



laetus in praesens

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Values, Virtues and Sins of a Viable Democratic Civilization

Reframing the controversy of unconstrained population growth as a hyperobject

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Introduction

Considerable importance is attached to values, especially to the democratic values deemed fundamental to governance, whether local, national or global. Significant in these times is the lack of consensus on the set of democratic values and especially how they relate to each other to sustain a viable global system.

As widely recognized, it has become virtually impossible to discuss the role of unconstrained population growth as a primary driver for current global crises (*Institutionalized Shunning of Overpopulation Challenge: incommunicability of fundamentally inconvenient truth*, 2008; *Local Reality of Overcrowding -- Global Unreality of Overpopulation*, 2019). Increasing population can however be recognized as aggravating issues such as: climate change, shortage of resources, overcrowding, environmental degradation, unemployment, inadequate social security, violence, and the like. Strategies are however designed with minimal attention to the ever-increasing significance of that factor.

Curiously there is a sense in which little effort is made to explore the conclusions offered by [root cause analysis](#) with respect to processes driving the current crisis. Especially problematic are situations in which the root cause cannot be named in public discourse -- because of the controversy and denial it arouses. Rather than the familiar deprecation of overpopulation as being a root cause in its own right, is there an even more fundamental root cause to which attention might be fruitfully accorded?

Does the controversy associated with "unconstrained population growth" derive from an understanding of the associated values which is problematic in its own right? Such growth might be more fruitfully recognized as engendered by a complex of intuited values which has yet to be appropriately understood. Rather than assuming that it can be readily understood, there is a case for recognizing that it may elude conventional modes of comprehension.

One possible way forward is through recognition that the issues and dimensions of discourse in that regard together constitute a [hyperobject](#), as articulated from the perspective of [object-oriented ontology](#) (OOO) by [Timothy Morton](#) (*Hyperobjects: philosophy and*

ecology after the End of the World, University of Minnesota Press, 2013; *Hyperobjects: an excerpt*, Academia.edu; *Introducing the Idea of 'Hyperobjects': a new way of understanding climate change and other phenomena*, *High Country News*, 19 January 2015). For Morton, a hyperobject is held to be of such vast temporal and spatial dimensions in relation to human life that it defeats traditional ideas about what is indicated -- an association with references to [hyperreality](#).

The following argument is a development of an earlier discussion of the complex dimensions of wealth and poverty, and the manner in which hyper-wealth and hyper-poverty might be represented (*Memorable representation of the dynamics of a hyper-wealth complex*, 2022). Curiously and ironically -- and perhaps necessarily paradoxically -- engendering progeny could be readily recognized as a quest for a form of wealth, especially given the etymological relation of wealth to health. Through intercourse, the process is one which is intimately related to the quest for inner wealth, usefully indicated as "wholth" (*Wholth as Sustaining Dynamic of Health and Wealth*, 2013). This then merits careful consideration of the value dynamics sustaining the meta-pattern that connects.

As with the quest for material wealth, the controversy regarding population growth may merit considered exploration as a fundamental instance of [misplaced concreteness](#) -- of reification and a quest for the ungraspable (*Misplaced Concreteness as a Form of Encryption*, 2021). Expressed otherwise, it may be a tragic case of "subunderstanding", as articulated by Magoroh Maruyama from a cybernetic perspective (*Peripheral Vision: polyocular vision or subunderstanding?* *Organization Studies*, 25, 2004, 3).

Subunderstanding can in turn be recognized as an instance of [negative learning](#), namely one which seeks to solve a partial problem, without considering the general problem of which it is a part. Successive resolutions of the partial problem do indeed generate learning -- but increase the motivation to make choices suboptimal from the standpoint of the general problem (*Lipoproblems: Developing a Strategy Omitting a Key Problem*, 2009). In a context of political correctness, consideration of negative learning may itself be confused with [negative language](#), namely the representation of people with disabilities in an incapable light.

Rather than the futility of rational argument regarding the "overpopulation myth", it may prove to be the case that it is the aesthetics of wholth which offers a means of reconciling the extremes of wealth and poverty (*Creating one's own Reality through Aesthetics*, 2022). Their compatibility -- their reconciliation -- necessarily eludes conventional modes of articulation through a mistaken quest for closure in the engagement with otherness (*Engaging with Elusive Connectivity and Coherence*, 2018; *Comprehension of Unity as a Paradoxical Dynamic*, 2019).

Understood as a complex nexus of controversial perceptions, greater insight may be found by applying the methods of representation of a hyper-wealth complex (as previously explored) to the familiar sets of "virtues" and "sins" variously recognized by the religions over centuries. In systemic terms these may usefully frame a more elusive form of root cause -- in a manner enabling more fruitful discourse.

Whilst acknowledging the ethical articulations of Buddhism and Taoism, the initial focus here is on the articulations within the Christian tradition (inspired to a degree by Aristotle), especially in the light of their current influence on national and global strategies. The concern here is the quest for more appropriate and coherent ways of representing those sets of virtues and sins beyond their traditional presentation as simple checklists. These necessarily tend to obscure the systemic relations between the psycho-social functions they imply, as well as any insight into their relationships in dynamic terms.

The focus on virtues and sins follows from an earlier [Human Values Project](#) as part of the online *Encyclopedia of World Problems and Human Potential*. This addressed the difficulty in handling the labelling ambiguity of [constructive values](#) (987) and [destructive values](#) (1992) through their organization into [value polarities](#) (230). The conventional labelling of virtues and sins offers a particular example of this -- especially in a multicultural global context. This understanding of axiological polarity is contrasted with that of Aristotle's *Nicomachean Ethics* in which 12 virtues are each associated at the (golden) mean between their excess and deficiency

The exploration here of more systemically coherent forms of axiological representation is consistent with the fundamental role now authoritatively attributed to the existence of an "Axis of Evil" -- and by implication to an "Axis of Good", as variously recognized. The cognitive and logical significance of such "geometry" follows from the two-dimensional [square of opposition](#), whose origins are traced back to Aristotle (*7th World Congress on the Square of Opposition*, Leuven 2022). Given the problematic role of divisive opposition so evident within a global context, this has acquired new relevance through the [geometry of logical opposition](#), now articulated in three dimensions through polyhedra and their 4-dimensional analogues.

Core democratic values?

A document of the United Nations (*Democracy: Peace, dignity and equality on a healthy planet*) indicates:

Democracy is a core value of the United Nations. The UN supports democracy by promoting human rights, development, and peace and security.... The UN does not advocate for a specific model of government but promotes democratic governance as a set of values and principles that should be followed for greater participation, equality, security and human development. Democracy provides an environment that respects human rights and fundamental freedoms, and in which the freely expressed will of people is exercised. People have a say in decisions and can hold decision-makers to account. Women and men have equal rights and all people are free from discrimination. These values are embodied in the [Universal Declaration of Human Rights](#)

Understood as the foundation of American democracy, one articulation (*Core Democratic Values, Study Smarter*) asserts that:

- Democratic values are the overall set of values that are widely shared among Americans. One thing that defines American political culture is a shared sense of democratic values.
- There are democracies all over the world that hold certain values specific to their government. For example, social justice, freedom of speech, and rule of law are values that can be seen in many democracies all over the world.

- American democratic values can be summarized by five characteristics: liberty, individualism, laissez-faire, populism, and egalitarianism.

A more comprehensive set -- *Core Democratic Values Defined* -- is derived from a collaborative project of the US Center for Civic Education and the Council for the Advancement of Citizenship (*Civitas: A Framework for Civic Education, National Council for the Social Studies Bulletin*, 86, 1991). This notes that core democratic values are the fundamental beliefs and constitutional principles of American society, which unite all Americans. These values are expressed in the Declaration of Independence, the United States Constitution and other significant documents, speeches and writings of the nation. The values are listed (with definitions) as: Life, Liberty, Pursuit of Happiness, Justice, Common Good, Equality, Truth, Diversity, Popular Sovereignty, and Patriotism. Extensive commentary in relation to these values is offered in *DebateUS! (Democratic Values Defined, 2021)*

An unsourced document (*Core Democratic Values*, Google docs) adds to that set: Checks and balances, Civilian control of the military, Federalism, Freedom of religion, Representative government, Rule of law, and Separation of powers.

As argued by Corey Brettschneider, the democratic ideal is fundamentally about a core set of values (political autonomy, equality of interests, and reciprocity) with both procedural and substantive implications (*The Value Theory of Democracy, Politics, Philosophy and Economics*, 1 October 2006).

For the Center for Values in International Development, Paulina Ibarra argues that respecting democratic values is not only critical to sustaining the democratic system, but such respect is also a means to an end in the context of human development (*Promoting Democratic Values to Prevent Democratic Backsliding*, 16 January 2022). That argument is relatively unique in emphasizing the dynamics interrelating core values:

The three core democratic values are liberty, equality, and justice. All three of these values constantly interact with each other in an intertwining dynamic where, if one core value is neglected, then the others are negatively affected too. In that sense, strengthening democratic values through different tactics such as education at all levels, civic participation, accountability, and similar other means, must be a horizontal effort. The solution is balancing all human rights, rather than trying to find which human right is more important than the others so that some rights can be traded away or ignored. All three core democratic values – liberty, equality and justice – as well as all human rights – must be equally protected. When we neglect one value, we are putting at risk the whole democratic system.

As suggested by the above, a varying number of core democratic values are explicitly recognized, although others may be implied:

- 6 values: democratic decision-making, freedom of speech, equality before the law, social justice, equality, social justice. (*Democratic Values Lesson Plan*, Parliament of Victoria)
- 10 values: life, liberty, the pursuit of happiness, justice, equality, diversity, truth, popular sovereignty, patriotism, and the rule of law (*Core Democratic Values, Quizlet*); 21 values (*Core Democratic Values, Quizlet*); 18 values (*Government Core Democratic Values, Quizlet*).

As indicated in the case of Australia, there is little embarrassment in implying the existence of other values which remain unspecified:

The Australian democracy has at its heart, the following core defining values: freedom of election and being elected; freedom of assembly and political participation; freedom of speech, expression and religious belief; rule of law; and other basic human rights (*Australian Democracy: an overview*, Museum of Australian Democracy)

In a quantitatively obsessed global civilization it is intriguing to note that there is little consensus on the number of relevant values -- of significance to the development of democracy or otherwise. As mentioned above, the Human Values Project took one approach in tentatively identifying 987 "constructive values", 1992 "destructive values" as articulated in English -- and then organizing them into 230 value polarities (*In Quest of Engaging Values: context of the Human Values and Wisdom Project*, 2008). The World Values Survey network has produced over 300 publications in 20 languages with secondary users having produced several thousand additional publications in response to data collected from questions formulated by social scientists. The methodology would seem to focus on "what people value" in the light of surveys -- but seemingly without any concluding focus on the "number of recognizable values".

