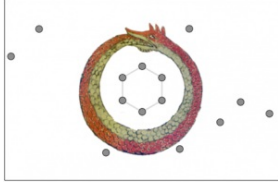
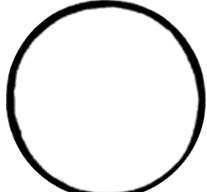
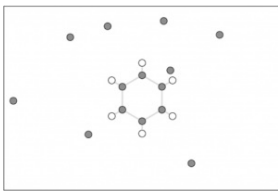
Given the above-cited approach of Lakoff and Nuñez (2011), it might also be asked whether the frequent use by mathematicians of "embedding" is indicative of the poorly extent to which human subjective experience is embedded in the objective reality of mathematics - - matched by the extent to which the latter "informs" subjective experience.

Points of inflection in the learning process? Curiously the literature focuses on the challenge of learning about the importance of elliptic curves but not on their implication for the learning process itself -- with the exception of some hints to that effect (Apostolos K. Doxiades and Barry Mazur, *Circles Disturbed: the interplay of mathematics and narrative*, 2012; Roberto Festa, et al. *Cognitive Structures in Scientific Inquiry*, 2005). The symmetries of the image on the right above are however suggestive of correspondences in the comprehension of 4 (=5-1) and 6 (=5+2), as well as of 3 (=5-2) and 8 (=5+3), for example.

Such an image also provocatively recalls the form of the [Tree-of-Life / Sephirot](#) pattern much-studied in the [Judaic Kabbalah](#) (readily framed by science as yet another form of "bullshit"). Kabbalah (but not the Sephirot) has evoked various comments on the relation between it and "ox-herding" (*Kabbalistic Meditation on Ancient Ox Herding Photos; Ox-herding Pictures of Zen Buddhism*, Donmeh West, 2004; Michael Eigen, *A Felt Sense: more explorations of psychoanalysis and Kabbalah*, 2014). As might be expected, there is a long association with magic squares (Tasha Lindsay, *Kabbalah and Magic Square*, *The Magic Square Blog*, 15 February 2016).

The relationship established by Brown to elliptic curves is valuable because the kind of learning associated with the Zen pattern of distinctions is essentially non-linear and usefully understood in terms of elliptic curves and points of inflection -- from concave to convex -- potentially to be considered in terms of the insideness (subjectivity) or outsideness (objectivity) of perspective (*Transformation of worldview from "inside-outside" to "outside-inside"*, 2013).

Stabilizing facticity: encycling the serpent and the snake lemma: The points of inflection are explained otherwise in *Wikipedia* by use of the following animation (on the left) with its suggestively snake-like dynamic.

9 Points of inflection in an elliptic curve animation	"Encycling" the serpent/snake	Benzene snake-dream (August Kekulé)
	 <p data-bbox="694 1608 949 1630">Traditional Ouroboros symbol</p>	
		
<p data-bbox="303 1836 638 1904">From <i>Wikipedia</i>, produced by Thomas Cooper; created with a GNU Octave script; Public Domain, Link</p>	<p data-bbox="758 1859 869 1881">Zen image #8</p>	<p data-bbox="1029 1848 1252 1892">Screen shots of animation by Michael Verderese</p>

The serpentine movement of the animation ironically suggests -- however naively -- that it is indeed snakes that have the most instinctive understanding of an "elliptic dynamic" which they embody in their movement. The challenge of self-reflexive learning might then be usefully framed by the snake "biting its tail", as with the Ouroboros symbol on the right above -- echoed by one of the images in the Zen pattern. The tail-biting image is also renowned for the insight it offered into the discovery of the structure of the [benzene molecule](#) fundamental to biological tissue, as illustrated in the screen shots above from an animation by Michael Verderese (*An HTML-based Representation of Kekulé's Benzene Dream*, *ChemDoodle*, 2011), and variously discussed (Malcolm W. Browne, *The Benzene Ring: dream analysis*, *The New York Times*, 16 August 1988).

Of relevance to such exploration is the literature on "continuous elliptic curves" and "cyclic elliptic curves", and the associated literature on the "snake lemma" or the "serpent lemma" (*Snake Lemma*, Wolfram MathWorld; *Snake Lemma*, nLab, 30 October 2015; 2015; Jonathan Wise, *The Snake Lemma*, Stanford Department of Mathematics, 17 February 2011). The latter introduces the mathematical argument with the biblical phrase: *the serpent was more subtil than any beast of the field which the Lord God had made* (*Genesis 3:1*).

The challenge is exemplified otherwise by the plasma snake effects in toroidal fusion reactors (*Taming Plasma Fusion Snakes*, Berkeley Lab Computing Sciences, 2014). Again, it is of course extremely ironic that the extensive current interest on comprehension of elliptic curves is related to cryptography, readily to be recognized as a device for the systematic prevention of learning (*Elliptic Curve and Finite Field Cipher Visualization Tools*, 2012; *ECvisual: A Visualization Tool for Elliptic Curve Based Ciphers*, 2012). There is seemingly no trace of their relevance to enabling learning of other kinds.

