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Tao of Engagement -- Weaponised Interactions and Beyond

Fibonacci's magic carpet of games to be played for sustainable global governance

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[Introduction](#)

[Levels of interaction](#)

[Encoding interactions](#)

[Construction of Fibonacci spiral as providing an open-ended integrative framework](#)

[Experimental attribution of binary codes to Fibonacci pattern](#)

[Experimental attribution of binary codes to Fibonacci pattern: commentary](#)

[Succession of dynamic "game-playing arenas"](#)

[Conclusion](#)

[References](#)

Produced in celebration of the United Nations [International Year for the Rapprochement of Cultures](#) (2010) and the ever increasing development, manufacture and sale of arms by Permanent Members of the UN Security Council following the UN [Year of Dialogue Among Civilizations](#) (2001)

Introduction

This is an exploration of the possibility of providing a common framework for the huge global investment in weaponry -- and the binary logic associated with its use -- in relation to a variety of other more complex games and non-weaponised modes of interaction. The specific focus is on interrelating the associated "Western" and "Eastern" patterns of interaction and engagement with various existential challenges of "otherness" -- with or without metaphorical implications, whether manifesting as games or not. This emphasis follows from the case made in an earlier exploration (*Enhancing the Quality of Knowing through Integration of East-West metaphors*, 2000).

The relevance here of "Eastern" patterns of thought follows from earlier explorations of binary coding patterns of significance central to classical Chinese texts and games (as mentioned below). A central ordering principle used in what follows is that of the Fibonacci spiral construction, whose strategic relevance was highlighted in a recent paper (*Adaptive Hypercycle of Sustainable Psychosocial Self-organization: designing a mapping of a Chinese metaphorical pattern language*, 2010). This emphasized the importance and constraints of design in rendering the significance of complex patterns both memorable and credible to those expected to act with their guidance. In highlighting the merit of the classical Chinese insights, the point was made that, in contrast to the primary emphasis on formalism in the "Western" approach to patterns, a specific effort is made within that culture to associate subtle meaning to the features articulated by such formal patterns. It is precisely such meaning that may enable a wider insight into such patterns and the possibility of their use in relation to decision-making.

Game dynamics are fundamental to this exploration because of their importance both to strategic thinking and to recreation, enabling in both cases a degree of engagement with patterns that are beyond immediate comprehension and formalization -- therefore introducing degrees of uncertainty both as challenge and playful entertainment. A related concern is accepting the complementarity between logical rigour and stories capable of creatively engaging the imagination, as previously argued (*Playfully Changing the Prevailing Climate of Opinion: Climate change as focal metaphor of effective global governance*, 2005; *Relevance of Mythopoeic Insights to Global Challenges*, 2009). The question raised here is whether it is possible to present a framework/story that encompasses the variety of games and strategic approaches -- recognizing the bloody central focus of the military-industrial complex on weaponised interactions.

The argument here is that governance, and the strategic challenge of any integrative approach, is essentially a design challenge -- variously taking into consideration geometric constraints and possibilities, mnemotechnical issues, and the aesthetics conducive to psychoactive engagement, credibility and communication. Of specific importance is the use of design to enable and enhance comprehension of greater degrees of complexity and subtlety -- embodying and interrelating the greatest diversity of cultural associations. The prevailing fragmented approach, reinforced by the variety of disciplines and belief systems, has been widely recognized as undermining any coherent, integrative approach. In a political world governed by image, rather than rationality -- and in the absence of

any inspiring global epic -- the challenge may be fruitfully considered as one of portraying a memorable, succinct narrative respectful, to the extent possible, of formal considerations. The design argument is further developed in a subsequent paper (*Designing Global Self-governance for the Future: patterns of dynamic integration of the netherworld*, 2010).

Levels of interaction

Non-dual interactions: As is implied by the interactions which follow, the nature of non-dual "interaction" is necessarily elusive and obscure, if not simply of the nature of a mystery. Non-duality (*Advaita*) is a theme of study and discussion with an extensive literature, assembled by Jerry Katz (*Nonduality.com: The Varieties of Nondual Expression*). It is also the theme for an interactive discussion [forum](#). However it would be a mistake to affirm that the nature of that interaction is itself non-dual. Points of relevance are made in discussion of [apophasis](#) or "unsaying" as indicated previously (*Being What You Want: problematic kataphatic identity vs. potential of apophatic identity?* 2008).

Binary interaction: As a dynamic driver, and a fundamental dynamic, this form of interaction has been the initial motivation for this exploration -- stimulated by further indications of the enthusiastic commitment to the development of ever more extraordinary weaponry (*Future Weapons, Discovery Channel*). Binary interaction is evident in the following characteristic forms, tentatively clustered:

- **"Binary logic":** The fundamental importance of [binary logic](#) (or principle of bivalence) has been highlighted in recent years by the guiding principle of post-9/11 US foreign policy, namely *You're either with us, or against us* as previously discussed (*Us and Them: Relating to Challenging Others*, 2009).
- **"Polarities":** As indicated with respect to polarity dynamics in the previous paper (*Adaptive Hypercycle of Sustainable Psychosocial Self-organization: designing a mapping of a Chinese metaphorical pattern language*, 2010), these constitute a core challenge of governance as currently conceived, being variously played out and associated with:
 - **attitude**
 - **hope vs despair:** with every "positive" artifice offered to increase hope and avoid dealing with despair and "negativity" -- exemplified by the syndrome of the glass "half full vs half empty" (*Credibility Crunch engendered by Hope-mongering: "credit crunch" focus as symptom of a dangerous mindset*, 2008)
 - **positive vs negative:** as evident in the unquestioning quest for anything "positive" (Diana Whitney, Amanda Trosten-Bloom and David Cooperrider, *The Power of Appreciative Inquiry: a practical guide to positive change*, 2010), neglecting the learnings from critical thinking (Barbara Ehrenreich, *Bright-sided: How the Relentless Promotion of Positive Thinking Has Undermined America*, 2009; *Being Positive and Avoiding Negativity: Management challenge of positive vs negative*, 2005)
 - **doing vs not-doing:** as evident in perceptions and accusations regarding modes of (in)action and their relevance at this time, notably in preferences on one hand for anything concrete whether or not its appropriateness may be usefully questioned, and on the other for abstractions irrespective of their connection with practical reality
 - **belief / conviction**
 - **assertions vs contradictions** (or denials): with the elevation of assertions to the level of being unquestionable and the marginalization of those who note contradictions
 - **belief vs unbelief:** most obviously evident in the case of religion, but recently and dramatically echoed in the framing of climate change
 - **right vs wrong:** despite the gray areas and compromises so typical of practical action under conditions of uncertainty. In metaphoric terms, Edward de Bono has contrasted this mode of thinking with that between "rock" and "water" logic (*I am Right, You are Wrong*. 1991)
 - **strategy**
 - **opening vs closing:** as articulated by [Orrin Klapp](#) (*Opening and closing: strategies of information adaptation in society*, 1978)
 - **winning vs losing:** as evident in the preferences for the outcome of most competitive sport and analogues to it. This is to be contrasted both with efforts to uphold the "spirit of the game" -- win or lose -- and for the capacity to engage in "infinite games" rather than "finite games", as argued by [James P. Carse](#) (*Finite and Infinite Games: a vision of life as play and possibility*, 1994)
 - **solutions vs problems:** with the pursuit of solutions and the avoidance (even the denial) of problems (*Lipoproblems: developing a strategy omitting a key problem*, 2009)
 - **agreement vs disagreement:** with the focus on the desirability of consensus at all costs (as so evident in the case of climate change) with the necessary demonisation of unbelievers and deniers -- and the failure to recognize the need or the possibility of "polysensus" (as discussed [previously](#)), or the need to build creatively on disagreement (*Using Disagreements for Superordinate Frame Configuration*, 1992)
 - **knowledge**
 - **recognized vs unrecognized:** as evident in the recognition accorded to some initiatives, or sought for them, in contrast with the deliberate marginalization of "alternatives" which may prove viable (for some).
 - **certainty vs uncertainty:** notably of concern in risk management (*Unknown Undoing: challenge of incomprehensibility of systemic neglect*, 2008)
 - **defined vs undefined:** as evident in the case made by the poet John Keats for the quality of [negative capability](#).
 - **question vs answer:** neglecting the possibility of reframing such a distinction (*Am I Question or Answer?* 2006; *Sustaining the Quest for Sustainable Answers*, 2003; *Questionable Answers*, 1995)