It is intriguing to note the opening in the United Arab Emirates of an *Abrahamic Family House*, designed as a configuration of church, mosque and synagogue (Robin Gomes, *Abrahamic Family House in Abu Dhabi to open in 2022, Vatican News*, June 2021). It has been designed to capture the values of mutual respect and peaceful coexistence, as shared by Judaism, Christianity, and Islam. It is inspired by the *Document on Human Fraternity for World Peace and Living Together*, signed on 4 February 2019, by Pope Francis and the Grand Imam during the Pope's visit to Abu Dhabi. The 11 values specifically recognized are:

- "peace"; "freedom [...] of every person"
- "justice based on mercy"
- "dialogue" in order to promote "peace" and "tolerance"
- "protection of places of worship"
- the necessity "to stop [...] terrorism"
- "full citizenship"
- "[g]ood relations between East and West"
- "the right of women"
- "protection of the fundamental rights of children"
- "protection of the rights of the elderly, the weak, the disabled, and the oppressed".

Symptomatic of the challenge of any ethical articulation of values, however, is the seeming lack of consideration of the *Global Ethic*, as promoted by the Parliament of the World's Religions (and discussed below).

In what manner has the United Nations and its Specialized Agencies engendered a coherent set of values of relevance to democratic civilization? Does the *Universal Declaration of Human Rights* frame the response -- possibly as supplemented by other such declarations?

Any effort to recognize "democratic values" is further complicated by their deliberate confusion (for some) with "liberal values" and "Western values":

- Geoffrey R. Stone: *Liberal Values* (*Huff Post*, 8 October 2006)
- Christopher Pyne: *Liberal Values and an Agenda for Australia's future* (*Ministers Media Centre*, 29 April 2015)
- Helena Rosenblatt: *Liberal Values: Benjamin Constant and the politics of religion* (Cambridge University Press, 2008)
- Deirdre Nansen McCloskey: *Why Liberalism Works: how true liberal values produce a freer, more equal, prosperous world for all* (Yale University Press, 2019)
- Martin Wight: *Western Values in International Relations* (*International Relations and Political Philosophy*, 2021)
- Peter Harrison: *An Eccentric Tradition: the paradox of "Western Values"* (*ABC*, 17 January 2018)
- Zheng Youngnian: *Chinese Values vs. Western Values: competition or dialogue?* (*Wilson Center*)
- Julian H. Blau: *Liberal Values and Independence* (*The Review of Economic Studies*, 42, 1975, 3)
- *Liberal Values* (*Conservapedia*)
- *What are the core liberal values?* (*Friedrich Naumann Foundation*, 15 September 2017)

Especially intriguing is the seemingly deliberate lack of clarity as to what constitutes the values upheld by the United Nations and where "UN values" are specifically identified -- and how these relate to democratic values, liberal values and "Western values". Recent examples of exacerbation of this confusion include:

- *2021 Year in Review: Celebrating UN values in action* (*UN News*, 31 December 2021)
- *UN Values and Behaviours Framework* (*UN HR Portal*)
- *What does the 2030 Agenda say about universal values?* (*UN Sustainable Development Group*)
- *What are the core values, principles and competencies of the United Nations?* (*United Career Coalition*)

The matter is further confused by media coverage of the anticipated address by the President of the USA to the UN General Assembly (*Biden to label Russia's invasion of Ukraine an affront to UN values*, *Deutsche Welle*, 21 September 2022). From that perspective, little is said of the affront to UN values by the US (*Alleged Breach of UN Treaty Obligations by US*, 2010; Kofi Annan, *An Illegal War*, *The New York Review of Books*, 21 October 2004).

Value devaluation and junk values

As a consequence of the confusing relation of fundamental human values to monetary value (as defined by economics), there is no clearly relevant antonym for "value" resulting from the loss of value or its absence -- usefully exemplified in the fictional title of Robert Musil (*The Man Without Qualities*, 1943). Understood as worthless, the financial markets have employed the term "junk bonds", as one indication of absence of value -- somewhat ironically, given the value associated with "bond". Economics also makes use of "junk value", as do the computer sciences. Further confusion results from the many economic studies of the "value of life" and the "value of statistical life".

Of relevance to this discussion, the sense of junk values has seemingly been borrowed to indicate those human values deemed worthless:

- Johann Hari: *How the "Junk Values" of Neoliberalism Drive Depression and Anxiety in the U.S.* (*Democracy Now*, 1 February 2018)
- Brooke Meredith: *8 Junk American Values That Are Making You Unhappy* (*Medium*, 21 December 2021)
- Leon Garber: *Harboring Junk Values: how our unhealthy goals maintain depression* (*Existential Cafe*, 30 October 2019)
- Jord Cuiper: *Junk vs. Core Values*
- Jason Duff: *The Age of Junk Values* (*Record Herald*, 14 May 2019)

It is most curious that -- other than with reference to "junk" -- the loss of value is not specifically recognized by a term in English, other than through the verb or gerund or as devaluation. There are a references to [devaluing science](#), [devaluing the humanities](#), [devaluation of religion](#), [devaluing the future](#), [devaluing nature](#), [devaluing the individual](#), [devaluing truth](#), and [devaluing life](#), for example.

More relevant to this argument is the intriguing use of devaluing in relation to human values, as indicated by the following:

- Ravi Kiran Jain, et al: *Subverting Democratic Institutions, Devaluing Democratic Values and Making Irrelevant Democratic Processes* (*PUCL Bulletin*, October 2020)
- Linton Weeks: *Trivialization Nation: are we devaluing our values?* (*NPR*, 12 February 2010)
- Charles Cavanaugh: *The Devaluing of Values* (*Vision4Living*, 3 August 2015)
- N. V. Subbaraman: *Devalued Values!* (*Envious Thoughts*, 28 June 2017)
- David Klinghoffer: *The Devaluation of Values* (*Forward*, 23 July 2004)
- John G. Blumberg: *Devaluing Values* (*The Porch*, 17 March 2016)
- Saulius Kanišauskas: *Devaluation of Values or a Creative Need to Transcend into the Depth?* (*Creativity Studies*, 11, 2018, 2,)
- Stephen Brown: *Devaluing Value* (*Consumer Value*, Routledge, 1998)
- Syed Rezaul Karim: *Dangerous Decline of Values* (*Daily Star*, 3 June, 2011)
- *Nihilism: How "All Higher Values Devalue Themselves"* (*The Chrysalis*, 26 June 2013)

Further insight is evident from other perspectives:

- Steven Stosny, *You Are the Way You Value and Devalue* (*Psychology Today*, 2 October 2008)
- Raleigh Sadler: *Giving value to the devalued* (*Baptist Press*, 7 August 2013)
- Guy Martin: *Why corporate "values" devalue you* (*Blueprints*, 18 April 2017)

Some clarification on the origins of such confusion is offered by Caitlin Johnstone:

The trouble with "Western values" is that Westerners don't value them. They think they value them, but all that reverence for free expression and holding power to account with the light of truth goes right out the window the second they see someone saying something that sharply differs from what their rulers and their propagandists have told them to think. Then they want that person silenced and shut down. In truth, the most forceful critics of the Western empire actually embody these Western values infinitely more than empire apologists do.... It's obvious with a look around that the "Western values" we're all told about are not actually terribly common in the West. (*Just Who Values 'Western Values'? Consortium News*, 16 September 2022)

Core values in relation to fundamental "virtues"

Virtues: Indicative checklists of "virtues" include:

- Lion Goodman: *The Master List of Virtues* (Trans4Mind), indicates over 650 virtues (followed by 350 vices in *The Master List of Vices*)
- Sean Galla: *A Master List of Virtues and Their Meanings* (*Mens Group*), offering checklists from a variety of perspectives, religious and otherwise
- Aly McCarthy: *What Are the 40 Virtues?* (*Families of Character*, 31 March 2018)
- Namrata Singh: *List of Virtues to Help You Live Your Best Life!* (*The MindFool*, 24 February 2020), indicating 80 virtues
- Barrie Davenport: *The Definitive List Of 100 Virtues To Live By* (*Live Bold and Bloom*, 25 May 2020)
- Madeline Sol: Master List of Virtues (*Wizardry*)
- *List of Virtues: A Master List of Virtues and Their Meanings* (*Jubasi*, 2022)
- *A List of The 52 Virtues* (*The Virtues Project Educator's Guide: Simple Ways to Create a Culture of Character*)
- *Virtues List* (*Virtues for Life*), indicating for 72 virtues what each complements and transcends

Virtues versus Values: Far less evident is any clarification of the relationship between current secular preoccupation with "values" and the traditional religious preoccupation with "virtues" -- a preoccupation which remains fundamental to those respectful of religion. One commentary argues that the main difference between value and virtue is that values are principles or standards of behaviour that help one to decide what is important in life, whereas virtues are qualities that are universally or generally considered to be good and desirable (*Difference Between Value and Virtue*, *Pediaa*, 8 January 2017)

It is unclear why such definitions are so readily assumed to be comprehensible -- especially given the fundamental role they are assumed to play in the governance of democratic societies and in the behaviour of their leadership.

More explicitly, for Jack Krupansky (*Relationship Between Virtues and Values*, *Medium*, 25 January 2018):

Virtues and values are commonly treated as synonyms, but there is a distinction — virtues are *lived* values, values *in action*, values which are achieved on a dependably regular basis, while values by themselves are *ideals* or *goals* which tend to be more *aspirational* and not uncommonly fail to be achieved on as regular a basis as desired. That's the real point or purpose of this informal paper, to emphasize that values are primarily aspirational and that the real goal is to *realize* values, to make them virtues, by living them in our daily lives on a consistently regular basis. [*emphasis in original*]

A different emphasis is offered by another commentary, arguing that values reflect what is accepted by cultures while virtues reflect characteristics of a human being in terms of their morals (*Difference Between Value and Virtue*, *Difference Between*, 14 September 2014):

- Value could be both culturally and personally explained while a virtue could only be explained in a personal sense
- Values reflect a culture in terms of good norms that the majority of that particular culture share.
- Virtues reflect people's characteristics or traits that lay the foundation of morally good being.
- Virtues could also be shaped by religions and beliefs of people while values are shaped by the culture or the society people live in.
- Personal values are things that are cherished by people.

For Scott Perry (*Values vs. Virtues*, *Creative Purpose*, 25 May 2020):

Values and virtues are terms frequently confused or conflated. Yet, the distinction between the two is worth teasing apart. Values are your ideals, guiding principles, and standards of behavior. They're aspirational goals that provide you with a moral compass for navigating choices and decisions. Virtues are your convictions. Values as lived and acted upon. Virtues are experienced and observed. Put another way, values are theory, and virtues are reality.

