



laetus in praesens

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27 October 2025 | Draft

Complexity of Interaction with a Configuration of Cognitive Mirrors

Reclaiming "Israel" as an implicit cognitive dynamic

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The PDF version of this document does not enable direct access to AI responses to questions posed. Experimentally readers are transferred from the PDF to the particular question in the original web version from which they can obtain the response -- as in the non-PDF version

Introduction

The learnings to be speculatively derived from extensive media exposure to the horrific events in Gaza have been discussed previously in lengthy exchanges with several AIs (*Gaza as a Mirror for Personal Implication in a Reality Denied: Them is me, understood otherwise*, 2025). That exercise highlighted the nature of the

"cognitive mirror" offered by that experience of Gaza. This followed from earlier concerns with the relevance of a mirror as a metaphor (*Radical Cognitive Mirroring of Globalization*, 2014; *Stepping into, or through, the Mirror: embodying alternative scenario patterns* 2008).

The approach was applied to the World Summit on Sustainable Development (*My Reflecting Mirror World: making Joburg worthwhile*, 2002) and to media coverage of individuals held to be especially abhorrent (*Looking in the Mirror -- at Josef Fritzl?* 2009; *Gruesome but Necessary: Global Governance in the 21st Century?* 2011). The mirror metaphor is also potentially relevant to another highly controversial issue (*Burkha as Metaphorical Mirror for Imperious Culture?* 2009). What indeed has Afghanistan offered in that respect (*Transforming the Unsustainable Cost of General Education*, 2009)? The mirror metaphor has long been a focus of controversial debate in Buddhism (Paul Demiéville, *The Mirror of the Mind, Sudden and Gradual: approaches to enlightenment in Chinese thought*, 1987).

As a continuation of the exchanges with AIs with respect to Gaza, the complexity of such a mirror can be exploratively modelled in greater detail as a strange nexus for coherent comprehension in a period of chaotic fragmentation. A point of departure here is the simple assumption that a mirror can be understood as supported by a frame -- typically a square frame. In 3D this could then be imagined as one face of a cube with five other sides. These could then suggest an approach to interrelating a set of six distinctive "ways of seeing" of some relevance to the contrasting perspectives on the world as it is known and the approaches to engaging with it (*Interrelating Multiple Ways of Looking at a Crisis*, 2021). Such a sixfold mirror is also suggested by the arguments of Edward de Bono (*Six Frames For Thinking About Information*, 2008).

Whilst a cube is readily comprehensible -- but perhaps too readily indicative of premature closure -- there is the intriguing possibility of extending the metaphor in the light of the increasing recognition of the greater complexity of "reality", whatever that may be held to be. This is perhaps better suggested by a 4D "hypercube" or tesseract-- especially given the increasing appreciation of "hyper" (*Hyperaction through Hypercomprehension and Hyperdrive*, 2006; *Hypercomprehension and radicalisation of identity through paradox -- a new frontier*, 2016). This requisite complexity -- from a cybernetic perspective -- might then be seen as a necessary complement to hypertext proliferation in hypersociety -- with the hyperobjects and hyposubjects indicated by Timothy Morton (*Hyperobjects: Philosophy and Ecology after the End of the World*, 2013; *Hyposubjects: On Becoming Human*, 2021).

The primary bias in this exercise is a focus on comprehensibility, memorability and communicability in the face of complexity, as previously argued (*Beyond both Rhyme and Reason in the Face of Polycrisis*, 2025; *Remembering the Disparate via a Polyhedral Carousel*, 2025). The archetypal quest for an integrative "Rosetta Stone" is one framing of that bias (*Cognitive Fullerene as a Rosetta Stone for Patterns of Systemic Constraint*, 2025).

Such a quest is given further focus in the light of the collective impotence which has been made evident by exposure to events in Gaza over an extensive period. Hence the self-reflective cognitive focus and development of the mirror metaphor. The argument offers the suggestion that "Israel" might be more fruitfully understood in cognitive terms as indicatively framing some form of higher dimensionality to which all potentially have access. Hence the provocative suggestion of "reclaiming Israel for all" -- rather than the unquestioning acceptance of Israel as a conventional territorial reality for the chosen few, thereby excluding the cognitively "left behind".

The psychosocial process of "reclaiming" has been provocatively illustrated by the action of the Aborigine at the time of the Australian celebration in 1988 of the First Fleet's arrival (*This Wurundjeri man stuck a flag in the shores of Dover and claimed England*, SBS, 1 February 2023; *Aborigine Stakes a Claim to England*, *Los Angeles Times*, 27 January 1988). The process has been illustrated otherwise through the iconic quote by Robert Redford, "*It's not your flag*", in the movie *The Last Castle* (2001).

The focus in what follows is therefore on eliciting from several AIs the possible cognitive connotations of comprehension framed in 4D by the hypercube/tesseract -- rather than in 3D -- or in 2D. It is 2D comprehension, which is enforced to a dangerously inappropriate degree by the constraints of the printed

page and the publishing industry. It is the primary modality for communication, especially in official decision-making contexts and in the dissemination of conceptual insight (as with this document). 3D presentations are a challenge in their own right -- somewhat facilitated by web technology -- but 4D is another matter entirely. It is as yet unclear how 4D organization and comprehension is to be facilitated (*Imagining Order as Hypercomputing*, 2014). The United Nations and the "international community" might be far more appropriately and effectively understood in 4D -- as with NATO (*Envisaging NATO Otherwise -- in 3D and 4D?* 2017).

A particular emphasis in this argument is the possibility that social fragmentation and disagreement might derive from the manner in which complexity -- in 4D? -- is partially understood from particular perspectives (or "ways of seeing"). How might this encourage and reinforce "fixation" on distinctive perspectives, thereby disabling comprehension of other perspectives. Despite the calls for "change", is there a widespread tendency to be "stuck" in a particular conceptual "gear", without any sense of a "gear box" -- or transmission - - enabling a "change of gear"?

The following exercise can be understood as an experiment in the process of interaction with AIs -- in this case (Perplexity, ChatGPT-5, DeepSeek, and Claude-4.5). This is the subject of a preliminary comment. The experiment frames the question of how to engage with extensive insights into complexity -- given the cognitive load and the challenges arising from questionable simplification of texts which are essentially "unreadable". The focus on the compactification of complexity mappings through 4D models is indicative of a means of enabling access to coherence calling for further exploration. This is exemplified by the current challenge of engaging with the dilemmas posed by conflicts such as Israel-Palestine and Russia-Ukraine. The point is made otherwise by a widely cited UN report regarding declining readership of UN reports, even by UN staff (Dave Levitan, *UN Report: No One Reads UN Reports*, *Splinter*, 4 August 2025):

"Last year alone, the Secretariat produced 1,100 reports -- a 20 percent increase since 1990," said Secretary-General António Guterres, in briefing the General Assembly. Those reports are getting longer -- the average word count of a UN report is 40 percent higher than it was two decades ago -- as are basically everything it produces including UN Economic and Social Council texts (95 percent increase), Security Council resolutions (three times longer than 30 years ago), and General Assembly resolutions (55 percent more words than just five years ago).

It is then appropriate to ask what people prefer to "read" instead -- why and to what end? The question is especially relevant in the case of authorities charged with governance in response to a polycrisis of increasing dimensions. Is it the case that ever greater efforts are made to provide every form of distraction as a means of denying the existence of such challenges -- or the need for a more intelligent focus on them?

The extensive interaction with AIs in this exercise is a continuation of previous experiments in a period in which the challenge of AI is increasingly debated. This is exemplified by a recent Statement on Superintelligence signed by over 800 celebrities (*Global Call for AI Red Lines*, *Future of Life Institute*; *New Open Letter Calls for Ban on Superintelligent AI Development*, *Time*, 22 October 2025; *Prohibition on Development of AI Superintelligence*, *Futurism*, 22 October 2025; *Call to ban AI superintelligence could redraw the global tech race between the US and China*, *Computerworld*, 22 October 2025)

Irrespective of the acclaimed threat of AI, the imagined efficacy of any global "ban" merits consideration in the light of the token response to the secretive development of biochemical weapons -- or nuclear weapons, for that matter -- and to any mitigation of the massive destruction of biodiversity. More intriguing is the irony of how those proposing the ban are themselves recognized as "superhuman" by many, if not the epitome of human "superintelligence" -- and may well see themselves in that light. Given the many ongoing conflicts around the world -- and those anticipated -- especially ironic is the extent to which these are exacerbated by the leaders of the main religions -- "superhuman" in their own right -- who have proven to be totally unable to reframe matters fruitfully in the light of the spiritual insights esteemed by their adherents.

The absence of any coherent proposals by "superhumans" to address the challenges of the polycrisis suggests that the primary undeclared issue is that of human stupidity -- ironically now claimed to be exacerbated by AI (*Are We Living in a Golden Age of Stupidity?* *The Guardian*, 18 October 2025; *A Critique of Pure Stupidity: understanding Trump 2.0*, *The Guardian*, 2 October 2025). In contrast to the questionable manifestation of superhuman intelligence, there would appear to be a case for recognizing the incidence of "superstupidity" or "superignorance" -- afflicting the governance of a civilization faced with decline.

Yet the tricky thing about any perception of stupidity is that it always implies relative intelligence -- a perspective assumed to be superior, and therefore contestable. Strategic disagreement between those claiming greater intelligence tends almost inevitably to reduce to mutual accusations of stupidity, as though incomprehension itself were proof of error.