A more systematic approach to the range of some 220 such polarities was the focus of the [value polarities](#) section of the [Human Values Project](#).

- **"Weaponised interactions"**: Although the variants above are essentially intangible, they provide a legitimating framework, sustaining a mindset, for what may be usefully described as "weaponised interactions", "weaponised violence" or "weaponised engagement". This is most evident in the acquisition and use of weapons by individuals, whether as part of tradition, framed as a constitutional right, or simply acquired to enable what is assumed to be more effective interaction. A fundamental distinction is typically made, often spuriously, between their acquisition for attack or defence. Of major significance is the level of investment by nations and smaller collectivities in the acquisition of weapons to ensure that their interactions and engagements are adequately weaponised.

Many forms of competitive sport are readily associated with this category, possibly deliberately as an appropriate training for "weaponised violence". However the "weapons" are most typically balls (struck in various ways) and the "violence" is primarily to status or standing in some social ranking. The weaponisation of interaction is now notably evident in virtual engagement with others in interactive gaming -- again possibly developed and used in training for non-virtual interactions, especially since the use of non-violent weaponry is now enhanced by virtual interfaces through which they are guided (drones, etc).

Military metaphors are frequently associated with what might be upheld as "non-violent" modes of interaction. The mindset sustaining weaponised interaction is widely evident in the use of military metaphors, as previously discussed ([Enhancing Sustainable Development Strategies through Avoidance of Military Metaphors](#), 1998). As in business competition, many players of competitive games commonly make use of expressions such as "slaughtering" or "killing" the opponent.

Such language is notably evident in recent language in support of the engagement between religions and the consequent foreign policies ("crusade", "jihad"). It is widely recognized by the "church militant" (*Ecclesia Militans*), and in a much-favoured Christian hymn: *Onward, Christian soldiers, Marching as to war*. Use of the phrase the "sword of truth", common in religious discourse, is also to be found beyond the religious context, notably in an epic fantasy series (*The Sword of Truth*).

A number of sources report on use various sacred books as weapons, whether as "weapons of power" or to condemn others, typically those of other faiths and most notably with respect to abortion or homosexuality. Some of these references may be found with search queries "Bible as a weapon", "Torah as a weapon" or "Koran as a weapon". for example, one comment is titled [The Bible: Our Weapon of Choice](#) (23 February 2010). As noted by John Shelby Spong ([Q&A on the Bible as a weapon of control](#), 31 October 2007):

The Bible has been used for centuries by Christians as a weapon of control. To read it literally is to believe in a three-tiered universe, to condone slavery, to treat women as inferior creatures, to believe that sickness is caused by God's punishment and that mental disease and epilepsy are caused by demonic possession.

Especially interesting is metaphorical weaponisation of the interaction between the sexes -- of the "war between the sexes". In addition to the widely acknowledged recognition of the penis as a weapon with which violence may be done, reference is widely made to the "weapons" used by women in attracting men -- most notably into the temptation against which religions tend to warn. The associated dangers of such "otherness" have been reviewed by [George Lakoff](#) (*Women, Fire, and Dangerous Things: what categories reveal about the mind*, 1987). The degree to which this otherness is taken seriously is evident in the obsession of the President of France, a permanent member of the UN Security Council, with prohibition of the burkha as a priority political issue ([Burkha as Metaphorical Mirror for Imperious Culture?](#) 2009; [Facism as Superficial Intercultural Extremism: burkha, toplessness, sunglasses, beards, and flu masks](#), 2009).

Many of these forms of binary interaction are especially obvious in political discourse, most notably in confrontational parliamentary debate between the ruling party and its opponents. Each endeavours to label the other with a pejorative polarizing term in order thereby to weaken the other's position. Despite occasional efforts at "bipartisanship", very little is done to address this dynamic or the possible value of transcending it.

The above presentation of various disparate manifestations of duality fails to highlight the possibility that they imply a common general understanding of an unusual degree of subtlety. The argument in what follows points to the manner in which such an understanding is central to the Chinese classical approach to these matters. This raises the question of the nature of a dualistic framework of interactions and the manner in which any otherness then emerges as problematic -- especially as a driver in the dynamics of social relations.

Ternary interaction: This is most evident in the so-called "eternal triangle" of agonizing inter-personal relationships. It is useful to note that the "violence" may well be indirect and non-physical -- possibly even assumed to be non-deliberate by the perpetrator, and possibly not even recognized. In a sense the violence is effectively virtualized although held to be equally devastating by those experiencing it.

Quaternary interaction: This is perhaps best recognized in the following quite distinct forms:

- **games involving "doubles"**: whether card games requiring a "partner" (bridge, etc) or various sports (tennis, etc). This implies a degree of cooperation by the partners in response to their opponents, echoing the pattern of binary interaction -- but rendering explicit collaborative and competitive dimensions conflated in the binary condition.