For Michael Sean Brady (*The Value of the Virtues*, *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition*, 125, 2005, 1):

Assuming that the virtues are traits of a person's character and intellect which count as valuable, what makes them so? Direct

theories of the virtues seek to answer this fundamental question in light of another assumption, namely that the virtues have characteristic aims or motives. In particular they hold that an explanation of why some virtuous trait counts as valuable should ultimately appeal to the value of its characteristic motive or aim.

In discussion of the [SCRUM](#) framework for software development, Sergey Makarkin argues:

Scrum Values were added to *Scrum Guide* in 2016. Values are what makes Scrum fully uncover its potential. These values include Courage, Focus, Commitment, Respect, and Openness.... Embodying Scrum Values is necessary for empirical Scrum pillars of transparency, inspection, and adaptation to come to life. Being alive, these pillars build trust and thus enable Scrum Team to thrive. However, by making them values we admit that we do not have what's necessary.... Is there a better concept than "value" to use as a guidance? Moral philosophy proposes another concept that is not so popular these days and that I believe to be a better fit: "virtue".... Key difference between value and virtue is that value refers to an entity when virtue refers to behavior. We can say that a virtue is a behavioral pattern embodying some value.... Speaking about virtues we are making it clear: our aim is to develop these virtues so that they are becoming our second nature. ([Moving from Values to Virtues, Scrum.org](#))

Questionable values: With respect to corporate value statements, Patrick M. Lencioni argues:

Most values statements are bland, toothless, or just plain dishonest. And far from being harmless, as some executives assume, they're often highly destructive. Empty values statements create cynical and dispirited employees, alienate customers, and undermine managerial credibility.... Given the risk, why do executives put so much work into developing values statements in the first place? Because they believe they have to. At least that's how they've felt since... [a] book made the case that many of the best companies adhered to a set of principles called core values, provoking managers to stampede to off-site meetings in order to conjure up some core values of their own.... Today, 80% of the *Fortune* 100 tout their values publicly -- values that too often stand for nothing but a desire to be *au courant* or, worse still, politically correct. The debasement of values is a shame, not only because the resulting cynicism poisons the cultural well but also because it wastes a great opportunity. Values can set a company apart from the competition by clarifying its identity and serving as a rallying point for employees. ([Make Your Values Mean Something, Harvard Business Review, July 2002](#))

For Nicole Dorskind ([Defining Your Corporate Values? Keep These Things In Mind, Forbes, 18 June 2019](#)):

It's not hard to see, however, why there is growing cynicism when it comes to corporate values -- especially when you think about companies like Enron, which claimed to have values such as integrity as part of its corporate mantra but clearly didn't adhere to them. While most businesses claim to have a set of values, often they're not technically values. These "values" are often communicated as a list of directives and behaviors, and the list is typically exhaustive and may include terms that contradict each other (e.g., "collaboration" and "autonomy" -- how do you know which to follow?). For some companies, their values are well-defined, but often they're not ingrained in the business. Therefore, they don't act as a tool to shape and reinforce the organization's unique culture. So what's the point of having them? Values can be a critical tool in your corporate arsenal. They represent the codification of your culture, and culture can be key when it comes to high-performing organizations.

The very nature of values is challenged by Iain T. Benson ([Values and Virtues: a modern confusion, Catholic Education Resource Center](#)):

Why "Values" Language is not a Moral Language: I hope that if I can give you anything tonight, it is to give you a very serious doubt about the utility of this term 'values'. What I want to do is explain why that is. Why, when we speak about values, we are not talking about something that is true? When we speak about 'Catholic values', we are speaking not about the truth that the Catholic faith upholds, but to the world around us, we are speaking about the values that a Catholic has. The same problem exists for any joint term such as "Canadian values" "American values" "family values" "religious values" etc. Though we may think these terms have some real identifiable meaning they do not....

If you look in an *Oxford English dictionary*, under the term 'values,' you will discover that it was not used as a moral term until later in the 19th century. It is very recent. Prior to that, people didn't speak about values as moral language. 'Values' was a language restricted to economics, and when you think about it, the value of something is how much you pay for something, what is its cost...

Virtue is similar in that how we are (our first natures) in relation to the virtues (understood, described by stories, taught and lived by practice) is personal; but unlike "values" the virtues are also shared and cannot be simply chosen or ignored at will. That was the point I made earlier about "justice" not being something one simply didn't have as part of one's "value system". All the virtues are shared as objectively true but they are personal in how they apply to us as persons.

Are these challenges relevant to the values which democracies (and their leadership) claim so frequently to uphold?

Embodiment of value in behaviour? The relationship between values and virtues would seem to lie in the sense in which a virtue is the embodiment of a value, whether by an individual or a collective. Curiously the secular understanding of any particular value would appear to lack any specific reference to the condition implied by its absence -- however much this may be deplored in the secular recognition of

"problems" and "issues". Considerable attention is however given by religions to the case of particular virtues -- with reference to corresponding "sins" or "vices".

Missing, although necessarily implied, is the relation of both to behaviour. A virtue may be recognized as embodied in behaviour as "virtuous action" -- problematically challenged as [virtue signalling](#). Reference to "valuable action" is questionably related to any set of values -- although similarly challenged ([greenwashing](#), and its variants). Somewhat ironically, the relation to behaviour invites more specific exploration as the "functions" recognized as vital to the viability of systems, as understood by cybernetics (discussed below).

It is unclear under what circumstances democracies argue for the embodiment of values by their citizens in their behaviour -- whether or not that is explicitly recognized as virtuous. The challenge may become even more apparent in response to climate change -- following the narrative deployed in such an unprecedented manner with respect to the pandemic (*Application of Universal Vaccination Narrative to Climate Change: implications for biodiversity, human equality and anti-otherness*, 2021).

Values (virtues) in relation to Problems (issues / vices / sins)?

This argument suggests that, understood as virtues or sins, there is a sense of a **dynamic process** consequent on the degree of individual or collective embodiment and the action this implies. This is less evident in the case of values **statically defined**, as argued separately (*Freedom, Democracy, Justice: Isolated Nouns or Interwoven Verbs? Illusory quest for qualities and principles dynamically disguised*, 2011)

The many problems and remedial strategies profiled in the online *Encyclopedia of World Problems and Human Potential* are complemented by the values dataset of the [Human Values Project](#). The commentary to the latter notes the curious fact that a "problem" can only be recognized in the light of a value -- potentially asserted as fundamental to any remedial strategy. The challenge is to relate specific problems and strategies to the relevant values -- as might be undertaken with respect to the 17 [Sustainable Development Goals](#) of the United Nations. Confusion of course arises when any "goal" is itself held to be a "value" in its own right.

A related point may be made with respect to the many advocated modalities of human development as profiled by the [Human Development Project](#) for that *Encyclopedia*. Again the question is what specific values it is sought to embody by any individual development process -- whether or not they are held to be "virtues" (and a remedial response to "vices"). By what problems is such development indeed hindered -- whether or not they are understood to be embodied as "sins" or "vices"?

The ambiguity of values, of which their multiple synonyms is indicative, poses a major challenge to any consensus on values and the manner in which they are labelled. It is also appropriate to note that value statements and checklists of any kind make relatively little effort (if any) to indicate the problematic condition arising from inadequate attention to any given value and its cultivation. The Human Values Project addressed these difficulties by distinguishing an extensive set of "constructive values" and of "destructive values" -- potentially relevant to a multilingual, multicultural global context. These were then clustered into value polarities. The conventional labelling of virtues and sins offers a particular example of this -- to some degree.

The website *Changing Minds* offers a very helpful degree of clarity in its commentary on [Values](#) as variously understood -- with links to a number of other commentaries on sets of values, or to specific insights into the nature of values. These various articulations help to emphasize the point that there is little consensus on fundamental values. No reference is made to "democratic values", for example. Nor is it evident that there is any collective motivation to derive greater coherence from this questionable diversity -- especially given the absence of references to the values (or their equivalent) as articulated by other cultures (and in other languages or scripts).

A summary of the configurative nexus relating pathologies and cognition is offered by Maurice Yolles and Gerhard Fink (*Personality, Pathology and Mindsets: pathologies and corruption*, *Kybernetes*, 2014; *Modelling Pathologies in Social Collectives*, *European Journal of International Management*, 1, 2007, 1/2).

Sets of virtues and sins as indicators for clustering values and problems

Classic checklists: It is intriguing to note that the *Changing Minds* site refers to its own valuable commentaries on [The Seven Virtues](#) and [The Seven Deadly Sins](#) -- but clustered with other "historical values". With respect to both virtues and sins, these offer a useful summary of the extensive discussion in the relevant *Wikipedia* entries on the [Seven virtues](#) ([Cardinal virtues](#), [Theological virtues](#)), and the corresponding [Seven deadly sins](#). Especially interesting is the historical development of the checklists and the manner in which the checklists have been progressively elaborated and redefined -- presumably remaining susceptible to further refinement.

The *Changing Minds* site notes the distinctions between:

- *Seven Virtues*: Faith, Hope, Charity, Fortitude, Prudence, and Temperance (as recognized by Pope Gregory)
- *Seven Contrary Virtues* (specific opposites to the Seven Deadly Sins): Humility (against pride), Kindness (against envy), Abstinence (against gluttony), Chastity (against lust), Patience (against anger), Liberality (against greed), and Diligence (against sloth)
- *Theological Virtues*: Love, Hope and Faith (as defined by St. Paul)
- *Cardinal Virtues*: Prudence, Temperance, Courage and Justice
- *Seven Heavenly Virtues*: Faith, Hope, Charity, Fortitude, Justice, Temperance, Prudence.
- *Seven Corporal Works of Mercy* (from medieval times): feed the hungry, give drink to the thirsty, give shelter to strangers, clothe the naked, visit the sick, minister to prisoners, and bury the dead.

Reframing in democratic society? It is rare to find consideration of both "virtues" and "values" in the same context, noteworthy being the exceptional articulation from another cultural perspective -- that of the Eastern martial arts:

Our 7 Virtues is our list of seven paramount guiding attributes with which we seek to direct and develop the character of our students here at Virtue Taekwondo. A 'virtue' is an element of behavior which carries high moral and personal standards. It is something that can be implemented in our interactions and engagements every day!... The 7 Core Values is our list of 7 foundational principles which we prioritize in order to strengthen and support the health of our school. The distinction between the Virtues and Values is that while a 'virtue' is a characteristic of behavior that can be practiced daily, a 'core value' is a goal which represents our motivations to do what we do with ever-increasing desire for achievement and purpose. Virtues are what we live by; Values are what we strive for. (*Our 7 Virtues and 7 Values, Virtue Taekwondo*)

The confusion of insights -- potentially to be understood as a hyperobject -- is usefully indicated in the *Wikipedia* entry on sins, which concludes with regard to contemporary "revalorization":

[Ferdinand Mount](#) maintains that [liquid currentness](#), especially through tabloids, has surprisingly given valor to vices, causing society to regress into that of primitive pagans: covetousness has been rebranded as retail therapy, sloth is downtime, lust is exploring your sexuality, anger is opening up your feelings, vanity is looking good because you're worth it and gluttony is the religion of foodies (*Full Circle: how the Classical World came back to us*, 2010)

There is a degree of irony to the fact that the religious preoccupation with sin has traditionally evoked the ritual of periodic confession, whereas use of "sin" in relation to democracy rarely evokes any confession by the "sinner" -- however much such recognition is sought by critics.