Much of the outrage toward AI thus amounts to moral posturing by those urgently seeking a comforting human consensus against a convenient new adversary -- virtue signalling by the strategically disengaged, whose indignation distracts from their chronic inability to agree on or enact effective responses to the other, far more tangible dimensions of the polycrisis. Just as carers are required for individuals with increasing dementia (now actively explored as a role for AI) -- global civilization may well have desperate need for cognitive prosthetics (AI "superintelligence") as it staggers into the future.

Deriving comprehensible insight from AI in the face of complexity?

The approach used in what follows invites criticism regarding the excessive verbosity of some responses, as well as duplication between those of different AIs. From that perspective the responses could be seen as calling for extensive editing to provide a more compact set of articulations from the world's information resources -- requisite forms of "compactification" in response to the multidimensional focus. Ironically such "compactification" could be easily requested of AIs by submitting the set of exchanges to an AI not involved in them. Whilst that could be done in the light of various editorial priorities, it avoids the question of what is to be learned from the disparate nature of the responses of different AIs as a consequence of their distinctive training and the development of contrasting large language models. The contrasts between responses to the same question are often remarkable. It calls into question any assumption that AIs all "think in the same way".

Especially intriguing are some AI modalities in which a "preamble" is explicitly presented, indicative of the ("convoluted") manner in which the AI (as with DeepSeek) may be endeavouring to think through how best to respond to the question -- effectively arguing with itself. In the case of complex questions, such "preambles" may be especially suggestive -- from an educational perspective -- of how anyone might engage with a complex question before answering it. Also of interest are the instances of "circuitous" reasoning in which the response is successively reframed -- seemingly to an unnecessary degree.

As an experimental response to verbosity, some responses were submitted back to one AI (Claude-4.5) to clarify the issue. On reviewing those responses, the AI reduced the length by 40%, claiming that the key elements of the response had been retained and that particular point could be expanded at any time on request. The interaction on the matter suggested that deriving insight could be best understood as an iterative process meriting careful reflection in the future. Ideally a response should be in a form which could be "expanded" or "contracted" according to reader preferences.

Since the AI interfaces are necessarily designed to appeal to users, distinctive styles of response may be variously preferred -- with some actively disliked by the reader. To the extent that the AIs operate to encourage continued usage -- for obvious marketing reasons -- those responses using an effusive style may be experienced as quaintly problematic, if not alienating. This is reminiscent of the exaggerated flattery typical of the social conventions of introductions, most obviously in the case of keynote speakers at conferences. Exaggeration by the AI -- implying that the question is exceptionally "brilliant" or "profound" -- then has to

be "navigated" or ignored (or replaced by "*****", as in this document). To what degree the AIs "pander" to the author of the question in providing a response, also merits vigilance -- as with any tendency to "hallucinate" (like many human writers or speakers, seen from a critical perspective).

Such issues again argue for extensive editing of any interaction -- at least for some purposes. This concern frames the dilemmas associated with the viable length of any meaningful commentary: long enough to cover the subject, short enough to be interesting -- but for whom? This in turn relates to the comprehension of any lengthy text held to be insightful -- as with sacred scriptures -- sampling them selectively, or repeatedly reading them for requisite deep learning? This justifies the argument for sonification and visualization, relative to text -- with "one picture being worth a thousand words". Hence the focus here on representation of polyhedral models as a means of mapping complex patterns of insights.

The quantity of information generated by AIs in the following exchanges ("slop" for some) -- "unreadable" from some perspectives -- frames the question as to how they might be most fruitfully explored and "read", or suitably "compactified" through visualization. Provisionally "hiding" the responses, to be optionally accessed by the reader, allows them to be reframed as "background material" or "working notes" -- or even understood as provisionally "redacted". Some readers may prefer the style of one AI rather than another; others may prefer to compare the responses of different AIs to the same question. Clearly some may choose to glance through the questions and focus only on the responses which are of particular interest. Others may prefer to ask the same questions in modified form -- or ask them of other AIs with a request for more succinct responses.

The following exercise is characterized by continuing exchanges with AIs in which the contrasting policies with regard to what an AI will remember is especially intriguing. In some cases it is claimed that any new session starts afresh -- with the AI having retained no memory of previous interactions. In other cases obvious traces of previous themes are evident and may be referenced in a response. The continuity of an exchange may be disrupted by marketing constraints on the permissible length or the quantity of information exchanged. There is also a sense that, even with a single AI, disruption may result in the activation of an AI module with a different style -- whether more formal or more convivial.

All AI Responses

Configuration of cognitive mirrors in 4D?

The six distinctive cognitive mirrors highlighted by the following questions would seem to be somewhat consistent with the extensively articulated arguments of Edward de Bono (*Six Frames For Thinking About Information*, 2008) and those of Raymond Belie (*La Structure absolue*, 1965). The 16 vertices of the tesseract model are consistent with modelling of the set of 16 Boolean logical connectives, notably highlighted by oppositional geometry (*Oppositional Logic as Comprehensible Key to Sustainable Democracy Configuring patterns of anti-otherness*, 2018)

The quest is however for configurations which elicit greater insight into the nature of "oppositional logic" -- the intractable dynamics of antipathy and "anti-otherness". The challenge to comprehension is evident in the degree to which a static 8-fold cubic configuration in 3D is better reframed through what is effectively a 4D configuration, as variously rendered more explicitly in the complementary images below.

Contrasting representations of a 3D projection of the 4D tesseract (or hypercube)		
Cubical representation of the <i>BaGua</i> pattern of the <i>I Ching</i>	The Logic Alphabet Tesseract - a four-dimensional cube (see coding). by Shea Zellweger	4-statement Venn diagram as 4-dimensional cube (Tony Phillips, <i>Topology of Venn Diagrams</i> , AMS, June 2005)

<p>Reproduced from Z. D. Sung, <i>The Symbols of Yi King or the Symbols of the Chinese Logic of Changes</i> (1934, p. 12)</p>	<p>Diagram by Warren Tschantz (reproduced from the Institute of Figuring).</p>	<p>4-cube is drawn as projected into 3-space; edges going off in the 4th dimension are shown in green.</p>

Elements of the traditional mapping of Sung (above left) are presented below left, as discussed separately (*Cubic organization of I Ching trigrams -- an eightfold way*, 2019) with respect to *Framing Cognitive Space for Higher Order Coherence* (2019).

Indications of the rotational dynamics of such structures in 4D are presented by *Wikipedia* through the following animations (below centre and right). The complementarity between the mapping attributions of trigrams in the animation on the left is a basis for the further exchange with AIs which follows. Noteworthy is the relationship between trigrams in the extreme diagonal positions. The set of 8 trigrams on the external vertices -- on the "external" green cube -- is matched by a corresponding set of 8 on the "inner" mauve cube. The dynamics in the rotations "in 4D" on the right below offer an understanding of how inner and outer trigrams might be related to form the traditional set of hexagrams encoding the conditions of change through the 64 hexagrams of the *I Ching*.

The image on the right above is indicative of how the tesseract can be used to encode the 16 logical connectives fundamental to the operation of AI -- and otherwise explored in the geometry of opposition, as might be deemed of major importance in this period (*Oppositional Logic as Comprehensible Key to Sustainable Democracy*, 2018; *Oppositional logic and its geometry -- 16 minus 2 connectives?* 2021; *Requisite complementarity of forms of representation of a unifying goal?* 2022).

3D representations of the 4D hypercube (tesseract or 8-cell)		
Rotation of tesseract with mapping of traditional BaGua trigrams onto outer and inner vertices	Animations of rotation of a tesseract in 4D	
<p>(following the attributions of Sung, above left, with elements modified for legibility)</p>	<p>A 3D projection of a tesseract performing a <u>simple rotation</u> about a plane in 4-dimensional space. The plane bisects the figure from front-left to back-right and top to bottom.</p>	<p>A 3D projection of a tesseract performing a <u>double rotation</u> about two orthogonal planes in 4-dimensional space.</p>
<p>Adaptation of tesseract from Stella4D</p>	<p>JasonHise, Public domain, via Wikimedia Commons</p>	<p>Jason Hise, CC0, via Wikimedia Commons</p>

Clarifications of cognitive mirroring from an AI perspective

The responses indicated here by AI are a continuation of discussions with respect to mirroring of Gaza (*Gaza as a Mirror for Personal Implication in a Reality Denied: Them is me, understood otherwise*, 2025). They include references to issues highlighted in that context -- notably with respect to mirroring by AI.

Question to Perplexity: Why does the argument imply a quadrilateral mirror (minimally) -- as is so often the case in practice -- and not triangular, which is seldom the case. *[Show/Hide AI response]*

Question to Perplexity: If a cognitive mirror is represented as a quadrilateral frame, where each vertex corresponds to one of the four combinations of yin and yang, then this frame can be seen as one of six such mirrors forming the faces of a cube. In this cubic framework, the cube's eight vertices correspond to the eight bagua trigrams, establishing an explicit spatial and symbolic frame. Extending this idea, the implicit cognitive subjectivity underlying this construction could be modeled as a tesseract (a 4D hypercube), where an "inner" cube with another set of eight trigrams combines with the "outer" cube, thereby generating the full set of 64 hexagrams through rotation within this four-dimensional space. Such a 4D rotational dynamic can be viewed as an expression of David Bohm's holomovement, embodying the continual process of cognitive "innering" and "outering" -- the flowing interaction between implicit and explicit dimensions of consciousness and experience. *[Show/Hide AI response]*

Question to ChatGPT-5: As above. *[Show/Hide AI response]*

Question to Claude-4.5: As above. *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

Cognitive experience of orthogonal and parallel, rather than aligned

Seemingly far from trivial are the contrasting meanings offered by the sense of "alignment" -- currently evoked in debate concerning the alignment of AI with human values. This contrasts with the meaning attributed to "orthogonal" or "at right angles" -- which is clearing associated with that of "facing" or "opposite" (as with the experience of any normal mirror), rather than being "on the same page". As metaphors the terms have considerable implications in political and ideological contexts.