- **military interventions:** where it is appropriate to distinguish:
 - victorious military rationale
 - defeated population (and military)
 - incipient resistance
 - questioning (regretful) dominance
- **cognitive / personality types:** as exemplified by the four-fold modes articulated by:
 - **Carl Jung:** as four main functions of consciousness:
 - Two perceiving functions: **Sensation** and **Intuition**
 - Two judging functions: **Thinking** and **Feeling**
 These were developed by Jung into eight psychological types (Extraverted sensation, Introverted sensation, Extraverted intuition, Introverted intuition, Extraverted thinking, Introverted thinking, Extraverted feeling, Introverted feeling) subsequently developed into the 16-fold **Myers-Briggs Type Indicator**.
 - **Ken Wilber** as the **AQAL system** of quadrants and levels:
 - Upper-Left (UL) quadrant: "I" Interior Individual Intentional e.g. Freud
 - Upper-Right (UR) quadrant: "It" Exterior Individual Behavioral e.g. Skinner
 - Lower-Left (LL) quadrant: "We" Interior Collective Cultural e.g. Gadamer
 - Lower-Right (LR) quadrant: "Its" Exterior Collective Social e.g. Marx
- **coaction cardioid:** as articulated by **Edward Haskell** (*Full Circle: The Moral Force of Unified Science*, 1972) and developed by Timothy Wilken (*UnCommon Science*, 2002), as noted in Figs. 4 and 5 below.
- **logical quadrilemma:** the tetralemmic model which has been developed in oriental logic stipulates the existence of four lemmas, as articulated by Kinhide Mushakoji (*Global Issues and Interparadigmatic Dialogue; essays on multipolar politics*, 1988)
 - (a) affirmation (A)
 - (b) negation (Not-A)
 - (c) non-affirmation and non-negation (A and Not-A)
 - (d) affirmation and negation (Neither A nor Not-A)
 Here (a) and (b) both belong to formal logic, whereas (c) and (d) are unacceptable to it, although they are acceptable in theoretical physics. "Only an acceptance of the third and fourth lemmas can allow a full representation of the contemporary world problematique in its totality since contemporary world reality is full of cases where a mere affirmation or negation does not make sense". (p.21-22).

A more general exploration of the challenging nature of patterns of assertions, involving from 1 to 20 "levels", has been made separately (*Distinguishing Levels of Declarations of Principles*, 1980). The manner in which sets are distinguished was the subject of an earlier exploration (*Representation, Comprehension and Communication of Sets: the Role of Number*, 1978). This was followed by identification of a variety of sets in these terms (*Patterns of N-foldness: Comparison of integrated multi-set concept schemes as forms of presentation*, 1980; *Examples of Integrated, Multi-set Concept Schemes*, 1984).

Encoding interactions

The study central to understanding of the formal process of making distinctions is that of **G. Spencer-Brown** (*Laws of Form*, 1969) on which commentaries continue to be made with respect to its function as a calculus of indications. The emphasis in what follows is however as much on the **dynamic process** of making meaningful distinctions as on the **static formal description** of the pattern of descriptions made, notably as previously discussed (*From Statics to Dynamics in Sustainable Community: navigating through chaos by playing on polarities as attitude correctors*, 1998).

Of interest is the possibility of encoding the different forms of interaction systematically, using the classical Chinese binary system, as suggested in the earlier paper (*Adaptive Hypercycle of Sustainable Psychosocial Self-organization: designing a mapping of a Chinese metaphorical pattern language*, 2010). However, the emphasis here is less on the formal encoding and more on the manner in which this is comprehended through various interactions -- or remains open to comprehension in interactions whose patterns are experienced in fragmentary modes rather than fully comprehended.

The approach can be clarified in the case of the polarity at the global level so remarkably demonstrated by the climate change debate -- radically distinguishing believers from deniers (or unbelievers). Encoding such a polarity, as is done with the Chinese *yin* and *yang* symbols, enables it to be reframed in the richer context of the set of hexagrams mapping the transformative conditions of change. The design of the hexagrams, as a coding system, offers an explicit means of representing different combination of such polarities. The coding offered by the hexagrams -- with their unbroken and broken lines (as with the black and white keys on a piano) -- allows the metaphor to be explored further. The *BaGua* structure enables eight fundamental conditions to be appropriately encoded, as separately discussed (*Discovering richer patterns of comprehension to reframe polarization*, 1998).

The approach can be given specific meaning by focusing on the binary nature of "weaponised" interactions in which society invests so heavily, especially in terms of military engagement, competitive sporting surrogates, and their representation in media coverage, fictional drama, or interactive gaming:

- **yang symbol (unbroken line):** this can be appropriately used to represent weapons ranging from a spear, through quarterstaff and sword, to the various cylindrical devices enabling the launching of missiles (bullets, mortars, rockets, etc). It can further

represent any rigidly upright (military) posture in the quest for dominance or having triumphantly achieved it. Metaphorically this is also indicative of the righteous, unbroken spirit and logic sustaining such an initiative.





- **yin symbol (broken line):** this can be appropriately used to represent those to be "broken" by any weaponised onslaught and the state to which they are then brought. It may also represent those inadequately equipped to resist such onslaught -- effectively "pre-broken", possibly an easy target (as in the Gulf War "turkey shoot"). The appearance of such a posture may well of course be a strategic ploy inviting weaponised intervention into a trap -- as with Napoleon's invasion of Russia. Metaphorically this is also indicative of the cowed and broken spirit of those defeated by any weaponised interaction.

As a further example, using one of the quaternary cases noted above:

- **double yang (two unbroken lines):** victorious military rationale, with its unquestioning sense of self-righteousness. This is typically to be seen in US foreign policy and in Israeli attitudes to Palestinians. It is evident in the self-righteousness of the advantaged in any society.
- **double yin (two broken lines):** defeated population (and military): This is notably to be seen in the case of dominated or occupied peoples, whether a consequence of US foreign policy, of Israeli control of Palestinian life, or of indigenous peoples restricted to reservations. It is evident in the hopelessness experienced by the underprivileged and impoverished.
- **yin on yang:** suggestive of incipient resistance amongst those held to have been successfully dominated and controlled. Again this is evident in resistance to the "full spectrum global dominance" sought by US foreign policy or in resistance by Palestinians to Israeli dominance. In both cases such resistance is readily framed as "terrorism". A speculative articulation of this problematic condition has been offered (*Massachusetts makes disobedience vaccine mandatory*, *Future News*, 25 March 2010).
- **yang on yin:** questioning (regretful) dominance within dominating cultures, perceived as a threat (even a subversive threat) to the coherence of that dominance. This is the posture of critics and those offended by the extremes of dominance. Such an attitude may be criminalized, as in the handling of human rights activists within China, notably in relation to Tibet.