There is a curious possibility that opposing parties in any parliamentary democracy engage in a [co-dependent dynamic](#) with each other. This could be compared to that of a [penitent](#) ("sinner") in relation to a priest in a [confessional](#). Each party (adopting the role of a priest) frames the other as under the obligation to "confess" to its "sins" -- a process typically resisted in practice, as might be expected. Absolution is consequently seldom accorded in that context -- but potentially sought and offered to a degree by a periodic election.

Sets of virtues as indicative of systemic viability

Systemic coherence: virtues versus values: From the various checklists of values or virtues, it is far from clear whether any selected set reflects coherence and viability in a systemic sense. As noted above, value statements, especially for corporations, need bear no relation to the viability of the operations of the corporation and may well be primarily of value for public relations purposes, despite arguments to the contrary (James Charles Collins and Jerry I. Porras, *Built to Last: successful habits of visionary companies*, 1997).

The possibility is all the more problematic in the case of "core democratic values" and the viability of governance of a country in practice -- rather than in theory as inspired by ideals. Given the possible confusion between goals and values, it could be asked whether the UN's 17 Sustainable Development Goals constitute a viable system for global governance in any sense -- rather than a somewhat coherent "dream" for public relations purposes, as separately explored (*Systemic Coherence of the UN's 17 SDGs as a Global Dream*, 2021).

By contrast it could be argued that a set of virtues tends to reflect greater recognition of systemic viability in the light of individual and collective experience. This could be especially the case since such sets tend to be the consequence of reflection over centuries within traditions preoccupied with viability -- if only in a religious sense, possibly reflective of insights from monastic viability. Modern value statements can not be said to have been subjected to such rigorous testing over time.

The argument can therefore be developed on the assumption that **sets of virtues tend to be of greater systemic coherence than sets of values**. Given that values tend to be articulated in language sensitive to current challenges rather than traditional insights, a further assumption can be made that **the language of virtues could be usefully challenged in the light of modern systemic insights**. The challenge relates specifically to the traditional labelling of values for which there may be multiple synonyms of potential significance. Rather than a single term, **a virtue (as with any value) may call for multiple labels indicative of a "semantic field" by which nuances of the systemic function can be carried** -- or are assumed to be carried.

Rather than the somewhat simplistic categories by which individual virtues and sins have been defined, there is a case for recognizing the extent to which those **labels are merely indicative of a semantic field** -- readily recognized by the synonyms through which each may also be known or implied.

Systemic relationships: As noted above, it is curiously characteristic of checklists of virtues or values that **very little effort (if any) is made to indicate the relationships between the elements composing a checklist** -- readily caricatured as a "to do list" or even a "laundry list". Ironically the relevance of such a sanitary metaphor could be seen in reference to "basket" (although not explicitly a "laundry basket") with respect to the major [Conference on Security and Cooperation in Europe](#) as a key element of the détente process during the Cold War. This was organized into **three "baskets" of issues** (*Findings Eleven Years After Helsinki -- Implementation of the Final Act: Basket I*, 1987; *Basket II*, 1987; *Basket III*, 1987). Use of that insightful metaphor did not however extend to the manner in which the baskets were "woven".

It is such relationships which are integral to insight into systemic viability (*Interweaving Thematic Threads and Learning Pathways*, 2010; *The Future of Comprehension: conceptual birdcages and functional basket-weaving*, 1980; E. Ronner, et al, *Basket of Options: unpacking the concept*, 7 July 2021). This is unfortunately best understood through the somewhat alien language of cybernetics. There is therefore a challenge to reconciling its principles with those of virtues and values -- a reconciliation readily framed as between the "hearts" and the "heads" (*Challenge of the "headless hearts" to the "heartless heads"?*2018).

In the quest for systemic viability, cybernetics is especially attentive to the balance between positive and negative feedback. Again, as

noted above, **consideration of virtues and values tends to avoid reference to their neglect** -- preferring attention to the positive rather than to the negative -- in the modern spirit of political correctness. Reference to the negative may even be considered as enabling its manifestation in some manner -- even inauspiciously so. Notable in this respect is the contrast between virtue lists (which may recognize a correspondence with lists of sins or vices), and value statements (which do not).

From a systemic perspective it is somewhat extraordinary that value statements do not identify explicitly the challenges consequent on their neglect. The articulation of the UN's Sustainable Development Goals could be explored from this perspective. Rather than values as such, those goals emphasize the elimination of certain negative conditions. Given the distinction made between virtues (as action embodying the desired condition) and values as ideals, **it is less evident how the values are indicative of the action required towards a sustainable dynamic associated with the eventual achievement of the goals.**

Cognitive capabilities and organizational virtues: The recognition of "organizational virtues" is explored by Florian Maurer (*Towards a Strategic Management Framework for Engineering of Organizational Robustness and Resilience*, Friedrich-Alexander-Universität Erlangen-Nürnberg, 2020), noting that:

- According to examined literature... most promising methodologies implementing and applying resilience are flexibility (including adaptability and improvisation), visibility and "organizational virtues" as umbrella term for capabilities as behaviors as free of denial, openness, creativity, emotional vitality etc. In addition, important ingredients are agility and strategy resp. strategic management, velocity and innovation (including entrepreneurship). Formal structure, safety oriented organizational culture, authentic leadership, control system and (responsiveness) policies are mentioned but only have minor relevance. (p. 145)
- Cognitive capabilities, as presented in literature, are a sum of methods and activities that enable and enhance communication, information sharing & connectedness, cooperation & collaboration, and learning & knowledge management within an organization and beyond. It captures the development of:
 - social capital, social interaction, community competence within the system/organization,,,
 - "virtue categories", such as wisdom and knowledge, courage, humanity, justice, temperance, transcendence,,,
 - a value system, identity & meaning...,
 - trust and respect mechanisms among system stakeholders...,
 - an innovation culture and entrepreneurship..., openness,, and commitment ..., (good) will...,
 - empowerment and emancipation of system/organizational members...,
 - teamwork and collaboration mechanisms...,
 - a winner's culture...,
 - integration/integrative and coordination processes...;
 - governance mechanisms..., communication (directly/indirectly) including: sensemaking, mindfulness, wisdom and heedfulness,
 - connectedness, exploration, situation awareness..., reality sense...; information sharing ...,
 - cooperation mechanisms and risk sharing strategies. (pp. 198-199)

A recent summary of the configurative nexus relating values and cognition is variously offered by Maurice Yolles and Gerhard Fink (*A Configuration Approach to Mindset Agency Theory: a formative trait psychology with affect, cognition and behaviour*, 2021).

Systemic formalization? A case for a more systematic approach to the complex of sins of collectivities -- whether political, corporate or otherwise -- is made separately (*Seven Deadly Sins of Fundamentalism: assessing memetic weapons capability of neoconservatism*, 2004). The argument was developed in the following sections:

Sin as deliberate distortion of insight
 Conceptual sins as logical fallacies
 Cognitive distortions as "sins"
 Strategic "sins"

Knowledge-handling "sins"
 Towards a logico-mathematical formalization of "sin"
 Deployment of memetic weapons

The formalization proposed there was itself explored separately (*Towards a Logico-mathematical Formalization of "Sin": fundamental memetic organization of faith-based governance strategies*, 2004):

Confusing variety of sins
 Sins and logical fallacies
 Sins in relation to axes of cognitive bias
 Sins as catastrophes
 Sins and the mathematics of harmony
 Sins as disruptions of the seamlessness of the cosmic plenum
 "Sins" understood through the drama of psycho-social dynamics
 "Sinful questions"
 "Sins" in the light of number theory
 Trigrams: a coding system for "sins"?
 Enneagram of sin

Sins inherent in value polarities
 "Sins" in the light of a Theory of Everything
 "Wrongness": as "sins" of structural design and aesthetic composition
 Statistical indicators of "sin"
 Social process triangles as a potential framework for "sins"
 Vector equilibrium as a dynamic configuration of tendencies to disorder or "sin"
 Day of Judgement: multi-dimensional accounting for sin?
 "Redemption of sins" and "healing"
 Implications for faith-based governance
 Role of mathematics in support of faith-based governance

The section on *Vector equilibrium as a dynamic configuration of tendencies to disorder or "sin"* is relevant to the polyhedral mapping discussed below.

It is unfortunate that **reference to "sin" or "vice", as with "virtue", is associated with a language which does not offer the**

articulation and analysis typical of the systems sciences and most notably of cybernetics. Understood in systemic terms, any failure of viability (whether for the collective or for an individual) merits exploration in the light of studies of systemic failure, as argued separately (*Variety of System Failures Engendered by Negligent Distinctions*, 2016). How is it appropriate to understand the failure of systemic functions specifically associated with values -- in the achievement of goals? Recognition of "sins" and "vices" is seemingly not sufficient, despite the extensive literature.

Collective-Systemic sins and vices -- of democracy?

Problematic values? As noted above, there is an aversion to explicit recognition of the problematic counterpart of "values". Ironically this is most evident in the **scarcity of meaningful antonyms of "value"** -- perhaps exemplified by deprecation of "non-profit" (*What is the opposite of value?*). It is however intriguing that a significant antonym is evident for the verbal form, namely as "devalue".

The implications have been argued by [Barbara Ehrenreich](#) (*Smile or Die: how positive thinking fooled America and the World*, 2009) and variously echoed ([Kathy McMahon](#), *The Tyranny of Positive Thinking, Resilience*, 5 March 2010; [Sonali Kolhatkar](#), *How Barbara Ehrenreich Exposed the "Positive Thinking" Industry, Socialist Project*, 15 September 2022). By contrast **the antonyms of "virtue" are multiple -- with no lack of synonyms for "sin" or "vice"**.

It is presumably for this reason that the virtue-vice language is borrowed by [Christopher Stone](#) (*Corporate Vices and Corporate Virtues: Do Public/Private Distinctions Matter? University of Pennsylvania Law Review*, 130, 1982, 6). Such a combined focus is exceptional. **As a systemic counterpart to "value statements", "vice statements" for individual corporations are necessarily difficult to find (if they exist)**. Arguably it is however extremely ironic that many institutions proudly identify "vice functions" -- in the form of "vice presidents" and "vice chairmen" (necessarily held to be unrelated to any "dirty tricks" in which the institution may feel obliged to engage).