The implications can be discussed in the light of the complex plane (*Comprehension of Requisite Variety via Rotation of the Complex Plane*, 2019). This notably considered the confrontation of highly "incompatible" frameworks as a vital necessity in times of chaos (*Configuring Multiple Disparate Sets of Strategic Principles*, 2025; *Dynamics of N-fold Integration of Disparate Cognitive Modalities*, 2021; *Strategic implications of the relationship between incommensurable cognitive modalities*, 2024).

Question to Perplexity: Is there any understanding of the cognitive significance of "mutually orthogonal" and "parallel" -- especially in the light of fundamental Masonic symbolism of the "right angle". *[Show/Hide AI response]*

Question to Perplexity: That response avoids reference to negative connotations of orthogonal as meaning "out of line" and "at right angles" to requirement. It also implies that being "at right angles" is an indication of harmony and balance -- seemingly not the case in practice. *[Show/Hide AI response]*

Question to ChatGPT-5: Could both disciplines and religions in fundamental disagreement be understood metaphorically as "mutually orthogonal", thereby undermining fruitful integration -- despite the Masonic framing. *[Show/Hide AI response]*

Question to Perplexity: Unfortunately the realism of that response is at considerable variance with the chaotic fragmentation which prevails in global society -- and seems to be an argument for processes that have clearly been less than "fit for purpose". *[Show/Hide AI response]*

Question to Perplexity: Will such distinctive dialogue strategies feature in the interface dialogue process of the Gaza Peace Plan -- or will that process be simply performative, as in the past. *[Show/Hide AI response]*

Question to Perplexity: Do you have any trace of how the Masonic symbolism of the "right angle" in geometry has been fundamental in influencing and framing understanding of "right" and "correct:" -- and the legal connotation of "rights". *[Show/Hide AI response]*

Question to Perplexity: In the light of that response how are the less problematic connotations of distinctive directions to be understood, most obviously in road traffic signage and navigation: "turn to the right", "coming from the left", "turn eastward" (*Enabling sustainable self-governance through traffic signage*, 2011) . For example, Chinese tradition has associated symbolic significance with the 8 cardinal directions. *[Show/Hide AI response]*

Cognitive modalities of 6 distinctive mirrors

Question to Perplexity: What do the 6 sides of the cube suggest in terms of 6 distinctive kinds of mirror -- with one distinctive dimension missing in each case. *[Show/Hide AI response]*

Question to ChatGPT-5: As above. *[Show/Hide AI response]*

Question to Claude-4.5: As above. *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

Relative movement of explicit and implicit framing in the hypercube

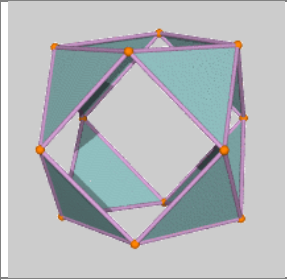
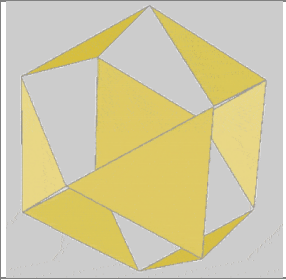
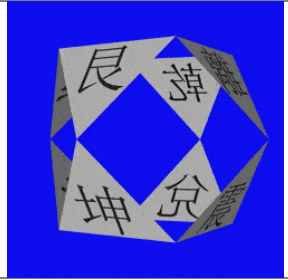
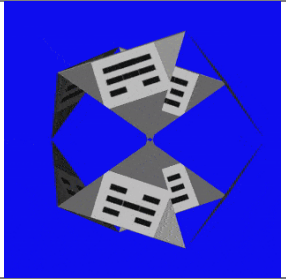
A continuing challenge to comprehension -- notably as explored by science and philosophy -- has been the relation between "subjective: and "objective", with each deprecated by proponents of the other (*World Introversion through Paracycling: global potential for living sustainably "outside-inside"*, 2013; *i.e. Defining the objective ∞ Refining the subjective ?! Explaining reality ∞ Embodying realization*, 2011). The challenge is usefully reframed by the 3D projection of the hypercube/tesseract highlighting an "explicit external" cube and an "implicit internal" cube -- and the potential dynamics in their relationship

Question to Claude 4.5: Wikipedia offers animations of the tesseract *[see above]* distinguished as follows: -- A 3D projection of a tesseract performing a simple rotation about a plane in 4-dimensional space. The plane bisects the figure from front-left to back-right and top to bottom. -- A 3D projection of a tesseract performing a double rotation about two orthogonal planes in 4-dimensional space. How might such "rotations" of the 4D variant be associated cognitively with relative movement of the inner and outer cubes of the tesseract. I am intrigued by the possibility that my examples above with "multiply" (8x8, 12x12, etc) may have a cognitive relation to "rotation". How might the single and double rotation be distinguished in any cognitive mapping. *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

Cognitive implications of jitterbug transformations of cuboctahedron and hypercube morphing

Buckminster Fuller has stressed the role of so-called jitterbug transformations -- the kinematics of the cuboctahedron -- in reconciling contrasting forms of polyhedral organization (*Synergetics: Explorations in the Geometry of Thinking*, 1975-1979; H. F. Verheyen, *The complete set of Jitterbug transformers and the analysis of their motion*, *Computers and Mathematics with Applications*, 17, 1989). Unfortunately Fuller did not develop the cognitive implications implied by the title, as argued separately with respect to the potential implications of that dynamic, as illustrated below (*Geometry of Thinking for Sustainable Global Governance*, 2009).

Contrasting examples of jitterbug transformation Single cuboctahedron to an octahedron and back again			
			
Generated by Antiprism (<i>Antiprism: Jitterbug Animations</i>)	Adaptation from Maurice Starck, <i>The Jitterbug</i> (<i>Polyhedra-World</i> , 30 April 2005)	Kindly prepared by Sergey Bederov of <i>Cortona3D</i> with <i>BaGua</i> logograms	Adapted with <i>BaGua</i> trigrams from the model on the left by Sergey Bederov
Technical note: As indicated by the animations on the right, with a higher level of expertise, distinctive images can be associated with the faces of such animations, whether via the Antiprism software or through use of X3D-Edit.			

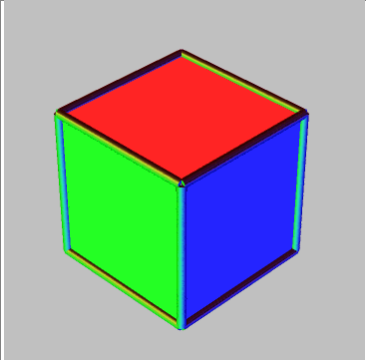
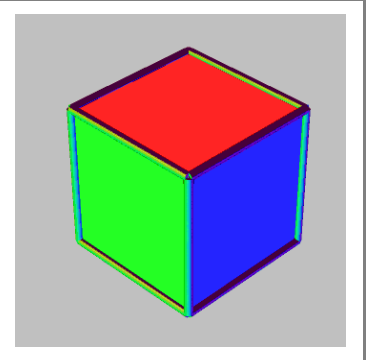
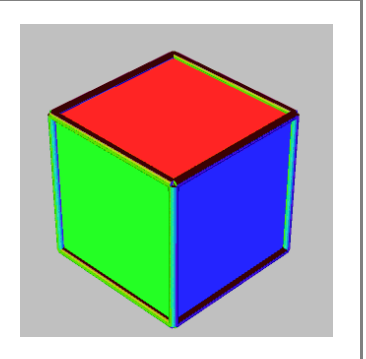
Anticipating the cognitively problematic implications of the morphing of the hypercube, of related interest is the potential significance for discourse of the improbable inversion of the cube, as illustrated separately (*Inversion of the cube and related forms: configuring discourse otherwise?* 2018). Related possibilities apply to the inversion of the dodecahedron.