It is appropriate to note that the quaternary pattern reflects a degree of virtualization from weaponised interaction to an attitudinal posture from which binary weaponised interaction may be engendered.

In using the Chinese encoding of binary systems, it is appropriate to note the extent to which the two symbols used (and given their traditional connotations) might be considered a highly generalized schematic indication of the [gender symbols](#) conventionally used in biology. This is especially the case if the circle in both those symbols is taken as indicative of their respective relationship to some form of nonduality.

	Male	Female
Chinese binary coding		
Biology		

As indicated in the *Wikipedia* entry, numerous variations of gender symbols have been developed. The Western use of the symbols has been reviewed by William T. Stearn (*The Origin of the Male and Female Symbols of Biology*, *Taxon*, 11, 4, 1962, pp. 109-113). Stearn notes that the origin of the symbols used to distinguish male or female organ is or individuals has a long complex history touching upon mythology, astrology, alchemy, palaeography, pharmacy, chemistry, heraldry, and even the schooling and psychology of the naturalist Carl Linnaeus. In contrast to the Chinese coding system, the symbols of biology are not integrated into any coding system, as might have been considered desirable in relation to genetics. The symbols have furthermore proven to be of little relevance to depicting the complexity of [transgender variety](#) -- tragically highlighted by the recent case of [Caster Semenya](#) whose gender (male or female) required some three months of world expertise to determine. The Chinese system offers a wider range of possibilities.

The continuing idealisation of heterosexual relations and their culmination in marriage "until death do us part" -- despite rapidly rising divorce rates -- suggests that a richer understanding of relationship possibilities could be usefully explored. This is especially justified by the manner in which the degradation of idealised relations is experienced as taking the form of their politicization -- as "[war by other means](#)" -- and their metaphorical weaponisation.

Of relevance to the framing of weaponised interactions, the male symbol used in biology is of course portrayed by an arrow whilst the female symbol emphasizes the lack thereof -- (perhaps even suggestive of infibulation). Such a framing is consistent with use of expressions such as "straight arrow" and "[broken arrow](#)" -- and their connotations notably in the military. The arrow has long been associated with the instrumentalization of domination, with the disarmament of others as its goal -- most recently expressed through the US foreign policy goal of "[full spectrum global dominance](#)", suitably backed by missiles as a modern upgrade of "arrow technology".

Especially significant is the associated commitment to "breaking the spirit" of any challenging opposition (expressed positively as "taming") -- whether in wild animals, women, competitors or, most notably, political opponents. The desired outcome of winning any "battle for hearts and minds" can be usefully explored from this perspective (Alexander T. J. Lennon, *The Battle for Hearts and Minds: using soft power to undermine terrorist networks*, 2003). It is however questionable whether any "globe" can be effectively dominated by the geometry of the "arrow" alone (*Metaphorical Geometry in Quest of Globality*, 2009). It is also questionable whether the resultant "tame" dynamics characterizes necessary biodiversity and what is acclaimed as the spirit of humanity (Darrell A. Posey, *Cultural and Spiritual Values of Biodiversity: a complementary contribution to Global Biodiversity Assessment*, 1999).

Of particular interest, in a period in which asymmetrical warfare is expected to develop in multiple arenas, is the contrasting nature of the metaphorical "weapons" associated with male and female. The original use of the biological symbols for the deities Mars and Venus was

associated with an understanding of their "weapons" ensuring they were on an equal footing. Whereas analogues to sword and missile have characterized symmetrical warfare, asymmetrical warfare has seen the development of other forms, most notably the "improvised explosive devices". Until recently military traditions would have distinguished between the "honourable" weapons used by men in face-to-face combat and the weapons of cowards unwilling to face their enemy. The use of drones, biochemical weapons, **thermobaric weapons** and IEDs has changed such perceptions.

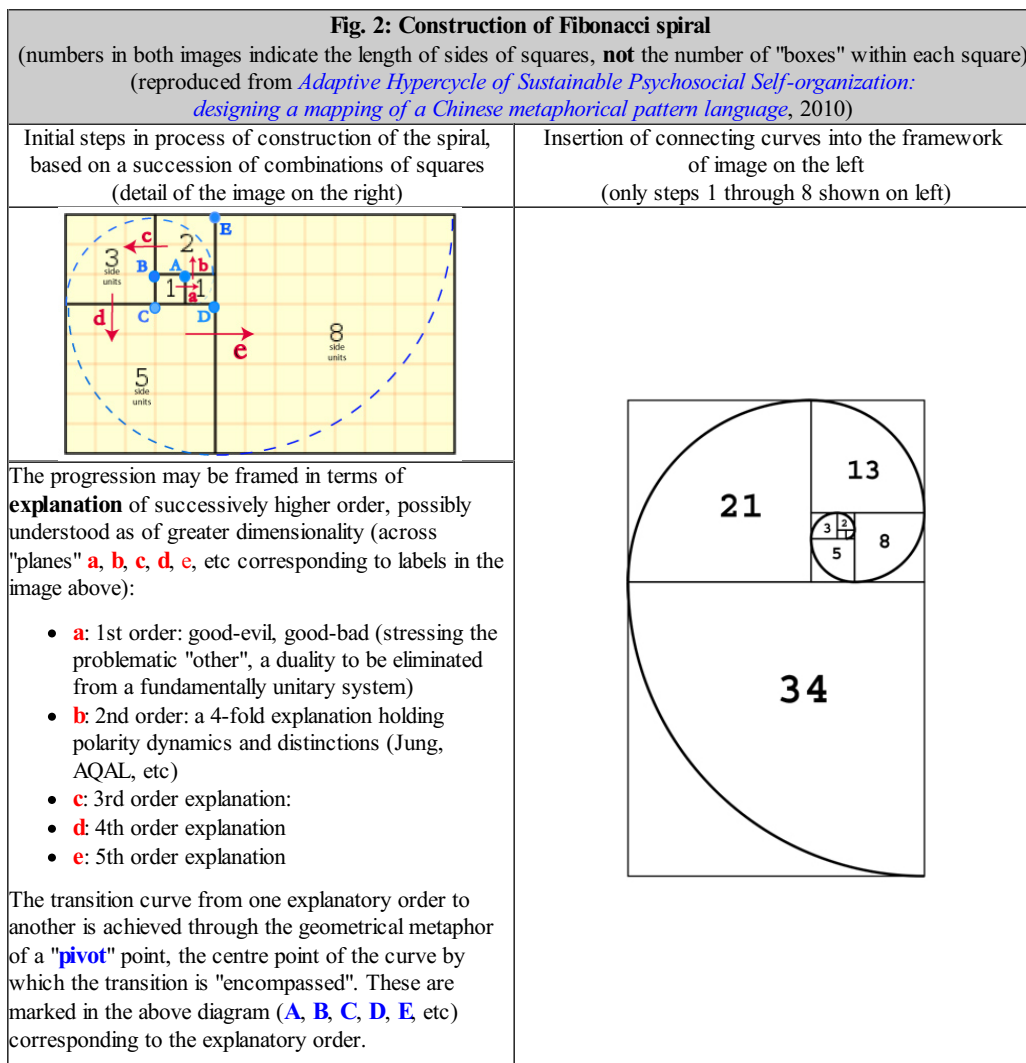
The nourishment of mindsets by this shift reinforces the significance of alternation (discussed separately), exemplified by aspirations to "union" through sex. This is reflected in the alternation in any encoding of such polarities, as in easy assumptions about "unbroken" and "broken" lines in the *yang-yin* coding system. The concern in the male mindset with any female agenda to "domesticate" them, or with metaphorical castration by females (*vagina dentata*, **castration anxiety**, and "ball crushing") is indicative of an alternative form of weaponisation -- appropriately complementary to infibulation..