Memetic disease? As framed by religion, sin is an act of transgression against divine law -- whatever the interpretations in different cultures. Understood as a corruption of being through acts which are wicked or destructive, this could be related to understanding of memetic disease -- namely as causing a decline from a healthy condition, however perfect that condition could potentially be (*Neglected traditional recognitions of memetic disease*, 2020).

Somewhat ironically, it can be argued that it is theology that has done most to recognize the nature of memetic disease -- through its own frameworks (as memeplexes in their own right). In the case of the Abrahamic religions this can be seen in development of understanding of "sin" -- or the mindset engendering the consequential actions engendered. There is a strange irony to use of "**wicked problems**" by the policy sciences -- as being any complex problem with which governance is confronted.

Any classification of sins therefore invites comparison with the major categories of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* published by the [American Psychiatric Association](#) (APA) -- to the extent that these can themselves be understood in memetic terms. Are the thousands of "world problems" profiled by the *Encyclopedia of World Problems and Human Potential* then to be recognized as indicative of memetic diseases?

Systemic sin and collective sins: Somewhat surprisingly, there are many references to "systemic sin" -- from a religious perspective, as might be expected. **Systemic evil**, or structural evil, is evil which arises from structures within human society, rather than from individual wickedness or religious conceptions such as original sin. One example of systemic evil within a society would be slavery. The *Bible* is recognized as speaking of the **sins of nations** in many places. Pope Francis is held to have apologized officially for the collective sins of the Roman Catholic Church over centuries -- and asked for forgiveness (*Remorse that ends sin, Christian Science Monitor*, 14 March 2000).

Potentially used as a metaphor or a rhetorical device, there is a corresponding literature from a management perspective on organizational sins and [corporate sins](#) -- perhaps framed as vices:

- Catherine Adenle: *6 Seriously Deadly Organizational Sins to Avoid at All Costs* (6 July 2018)
- Tim Cole: *The Three Deadly Organizational Sins* (*The Compass Alliance*, 16 March 2021)
- Josh Millman: *Seven Deadly Organizational Sins of Covid-19* (23 March 2021)
- Rabison Shumba: *7 Corporate Sins to Avoid* (*LinkedIn*, 18 November 2016)
- Rob Enderle: *The Seven Deadly Corporate Sins* (*IT Business Edge*, 16 January 2013)
- Marshall Cooper: *Beware of these 5 Deadly Corporate Sins* (*Chief Executive*, 5 June 2017)
- Vikram Bhalla: *The Deadly Corporate Sins* (*Financial Express*, 3 October 2015)
- Amanda Erven: *The 7 Deadly Sins of Organizations* (August 2021)
- Les Stahlke, et al.: "seven deadly sins of organizations" (*Governance Matters: Balancing Client and Staff Fulfillment in Faith-based Not-for-Profit Organizations*, *GovernanceMatters.com*, 2003).
- Change Factory: *Seven Deadly Sins of Governance (Boards)*
- Charles Cohen: *Corporate Vices: What's Gone Wrong with Business?* (Wiley, 2002)
- Suzanne Corcoran: *Ordinary Corporate Vices and the Failure of Law*

The book *No Logo* (2000) by [Naomi Klein](#) is claimed to be the first book that both uncovers the sins of corporations run amok and explores the new resistance that will change consumer culture in the 21st century.

Core democratic sins? Whilst much is indeed made of "core democratic values" (as noted above), little attention is seemingly accorded to "core democratic sins" or to "core democratic vices", with exceptions possibly to be recognized in the form of

- John Pitney: *The Seven Deadly Sins of Politics* (*Reason*, April 1998)
- R. R. Reno: *Seven Deadly Political Sins* (*American Compass*, 18 October 2020)

- Stephen Freeman: *The Sin of Democracy (Glory to God for All Things*, 27 December 2013)
- Beth Doherty: *Seven deadly sins and seven heavenly virtues for life on social media* (ABC, 21 Aug 2015)

Many references are indeed made to the "sins" of a political party labelled "Democratic", most obviously by its opponents -- even to its "vices" (Nathaniel J. Klemp, *The Morality of Spin: virtue and vice in political rhetoric and the Christian Right*, 2012). The leadership is a particular focus (William Donald Richardson, et al., *Ethics and Character: the pursuit of democratic virtues*, 1998). Media coverage of leaders of democratic societies indicted for crimes emphasize the nature of the challenge, especially in the case of crimes against humanity for which they acquire immunity.

Such articulations are necessarily integral to the sins of democracy.

Sins and vices of democracy: Perhaps less evident, but more relevant to this argument, is recognition of those of democracy itself, or of an anti-democratic nature (Erich Kofmel, *Anti-democratic Thought*, SCIS, 2008). There are many references to the sins of democracy (in addition to the identification of "core democratic sins", as discussed above):

- John J. Goyette: *The Virtues and Vices of Democracy: why we read Tocqueville* (Thomas Aquinas College, 26 December 2019)
- Mark E. Button: *Political Vices* (Oxford Academic, 2016)
- Ruy Teixeira: *The Five Deadly Sins of the Left: identity politics, retro-socialism, catastrophism, growthphobia, technopessimism* (*American Compass*, 13 October 2020)
- Henry Olsen: *The Three Deadly Sins of the Right Market fundamentalism. snobbery. hubris* (*American Compass*, 13 October 2020)
- Michael Kirby: *Freedom of Information: the seven deadly sins* (International Commission of Jurists, 17 December 1997)
- Francisco Valdes: *Original Sins, Continuing Wrongs: equality, democracy, and supremacy in the U.S. under judicial review* (*Law Explorer*, 30 October 2015)
- Demetris Tillyris: *The Virtue of Vice: a defence of hypocrisy in democratic politics* (*Contemporary Politics*, 22, 2016, 1)
- Martin S. Edwards, et al.: *Sins of Commission? Understanding membership patterns on the United Nations Human Rights Commission* (*Political Research Quarterly*, 61, 2008, 3)
- Dennis F. Thompson: *Constitutional Character: virtues and vices in presidential leadership* (*Presidential Studies Quarterly*, 40, 2010, 1)
- Christian Adam: *On Democratic Intelligence and Failure: the vice and virtue of incrementalism under political fragmentation and policy accumulation* (*Governance*, 35, 2022, 2)
- Leanne ten Brinke, et al: *Virtues, Vices, and Political Influence in the U.S. Senate* (*Psychological Science*, 27, 2016, 1)
- Ivan William: *Democracy: its vices and virtues* (University of Hong Kong, 26 November 2012)

The vices of democracy have long been recognized, as indicated by Christopher Childers:

A wide variety of people participated in early U.S. politics, especially at the local level. But ordinary citizens' growing direct influence on government frightened the founding elites. At the Constitutional Convention in 1787, Alexander Hamilton warned of the "vices of democracy" and said he considered the British government -- with its powerful king and parliament -- "the best in the world". Another convention delegate, Elbridge Gerry of Massachusetts, who eventually refused to sign the finished Constitution, agreed. *The evils we experience flow from an excess of democracy*, he proclaimed. Too much participation by the multitudes, the elite believed, would undermine good order (*Democracy in America, from the Early Republic to the Jacksonian Era*, Benedictine College, 16 August .2016)

As expressed by Douglas J. Den Uyl:

Yet throughout man's political history such basic human vices as envy, peed, honor (a mere concern for praise), and the desire for power have had important political manifestations against rights and liberty, Some of these vices seem to be continuously associated with certain political forms. For example, envy and greed seem to be the vices of democracy while honor and power are the vices of the upper classes. A political philosophy which does not at some point concern itself with such issues will not be a convincing and complete doctrine. (*Government and the Governed, Reason Papers*, 2)

For Cody Reinhard the vices are inherent in the nature of democratic politics:

The errors of democracy have propelled the United States into our current crisis, and only a rebirth of republicanism may correct our national course.... America was never supposed to fall victim to the vices of democracy because the virtues of republicanism safeguarded against such a tyranny... Even in its vices, republicanism is preferable to the consequences of democracy, which is why the United States was founded as a republic... For over a century, the resilience of the American people has fallen victim to the vices of democracy. From its perversion of our institutions, with the false promise of popular government, government has grown to serve only those capable of abusing increasingly centralized power. (*The Errors of Democracy, Medium*, 2 May 2020)

For James Organ (*Citizen Participation in Democratic Europe - What Next for the EU?* University of Liverpool, 19 May 2021);

In an effort to remedy some of the EU's democratic sins, Commission President Von der Leyen announced a two-year 'Conference on the Future of Europe,' (CoFoE) in which citizens shall 'play a leading and active part'.

For Mohamed Rabie (*American Democracy and Freedom of Speech, Conference: The Future of Western Democracy*, January 2021):

Consequently, American democracy was undermined, freedom of speech suffered, and America began to lose its political will to protect its interests and advance its values. A government held captive to special interests, and foreign lobbies caused the United States to slowly emerge as the mother of most political ills, wars, and democratic sins in our times.

Curiously there seems to be no effort to articulate a comprehensive set of "sins of democracy", despite a degree of recognition:

- George Neumayr: *The Sins of Democracy* (Catholic Exchange, 20 November 2000)
- Terry Nettle: *The Democracy Mirage: The Sins of Democracy*, 3 June 2020)
- Abdullah bin Bijad al-Otaibi: *'Nuclear Iran' and the 'Sins of Democracy'* (Alarabiya News, 5 December 2021)

One argument, citing the "sins of democracy", presents a 13-fold checklist of the associated myths (Frank Karsten, *Beyond Democracy*). A valuable discussion by the Rosa Luxemburg Stiftung cites *the original sins of "democracy" and their consequences* (*New Political Horizons: beyond the "democratic" nation-state*)

Whilst recognition may be accorded to the personal sins or vices of leaders, their reflection in the collectives for which they are responsible is unfruitfully neglected (*Sins of Hot Air Emission, Omission, Commission and Promission: the political challenge of responding to global crises*, 2009). Although "promission" is not an English term, the broken promise by NATO, at the origin of the current conflict over Ukraine, merits recognition as a "sin of promission", as with broken electoral and those made to indigenous peoples.

As yet to be explored is the extent to which acclaimed democratic values offer a highly problematic disguise for their perversion. Does the pursuit of each value by an individual or a collective hinder its achievement by another? Paradoxically, is the freedom of one acquired by the loss of freedom of another -- with one person's meat being the other person's poison? Conflict such as Russia-Ukraine, Israel-Palestine, and China-Tibet exemplify the collective quest for *lebensraum* -- now projected into outer space as an unquestionable ideal for humanity. As yet assiduously avoided is how such aspirations translate into encroachment (*Varieties of Encroachment*, 2004). The encroachment by Russia on Ukraine has been tragically preceded by that of NATO on Russia -- each process justified by purportedly the most fundamental values.