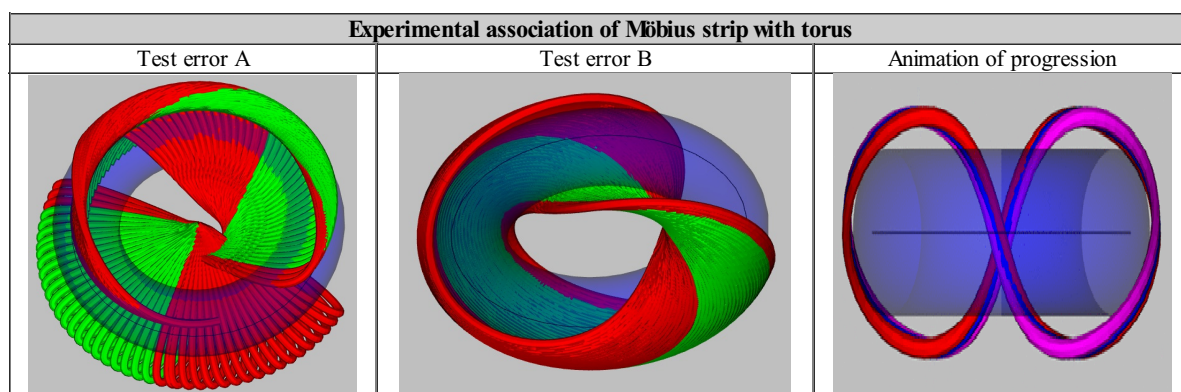
So framed it becomes clearer that "facts" only acquire the stability -- that science and convention would claim they have -- under very particular conditions. Otherwise, like some isotopes, "facts" may only be meta-stable, retaining their coherence only relatively briefly -- before "decaying" in some way (Samuel Arbesman, *The Half-Life of Facts: why everything we know has an expiration date*, 2012). As yet to be fully clarified, this transformation may come to be indicated by some form of "post-truth table", as separately discussed (*Towards articulation of a "post-truth table"?* 2016). The alleged "facts" justifying military action in Iraq and Syria merit evaluation in such terms (*Truth Test on Syria: Religious oath -- Polygraph -- Ouija board? Systemic mapping of the pattern of affirmations and denials*, 2013).

Given the problematic association of facticity with problem perception, the challenge of "encycling" the snake can be explored in relation to that of coherence in governance (*Encycling Problematic Wickedness for Potential Humanity*, 2014).

Encycling a paradoxical snake in a Möbius strip: As widely noted, an elliptic curve is a challenge to comprehension. Elliptic curves are of the following topological types: a torus, an annulus, a Möbius strip, and a Klein bottle (*North-Holland Mathematics Studies*, 54, 1981). A Möbius strip is a challenge to comprehension in mathematical terms -- although easy to visualize through constructing one (*Understanding the Equation of a Möbius Strip*, Mathematics Stock Exchange, 2014). Any challenge to learning, with the requisite "cognitive twist" of a paradigm shift, might then be understood as usefully embodied into a Möbius strip in some way -- beyond the relatively simplicity of framing the Zen pattern within a torus (as indicated above).

"Re-cognition" of the nature of the challenge is usefully indicated by the manner in which depiction of wisdom in iconography may use some form of halo or annulus, even taking the form of a torus. Such depiction may include use of the infinity symbol, readily implying the paradoxical complexity of a Möbius strip. The cognitive peculiarity of the relationship between "global experience", the "toroidal journey" of eternal return, and the "paradoxical twist" linking alternative world views can be explored in terms of the corpus callosum nexus of the human brain (*Corpus Callosum of the Global Brain?* 2014; *Engendering Viable Global Futures through Hemispheric Integration*, 2014). Any dynamic integration of "facts" and modalities, as implied by the Zen "herding" metaphor, can then be contrasted with the implication of "herding cats".

Better still would be to explore any way of combining a torus mapping with that of a Möbius strip. One approach is suggested by a double twisted Möbius strip fitted into the form of a torus; otherwise known as a bifilar torus knot, this is discussed and depicted separately (*Möbius and Torus Relationship*, *The Life Field Transformer*).