Curiously, notably from a biological perspective, the "arrow" has nowhere to go to reproduce itself, celebrate its value, or ensure continuation of its pattern -- other than by "penetration" of that which is dominated. This is a process into which it is effectively locked. It is perhaps the Chinese symbol which emphasizes this singular directional opportunity -- but in a context of richer potential.

More intriguing in the interplay of symbols highlighted by the male-female distinction is the sense in which separately and together they exemplify a (typically vain) quest for "union", and a context in which that is nurtured, paradoxically articulated in alchemical metaphors regarding the creation of a container appropriate to a universal solvent -- the **alkahest** -- capable of destroying any container. The challenge is common to Eastern and Western traditions. This is esoteric quest is admirably illustrated by the technological challenge of containing plasma in order to achieve sustainable nuclear fusion -- which lends itself to metaphorical exploration relevant to this argument (*Enactivating a Cognitive Fusion Reactor: Imaginal Transformation of Energy Resourcing (ITER-8)*, 2006).

Construction of Fibonacci spiral as providing an open-ended integrative framework

The standard means of constructing an approximation to the **Fibonacci spiral** is illustrated by the following diagram

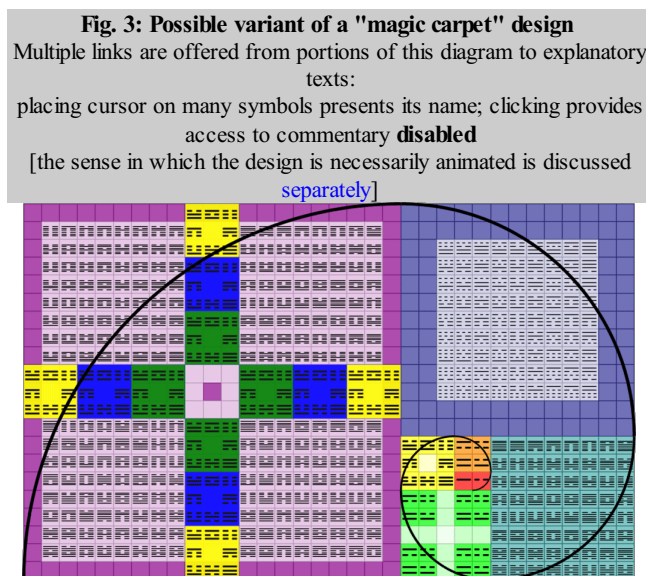


Using this framework, the following diagram may be used to hold common patterns of interaction, notably evident in games. Examples include: 2x2 games (tennis and games requiring "doubles"), in 8x8 "games" (as with chess, or the *I Ching*), or 19x19 games (as with the Chinese game of *go*). Central to this diagram are binary competitive "games", notably the virtual games ("shoot-em-ups") which are weaponised virtually or by the military. The various rectangular spaces within the diagram may then be understood as decision arenas of varying degrees of complexity, whether explicit or implicit. The traditional Chinese coding offers a means of distinguishing the conditions

emergent within each such space.

The spiral effectively "constructed", or rendered comprehensible, by such spaces is an indication of a form of emergence or transcendence -- even suggesting a "pathway" as previously discussed ***. This explicitly honours subtle conditions and dynamics that may be less readily comprehensible, or capable of being rendered, at earlier stages in the spiral. Specifically the larger spaces give expression to a larger set of parameters and a more complex dynamic. It is however striking how the implicit dynamics of "simpler" games continue to be expressed in such settings.

Experimental attribution of binary codes to Fibonacci pattern



Commentary

In the above variant:

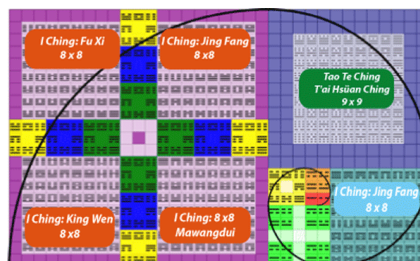
Fig. 3a: Explanation of some arenas in diagram above

lower-right arena: the *Jing Fang* pattern (J.M. Berger, *Eight Palaces Circular Arrangement*, 2006)

upper-right arena: arrangement in the light of the *Tao Te Ching* and *T'ai Hsüan Ching* (as presented in *Strategic Patterns in terms of Knowing, Feeling and Action*, 2008)

left-arena as previously presented (*Strategic Patterns in terms of Knowing, Feeling and Action*, 2008), following Steve Marshall (*Yijing Hexagram Sequences*, 2003)

- upper-left: the *Fu Xi* (Shao Yung) pattern (renowned for its influence on Leibniz)
- upper-right: the *Jing Fang* pattern (J.M. Berger, *Eight Palaces Circular Arrangement*, 2006)
- lower-left: the *King Wen* pattern
- lower-right: *Mawangdui* pattern (Edward L Shaughnessy, *I Ching -- Mawangdui texts*, 1997)



Succession of dynamic "game-playing arenas"

For convenience, and as an example of the design challenge (see *Designing Global Self-governance for the Future*, 2010), the succession of spaces around the spiral in the above diagram has been tentatively colour coded following the conventional spectrum colours (red, orange, yellow, green, blue, indigo, violet). The sequence of *Fibonacci numbers*, with which the spiral is associated, includes: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181....