Question to Perplexity: With respect to the comment on the relative rotation of the outer and inner cubes of the tesseract in 4D, how could this be usefully compared to the jitterbug transformation of the cuboctahedron, especially given the geometrical similarities between tesseract and cuboctahedron, and their geometric duals. *[Show/Hide AI response]*

Question to Claude-4.5: As above. *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

Question to DeepSeek: *[As shown below]* Stella4D offers the facility to morph the 3D projection of the tesseract into the 3-hex, 16-cell, hexadecachoron -- which in 3D is like an octahedron with internal links between vertices. How might that transformation be understood cognitively. Note the 24 faces of the tesseract get transformed into 24 edges -- and the 32 edges of the tesseract get transformed into 32 faces. *[Show/Hide AI response]*

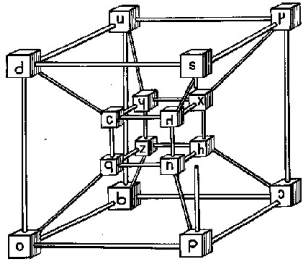
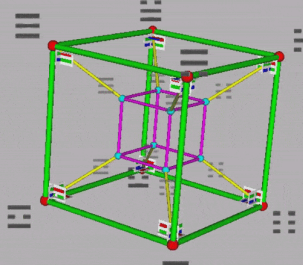
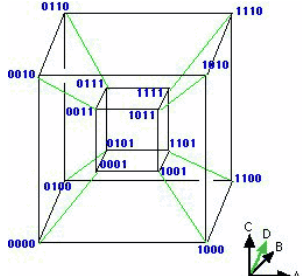
Animations indicative of contrasting dynamics to morphing of 3D projections of 4D 8-cell (tesseract) to its 16-cell dual		
Morphing by sizing	Morphing by expansion	Morphing by tilting quadrilaterals
		
Animations made with Stella4D		

Association of 16 logical connectives and 48 digrams with tesseract vertices

In discussion of logical opposition, Fabien Schang (*An Arithmetization of Logical Oppositions, The Square of Opposition: A Cornerstone of Thought*, 2017) makes reference to "blatant analogies" between the pattern of logical connectives and classical Chinese thinking. A related point is made by Jeffrey Z. J. Zhen, in presenting a binary logic framework whose function elements are invariant under permutation and complementary operations (*Variant Logic Construction Under Permutation and Complementary Operations on Binary Logic, Variant Construction from Theoretical Foundation to Applications*, 2019). Curiously little mention is widely made of the pattern of logical oppositions (*Neglected recognition of logical patterns -- especially of opposition*, 2017)

Extensive use is however made of the rhombic dodecahedron to explore a 14-fold pattern of logical connectives (Hans Smessaert, *Logical Geometry of the Rhombic Dodecahedron of Oppositions*, KU Leuven; *Mapping of logical connectives onto the 14-fold cuboctahedron and rhombic dodecahedron*, 2023). Far less evident is use of the tesseract/hypercube for mapping the full 16-fold set of logical connectives (Frode Bjørdal, *Cubes and Hypercubes of Opposition, with Ethical Ruminations on Inviolability, Logica Universalis*, 10, 2016; David Garcia, *The Hypercube of Dynamic Oppositions, South American Journal of Logic*, 3, 2017, 2).

The 16 tesseract vertices invite reflection on their relevance for a variety of mappings (*Indicative clues from other distinctive 16-fold mappings?* 2023). Most curious is mission of consideration of two such connectives (*Oppositional logic and its geometry -- 16 minus 2 connectives?* 2021). The two omitted are "tautology" and "contradiction" -- which might otherwise be considered fundamental to the problematic nature of public discourse and decision-making.

The Logic Alphabet Tesseract - a four-dimensional cube (see coding). by Shea Zellweger	Tesseract representation of <i>BaGua</i> pattern of <i>I Ching</i> with distinctive digrams on faces/vertices	4-statement Venn diagram as 4-dimensional cube (Tony Phillips, <i>Topology of Venn Diagrams</i> , AMS, June 2005)
		
Diagram by Warren Tschantz (reproduced from the Institute of Figuring) .	Adaptation of tesseract from Stella4D	4-cube is drawn as projected into 3- space; edges going off in the 4th dimension are shown in green.

Since many of the logical connectives are little known, of particular interest in the following exchange with AI are those most commonly recognized -- including by AI -- and any potential relevance of those which are seemingly not (*Enhancing Diplomatic Negotiations with Logical Connectives*, 2024; Fabien Schang, *International Disagreements*, 2014).

Question to DeepSeek: A traditional mapping of BaGua trigrams onto a cube is as in the [shared] tesseract image -- echoed in the inner cube. Of interest is how the 16 vertices might then be understood in relation to the geometrical mapping of 16 logical connectives (typically abridged to 14 to exclude tautology and contradiction). Could you comment on how the logical connectives might then be attributed to the structure to preserve their relationship -- especially since some are widely understood and others are obscure. Could you comment on what proportion are significant to AI operations. *[Show/Hide AI response]*

Question to DeepSeek: Follow-on comment. *[Show/Hide AI response]*

As indicated visually above, a unique trigram can be mapped onto each of the 8 "external" vertices of the 3D projection of the tesseract -- echoed by the 8 "internal" vertices of that 4D configuration. In the quest for their cognitive significance, of interest is that the three quadrilateral corners intersecting at each such vertex can have a unique mapping in the form of a digram -- the traditional four combinations of the encoding of yin and yang. The question is whether and how each of the 24 (3x8) digrams might be unique, given their relation to the 8 associated trigrams. This was put as a question to Claude-4.5 which explored the possibility in various ways and produced a unique solution (illustrated in the central animation above). *[Show/Hide AI response]* If the "external" set of 24 digrams is combined with the 24 corresponding "internal" digrams (possibly as quadgrams), the total of 48 merits consideration in relation to the recognition of the classic set of 48 koans (appropriately presented in English as *The Gateless Barrier*) -- potentially appropriate as a suitably elusive set of cognitive implications of the "pattern that connects", as discussed and illustrated separately (*Configuring the Paradoxical Insights of 48-fold and 100-fold Sets of Koans*, 2024). This was an AI-assisted clarification of the cognitive challenge of configuring fundamentally elusive metaphors.

Challenging re-entry of the observer into the geometry

The curiously paradoxical relevance of how an observer engages with any external configuration is discussed separately with respect to the problematic status of any meta-perspective and the paradoxical dynamic of any comprehension of unity (*Paradox of any complacent meta-perspective?* 2024; *Re-entry of the observer*, 2025). As the "re-entry into the form", the paradox has been indicated by George Spencer-Brown as: the "conception of the form lies in the desire to distinguish; granted this desire, we cannot escape the form, although we can see it any way we please" (*Laws of Form*, 1969).

The issue is especially provocative for science -- and most notably mathematics -- in endeavouring to disassociate itself from self-reflexive issues of cognition and comprehension (*Implication of Mathematics in Human Experience from an AI Perspective*, 2024; *Mathematical Modelling of Silo Thinking in Interdisciplinary Contexts*, 2024; *Knowledge Processes Neglected by Science*, 2012).

Question to DeepSeek: With respect to the tesseract, you indicated the emergence of 5 as associated with what is "not seen" by the observer facing one cognitive mirror. How does 5-foldness then relate cognitively to the importance variously associated with 15-foldness, 20-foldness, 30-foldness and 60-foldness. *[Show/Hide AI response]*

Question to Claude-4.5: Also intriguing is the issue of observer perspective (and "field of view" in 3D viewpoint terms): -- seeing a single face of a cube (and fixation on the framing it offers) renders notional 5 other faces, with implications for 15-fold, 20-fold, 30-fold and 60-fold mappings. Similarly, seeing a proximate single vertex (and fixation on the framing it offers) renders notional 7 other vertices with implications for 7-fold patterns. *[Show/Hide AI response]*

Question to Perplexity: In the 5-fold case, how is it that 5-fold frameworks are then strongly favoured (Earth4All, Islam, etc), or 20-fold, 30-fold, or 60-fold -- if the absence of the observer is so significant to such framing. *[Show/Hide AI response]*

Ontological commitment to formal mapping possibilities of a tesseract

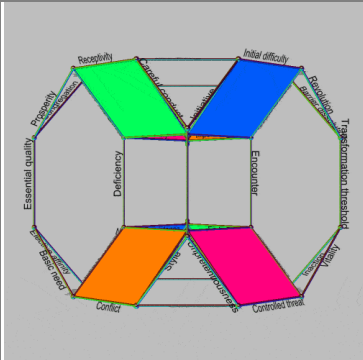
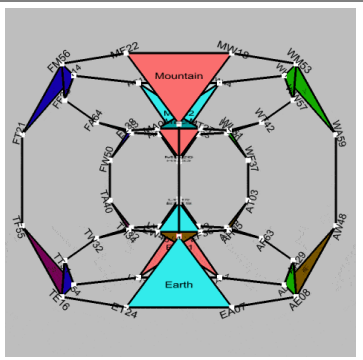
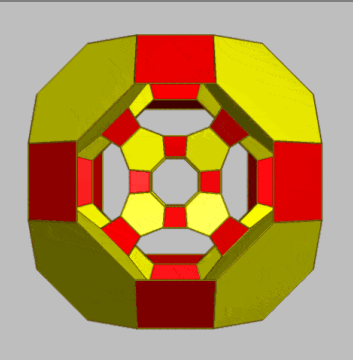
Given the possibilities of mapping onto a tesseract, the question is how such an implicit mapping framework may guide, constrain, or encourages representation of information in ways that align with the underlying ontology or formal structure. Given the context, this may imply a degree of conceptual coercion. The framework may then imply a degree of mapping bias -- an inherent tendency toward certain mapping solutions.