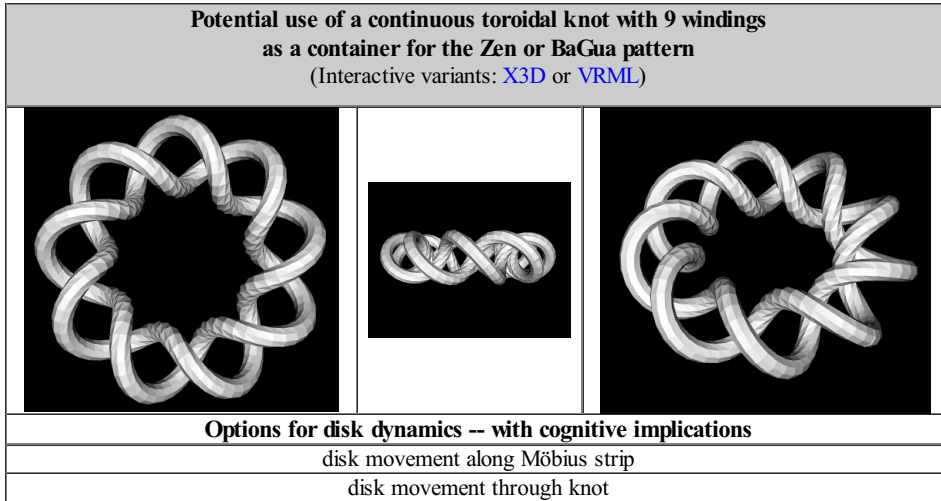
Presentation of the test errors above recalls the range of topological distortions of the Möbius strip through introduction of extra twists -- with their potential cognitive implications.

DNA as a biomimetic template: DNA as a coiled coil (a double helix, or supercoiling) is the fundamental schema of biological communication (J. L. Campos, et al., *DNA coiled coils*, *PNAS*, 102, 2005). It can be explored in terms of elliptic curves (P. Vijayakumar, et al., *DNA Computing based Elliptic Curve Cryptography*, *International Journal of Computer Applications*, 36, 2011; *Enhanced Level of Security using DNA Computing Technique with Hyperelliptic Curve Cryptography*, *International Journal on Network Security*, 4, 2013). As might be expected, related exploration also involves consideration of the Möbius strip, as indicated by Dongran Han, et al, (*Folding and Cutting DNA into Reconfigurable Topological Nanostructures*, *Nature Nanotechnology*, 5, 2010):

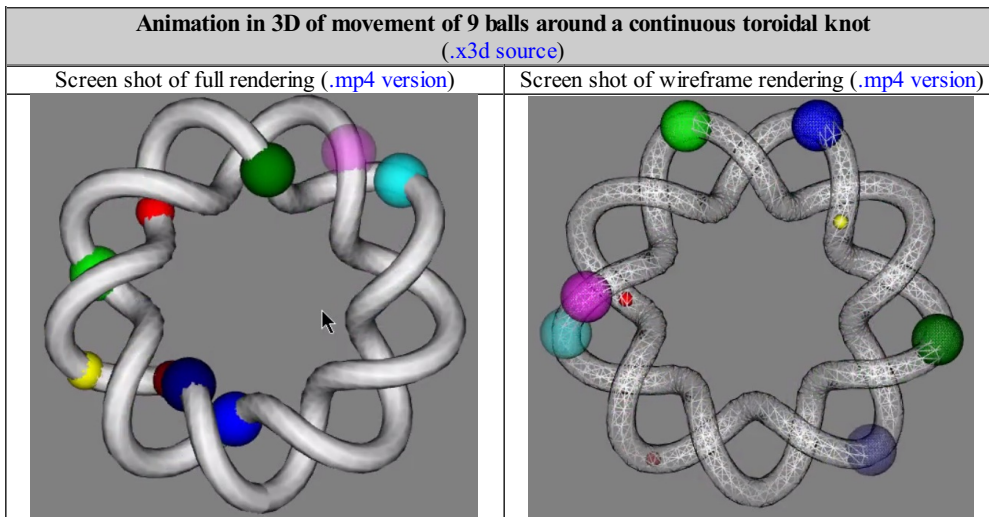
Here, we show that DNA origami can be used to assemble a Möbius strip, a topological ribbon-like structure that has only one side. In addition, we show that the DNA Möbius strip can be reconfigured through strand displacement to create topological objects such as supercoiled ring and catenane structures.

Verbal explanation of any "twist" is essentially unhelpful to forms of comprehension dependent on linearity. The following images and animations can therefore be understood as experiments in the facilitation of comprehension implying "paradigm twists". The challenges to their construction using 3D visualization facilities are also significant in that respect -- notably through the failures to engender results which combine both comprehensibility and appeal. The question is on what forms can new insight be meaningfully "hung" -- and in what forms can it be fruitfully embodied (*In Quest of Mnemonic Catalysts -- for comprehension of complex psychosocial dynamics*, 2007).