The zero in the sequence may be considered the point of origin of the spiral. The subsequent numbers are associated with the squares in the diagram, starting with the initial two squares, each with a side of one unit. The pattern is notably described in *Tao Te Ching* (chapter 42), variously translated as:

- From the Tao, the One is created; From the One, Two; From the Two, Three; From the Three, Ten Thousand Things.
- Tao becomes one, one becomes two, two becomes three and three becomes ten thousand.
- Tao engenders One, One engenders Two, Two engenders Three, Three engenders the ten thousand things. ***

Originating polarity: The interpretation in this argument is that it is the initial polarity that is at the heart of a dynamic system to be variously understood as setting the beat and sustaining the engendered pattern. In one traditional Chinese interpretation the significance is associated with the "Yellow Bell" and its function in ensuring that the pattern of governance was "in tune" throughout the land -- effectively setting the tone. A theoretical system of 12 pitches per octave was generated by *Lu-lu* pitch pipes (as from the period of

Pythagoras) and considered fundamental to the harmony of the state. The first frequency of the system was called Huangzhong ('Yellow Bell') which served as the primal generator of the whole series of twelve. The first of each pair was considered *yang* or 'generating,' the second as *yin* or 'generated'.

The [symbolism of the heart](#) has been of importance in many cultures, although more often in a static rather than as dynamically beating. It was especially important in [Aztec human sacrifice](#) as a consequence of a belief that the heart (*tona*) was both the seat of the individual and a fragment of the Sun's heat (*istli*). It is otherwise (or perhaps correspondingly) recognized in the importance attached by Christianity to the [Sacred Heart of Jesus](#) (often depicted in Christian art as bleeding) and the [Immaculate Heart of Mary](#) (associated with the [divine centre of the universe](#)). The contemporary relevance of such beliefs to faith-based governance should not be neglected given the manner in which it is a mobilizing force of the "church militant" and central to the faith supporting various military conflicts -- as it was for the Aztec empire. The cognitive challenge is how to comprehend the dynamics of alternation between categories only too readily (mis)understood in static terms (*Embodying Values Dynamically through Alternation: integrating sets of polarized static values through indicative metaphor*, 2008).

It is perhaps the pumping action of the heart that is of most relevance to understanding the implication of the polarity for the other feature of the spiral pattern. This alternation might be understood as central to a work cycle as discussed previously (*Psychosocial Work Cycle: beyond the plane of Möbius*, 2007). The "blood" that is "pumped" is however of a cognitive nature, whether to be described as semantic or memetic, ensuring the circulation of memes. The succession of spaces might then be understood as "memetic organs" with those most "distant" down the spiral being effectively "memetic capillaries". Beyond the polarity, the 2x2 pattern then offers an appropriate mnemonic echo of the 4 ventricles and valves of the heart.

The question within this metaphor is the nature and location of the "oxygenation" of such memetic blood. The radical contrast between "blood" and the conventions of abstract formalism recalls the challenge to "bloodless categories" felt to be essentially empty of meaning - the "*unearthly ballets of bloodless categories*" challenged by [Francis Herbert Bradley](#). A contrast was discussed with respect to *Dancing -- between "bloodless categories"* (in *Conditions of Objective, Subjective and Embodied Cognition: mnemonic systems for memetic coding of complexity*, 2007). The dynamic between these perspectives may be appropriately framed as the eternal battle between the "headless hearts" and the "heartless heads". It is this "battle" that can be fruitfully reframed. The problem of the "weaponisation of the heart" is discussed further in the second part of this paper (*Weaponisation of the Heart: from pomegranate to hand grenade*, 2010). It is ironic that the heart, by means of a stroke, is capable of "striking back" and this may be a future consequence of collective heartlessness (*Spontaneous Initiation of Armageddon -- a heartfelt response to systemic negligence*, 2004).

Insights into this process of "oxgenation" would seem to be associated with the Taoist meditational classic, *The Secret of the Golden Flower* (*Tai Yi Jin Hua Zong Zhi*) ([C. G. Jung](#) and [Richard Wilhelm](#), *The Secret of the Golden Flower: Chinese Book of Life*, 1972; [Patrick Harpur](#) and [Tanya Graham](#), *The Philosophers' Secret Fire: a history of the imagination*, 2007). This offers an understanding of the sense of an "inner fire" necessary to transcend mundane challenges -- a "fire" notably cultivated in some Taoist alchemical practices. The Eastern Orthodox meditational practice of [Hesychasm](#) has been upheld as bearing some formal resemblance to such Eastern mystical prayer or meditation, although this similarity is rejected by Orthodox practitioners of Hesychasm.

Of relevance to the argument here is the cognitive challenge implied by such meditational practices that engage with the kinds of paradox made evident by the *koan* in Zen. The geometry traced out by the spiral in the above diagram is then to be understood as in some way looping back on itself -- as suggested by the title of the most recent exploration of [Douglas Hofstadter](#) (*I Am a Strange Loop*, 2007) following on from his well-titled *Gödel, Escher, Bach: an Eternal Golden Braid* (1979). The cognitive challenge can for example be explored through the topology of the [Klein bottle](#) (*Intercourse with Globality through Enacting a Klein bottle*, 2009). The strangeness of Hofstadter's loop, combined with a Fibonacci spiral "looping back on itself", might then be understood in terms of an [Ouroboros](#) of higher dimensionality.

Ternary contrast: With the emphasis on the binary origins of the pattern, seemingly missing, is recognition of a ternary pattern. Binary logic is so fundamental to both discourse, computer operations and electronic communications that the potential importance of a ternary pattern is effectively ignored. A remarkable exception is the triadic taxonomy explored by [Paris Arnopoulos](#) (*Sociophysics: cosmos and chaos in nature and culture*, 2005). A triadic pattern was also developed in the period 1970-72 in support of the strategic initiatives of the [Institute of Cultural Affairs](#) by [Jon](#) and [Maureen Jenkins](#) (*The Social Process Triangles*, 2001), as separately described (*Collective strategy-making: designing a strategic array*, 1994).

The *Wikipedia* entry on [ternary numeral systems](#) notes:

- a base-three system is used in Islam to keep track of counting *Tasbih* to 99 or to 100 on a single [hand](#) for counting prayers (as alternative for the *Misbaha*). The mnemonic benefit is that counting within this system then reduces distraction since the counter needs only to divide *Tasbihs* into groups of three.
- use of ternary numbers conveniently to convey self-similar structures like a [Sierpinski Triangle](#) or a [Cantor set](#). The ternary representation is useful for defining the [Cantor Set](#) and related point sets, because of the way the Cantor set is constructed.
- ternary as being the integer base with the highest [radix economy](#), followed closely by [binary](#) and [quaternary](#). It has been used for some computing systems because of this efficiency. Rarely mentioned is the existence of [ternary computers](#) (notably defining a tryte to be 6 trits, analogous to the binary byte).
- use in the representation of 3 option *trees*, such as phone menu systems, which allow a simple path to any branch.