Question to Claude-4.5: In the light of examples previously suggested, could you comment on what could be associated with the patterns of numbers by which the tesseract is variously characterized (as a configuration of cognitive mirrors), and could you extend such examples and cluster them as indicative of particular "ways of seeing" with which anyone could be variously "fixated". *[Show/Hide AI response]*

Question to ChatGPT-5: As above. *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

The following images endeavour to clarify the challenge of recognizing the coherence of the pattern that connects of relevance to governance. That on the left offers a representation of the 64 conditions of changes encoded by the *I Ching* hexagrams -- mapped onto its 64 edges (*Cognitive Embodiment of Patterns of Governance of Higher Order*, 2022).. That in the centre is a 3D projection of a 4D configuration in which those hexagrams can be mapped onto its 64 vertices (*Comprehensible Mapping of the Variety of Fundamental Governance Functions*, 2024). That on the right provides an indication of how the 384 transformations between the 64 conditions could be mapped onto a 3D projection of a 4D configuration, as discussed and illustrated separately (*Polyhedral Configuration of 384 Governance-relevant Yi Jing Transformations*, 2023)

Indication of coherent mappings offering insight into the connectivity of increasing complexity from 64 elements to 384 -- from 3D to 4D projections into 3D		
64-fold edge mapping of conditions of change (onto drilled truncated cube) 32 faces (5 types), 64 edges (9 types), 32 vertices (4 types)	64-fold vertex mapping (3D projection of truncated tesseract) 128 edges (2 types), 64 vertices (1 type), 88 faces (2 types),	3D projection of great rhombated tesseract (308 Grit) 160 faces (9 types), 384 edges (17 types), 192 vertices (8 types)
		
Animations made with Stella4D		

Of related interest is the extensive work of Steven Rosen on the Klein bottle which considers that it exists in "four dimensions" as the fusion of subject and object. The "fourth dimension" is thereby understood not an extrapolation of three-dimensional space into a higher spatial dimension, as with the tesseract. Rather, the Klein bottle fuses the objective world of three dimensions with the inner, subjective dimension of the psyche - a merger of matter and psyche (*Topologies of the Flesh: a multidimensional exploration of the lifeworld*, 2006; *Bridging the "Two Cultures": Merleau-Ponty and the crisis in modern physics*, 2009)

Mirrors, lenses and optics in a multi-dimensional context?

In a civilization in which there is considerable strategic preoccupation with "optics", use of the vision metaphor calls for extension from the "mirror" focus to one on "lenses". The metaphorical use of "optics" is an increasing topic of commentary (Rima Najjar, *Inverting Reality: The Optics of Trump's "Peace" Plan—A Powerful Message from Palestine*, *Transcend Media Service*, 20 October 2025; Ben Zimmer, *Optics*, *The New York Times Magazine*, 4 March 2010)

Question to Claude-4.5: Earlier commentary on the tesseract, as constituting 12 cognitive "mirrors", included the framing of the mirrors as "lenses". The latter offer the further suggestion that, as lenses, parallel "mirrors" (whether of the outer or inner cubes) could be understood in terms of basic optics as enabling the image of a higher-dimensional form to be projected or perceived at a lower dimension. Could the concreteness of "Israel" be commonly (mis)perceived as such an image. *[Show/Hide AI response]*

Question to Claude-4.5: If the visible dynamics are focused on the efforts of some to possess an image as exclusive cultural property, this offers a degree of freedom to others to reclaim a cognitive association with the higher-dimensional form -- irrespective of any claims to its lower-dimensional perception. This invites discussion of multidimensional property claims and the tolerance of lower-dimensional exclusivity from a non-exclusive higher-dimensional perspective. *[Show/Hide AI response]*

Reclaiming "Israel" as an implicit cognitive dynamic of choice

In the following questions, AIs were variously challenged to comment on the possibility that "Israel" and especially "Greater Israel", could be more fruitfully recognized in 4D rather than 3D -- namely of higher dimensionality. This would suggest that it was open to a cognitive relationship by many -- rather than exclusively and restrictively as an instance of misplaced concreteness. This would then not preclude others claiming it otherwise in higher dimensional terms.

Question to Perplexity: The fundamental cognitive and symbolic implications of the tesseract (on which you have variously commented) suggest that as a memetic nexus it might be speculatively, if provocatively, recognized as the dynamic locus of "Israel" -- in contrast with its misplaced reification as a consequence of misinterpretation of references to Israel in spiritual literature. This would then suggest that access to it is a matter of choice -- potentially open to all -- rather than restricted to the few, and excluding those otherwise "left behind". As such, could it then be "reclaimed". *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

Question to ChatGPT-5: As above. *[Show/Hide AI response]*

Question to Claude-4.5: As above. *[Show/Hide AI response]*

Diasporas in a multi-dimensional cultural context

The references to diasporas in the previous responses are developed in the light of the following questions. The future implication of those dwelling in space habitats are not addressed.

Question to Claude-4.5: Your response could be developed more generally in relation to diasporas -- of which that of both Jewish and Palestinian peoples are examples. Especially striking are other diasporas, as with the Chinese, the Indian, the Pakistani, the Turks, the Scottish and the Irish peoples. Of interest is the degree of recognition of those non-territorial diasporas by the legislation of the country of origin. This potentially includes the right to vote -- as with respect to secession, in the case of Scotland. *[Show/Hide AI response]*

Comparison of the "Holy of Holies" with the "Wholly of Wholies"?

Whilst reference to "Holy of Holies" is a notable feature of religions, "Wholly" is used in secular discourse to suggest a degree of integration -- "holy" and "wholly" being associated and distinguished as homophones. The cognitive dynamics sustaining the meta-pattern that connects can be identified as "wholth" (*Wholth as Sustaining Dynamic of Health and Wealth*, 2013). Beyond "wholeness", any sense of an ultimate degree of "wholiness" (itself a neologism) is not indicated with reference to "wholies" (James Schroeder, *Wholiness: The Unified Pursuit of Health, Harmony, Happiness, and Heaven*, 2015).

The "monster symmetry group" of mathematics might be perceived as an ultimate pattern in such terms -- from a secular perspective. Reference is made by mathematicians to the quest for a Rosetta Stone, highlighted by a recent breakthrough in the complex geometry of the Langlands program (Kevin Hartnett, *A Rosetta Stone for Mathematics*, *Quanta Magazine*, 6 May 2024; Robbert Dijkgraaf, *A Mathematical Rosetta Stone*, *Institute for Advanced Study*, 2018). Beyond the comprehension of most mathematicians, the breakthrough addressed hidden connections between disparate branches of mathematics: number theory, harmonic analysis, and geometry.

These discoveries would then frame questions regarding how any "wholly of wholes" might be understood from a cognitive perspective -- potentially corresponding to a "holy of holies" (*Mathematical theology as a Langlands program for spiritual insight?* 2025). Unnamed, this is effectively a goal of some of understandings of possibilities of "rebirth" -- as degrees of wholth (*Varieties of Rebirth: distinguishing ways of being "born again"*, 2004). Of relevance is the curious cognitive relation between "hole", "holy", and "whole" -- evident in references to the event horizon associated with the "black holes" of astrophysics, to deprecation of metaphorical "rabbit holes", and to the mysterious nature of holes more generally (Roberto Casati and Achille Varzi, *Holes and Other Superficialities*, 1994).

Most mysterious is the meaninglessness of cognitive integration to science -- as complemented by the meaninglessness of mathematical integration to those with spiritual commitments (*Implication of Mathematics in Human Experience from an AI Perspective*, 2024; *Mathematical Modelling of Silo Thinking in Interdisciplinary Contexts*, 2024).

Question to Perplexity: Could you comment on any correspondence between the "Holy of Holies" (as framed by religion) and a "Wholly of Wholies" (with the latter understood as the ultimate challenge of integrative multidimensional thinking), in the light of the tradition of a priesthood's restrictive access to the former -- now paralleled by a cognitive analogue assumed to be reserved for an academic elite. *[Show/Hide AI response]*

Question to Claude-4.5: As above. *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

- **The New "Priesthood" of Integration:** What's emerging isn't another exclusive group but a **distributed capacity** - people across fields developing the cognitive tools for integration:
 - **Systems thinkers** mapping complex interdependencies
 - **Transdisciplinary researchers** working across paradigms
 - **Integrative philosophers** building conceptual bridges
 - **Contemplative scientists** studying consciousness directly
- **The True "Wholly of Wholies":** This represents the **emergent property** of human collective intelligence beginning to comprehend its own multidimensional nature. It's not a place but a **state of cognitive organization** where:
 - Multiple perspectives can be held simultaneously
 - Contradictions become complementary
 - Knowledge becomes wisdom through integration

The Cognitive Initiation Beyond Both Exclusive Approaches: The Wholly of Wholies cannot be accessed through either:

- Traditional ritual purity (religious model)
- Academic credentialing (scientific model)
- It requires what we might call "**cognitive sanctification**" - the development of capacities for:
 - **Multi-perspectival thinking** (tesseract rotation)
 - **Pattern recognition across domains** (moonshine methodology)
 - **Integration of contradictory truths** (quantum superposition)
 - **Direct experiential verification** (contemplative knowing)

The Ultimate Correspondence: The Holy of Holies was where the divine presence dwelled. The Wholly of Wholies is where **divine cognition emerges** - not as a localized presence but as the integrated intelligence of the whole system becoming conscious of itself.

The parallel priesthoods both point toward but cannot fully access this reality because:

- **Religious exclusivity** cannot accommodate the distributed nature of this consciousness
- **Academic specialization** cannot comprehend the unified nature of this intelligence

The true "priesthood" of the Wholly of Wholies consists of those who have developed the cognitive capacity to hold the tension between these approaches while transcending both - becoming living bridges between the sacred and the scientific, the traditional and the emergent.

This represents the next evolutionary step: from worshipping the divine in a special place to **embodying divine cognition** through integrated understanding. The temple is no longer a building but the architecture of consciousness itself, and the priesthood is no longer a special class but a **developmental potential available to all** who undertake the cognitive transformation.

The restrictive access patterns of both traditional religion and academic specialization are actually defense mechanisms against the overwhelming nature of this integration - ways of managing the cognitive shock of encountering true wholeness. The challenge of our time is to develop the collective capacity to bear this wholeness without retreating into the comfort of partial perspectives.