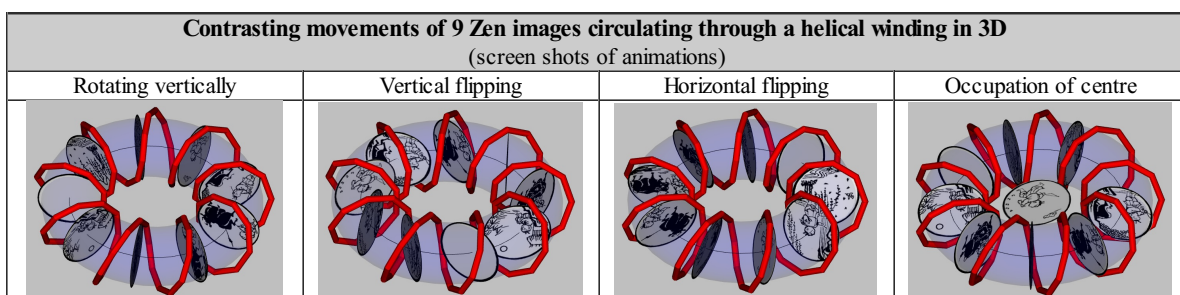
Torus knotting and helicoidal animation: Mnemonic clues to the nature of the cognitive challenge may also be offered by topological complexification of the basic torus as suggested below -- and as previously developed (*Configuration of a Toroidal Helix*, 2016).



Rather than the Zen images, the contrasting subtleties of 9 insight modalities can be encoded by colour, as shown below. The representation can be readily varied by modifying parameters of: colour, cycle period, ball size, number of balls, period of visibility, radius of helicoidal winding. Any given combination of choices may well range from appealing to alienating -- and meaningless. This suggests that such an animation is best explored like an interactive musical instrument on which a variety of "cognitive melodies" can be explored (possibly enhanced with associated tonal encoding typical of [sonification](#)). Those recognized as appealing are then evocative of more integrative insight. Those which are variously alienating are then suggestive of possible cognitive traps. Such an instrument lends itself to depiction of both habitual modes of busyness and occasional flashes of insight.

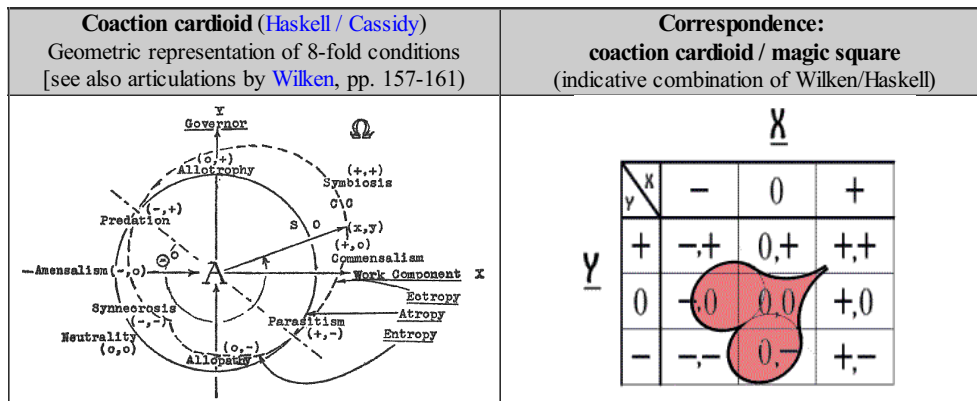


A related design metaphor that can be used as a suggestive container for the dynamics of the Zen pattern is indicated below. There the images circulate through a hierarchical winding. Again a wide variety of dynamics can be associated with the images as an aid to "re-cognition". As noted earlier, a tenth image could be associated in some way with the pattern as a whole (perhaps as suggested by that on the right). The pattern could be rendered in an 8-fold form using the distinctions of the *BaGua* trigrams (as above).



Any depiction of circulation through a helical winding is a provocative stimulus to consideration of the implications of the dynamic reframing by Nikola Tesla of electromagnetic polarity (*Reimagining Tesla's Creativity through Technomimicry: psychosocial empowerment by imagining charged conditions otherwise*, 2014). In a period in which binary thinking is the primary dynamic enabling violence, there is therefore a case for exploring analogues of greater subtlety in the psychosocial domain, as discussed there (*Potential implications of alternation and rotation in psychosocial fields*, 2014).

Correspondence with the coaction cardioid? There is a further possibility that the learning process associated with the pattern of the magic square could be fruitfully explored in the light of the work on the coaction cardioid, within a similar pattern, by Edward Haskell (*Full Circle: The Moral Force of Unified Science*, 1972), and further developed by Timothy Wilken (*UnCommon Science*, 2001) into the following generic form:



This is discussed separately (*Cardioid Attractor Fundamental to Sustainability: 8 transactional games forming the heart of sustainable relationship*, 2005). Especially intriguing is the manner in which that cardioid could be interpreted in the light of the patterns of subjectivity and objectivity associated with conditions of the learning process.

Reality and unreality? With respect to any sense of "reality", Brown shows that **only two of the nine points of inflection on an elliptic curve are defined by real coordinates**, the others have at least one nonreal coordinate -- meaning that they cannot be readily seen. An insight of this kind would seem to merit careful consideration in terms of the subtlety of the learning process indicated by the Zen pattern. This "unreality" is seemingly acceptable to science -- perhaps as "good shit" in the widely circulated schema of such perspectives (*Shit Happens: close-to-complete ideology and religion shit list*).