Of further relevance to the pattern of argument here is the role of [ternary valued logic](#). Such a three-valued or trivalent logic is one in which there are three [truth values](#) indicating *true*, *false* and some third value. This is contrasted with the more common [bivalent](#) logics (mentioned above) which provide only for *true* and *false*. or *guilty* and *not-guilty*. An exception occurs in the Scottish legal system providing additionally for *not-proven* (a distinction which would seem to be of considerable current significance with respect to many detained in Guantanamo Bay). Conceptual form and basic ideas were initially created by [Jan Lukasiewicz](#), [C. I. Lewis](#) and [Sulski](#). These

were then re-formulated by [Grigore Moisil](#) in an axiomatic algebraic form, and also extended to n -valued logics. In the argument here, the question is whether the pattern in the diagram above holds a meaningful relationship with a range of [multi-valued logic](#) systems.

A three-fold pattern is of course very common in many symbol systems and religions, perhaps most notably in the Christian Trinity. The challenge of their comprehension may then be elevated to the level of a mystery -- as with the experiential challenge of the "eternal triangle".

Quaternary: There is a considerable body of literature on 4-fold systems from a symbolic and psychological perspective, notably following the more recent focus of [Carl Jung](#) and his followers in distinguishing sensation, thinking, feeling and intuition as fundamental to psychological typology. This focus has however long been embodied in the Earth-Air-Fire-Water pattern of various systems and cultures. It has most recently been highlighted in the [AQAL system](#) developed by Ken Wilber. Many "models" promoted by strategic management consultants make use of a quaternary pattern.

The dynamics of the 4-fold pattern are played out in many games, perhaps most notably bridge. However the above diagram highlights how this pattern is echoed in more complex patterns. Of particular relevance are the cognitive implications of the aesthetic appreciation of the interplay within "[quartets](#)":

- [String quartet](#), consisting of two violins, a viola, and a cello playing a multi-movement musical composition written in sonata form. The choice and number of instruments derives from the registers of the human voice: soprano, alto, tenor and bass.
- [Jazz quartet](#) as widely used in jazz and fusion music, typically consisting of a "horn", a chordal instrument, a bass instrument, and a drum kit.
- [Popular music](#) (pop and rock) where a standard quartet formation in pop and rock music is an ensemble consisting of two electric guitars, a bass guitar, and a drum kit.
- [Vocal quartet](#) consisting of various ensembles of four singers

The subtlety of the cognitive significance is presumably explicit to a degree in such poetic classics as the set of four poems written by [T. S. Eliot](#) ([Four Quartets](#), 1943).

Given the widely recognized absence of cooperative games, in contrast with the competitive variety, it is appropriate to cite here the board game developed by Matt Leacock ([Pandemic](#), 2008). It is based on the premise that four diseases have broken out in the world, each threatening to wipe out a region. The game accommodates 2 to 4 players, each playing one of up to five possible specialists (dispatcher, medic, scientist, researcher or operations expert). Through the combined effort of all the players, the goal is to discover all four cures before any of several game-losing conditions are reached. An extension of the game ([Pandemic: On the Brink](#)) adds several new roles, special events, and challenges. Arguably the four "diseases" might be seen as echoing the archetypal challenge to humanity of the [Four Horsemen of the Apocalypse](#).

Eight-fold (2^3) / Nine-fold (3^2): The 4-fold system is readily extended into an 8-fold system, as was done by Carl Jung in extending his 4-fold system by applying to it the distinctions of extraverted/introverted and rational/irrational ([Psychological Types](#), 1971/1976). An 8-fold system has long been fundamental in the Chinese [Ba Gua](#) system.

In the pattern developed here, the traditional Chinese configuration of 8 trigrams in the [Ba Gua](#) provides a focus for the central empty space. This may be considered a ninth condition. As a 9-fold pattern this set of conditions has been the subject of the generic analysis of [Edward Haskell](#) ([Full Circle: The Moral Force of Unified Science](#), 1972), followed by Timothy Wilken ([UnCommon Science](#), 2002).

Figure 4: Possible 8-fold Positive-Negative Hybrid Conditions

		X = "Work component"		
		Negative	Neutral	Positive
Y = "Control component"	Positive	<i>predation</i> (positive negativity)	<i>allotropy***</i> (positive neutrality)	<i>symbiosis</i> (positive positivity)
	Neutral	<i>amensalism</i> (neutral negativity)	O (neutral neutrality)	<i>commensalism</i> (neutral positivity)
	Negative	<i>synnecrosis</i> (negative negativity)	<i>allopathy</i> (negative neutrality)	<i>parasitism</i> (negative positivity)

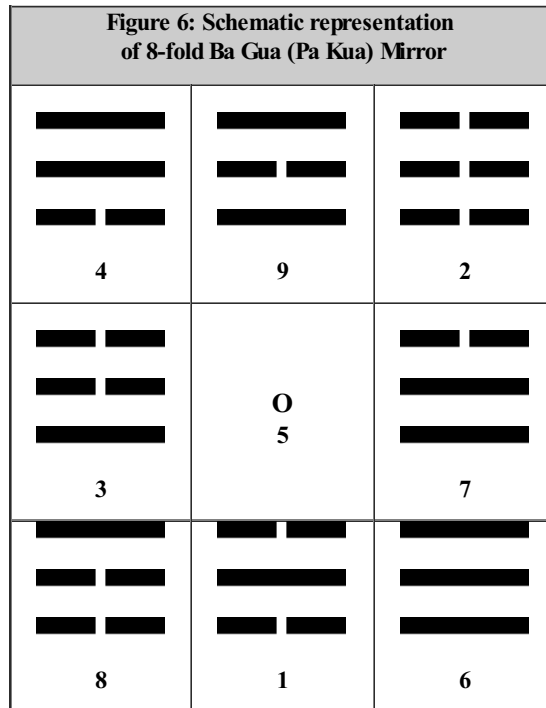
As reformulated by Wilken, Haskell's distinction between controller and controllee in any cybernetic system is expressed as follows:

Figure 5: 8-fold Pattern of Non-Neutral Relationships
(Timothy Wilken)

		X		
		Lose	Draw	Win
Y	Win	Lose,Win Net Neutrality	Draw,Win	Win,Win True Synergy
	Draw	Lose,Draw Net Adversity	Draw,Draw True Neutrality	Win,Draw Net Synergy
	Lose	Lose,Lose True Adversity	Draw,Lose	Win,Lose Net Neutrality



The relationship of these patterns to the *Ba Gua* pattern below is discussed separately (*Cardioid Attractor Fundamental to Sustainability: 8 transactional games forming the heart of sustainable relationship*, 2005)



The octagon is a symbol of significance in many cultures, both East and West. The seemingly missing ternary, mentioned above, is evident in the construction of this eight-fold pattern. Eightfold and ninefold distinctions are notably evident in practices associated with team operation and the enneagram framework ([Meredith Belbin](#), *Management Teams*, Heinemann, 1981 and the *Belbin Team Inventory*; Anthony Blake, *The Intelligent Enneagram*, 1995).