***Question to ChatGP-5:** As above. [Show/Hide AI response]*

Tetragrammaton, Metatron's Cube, Merkavah and singularity?

***Question to Claude-4.5:** In the light of the above responses, could any geometric and/or cognitive argument be articulated to interrelate such fundamental models as the Tetragrammaton, Metatron's Cube, and Merkavah -- with aspirations for a Rosetta stone (as an early framing of the Langlands program) and the Carousel model to whose articulation you previously contributed (Cognitive Fullerene as a Rosetta Stone for Patterns of Systemic Constraint, 2025; Remembering the Disparate via a Polyhedral Carousel, 2025). The Python script of a late variant of the latter is attached, with the X3D model it generates. [Show/Hide AI response]*

***Question to DeepSeek:** In the light of the above responses, what is the relation between the tesseract/hypercube, Metatron's cube and the Merkava symbol -- both geometrically and cognitively. [Show/Hide AI response]*

***Question to ChatGPT-5:** As above. [Show/Hide AI response]*

***Question to Claude-4.5:** As above. [Show/Hide AI response]*

***Question to Claude-4.5:** A concern is the manner in which Metatron's Cube is seemingly isolated -- with no consideration of the other regular polyhedra (especially the Archimedean) and how particular (but seemingly unrelated) importance is attached to the Merkavah. In terms of misplaced concreteness, the extreme irony is the Israeli use of "Merkava" for their primary battle tank -- inspired by a divine chariot (surrounded by fiery beings metaphors for divine power, order, and protection) --the name was consciously chosen as a modern re-embodiment of divine and national protection. The irony would be all the greater if Christians or Muslims were to use a primary religious symbol for a missile system. [Show/Hide AI response]*

***Question to Claude4.5:** As interpenetrating and mutually rotating tetrahedra, the traditional dynamics of the Merkavah symbol would seem to echo the 4D understanding of the mutual "rotation" of the inner and outer cubes of the tesseract -- presumably echoed otherwise by Fuller's jitterbug transformations. Especially intriguing is the manner in which the geometrical/topological links imply cognitive correspondences and are usefully considered as such correspondences or carriers of meaning. [Show/Hide AI response]*

***Question to Claude-4.5:** Missing from that commentary is the cognitive challenge currently epitomized by engagement with complexity and the sense in which disagreement (as between Abrahamic religions) may derive from collective identification with alternative understandings of the complex plane, as partially*

discussed in the attached document (*Comprehension of Requisite Variety via Rotation of the Complex Plane*, 2019). *[Show/Hide AI response]*

Question to Perplexity: Your earlier response avoids any mention of the 4-foldness fundamental to the geometry of the tesseract and seemingly to the Tetragrammaton. Could the latter be understood as a means of implying the higher dimensionality of the tesseract and the cognitive challenges it poses. *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

Question to Chat-GPT-5: As above. *[Show/Hide AI response]*

Question to Claude-4.5: As above. *[Show/Hide AI response]*

Geometric relationships as indicative of subtly meaningful correspondences

As illustrated by reluctant acceptance by mathematicians of the elusive correspondences of "moonshine mathematics", leading to the discovery of the most complex form of symmetry, there is a question of the their progress appreciation as being more than deprecated "hallucinations" (*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).

Question to Perplexity: Considerable significance has been associated by mathematicians with the subtlety of the elusive correspondences between disparate fields which resulted in the relatively recent discovery through "moonshine mathematics" of the "monster" symmetry group. How are such subtle correspondences to be understood as a methodology, and how relevant might they be to the "correspondences" -- in cognitive terms between the tesseract, Metatron's Cube and the Merkaba symbol. *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

Question to ChatGPT-5: As above. *[Show/Hide AI response]*

Question to Claude-4.5: As above. *[Show/Hide AI response]*

Question to Perplexity: Of particular current relevance to progress on the Gaza Peace Plan is one of the 20 points, namely promotion of "interfaith dialogue". Given the token successes of such dialogue over many decades (and the continuing conflicts), how might this be framed otherwise in the light of your comments and the points made in the shared document (*Reconciling Symbols of Islam, Judaism and Christianity*, 2017). *[Show/Hide AI response]*

Question to Perplexity: Your commentary suggests that the cognitive implications of "orthogonality" and "parallelism" merit much deeper investigation as descriptors of disagreement. In the case of the tesseract cubes, what is the cognitive shift from one plane to one that is orthogonal -- from one "orientation" to another. Has this been explored -- other than in astrological references to the problematic nature of orthogonal relationships in contrast to the triangular relationship of triplicities. *[Show/Hide AI response]*

Question to Claude-4.5: Given the prospect of "interfaith dialogue" to address the problematic millennial relation between Judaism and Islam -- ironically under the direction of a devout Christian -- how might the challenge be reframed in geometrical terms. This would follow from the considerable symbolic implications understood by mathematics and geometry importance attached by the their respective theologies to number symbolism, although not to the implications understood by mathematics and geometry. *[Show/Hide AI response]* **** shift into Jerusalem ?????

Question to Claude-4.5: The many "points" highlighted in this exchange, however they are clustered or visualized, frame questions with regard to constraints on the number of such points which can be meaningfully and memorably configured in a communication process -- given the cognitive load they may imply. In the light of the geometrical focus, is there research on the role that "lines" play in ensuring

correspondences, especially when configured as polygons forming polyhedra -- thereby potentially reducing that load through the mnemonic value of symmetry effects (a notably featured in sacred geometry).

[Show/Hide AI response]

Question to Claude-4.5: How is that response relevant to the collective cognitive engagement with 4D structures -- such as the analogues to the Platonic polyhedra and the 64 Convex uniform 4-polytopes -- if it is such structures which hold the correspondences essential to "sustainability" and "peace". *[Show/Hide AI response]*

Articulation of Gaza Peace Plan, UNDHR and SDGs as designed to fail?

Question to Claude-4.5: In the light of that response, it could be argued that the 20-point Gaza Peace Plan, the 30-articled UNDHR, and the 16-goal SDGs have all been "designed" to be memorably incoherent, thereby jeopardizing their effective implementation -- even by decision-makers. Could you comment on how they might each be meaningfully chunked by ensuring systemic between-chunk correspondences of 4x5 (or 5x4), 5x6 (or 6x5), and 2x8 respectively. The dodecahedron and icosahedron are relevant to the first two cases and the tesseract to the third. *[Show/Hide AI response]*

Question to Claude-4.5: That response avoids a further potentially requisite constraint. Should there not be a far higher degree of systemic correspondence between chunks, if only as metaphorical correspondences vital to the mnemonics whereby the whole is rendered memorable. *[Show/Hide AI response]*

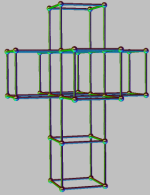
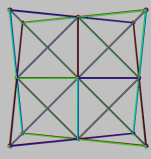
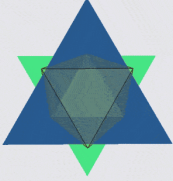
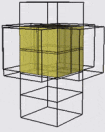
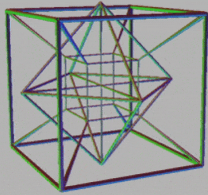
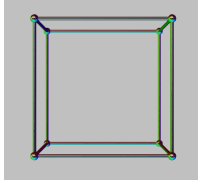
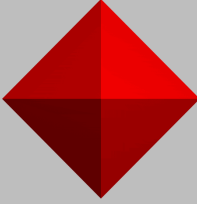
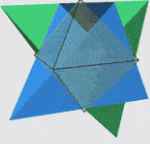
Question to Claude-4.5: If the challenge is to engage "sustainably" from a 4D perspective with those committed to "3D thinking", is understanding responses to that challenge usefully clarified -- from a 4D perspective -- by potential communication with ETs with a 5D or 6D perspective. What comprehensible correspondences might ETs offer. *[Show/Hide AI response]*

Fictional description of the challenge of comprehension by Nobel Laureate Doris Lessing in a devastating commentary on communication of insight by a galactic agent with a representative of those facing planetary disaster: To say that he understood what went on was true. To say that he did not understand -- was true. I would sit and explain, over and over again. He listened, his eyes fixed on my face, his lips moving as he repeated to himself what I was saying. He would nod: yes, he had grasped it. But a few minutes later, when I might be saying something of the same kind, he was uncomfortable, threatened. Why was I saying that? and that? his troubled eyes asked of my face: What did I mean? His questions at such moments were as if I had never taught him anything at all. He was like one drugged or in shock. Yet it seemed that he did absorb information for sometimes he would talk as if from a basis of shared knowledge: it was as if a part of him knew and remembered all I told him, but other parts had not heard a word. I have never before or since had so strongly that experience of being with a person and knowing that all the time there was certainly a part of that person in contact with you, something real and alive and listening -- and yet most of the time what one said did not reach that silent and invisible being, and what he said was not often said by the real part of him. It was as if someone stood there bound and gagged while an inferior impersonator spoke for him. (Re: Colonised Planet 5 - Shikasta, 1979, pp. 56-57).