Of potential relevance is the relation of such curves to the work of René Thom, basic to catastrophe theory -- with learning readily understood as a succession of cognitive catastrophes (*Structural Stability and Morphogenesis: an outline of a general theory of models*, 1972; *Esquisse d'une Sémiophysique: physique aristotélicienne et théorie des catastrophes*, 1989).

This association has been developed by Wolfgang Wildgen (*Catastrophe Theory and Semiophysics: with an application to "movie physics"*, *Language and Semiotic Studies*, 2015) and by Jean Petitot (*Morphogenesis of Meaning*, 2003; *Cognitive Morphodynamics: dynamical morphological models of constituency and syntax*, 2011).

Reframing "winning" through neural network learning -- as "bullying"?

With respect to "bull", illusion and ignorance may be a greater source of inspiration than commonly expected (*University of Ignorance: engaging with nothing, the unknown, the incomprehensible, and the unsaid*, 2013) as variously argued by Nicholas Rescher (*Ignorance: on the wider implications of deficient knowledge*, 2009; *Apoetics: rational deliberation in the face of inconsistency*, 2009).

Deep learning: It is intriguing to note the ever increasing importance attached to artificial intelligence, most specifically through neural network learning (Déborah Mesquita, *Big Picture Machine Learning: classifying text with neural networks and TensorFlow*, *FreeCodeCamp*, 9 April 2017). TensorFlow is an open-source library for machine learning, first created by Google. Tensors are understood as multidimensional arrays that flow through the nodes of a graph. Of relevance to the above argument is the fashionable reframing of learning as deep learning, otherwise known in relation to data mining as deep structured learning or hierarchical learning.

Especially intriguing with respect to the above argument is the manner in which deep learning has been defined (*Deep Learning in 7 lines of code* (*Chatbot's Life*, 7 April 2017)). The latter emphasizes that the essence of machine learning is recognizing patterns within data. This is achieved by use of layers of abstraction, otherwise known as "frameworks" -- a term subject to confusion (Enrico Busto, *Deep Learning Frameworks Explained*, *Add-for*, 2 November 2016). It is curious that highlighting 7 such layers is consistent with the cognitive constraints highlighted above: "plus or minus 7". More curious is the degree to which the layers of abstraction bear comparison with the Zen images as indicative of progressive abstraction -- especially as frameworks for cognition. The emphasis on "7 lines of code" also suggests a charmingly reminiscent comparison with the poetic lines by which the cognitive significance of each ox-herding image is indicated.

Layers of abstraction: Less obvious is whether 7 abstraction layers is deemed sufficient for deep learning or a necessary prerequisite. The ISO-OSI networking model comprises seven such layers. Each layer encapsulates and addresses a different part of the needs of much digital communication, thereby reducing the complexity of the associated engineering solutions. With respect to the argument above for "5 plus or minus 4", one exception appears to be the use of 9 such layers, usefully articulated for GIS (Stuart Hodgson, et al.

Five of these model the abstraction from real world to project world and the interfaces between them: The essence of the real world is captured in the name's and descriptions of the conceptual world; the conceptual world is modeled on the simplified or generalized constructs of geomatics in the geospatial world; the geospatial world is more rigorously defined in the metrics and spatial objects of the dimensional world; and finally the dimensional world is codified in the project world of a particular domain, along with its definitions of space, vocabulary, methods or observation. and classifications of entities and phenomena.

The remaining four abstractions define in increasing detail the mechanism of encoding the elements of the project world in terms of the data and services model of Open GIS. In order, these are: the points world of coordinate geometry; the geometry world of well-known geodata types; the feature world which combines spatial and non-spatial attributes of geographic objects according to schemas of properties and their values; and the feature collection world which provides an overall structure and taxonomy to all of the elements in the underlying project world.

[Embedded computer systems](#) with up to 10 different layers of abstraction offer another exception (Tanmay Patil, *Layers of Abstraction*, 15 May 2016; Andy D. Pimentel, et al, *A Systematic Approach to Exploring Embedded System Architectures at Multiple Abstraction Levels*, *IEEE Transactions on Computers*, 55, 2006; Jerry R. Burch, *Using Multiple Levels of Abstractions in Embedded Software Design*, 2001).

Out-smarting the other: Clearly the interest for Google lies in the competitive advantage to be derived from more sophisticated approaches to the data it holds in various forms. It is for this reason that much has been made of the development of these techniques (through [DeepMind](#), a Google-owned company) to winning board games against their grand masters, most notably through the [AlphaGo](#) application (Dom Galeon, *Google's AI Is Changing the Way a 3,000-Year-Old Game Is Played*, *Futurism*, 9 April 2017). The [Future of Go Summit](#) (May 2017) is a collaboration between the Chinese Go Association, the Chinese government, and Google. Leading AI experts from both Google and China will be in attendance with the aim of testing AlphaGo's creativity and adaptability, plus its ability to work in tandem with human players.