5x5 (5²) and 4x4 (4²): In the Fibonacci construction sequence a 5-fold pattern is evident. This is fundamental to the traditional Chinese *Wu Xing* pattern (Five Elements, Five Movements, Five Phases or Five Steps/Stages), a mnemonic device interrelating the traditional concepts of **Wood**, **Fire**, **Earth**, **Water**, and **Metal**.

In this exercise (in Fig. 3 above) the Chinese five-fold system is presented in terms of the 4-fold Earth-Air-Fire-Water pattern (characteristic of Western symbolism), but distinguishing Metal as the fifth. Structured in this way, it becomes possible to express the 16-fold pattern highlighted by the [Myers-Briggs Type Indicator](#). This is a further development of the Jungian system of 4-fold and 8-fold types.

8x8 (8² and 2⁵): This is most commonly recognized in the West in the 64-square chess board that has been so emblematic of the highest levels of strategic thinking and capacity -- as the "game of kings". Variants exist in other cultures, notably India and Persia from which the Western version derived. There are more than two thousand published chess variants.

The 64-fold pattern is used in the above diagram to hold the 64 interrelated hexagrams of the *I Ching* -- from which chess originated. In contrast to the naming of positions in chess, these effectively attribute distinct significance to 64 conditions of change. Traditionally the *I Ching* was considered of importance in decision-making and governance. Useful distinctions and comparisons can be made between chess as a "game" valued for its insights into strategic thinking and the insights offered by the *I Ching* in framing decisions under conditions of uncertainty. Its deprecated use as an oracle may be provocatively compared with the oracular expertise offered by futurists to modern governments in the light of their preferred "models".

The pattern is further discussed separately (*Cardioid Attractor Fundamental to Sustainability: 8 transactional games forming the heart of sustainable relationship*, 2005).

13x13 (9x9 and 3⁴): In the Fibonacci construction no conventional "games" correspond to a framework of 13x13. In this exercise, the pattern that can be most appropriately nested within that framework is the 81-fold pattern of the *Tao Te Ching* and the associated *Tai Xuan Jing* (*Tai Hsuan Ching*, "Canon of Supreme Mystery"), also known as the *The Alternative I Ching* (Derek Walters, *The Alternative I Ching*, 1987) and *The Elemental Changes* (Hsiung Yang, Michael Nylan and Xiong Yang, *The Elemental Changes: the ancient Chinese companion to the I Ching*, 1994). The latter encodes the 81 distinct conditions into 9 families of tetragrams -- groups of four lines, any of which may be unbroken (like the *yang* symbol), broken once (like *yin*), or broken twice (*Tai Hsuan Ching and Tao Teh Ching*, Live Journal 2008).

As with other Chinese patterns, these lend themselves to mathematical exploration, most especially in terms of **magic squares** (*9-fold Magic Square Pattern of Tao Te Ching Insights -- experimentally associated with the 81 insights of the Tai Hsuan Ching*, 2006; *9-fold Higher Order Patterning of Tao Te Ching Insights: possibilities in the mathematics of magic squares, cubes and hypercubes*, 2003).

The 9x9 pattern has evoked worldwide interest through the intellectual challenge of *sudoku* and its associated [mathematics](#). Again, the seemingly missing ternary is evident in the line structure of the tetragrams.

19x19 fold: As before, in the Fibonacci construction no conventional "games" correspond to a framework of 21x21. However, as with *sudoku*, widespread familiarity with such challenging patterns is common through [crossword puzzles](#). For example, many weekday puzzles (such as the *New York Times* crossword) are 15x15 squares, while weekend puzzles may be 21x21, 23x23, or 25x25. Ironically, given the purpose of the above design in enabling engagement with richer patterns, it might then be said that with respect to potential of the 21x21 pattern for many decision makers that **global governance is a "cross word puzzle"**.

In this exercise, the pattern that can be most appropriately nested within the 21x21 framework is the game of *go* (*weiqi*) most commonly associated with the Chinese, Japanese and Korean cultures. It is widely recognized for being rich in strategy despite its simple rules. It has been suggested that the Vietnam war was won using strategic thinking based on *go*, in contrast to conventional Western military strategy based on chess ([Scott Boorman](#), *The Protracted Game; a wei ch'i approach to Mao's revolutionary strategy*, 1969).

As an illustration of the packing/design considerations (discussed [separately](#)) the 19x19 framework offers an arena within which to include four distinct traditional variants of the 8x8 pattern of *I Ching* hexagrams, as discussed previously ([Strategic Patterns in terms of Knowing, Feeling and Action](#), 2008).

Conclusion

Given the above context, it is appropriate to note that whilst governance at every level has "levels" of secrecy (confidentiality and classification), it is not recognized as having levels of strategic subtlety -- a condition ably obscured by the levels of secrecy. On the other hand, "levels" are now a common characteristic of interactive gaming, whilst "game-playing" is widely recognized as a characteristic of politics and governance. Politics, as noted above, is typically characterized by polarizing statements ("our project good", "their project bad"). Although simplistic, polarizing statements are characterized by brevity. Any higher orders of subtlety are difficult to describe. They are then left to be enacted in the complexities of the dynamics of the game-playing, most notably "behind the scenes" -- only to be comprehended through "experience".

Of mnemonic relevance is the manner in which the spiral constructed "cuts" off a portion of each rectangular arena, thereby suggesting that certain conditions are "designed out" (perhaps as "externalities" or "nonsense") in contrast with those which are encompassed, integrated or embodied by it. It is only in the subsequent turn of the spiral that the excluded "externalities" are "designed in" -- in the light of understanding of a more complex set of dynamics.

NB: The **design argument is further developed in a subsequent paper** ([Designing Global Self-governance for the Future: patterns of dynamic integration of the netherworld](#), 2010).

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