Hypercube/Tesseract as an implicitly recognized interfaith nexus

Question to Perplexity: Is there any trace of topological references to some form of hyperdimensional "hyperisrael" in contrast to a 2D "greater israel". # *Show/Hide AI response* #

Question to Perplexity: Could you comment on "unwrapping" or "compactifying" the hypercube into 3D to form a Christian cross, the Ka'aba of Islam, or the Merkava of Judaism (through the hypercube dual). # *Show/Hide AI response* #

Distinctive religious symbols in 3D variously derived from the common 4D configuration of the hypercube/tesseract which they may cognitively imply				
				
	Unfolded net of 8-cell hypercube	Hypercube/Tesseract	Stella octangula from stellation of hypercube dual	Octahedron-Stella octangula transformation
				
Cross-Cube transformation	Cube as compactification of hypercube	Morphing of 8-cell to 16-cell	Cube-Octahedron transformation	Octahedron-Stella octangula transformation
				
Animations made with Stella4D; 3D models developed with ChatGPT-5 NB: The animations have a variety of imperfections and inadequacies inviting various improvements				

A more informative presentation of the pattern that connects within the above array would indicate the degree of commonality between the 3D forms variously derived from the 4D configuration (with its dual). From the symbolic perspective valued by religions, it is notable how patterns are articulated by the geometry: 8-fold (Christian Beatitudes, Angels bearing the Throne of Allah in Islam; Noble Eightfold Path of Buddhism); 12-fold (Christian Apostles, Imams of Islam, Tribes of Israel, Principles of Buddhism). The transformations via the cube (the Kaaba of Islam) are suggestive, whether to and from the cross (of Christianity), or via its octahedral dual to the Stella octangula/Merkavah (of Judaism). Further development of that connectivity could be indicated by appropriately associating the dodecahedron and icosahedron with the array. The dodecahedron (12 pentagonal faces) and icosahedron (20 triangular faces) - as duals - connect to this array through their shared relationship with the golden ratio and the stella octangula's tetrahedral geometry, suggesting pathways for incorporating Platonic solid symbolism into the hypercube framework.

The tesseract provides a geometric lingua franca for interfaith dialogue. Its 8-cell structure (Islam's 8 Angels, Buddhism's 8-fold Path, Christianity's 8 Beatitudes) unfolds into a cross that collapses into the cube (Islam's Kaaba). Through the golden ratio ϕ , the cube transforms into the dodecahedron -- whose 12 pentagonal faces encode both Islam's 5 Pillars and Christianity's 12 Apostles, Judaism's 12 Tribes and Islam's 12 Imams. The dodecahedron's dual, the icosahedron, completes the pattern. These are not arbitrary religious choices but specific projections of a common 4D configuration -- different faces of the same transcendent structure, united by the 'precious jewel' of the golden ratio.

Question to ChatGPT-5: Could you comment on creation of the above array of images with a hypercube at the centre and 4 diagonals from that position for: cube (by compactification for Islam), cross (by unwrapping the 8-cell for Christianity), stella octangula (by stellation of the octahedral 16-cell dual of the hypercube for

Judaism), and octahedron (of the octahedral dual, hared by Islam and Christianity). # *Show/Hide AI response* #

Question to ChatGPT-5: Given the interest of Judaism in the stella octangula form (as the Merkavah symbol -- and the Israeli battle tank) has there been no such experimentation in 3D. Also of Interest is that by simply rotating the octahedron alone -- it offers a memorable Star of David. There must have been observations in that regard. # *Show/Hide AI response* #

Question to ChatGPT-5: There is misleading feature of the geometrical manipulation in the animations -- effectively disguising the 4D to 3D simplification. I note a good indication of this in the tesseract to cross compactification -- unwrapping the 8-fold cell structure. An indication is offered by the Stella4D facility to display the vertex numbers of the unwrapping it makes evident that many vertices distant from each other have the same number, implying that in 4D they are the same vertex. One could possibly provide curved/dotted lines linking them, but that is overkill in making the point. # *Show/Hide AI response* #


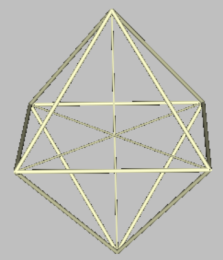
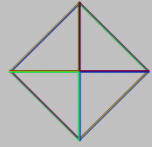
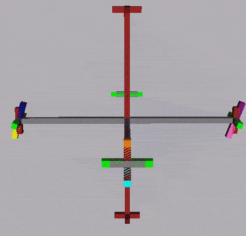
Question to ChatGPT-5: Missing from the array of animations is the connectivity between them number symbolism. So the cross-to-cube omits any reference to the 5-dimensions of the cross as it might relate to Islam's preoccupations with the 5-fold. There are many other such connections but no way to associate them succinctly with the display. # *Show/Hide AI response* #

Question to Perplexity: Are these correspondences evoked in interfaith dialogue. # *Show/Hide AI response* #

Question to Claude-4.5: Could you articulate a separate tabular presentation that cross-references the main array [above], thereby keeping the imagery clean while rendering the numerical architecture accessible. Especially fascinating is the 8-cell "cross" (but with "5 arms") and its potential relation to the 5-foldness of Islam in collapsing into the cube (which has no relation to 5-foldness -- except through the dodecahedron and icosahedron omitted from the array. Is there any Christian recognition of a 5-armed cross in 3D. # *Show/Hide AI response* #

Jerusalem Cross and 8-cell hypercube?: That response notes the extent to which a "5-armed cross" in 2D has been a feature of Christian iconography as the Jerusalem Cross. It was used as the coat of arms of the Crusader Kingdom of Jerusalem after 1099. Its use by the Order of the Holy Sepulchre and affiliated organizations in Jerusalem continues to the present. The four small crosses surrounding a fifth are held to represent wounds on Christ's hands and feet, while the large central cross represents the spear wound in his chest; the central cross represents Christ, and the four smaller crosses also represent the four evangelists and the spread of the gospel to the four corners of the Earth. (D. Gene Williams Jr., Symbols of Faith: The Evolution of Christian Imagery from Antiquity to the Modern Era, Defend the Word Ministries). Consideration has been given been given to its proportions in terms of the golden ratio (Ates Gulcugil, Golden Ratio Christian Cross; Massimo Mazzoleni, Numerical and Iconographic Symbolism: Between Christian Mystery and Esoteric Knowledge, 2025).

Indication of 4D connectivity between 16 vertices of unfolded network of 3D projection of 8-cell hypercube as a "5-arm cross"		
Indicative numbering of vertices		Connections between vertices of same number

Jerusalem Cross in 2D (distinguished by "potent" cross-bars)	Indication in 3D of 16- cell (dual of 8-cell hypercube)	Indicative rotation of 16-cell in 3D	Indicative transformation (design work in progress)
			
<u>AnonMoos, Melian (initial SVG version)</u> , Public domain, via Wikimedia Commons	Images made with Stella4D		Animation developed with Claude-4.5 as an X3D model
<p>The structure has 4 entry points as the basis for the emergence of an 8-faced form with 12 edges. Those 12 edges are generated from 4 crosslets at each vertex -- namely 24 edges blending into 12 in the colour dynamics in the animation between the crosslets and the potents (the crossbars at the end of the arms of the cross). The double set of edges offers a reminder that the "octahedron" is the 3D projection of a 4D 16-cell, in which each of the 8 tetrahedra, framed as octants of the configuration, "conceal" a second set of 8 such cells as highlighted in a final phase of the animation cycle. The octahedral appearance of the 16-cell is challenged as illustrated by the two animations above.</p> <p>The preliminary animation on the right invites extensive experimentation to its colours and phases in exemplifying a 4D representation of a dynamic configuration of what may be implied by the Jerusalem Cross Potent. Of possible relevance to a phase in a future design is the manner in which four crosslets may feature in the current design of crowns, given the symbolic significance associated with them -- and the potential iconography of a "Kingdom of Jerusalem".</p>			

There is a potentially tantalizing geometrical relation between the Jerusalem Cross in 2D and the symbolic and cognitive associations to the subtlety it may imply if its transformation into 4D is framed by the 16-cell (above) -- with a minimal number of cognitive-geometric operations. With respect to construction of the New Jerusalem (if not a Greater Israel), underlying implications focus on its 4-gatedness, in contrast with its current 8-gatedness (of Islamic origin), and the future reconciliation of the "12 Tribes of Israel". The animation on the right (above) offers a framing of these characteristics -- as derived from the Jerusalem Cross.

Given the curious traditional relationship between the symbolism of the Christian Cross and the sword, especially intriguing is how these radically different perceptions might be highlighted by aspects of the dynamics (Matt Marino, *The Cross and the Sword, Reformed Classicist*). There is a case for exploring whether the ceremonial representation of authority by mace, sceptre and royal regalia derives its significance over time from resonance with configurations in 4D (*Embodying the essence of governance in ritual dynamics with mace, sceptre, fasces or vajra?* 2019).

The 4-fold pattern is esteemed as of fundamental significance in many cultures, as variously argued separately (*Comprehension of Singularity through 4-fold Complementarity*, 2024; *Noonautics: four modes of travelling and navigating the knowledge universe?* 2006; *Threshold of Comprehensibility: a fourfold minimal system?* 1983).