Of particular relevance to the argument above is the underlying assumption that "deep learning" is now intimately related to an unchallenged primary preoccupation with a form of "winning" whose nature is not open to exploration. This is exemplified in strategic board games, such as chess and go, in which the objective is to determine a single "winner" (through effectively "breaking the spirit" of a "loser"). Hence the military and corporate interest in such applications as a means of "out-smarting" any opponent. The implied "depth" of the learning seemingly does not go beyond the desirability of that binary outcome.

Bullying the other: Ironically, given the framing of the above argument, go terminology includes the term *ijime* -- translated as "bullying" -- referring to the freedom of *sente* moves offered by playing against weak positions. In the light of the Zen pattern of distinctions, the preoccupation of "winning" in this manner -- and the freedom to "bully" an opponent -- corresponds to no more than a middle phase in the learning process. The distinctions made in that respect are [Catching the "bull"](#), prior to [Taming the "bull"](#), prior to [Riding the "bull" home](#) (with the latter caricatured by a self-satisfied Don Quixote).

Should such board games be seen as exemplifying the vicarious pleasure from determining who can "bully" the other "better" -- in anticipation of their total "annihilation"? Is such the perversity underlying much competitive game playing?

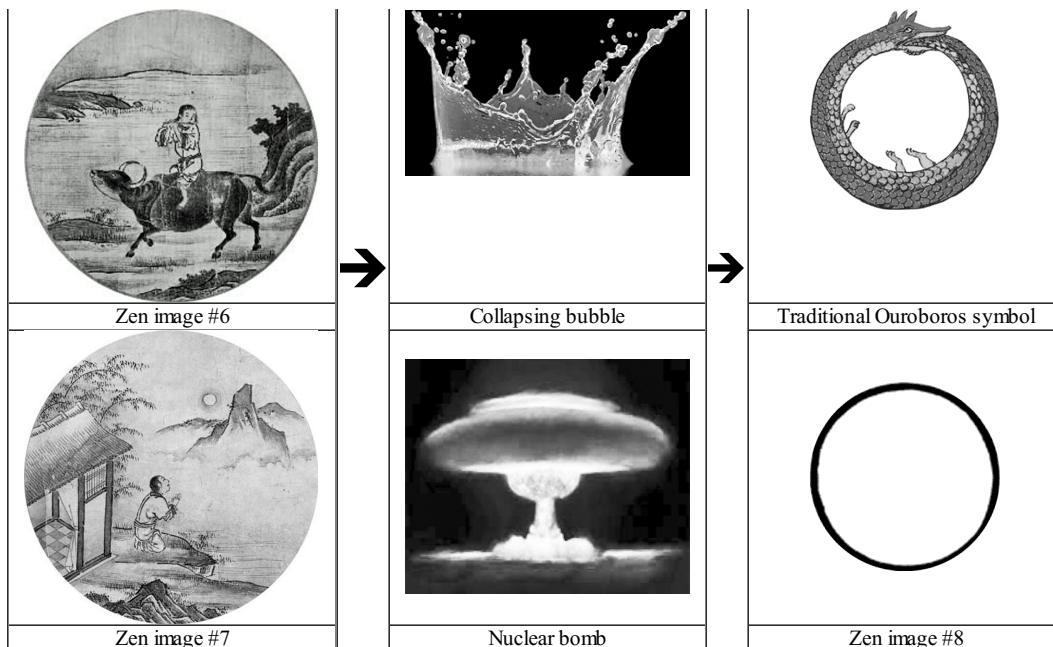
There is no "re-cognition" of the subtler distinctions: [The "bull" transcended](#), [Both "bull" and self transcended](#), or [Reaching the source of the "bull"](#) -- but especially any sense of [Return to society](#) (rather than its exploitation by any "winner"). The problematic facticity of marketing "bull" is of course to be expected with respect to the latter. There is no implication that insights from deep learning will in any way contribute to reframing violent binary conflict -- as currently exemplified by Israel/Palestine, Christianity/Islam, and USA/Russia. Arguably there is no evident motivation to develop learning in this way.

The argument could be developed otherwise in the light of the ambitious [Neuralink](#) initiative of [Elon Musk](#) to transform "being human" through worldwide deployment of [brain-machine interfaces](#), as described by [Tim Urban](#) (*Neuralink and the Brain's Magical Future*, *Wait But Why*, 20 April 2017). Again there is as yet no indication how such deployment would engage with binary conflicts as a consequence of intelligence enhancement -- and seemingly no motivation to recognize the essentially subtle nature of the constraints (*Recognizing the Psychosocial Boundaries of Remedial Action: constraints on ensuring a safe operating space for humanity*, 2009).

The irony is all the greater in that radical Islam has been surprisingly successful strategically through "re-cognizing" the modality of personal sacrifice. Despite expenditure of trillions of dollars over decades, exploiting every form of global "intelligence", no insights have emerged regarding how to contain this paradoxical individual commitment. The focus of intelligence has been limited to threat identification, targeting and hacking -- and the avoidance of personal sacrifice (except that of others). There is no sense that artificial intelligence encompasses the existential sacrifice of the player -- rather than one of it pawns.