Collective irresponsibility and the Corporate Ethical Virtues scale (CEV)

Nicomachean Ethics of Aristotle: Studies of ethics commonly take as their point of departure the articulation by Aristotle, who defined virtue as a (golden) mean between two vices (J. K. Thomson, *The Nicomachean Ethics*, 1955; Kennox Johnson, *Virtue as a Mean Between Two Vices: a short reading from Aristotle's 'Nicomachean Ethics'*, *The Daily Idea*, 29 May 2018). Consideration continues to be given to their current relevance (Vlad Costea, *Aristotle's Ethics and the Nature of Contemporary Policies and Politicians*, *The Political Science Club*)

Nicomachean Ethics of Aristotle		
Vice of Excess	Virtue as Mean	Vice as Deficiency
Rashness (<i>thrasuses</i>)	Courage (<i>andreia</i>)	Cowardice (<i>deilia</i>)
Licentiousness / Self-indulgence (<i>akolasia</i>)	Temperance (<i>sophrosune</i>)	Insensibility (<i>anaesthesia</i>)
Prodigality (<i>asotia</i>)	Liberality / Generosity (<i>eleutheriotes</i>)	Illiberality / Meanness (<i>aneleutheria</i>)
Vulgarity / Tastelessness (<i>apeirokalia / banausia</i>)	Magnificence (<i>megaloprepeia</i>)	Pettiness / Stinginess (<i>mikroprepeia</i>)
Vanity (<i>chaunotes</i>)	Magnanimity (<i>megalopsuchia</i>)	Pusillanimity (<i>mikropsuchia</i>)
Ambition / Empty vanity (<i>philotimia</i>)	Proper ambition/pride	Unambitiousness /Undue humility (<i>aphilotimia</i>)
Irascibility (<i>orgilotes</i>)	Patience / Good temper (<i>praotes</i>)	Lack of spirit / Unirascibility (<i>aorgetia</i>)
Boastfulness (<i>alazoneia</i>)	Truthfulness (<i>aletheia</i>)	Understatement / Mock modesty (<i>eironeia</i>)
Buffoonery (<i>bomolochia</i>)	Wittiness (<i>eutrapelia</i>)	Boorishness (<i>agroikia</i>)
Obsequiousness (<i>areskeia</i>)	Friendliness (<i>philia</i>)	Cantankerousness (<i>duskolia</i>)
Shyness (<i>kateplexis</i>)	Modesty (<i>aidos</i>)	Shamelessness (<i>anaischuntia</i>)
Envy (<i>phthonos</i>)	Righteous indignation (<i>nemesis</i>)	Malicious enjoyment / Spitefulness (<i>epichairekakia</i>)

Social sins: The articulation by Mohandas Gandhi is cited in recognition of collective irresponsibility (*Seven Social Sins*, *Young India*, 22 October 1925). Widely cited and discussed, as indicated in the *Wikipedia* entry, books have also focused on those sins, or been structured around them, including:

- Eknath Easwaran: *The Compassionate Universe: the power of the individual to heal the environment* (1989)
- Frank Woolever: *Gandhi List of Social Sins: Lessons in Truth* (2011)

- [Stephen Covey](#): *Principle-Centered Leadership* (1989)

- *Wealth without work.*
- *Pleasure without conscience.*
- *Knowledge without character.*
- *Commerce without morality.*
- *Science without humanity.*
- *Religion without sacrifice.*
- *Politics without principle.*

A later variant has been presented by Gandhi's grandson, Arun Gandhi, as *Seven Blunders of the World (The Seven Blunders or Social Sins*, 12 June 2013), to which an eighth was added: *Rights without responsibilities*.

Corporate Ethics Virtual scale: Muel Kaptein has distinguished eight "important organizational virtues" in the light of a qualitative analysis of 150 cases of unethical behaviour by managers and employees that could (partly) be related to the organization in which they worked (*Developing and testing a measure for the ethical culture of organizations: the Corporate Ethical Virtues model*, *Journal of Organizational Behavior*, 29, 2008, 7; *Corporate Ethical Virtues Model*, *Ethics and Integrity Management*). The CEV scale was designed to measure eight corporate virtues: clarity, congruency of supervisors, congruency of senior management, feasibility, supportability, transparency, discussability, and sanctionability.

In relation to the factorial validity of the 58-item CEV scale, the invariance of the factor structure across different organizational samples has been tested (Maiju Kangas, et al, *Corporate Ethical Virtues Scale: factorial invariance across organizational samples*, *Journal of Business Ethics*, 124, 2014). As presented below, Muel Kaptein has related the corporate virtues to vices (*When Organizations are Too Good: applying Aristotle's doctrine of the mean to the Corporate Ethical Virtues model*, *Business Ethics: A European Review*, 26, 2017, 3):

Aristotle's doctrine of the mean states that a virtue is the mean state between two vices: a deficient and an excessive one. The Corporate Ethical Virtues (CEV) Model defines the mean and the corresponding deficient vice for each of its seven virtues. This paper defines for each of these virtues the corresponding excessive vice and explores why organizations characterized by these excessive vices increase the likelihood that their employees will behave unethically. The excessive vices are patronization, pompousness, lavishness, zealotry, overexposure, talkativeness, and oppressiveness.

Corporate ethical virtues and their vices			
Sphere	Vice: deficiency	Virtue: mean	Vice: excess
1. Norms for ethical behavior	Ambiguity	Clarity	Patronization
2. Ethical behavior of managers and supervisors	Subversiveness	Congruency	Pompousness
3. Resources for ethical behavior	Scantiness	Feasibility	Lavishness
4. Motivation for ethical behavior	Animosity	Supportability	Zealotry
5. View on ethical behavior	Opaqueness	Transparency	Overexposure
6. Discussion of ethical issues	Muteness	Discussability	Talkativeness

Reproduced from Kaptein (2017)

A refinement of the CEV scale has been proposed (Jason Debode, et al, *Assessing Ethical Organizational Culture: refinement of a scale*, *Journal of Applied Behavioral Science*, 49, 2014, 4).

Corporate irresponsibility: In response to corporate ethical irresponsibility, concerns regarding the ethics of corporations have long been a feature of evaluations of [corporate social responsibility](#) (CSR):

- Maya Fischhoff: *Corporate Irresponsibility: meaning and notable example* (*Network for Business Sustainability*, 22 September 2017)
- Aaron Chatterjij, et al: *Corporate Social Irresponsibility* (*Democracy*, 2007, 3)
- Scott Armstrong, et al: *Effects of Corporate Social Responsibility and Irresponsibility Policies* (*Journal of Business Research*, 66, 2013, 10)
- Brian Jones: *Corporate Social Irresponsibility* (*Encyclopedia of Corporate Social Responsibility*, 2013)
- Samuel S. Idowu, et al: *Corporate Social Responsibility and Governance: CSR, Sustainability, Ethics and Governance* (2015).

Noting that CSR standards and guidelines have become a common point of reference for practitioners, regulating bodies and scholars alike, research in the business ethics field seems however to have given less attention to the way ethical concepts and models relate to such CSR standards; a chapter in the latter discusses the relationship of CSR measures to the CEV scale (M. Constantinescu and M. Kaptein. *CSR Standards and Corporate Ethical Virtues: a normative inquiry into the way corporations integrate stakeholder expectations*, 2015):

The paper evaluates the principles of three most prominent CSR standards and guidelines – [Global Reporting Initiative](#), [United Nations Global Compact](#), and [ISO26000](#) – through the lens of the Corporate Ethical Virtues Model.. Namely, it inquires how the principles and reporting criteria pertaining to these CSR standards help corporations embed seven ethical virtues which represent organizational conditions for ethical conduct: clarity, consistency, achievability, supportability, visibility, discussability and sanctionability. The paper concludes that cross-reporting using multiple standards is the key for corporations to achieve the organisational virtues advanced by the Corporate Ethical Virtues model and in this way to effectively integrate stakeholder

expectations within the corporate framework.

Financial virtues and sins inherent in democracy?

There is little difficulty in recognizing that monetary tokens and their circulation are fundamental to the systemic integrity of a society -- whether a democracy or not. A focus on finance therefore offers a means of addressing the confusion between values and virtues, given the degree to which money is then inherently "valuable" as the primary token of value. The question is then how virtue is to be distinguished from such value within a system in which in which everything is readily held to have a price. A focus is given by the question addressed by Karol Marek Klimczak, et al (*How to Deter Financial Misconduct if Crime Pays?* *Journal of Business Ethics*, 179, 2022, 1, 3)

The argument can be developed in the light of the contribution of [Alejo José G. Sison](#), et al. (*Characterizing Virtues in Finance*, *Journal of Business Ethics*, 155, 2019). For the authors:

In this article, we shall attempt to lay down the parameters within which the practice of the virtues may be enabled in the field of finance. We shall be drawing from the three main sources, Aristotle, Catholic Social Teaching (CST) and [MacIntyre](#) [*After Virtue: a study in moral theory*, 1981], on which [virtue ethics](#) is based. The research question is what ought to be done for financial activities to truly contribute to *eudaimonia* or human flourishing (Aristotle), to the achievement of three distinct kinds of goods as required of virtue, "those internal to practices, those which are the goods of an individual life and those which are the goods of the community" (MacIntyre), and to "[help] man on the path of salvation" in the midst of complex network of relationships in modern societies (CST). These parameters could then be taken as conditions financiers ought to fulfill in order to live the virtues in their work and across different life spheres.

The authors introduce their study by noting that:

In a previous work, we endeavoured to establish the conditions within which financialization may be considered a vice from the perspective of Aristotelian and MacIntyrean virtue ethics in consonance with Catholic Social Teaching (CST) [Sison and Ferrero, *Aristotle and MacIntyre on the Virtues in Finance*, 2017]. From the Aristotelian viewpoint, financialization becomes a vice not by reason of its object, in accordance with generally accepted definitions, but due to the agents' intentions or motives and the circumstances of their actions.

The earlier study notes that:

Finance can only be "virtuous" insofar as money and financial resources are used to acquire, produce or purchase other goods necessary for flourishing, but not an indefinite amount of money in itself. In Aristotle's time, money only had two functions: as a "store of value" and as a "unit of exchange". Therefore, money used to earn interest (rent-seeking activities) would be improper or vicious... In relation to the limit, human beings need a finite amount of money to satisfy physical or bodily needs and attain flourishing. Therefore, beyond this quantity, more money may result in a hindrance than a help. More is not always better (*Aristotle and MacIntyre on the Virtues in Finance*, 2017)

Their argument is valuable in offering a sense of the interrelated economic functions with which virtues may be associated. However the limitations of the argument are evident in the manner in which "the virtues" are identified -- to the point of being considered self-evident. With respect to the "limit", they conclude that:

This limit could only be established to the extent that one attends to the demands of the virtues of moderation, justice, courage and prudence. It results from the practice of self-control over wishes and desires, careful attention to duties toward the material welfare of others and one's own, determination to overcome challenges and difficulties at work, and thoughtful circumspection, choice and action.