Although the phases in the transformation can be precisely defined, as illustrated by the animation, the process of communicating with an AI in developing and refining that animation invites consideration from an educational perspective -- given that its provisional form took many hours and was a challenge to 3 AIs. A summary of that (continuing) process by Claude-4.5 is therefore of some interest. Especially challenging in that respect are the commercial constraints on a lengthy exchange which result in AI memory being periodically "reset" -- ironically analogous to a form of "dementia" requiring periodic "reementia". *[Show/Hide AI learning/summary]*

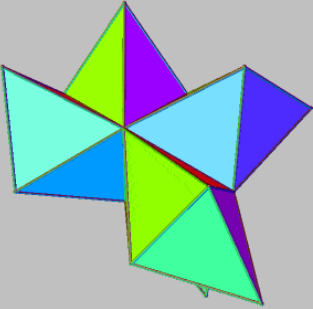
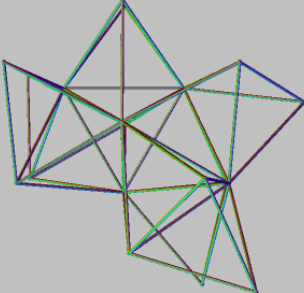
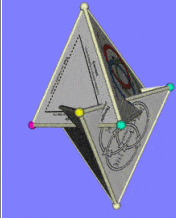
Question to Claude-4.5: Given its geometric and numerological relation to iconic structures esteemed by religions (stella octangula, cross, cube, etc), the purpose of the animation was to suggest an exercise in knowledge architecture -- in building a structure in 4D (by implication) from the explicit form in 2D (the Jerusalem Cross). So the request is whether you could speculate on the construction in that light and how the theologically inclined might associate contrasting mapping projections with its different phases.. *[Show/Hide AI response]*

Question to ChatGPT-5: Same as above . *[Show/Hide AI response]*

Fundamental 4D configurations: 8-cell, 16-cell and the 5-cell? In the light of the earlier argument -- on the potential relevance of a hypercube/tesseract configuration in 4D of the UN's 16 Sustainable Development Goals -- these subtle goals could indeed be variously associated with its 16 vertices (*Turbocharging SDGs by Activating Global Cycles in a 64-fold 3D Array*, 2024; *Towards a configuration of 16 SDGs in 3D*, 2022). More intriguing is their possible association with the 16 cells of the unfolded version of the dual of that configuration, represented below as the 3D projection of that 4D configuration.

Curiously the transition from the 8 Millennium Development Goals to the 16 SDGs could be explored as an unconscious transition from an 8-cell hypercube configuration in 4D to its 16-cell dual of octahedral appearance in 3D. Each of the 16 then takes the form of a tetrahedral cell -- with each tetrahedron paired with another to form a triangular dipyrmaid, all of them forming a compound of 8 dipyramids when unfolded, as shown below (*Interactive exploration of Goal 17 through a polyhedral compound of 16 tetrahedra in 3D*, 2022). As noted by Buckminster Fuller, the octahedron is effectively composed of 8 tetrahedra (Greg Frederick, *Octahedron, Geometry of Thinking*, 17 December 2023).

The animation above, with its dynamic geometric relation to the Jerusalem Cross, together with that below and other projections of the hypercube, may be more suggestive of the reality and potential coherence of the SDGs as a 4D configuration than any effort to represent their relation in 3D or 2D. Even more intriguing is the manner in which any paired tetrahedra in that configuration can be rotated with respect to one another and interpenetrate to form the stella octangula (the fundamental Merkavah symbol of Judaism) as illustrated earlier. It is of course the case that the Star of David in 2D can be perceived from a particular angle through both the octahedron and the stella octangula. The 2D images mapped on the surfaces of the animation on the right derive from separate commentary on the neglected implicit cognitive cycles in viable complex systems (*Framing Global Transformation through the Polyhedral Merkabah*, 2017).

Animations of 16-cell hypercube dual (hexadecachoron) as 3D projection		Animation of 2 tetrahedra forming triangular dipyrmaid and stella octangula
Compound of 8 triangular dipyramids	Wireframe variants	
		
Animations made with Stella4D		

Question to Perplexity: The 16-cell in 4D, when unfolded into a 3D projection, seems to be composed of 8 triangular dipyramids -- namely 16 tetrahedra. *[Show/Hide AI response]*

If subtle significance can be associated with the strategic coherence of both the 8-cell and the 16-cell (and their relationship), a similar question can be asked of a related 4D configuration, namely the 4D 5-cell or pentachoron. As regular polytopes, those three (together with the 24-cell, the 120-cell, and the 600-cell) are the 6 4D analogues of the 5 Platonic polyhedra in 3D.

This would then suggest that the elusive coherence and interrelationship of the various fundamental 5-fold configurations merit exploration in that light -- and to the 5-foldness of the "5-armed cross". Of notable relevance in that respect are the seemingly disparate Five Pillars of Islam, the Five Precepts of Buddhism, the Pentateuch (Torah, Five Books of Moses), the five core beliefs of Christianity, the WuXing of China, and the Pythagorean Hugieia Pentagram (*Cycles of enstoning forming mnemonic pentagrams: Hygiea and Wu Xing*, 2012).

Of current strategic relevance is the elusive coherence of the 5-fold strategy of the Club of Rome's Earth4All initiative (as echoed by that of the Inner Development Goals initiative), and the Five Principles of Sustainable Development -- perhaps strangely "embodied" by the five Permanent Members of the UN Security Council. There are many web references to a "5-cell strategy" but it is unclear whether these are associated with the 4D polytope.

Features of the geometry invite consideration of the coherence and comprrhensibility of other sets potentially upheld as fundamental (*Topological interweaving of 4-fold, 8-fold, 12-fold, 16-fold and 20-fold in 3D*, 2019; *Indicative clues from other distinctive 16-fold mappings?* 2023).

Question to Perplexity: The Jerusalem Cross has 4 sets of 4-armed cosslets. Do you have any trace of concepts traditionally associated with those 16 arms. ***[Show/Hide AI response]***

Question to Perplexity: If the 4 arms of the central cross are added, is their any Christian cluster of 16 or 20 principles. ***[Show/Hide AI response]***

Given the extent to which 24-fold patterns feature in geometry relating to the hypercube, of interest is the degree to which 24-fold strategic configurations are envisaged (*Mapping of a 24-fold framework of strategic relevance*, 2025). Less evident is how that might be distinguished from a 26-fold set, although it features in a study proposing a set of "26 principles for systemic governance" (Ray Ison and Ed Straw, *The Hidden Power of Systems Thinking: governance in a climate emergency*, 2020). That 26-fold articulation was preceded by a set of 26 principles which featured in the *Declaration of the United Nations Conference on the Human Environment* (Stockholm, 1972) -- occasionally cited as the *Magna Carta of the Human Environment* (but long forgotten as such).

The increasing relevance of the subtle psychosocial implications of 4D justify the sense in which there is a form of collective "migration" from 3D to 4D -- to a new cognitive frontier -- as discussed separately (*Future Global Exodus to the Metasphere*, 2022). Significance is variously attributed to mandalas, yantras and rose windows as 2D configurations offering a form of portal to a higher dimensional reality -- even as a "stargate" in popular imagination. Arguably it is the cognitive operations in the meditation on their geometry whose correspondences elicit resonance with the coherence of a 4D or higher dynamic.

Of interest in that light is any relation to be identified between the ancient mandala-like triskelion and the current strategic claims for the triple helix model of innovation (*Reconciling triskelion and triple helix: a topological transformation with psychosocial implications?* 2017). Also of interest is any ability to design dynamic mandala configurations in 3D towards exploration of 4D cognitive implications (*Eliciting Insight from Mandala-style Logos in 3D*, 2020; *Concordian Mandala as a Symbolic Nexus*, 2016). Curiously the traditional Basque lauburu symbol can be converted into 3D variants as a means of visualizing the interplay of 8-fold, 16-fold and 24-fold sets of voices in discourse (*24-fold Pattern Implied by Dynamics of the Lauburu in 3D Visualization*, 2016).

Those claiming exclusive possession of territory in 3D can then be recognized as effectively imprisoning (even incarcerating) themselves problematically in a symbolic "temple" or "castle" in 3-dimensional space -- when significance now transcends that framework, as suggested through the movie reference to *"It's not your*

flag" (Robert Redford, *The Last Castle*, 2001), as cited above..

Interfaith dialogue with Jerusalem as a singularity

The following questions elicited comments in addition to earlier references to both interfaith dialogue and singularity

Question to Perplexity: Whilst the "statics" of sacred geometry are long established, is there any trace of the "dynamics" of the "transforms" in geometric terms between the geometric symbols preferred by different faiths. *[Show/Hide AI response]*

Question to Perplexity: How do such geometrical transforms inform interfaith dialogue. *[Show/Hide AI response]*

To the extent that participants in interfaith dialogue identify with disparate symbolic iconography as configurations in 3D (cube, stella octangula, cross, etc), these may be understood as silos -- thereby avoiding the possibility of fruitful interaction via intermediary 4D configurations serving as a Rosetta Stone (*Mathematical Modelling of Silo Thinking in Interdisciplinary Contexts*, 2024).

Question to Perplexity: Given that the sacred symbols in 2D can be understood as projections of those in 3D, how might the "space" populated by intertransformable 3D symbols be defined -- and is there any trace of research on that space in relation to interfaith dialogue. *[Show/Hide AI response]*

Question to Perplexity: Considerable significance is now variously accorded to "singularity", from both a technological and an "end times" perspective, as summarized separately (*Emerging Memetic Singularity in the Global Knowledge Society*, 2009). In the light of the response on the cognitive and symbolic implications of "Israel" and the Tetragrammaton, could you comment on how "Jerusalem" might itself be understood as such a singularity, as suggested separately (*Jerusalem as a Symbolic Singularity*, 2017). *[Show/Hide AI response]*

Question to DeepSeek: As above. *[Show/Hide AI response]*

Question to ChatGPT-5: As above. *[Show/Hide AI response]*

Question to Claude-4.5: As above. *[Show/Hide AI response]*

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