Reality bubble collapse and emergence of self-reflexivity: In a period in which the risk of nuclear conflict is considered imminent, the pattern of Zen images can be interpreted as embodying the transition between the collapse of the reality bubble of an inadequate paradigm and the emergence of a higher order of self-reflexivity.

Critical paradigm shift		
Celebrating self-satisfaction	Collapse of reality bubble	Self-reflexive emergence



The images on the left are indicative of unquestioning cognitive modalities, righteously content with their world views (Richard Moore, *Trump is Kicking Off WWII and the Left is Chasing Windmills, Storm Clouds Gathering*, 15 April 2017. As reality bubbles, these imply a mode of collapse, as argued by Jared Diamond (*Collapse: How Societies Choose to Fail or Succeed*, 2005).

The images in the centre are indicative of the annihilation of such reality distortion fields. Those on the right are indicative of how nothingness is encompassed by emergence of self-reflexivity -- otherwise depicted in mythology by the emergence of the **Phoenix** from the ashes of annihilation. This emergence can be fruitfully explored in terms of **navigating through the adaptive cycle**, as argued by Thomas Homer-Dixon (*The Upside of Down: catastrophe, creativity, and the renewal of civilization*, 2006). In this respect, given comparisons made between the conventional **need hierarchy of Abraham Maslow** and the Zen phases, it is appropriate to note Maslow's later addition to the hierarchy of "self-transcendence" (Henry J. Venter, *Maslow's Self-Transcendence: how it can enrich organization culture and leadership*, *International Journal of Business, Humanities and Technology*, 2012; Robby Berman, *The Missing Apex of Maslow's Hierarchy Could Save Us All*, *Big Think*, 13 February 2017).

Recognition of subtler patterns: Given the emphasis in AI on recognition of ever subtler patterns, this necessarily recalls both the cybernetic levels of self-reflexivity (noted above) and the **pattern language** preoccupation of Christian Alexander. Of particular relevance is his focus on what he names as "a quality without a name" and a "place to be":

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, but it cannot be named... every place is given its character by certain patterns of events that happen there. These patterns are always interlocked with certain geometric patterns in the space... To reach the quality without a name we must then build a living pattern language as a gate. (*A Timeless Way of Building*, 1979, pp ix-xi)

The puzzle is how building layers of abstraction by AI relates to this insight -- despite a degree of recognition by AI of "ontological levels" and higher orders of morality (Claudio Masolo, *Understanding Ontological Levels*, 2010; Vincent Conitzer, et al. *Moral Decision Making Frameworks for Artificial Intelligence*, 2017). How indeed is AI to respond "intelligently" to issues relating to the distribution of resources in global society?

A valuable pointer in this respect is offered by Spyros Bofylatos (*Supporting Design Dialogue through a Communication Framework using Four Layers of Abstraction*, *The Design Journal*, 2016). Similarly, as with the argument with respect to the Zen "phases", related exploration reframes the "levels" as "paradigms" (Cécile Hardebolle and Frédéric Boulanger, *Exploring Multi-Paradigm Modeling Techniques, Simulation*, 17 July 2009). This is reminiscent of the arguments of Edward de Bono (*Six Frames For Thinking About Information*, 2008) and for the **Belbin Team Role Inventory**. Ironically, from within each such frame that of the others is perceived as "bull" to some degree.

"Re-cognition" of subtler strategies? So framed it is comprehensible that, with the aid of artificial intelligence, conventional strategy may indeed be highly skilled in the great game of "winning the war" (*Playing the Great Game with Intelligence*, 2013). Unfortunately that intelligence has proved to be increasingly competent at "losing the peace", as has also been demonstrated (Ali A. Allawi, *The Occupation of Iraq: Winning the War, Losing the Peace*, 2007; *Transforming the Unsustainable Cost of General Education: strategic insights from Afghanistan*, 2009). Such "bull's eye" skills have most recently been deployed in launching the ultimate bomb against an underground complex in Afghanistan (*Why the 'mother of all bombs' and why now?* *CNN*, 14 April 2017).

In the case of the game of go, the philosophical learning and "spirit of the game" -- long cultivated in its mythology -- are necessarily dissociated from the hierarchical learning of artificial intelligence algorithms and their exploitation. Those modalities of learning are intimately associated with the Zen philosophy recognizing the distinctions noted above. Curiously they are also intimately related to the philosophy of Eastern martial arts (*Ensuring Strategic Resilience through Haiku Patterns: reframing the scope of the "martial arts" in response to strategic threats*, 2006).

From a strategic perspective, also curious is how AI's layers of abstraction may make use of deception, or embody it, given its fundamental importance to any intelligent martial endeavour. As "bull", such deception is presumably to be considered a quintessential form of "fake news" -- which Google now claims to be removing from its search results through new algorithms. If quantitative easing (through *fiat money*) has proven to be so vital to economic sustainability, might "printing facts" not have an analogous role? Is "faking it" an essential feature of any viable form of intercourse?