There is seemingly no particular sense of how the virtues are themselves systemically interrelated from a financial perspective, nor whether the set of virtues cited is complete in functional terms. The reference to the perspective of MacIntyre is however especially relevant to current challenges, given his complex critique of capitalism (Alasdair MacIntyre, *Ethics in the Conflicts of Modernity: an essay on desire, practical reasoning, and narrative*, 2016). For him, problematically, liberalism and postmodern consumerism not only justify capitalism but also sustain and inform it over the long term (Stanley Hauerwas, *The Virtues of Alasdair MacIntyre*, *First Things*, October 2007; Andreea Deciu Ritivoi, *Virtuous Selves in Vicious Times: Alasdair MacIntyre on narrative identity*, *Narrative Inquiry*, 21, 2011, 2).

In the light of the slogan "greed is good", for many [critics of capitalism](#) it is itself the "vicious" problem undermining the viability and sustainability of potentially "virtuous" democratic societies (*Capitalism: this is a vicious failing system*, *Workers Power*, 1 September 2010; *Employed and in Poverty: - capitalism's vicious cycle*, *Socialist Appeal*, 20 July 2017). This evokes a "virtuous" response (Fred Smith, *Virtuous Capitalism in Theory and Practice*, *Forbes*, 17 November 2015; Pope Pius XI, *Capitalism is not Vicious by Nature*, *Encyclical Quadragesimus annus*, 15 May 1931).

With respect to the relation between finance and the virtues, there is a particular difficulty for the Catholic Church, traditionally acclaimed

as an epitome of the virtuous -- and perhaps to be recognized as vigorously committed to [virtue signalling](#). It has recently been faced with a variety of scandals in relation to the [Vatican Bank](#), formally known as the Institute for the Works of Religion (*Vatican Bank: the scandals, net worth, assets, conspiracy facts and more! Visit Vatican*; *The Vatican Bank scandal nobody is talking about*, *America Magazine*, 15 July 2015; *The Vatican Bank is rocked by scandal again*, *BBC News*, 18 July 2013; *The Vatican Bank scandal*, *Christianity Today*, 3 September 1982).

Such difficulties in relation to the virtuous have been compounded by the degree to which the Catholic Church has been mired in scandals in relation to the sexual abuse by its clergy. Especially tragic has been the indictment for such abuse of the person responsible for financial reform of the Vatican treasury (*George Pell: Cardinal found guilty of child sexual assault*, *The Guardian*, 26 February 2019; *Church says Cardinal Pell returning to Vatican in crisis*, *ABC News*, 28 September 2020).

Various sources offer explicit recognition of perceived financial virtues and financial sins, although it is less apparent how these apply to collectivities:

- Erik Carter: *7 Financial Vices To Give Up For Lent* (*Forbes*, 28 February 2022)
- Jenny Smedra: *Financial Vices that Affect your Fiscal Health* (*SavingAdvice*, 23 August 2021)
- Lynnette Khalfani-Cox: *The 5 Deadly Financial Sins* (*The Money Coach*)
- John Lim: *12 Financial Sins* (*Dinarecaps*, 23 January 2020)
- Kendal Perez: *Avoid These 7 Deadly Financial Sins* (26 October 2016)
- [Financial Virtues](#) (Atlas Point) as a research-driven survey tool that helps financial advisors to personalize interactions by efficiently assessing each client's unique behavioral biases.
- *Adding it up: Here's how much Americans spend on financial vices* (*Banrate*, September 2018)
- *The Seven Heavenly Financial Virtues* (with corresponding vices): temperance, justice, prudence, fortitude, faith, hope, charity

For David Orrell, value calls for reframing in terms of quantum reality:

Money objects, from coins to bitcoins, are used in economic exchange as a way of putting a number on the fuzzy concept of worth or value. They are inherently dualistic in that they combine the properties of abstract numbers with the properties of owned objects. As a result of this duality at its core, the money system exhibits the properties of a macroscopic quantum system, including entanglement, indeterminacy and interference, with money objects playing a special role as a measurement device. This article argues that, by virtue of its dualistic nature, money acts as a vector of transmission that scales up the properties of quantum mind to the global level. (*The Value of Value: a quantum approach to economics, security and international relations* *Security Dialogue*, 51, 2020, 5)

Ethical implications of artificial intelligence

The future implications of artificial intelligence for governance are increasingly recognized (Henry Farrell, et al, *Spirals of Delusion: how AI distorts decision-making and makes dictators more dangerous*, *Foreign Affairs*, 2 September 2022). Given the *Facebook-Cambridge Analytica data scandal*, its role with respect to the pandemic already invites speculative exploration (*Governance of Pandemic Response by Artificial Intelligence*, 2021).

Introducing a special issue on the security implications of quantizing international relations, James Der Derian and Alexander Wendt argue:

This special issue is conceived out of the proposition that recent developments in quantum theory as well as innovations in quantum technology have profound implications for international relations, especially in the field of international security. Interaction with quantum theory outside the circle of physics has been limited; our goal is to catalyse an informed debate on the virtues of quantum theory for international relations.... With the arrival of quantum computing, communications and artificial intelligence, we can also expect to see significant transformations in the nature, production and distribution of power and knowledge. (*'Quantizing International Relations': the case for quantum approaches to international theory and security practice*, *Security Dialogue*, 44, 2020, 5)

Potentially especially relevant to the argument here are the ethical constraints on the future development of artificial intelligence, as articulated by Jakob Stenseke (*Artificial virtuous agents: from theory to machine implementation*. *AI and Society*, 2021):

Virtue ethics has many times been suggested as a promising recipe for the construction of artificial moral agents due to its emphasis on moral character and learning. However, given the complex nature of the theory, hardly any work has de facto attempted to implement the core tenets of virtue ethics in moral machines. The main goal of this paper is to demonstrate how virtue ethics can be taken all the way from theory to machine implementation. To achieve this goal, we critically explore the possibilities and challenges for virtue ethics from a computational perspective. Drawing on previous conceptual and technical work, we outline a version of artificial virtue based on moral functionalism, connectionist bottom-up learning, and eudaimonic reward. We then describe how core features of the outlined theory can be interpreted in terms of functionality, which in turn informs the design of components necessary for virtuous cognition. Finally, we present a comprehensive framework for the technical development of artificial virtuous agents and discuss how they can be implemented in moral environments.

The programming techniques required in the incorporation of **a pattern of ethical constraints in AI will presumably require an articulation more complex than conventional value statements**. This is necessarily a stage beyond the preoccupations of Neil McBride (*Virtuous Business Intelligence*, *International Journal of Business Intelligence Research*, 6, 2015, 2):

Without the practice of virtues, business intelligence (BI) may be recruited to support corporate vices of exploitation, exposure, exclusion, coercion, control and concealment. The paper seeks to highlight the importance of ethical issues in BI practice and suggests the development of an ethical balanced scorecard as a vehicle for developing ethical sensitivity.

Relevance of oppositional logic to relating virtues and sins?

Square of opposition: As noted above, the exploration here of more systemically coherent forms of axiological representation is consistent with the fundamental role now authoritatively attributed to the existence of an "Axis of Evil" -- and by implication to an "Axis of Good", as variously recognized (*Ensuring Dynamics of Sustainability by Appreciative Recognition of Evil*, 2022). The latter discusses the case for engaging otherwise with the problematic paradoxes of "positive" versus "negative".

Given the problematic role of divisive opposition so evident within a global context, such definitive assertions have acquired new relevance through the [geometry of logical opposition](#), now articulated in three dimensions through polyhedra (with some relevance to their 4-dimensional analogues). The cognitive and logical significance of such "geometry" follows from the two-dimensional [square of opposition](#), whose origins are traced back to Aristotle. The *Hexagon of Opposition* of Robert Blanché was a major step in the development of the theory of opposition, and its active exploration through a conference series:

- *1st World Congress on the Square of Opposition* (Montreux, 2007).
 - *Logica Universalis*, 2, 2008 (13 papers)
 - Jean-Yves Beziau and Gillman Payette (Eds.): *The Square of Opposition: a general framework for cognition*. Peter Lang, 2008
- *2nd World Congress on the Square of Opposition* (Corsica, 2010)
 - *Logica Universalis*, 6, 2012 (on the hexagon)
 - Jean-Yves Beziau and Dale Jacquette (Eds.): *Around and Beyond the Square of Opposition: Selected Papers*, *Studies in Universal Logic*, 2012
- *3rd World Congress on the Square of Opposition* (Beirut, 2012)
 - Jean-Yves Beziau and Stephen Read (Eds.): *Square of Opposition: A Diagram and a Theory in Historical Perspective, History and Philosophy of Logic*, 35, 2014, 4
- *4th World Congress on the Square of Opposition* (Vatican, 2014)
 - Jean-Yves Beziau and Gianfranco Basti: (Eds.): *The Square of Opposition: A Cornerstone of Thought*. *Studies in Universal Logic*. 2017
- *5th World Congress on the Square of Opposition* (Rapa Nui, Easter Island, 2016)
 - *Special issue on the Square of Opposition*, *South American Journal of Logic*, 3, 2017, 2
 - Jean-Yves Béziau and Stamatiou Gerogiorgakis (Eds.): *New Dimensions of the Square of Opposition*. *Philosophia*, 2017
- *6th World Congress on the Square of Opposition* (Crete, 2018)
 - Jean-Yves Béziau and Jens Lemanski (Eds.): *Special issue on the Cretan Square*, *Logica Universalis*, 14, 2020, 1
- *7th World Congress on the Square of Opposition* (Leuven 2022).

Oppositional logic: As discussed below, and as one particular configuration of squares, the [cuboctahedron](#) is potentially of relevance in the light of its relationship to a form currently used in explorations of the geometry of oppositional logic, namely the [rhombic dodecahedron](#) (Alessio Moretti, *The Geometry of Logical Opposition*. University of Neuchâtel, 2009).

The relevance is discussed separately (*Oppositional Logic as Comprehensible Key to Sustainable Democracy: configuring patterns of anti-otherness*, 2018; *Neglected recognition of logical patterns -- especially of opposition*, 2017). The latter discusses explorations of [logical geometry](#) and [Aristotelian diagrams](#), as recently summarized in a very comprehensive paper by Lorenz Demey and Hans Smessaert (*Logical and Geometrical Distance in Polyhedral Aristotelian Diagrams in Knowledge Representation*, *Symmetry*, 2017).