Intimacy vs Abstraction: calling hierarchy into question: As noted above with respect to what is "missing", the language of "levels" of cognitive abstraction is of course subject to criticism. It necessarily implies patterns of male dominance -- of concern from a complementary feminine perspective. Missing is the sense in which subtler cognitive insight may imply greater degrees of "cognitive intimacy" in relation to any sense of otherness. Rather than the detachment formalized by abstraction, this is readily experienced as fundamentally boring in contrast with experiential reality.

This could be understood as exemplified through the sequence of images of a bull by Pablo Picasso (*Bull: a Master class in Abstraction*) and their implications for his abstraction of the feminine through *Cubism*. As a consequence of being the subject of such "abstraction" -- as with eunuchs and castrati -- do oxen dream of having balls and a functional erection? As separately discussed, it is tragically appropriate in symbolic terms that the person hailed as the innovator of computer advances on which AI is now based should himself have been literally castrated by convention at the peak of his creativity (*Imagining Order as Hypercomputing Operating: an information engine through meta-analogy*, 2014).

Should the aspirations of war-mongers be explored in such terms -- and perhaps their need for cognitive *neuticles*? (Jessica Pierce, *Rocky Has Big Balls (But They're Fake)*, *Psychology Today*, 4 June 2012). As with the compression (or "squashing") of a 3D ball into an annular equivalent in 2D, does attribution of medals have some such symbolic function in commemorating a global value experience, as separately explored (*Quantum Wampum Essential to Navigating Ragnarok*, 2014)? Of relevance in this respect are the arguments of Edward de Bono (*The Six Value Medals: the essential tool for success in the 21st Century*, 2005).

The nature of any subject-object duality is called into question through deep learning understood otherwise. This may imply increasing degrees of cognitive embodiment of "reality" in contrast with patterns of abstraction from it -- although the two may well come to be conflated in some way.

Such possibilities elude the language of abstraction and are more fruitfully suggested by aesthetic patterns and *tacit aesthetic entanglement*, subject to a form of *compactification* characteristic of a mandala (for example), as argued separately (*Concordian Mandala as a Symbolic Nexus: insights from dynamics of a pentagonal configuration of nonagons in 3D*, 2016; *Con-quest Aesthetically Reframed via the Concordian Mandala*, 2016). This necessarily implies what is evoked through attraction to music and poetry, although the language of abstraction offers a formalization of distinctions which are typically conflated in the case of cognitive intimacy. It is appropriate to note the indication offered by the flute player in the Zen image of *Riding the "bull" home*.

The comprehension challenge for decision-making in governance can be variously argued (*Poetry-making and Policy-making: Arranging a Marriage between Beauty and the Beast*, 1993; *Poetic Engagement with Afghanistan, Caucasus and Iran: an unexplored strategic opportunity?* 2009; *Enactivating Multiversal Community: hearing a pattern of voices in the global wilderness*, 2012).

As noted above, the ambiguity of "bull" in the Zen phases is succinctly indicative of the self-referential process of engaging with an emergent pattern of abstraction of greater subtlety -- both in terms of its intractable dynamic and its deprecation as a delusion or conceit from any more conventional perspective.

Recursive embedding? The current deployment of resources with respect to the go board game offers a further irony in relation to the above argument. Go is played on a 19x19 board, apparently offering far greater complexity than the 3x3 magic square with respect to which the Zen distinctions were made. However the strategic challenges of the game may well be determined in a 3x3 context within the board -- as evidenced by the Knight's move of chess (indicated above) and notions of *shape in go*.

The question to be asked is how exploration of the 19x19 patterns might offer greater insight into the strategic challenges of governance in this period -- beyond the simplistic binary aspirations to hegemony and triumphalism (*Sustainability through Magically Dancing Patterns: 8x8, 9x9, 19x19 -- I Ching, Tao Te Ching / T'ai Hsüan Ching, Wéiqi (Go)*, 2008).

Rather than the current focus on the *Turing Test* in relation to artificial intelligence, is the need for some form of "Tesla Test" to distinguish forms of deep learning of psychosocial significance transcending duality?

There is however the ironic possibility that humans might themselves be unable to "re-cognize" any such creative paradigm shift (*Engaging with Insight of a Higher Order*, 2014; *Eliciting a Universe of Meaning -- within a global information society of fragmenting knowledge and relationships*, 2013). The point is provocatively highlighted by the manner in which cognitive "levels" of pattern recognition are associated to some degree with age -- in a global society characterized by variously increasing proportions of the young and the old. What is AI to do when the data at its disposal embodies the "wisdom of the ages" -- at the subtlest levels of abstraction -- but must respond to the binary preferences of the young? Is deceptive *dumbing down* then a necessity -- as traditionally embodied in riddles? Is that how the Zen of facticity is to "re-cognized"?

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