That approach develops the idea that Aristotelian diagrams can be fruitfully studied as geometrical entities, as clarified by Lorenz Demey (*Aristotelian Diagrams for Semantic and Syntactic Consequence*, *Synthese*, 198, 2021; *Aristotelian Diagrams in the Debate on Future Contingents*, *Sophia*, 58, 2019). In particular, it focuses on four polyhedral Aristotelian diagrams for the 16 distinctions of Boolean algebra B4, through the rhombic dodecahedron, the [tetrakis hexahedron](#) [dual of the [truncated octahedron](#)], the tetraicosahedron and the nested tetrahedron. A more systematic approach is suggested by Leander Vignero (*Combining and Relating Aristotelian Diagrams, Diagrammatic Representation and Inference: Lecture Notes in Computer Science*, 12909, 2021).

Research on the geometrical-logical extensions of Aristotle's square and the modal squares of opposition, enables Dominique Luzeaux (and collaborators) to highlight the key role of the tetraicosahedron, for example:

We show that if the vertices of that geometrical figure are logical formulae and if the sub-alternation edges are interpreted as logical implication relations, then the underlying logic is none other than classical logic. Then we consider a higher-order extension... and we show that the same tetraicosahedron plays a key role when additional modal operators are introduced. (*Logical Extensions of Aristotle's Square*, *Logica Universalis*, 2, 2008, 1)

The standard set of 16 logical connectives, or [logical operators](#), are recognized as interrelated by a [Hasse diagram](#) as shown below left,

as discussed separately (*Oppositional logic and its geometry -- 16 minus 2 connectives?* 2021). Of potential relevance is the exclusion of 2 "operators" (0000 and 1111) from their presentation on the polyhedral arrays as shown on the right, and discussed separately (*From 16 to 14 connectives -- precluding a logical meta-perspective?* 2021).

Oppositional nexus as depicted by oppositional logic (paired coloured circles are complementary and are equivalent between images)			
2D Hasse diagram	3D Rhombic dodecahedron	3D Tetrakis icosahedron	Rotation of tetrakis icosahedron
Adaptation of depictions by Demey and Smessaert (<i>Logical and Geometrical Distance in Polyhedral Aristotelian Diagrams in Knowledge Representation</i> , 2017)			

Alternative representations of arrays of logical connectives			
Hasse diagram with binary codings and Venn diagrams	Hasse rhombic dodecahedron binary codings and Venn diagrams	Aristotelian rhombic dodecahedron with indicative Venn diagrams added	Rhombic dodecahedron (14 vertices, 12 faces transparent)
Augmented from Watchduck (a.k.a. Tilman Piesk), Public domain, via Wikimedia Commons	Adapted and augmented from Lorenz Demey and Hans Smessaert (<i>Geometric and Cognitive Differences between Logical Diagrams for the Boolean Algebra B4</i>)		

Of potential interest in this respect is the difficulty of representing the relationships between the 16 operations on simpler polyhedral frameworks offering an equivalent sense of memorable coherence (*Current relevance of the "simplest torus"?, Coherent mapping possibilities on the simplest torus?, Functional dynamics of a 16-fold configuration of strategic goals*, 2019).

This explicit recognition of opposition is potentially appropriate to the distinction made between virtues and sins -- with the advantage that the language of logic enables the relationship between virtues and sins to be addressed dispassionately. Arguably this is vital to comprehension of a viable relationship between them from the systemic perspective offered by cybernetics. The representational value of the tetracosahedron is also discussed by M. Pitkanen (*Geometric Theory of Harmony*, January 2015)

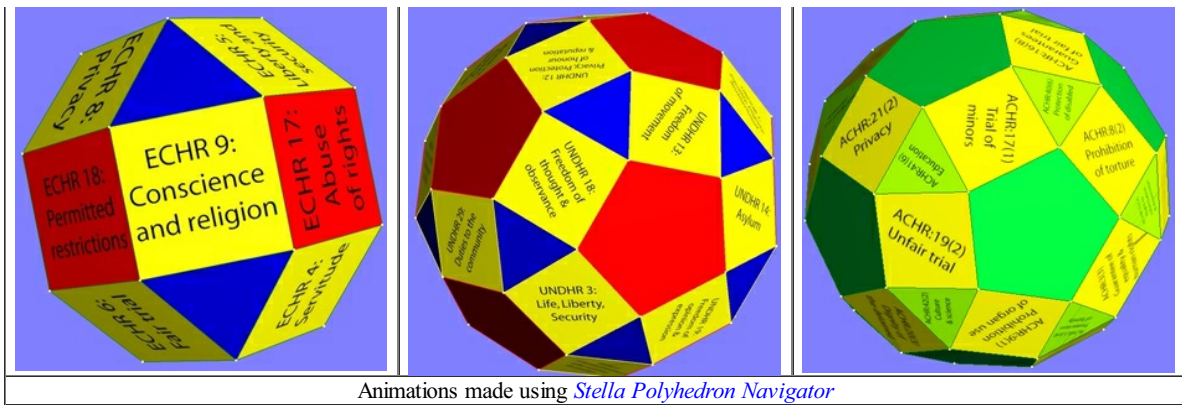
Curiously, and despite the highly divisive role of opposition in democratic societies, the relevance of oppositional logic to such problematic dynamics is rarely a focus of attention (Fabien Schang, *International Disagreements*, 2014). Does opposition to application of oppositional logic merit study in its own right?

Coherent global mapping of virtues and sins?

The question is then how the earlier experiment in representation with polyhedra -- especially the cuboctahedron -- can be usefully applied to the sets of virtues and sins -- as a prelude to reframing the relationship between constructive and destructive values (*Memorable representation of the dynamics of a hyper-wealth complex*, 2022; *Topology of Valuing" dynamics of collective engagement with polyhedral value configurations*, 2008).

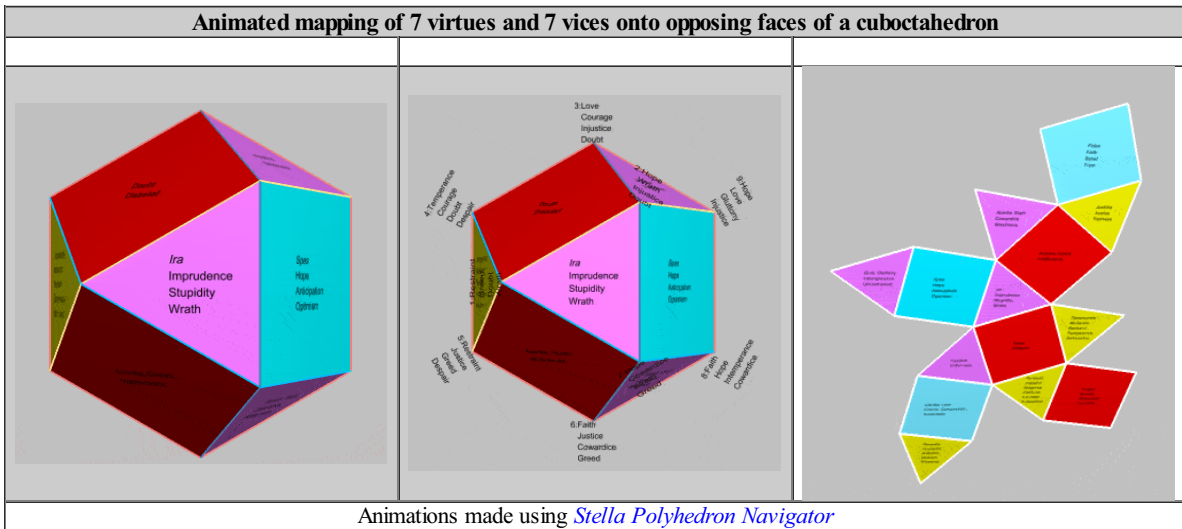
The case for presenting values in this way has been discussed separately (*Embodying Values Dynamically through Alternation: integrating sets of polarized static values through indicative metaphor*, 2008; *Dynamic Exploration of Value Configurations: polyhedral animation of conventional value frameworks*, 2008). Extracts from the latter are reproduced below.

Animated mappings of polyhedral representation of value configurations: a challenge to integrative imagination screen shots of stages in the transformation of the geometry of sets of values		
<i>European Convention on Human Rights</i>	<i>Universal Declaration of Human Rights</i>	<i>Arab Charter on Human Rights</i>
18 Articles displayed on 2 face-types of a rhombicuboctahedron	30 Articles displayed on 1 face-type of a rhombicosidodecahedron	53 Articles displayed on 2 face-types of a rhombicosidodecahedron



Animations made using *Stella Polyhedron Navigator*

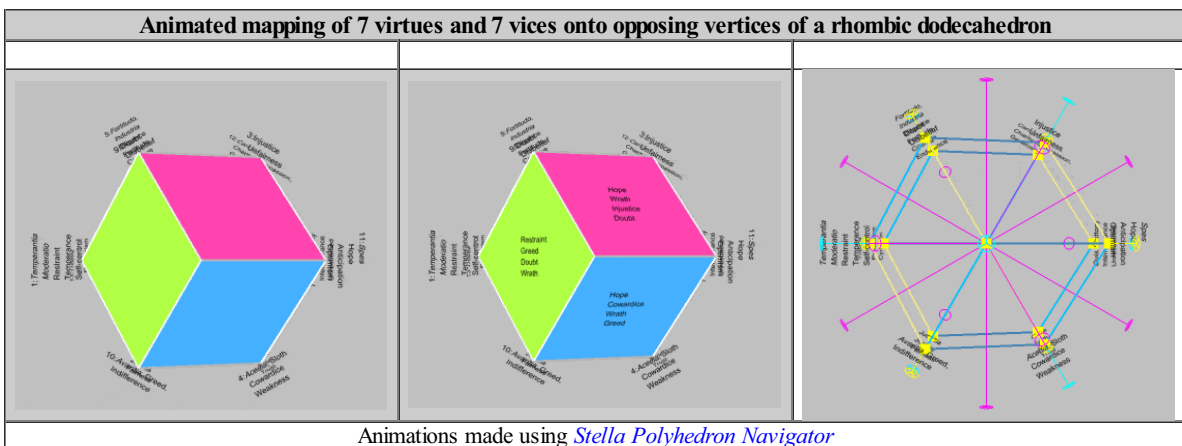
With respect to virtues and vices, a point of departure is to make use of the cuboctahedron as shown below (left), in the light of the previous exercise (*Memorable representation of the dynamics of a hyper-wealth complex*, 2022). That particular polyhedron is especially useful because it offers 3 opposing quadrilaterals and 4 opposing triangles. These can be used respectively to map 3 theological virtues (and their opposing sins), and 4 cardinal virtues (and their opposing sins). Arguably the configuration then offers a framework enabling exploration of their systemic relationships from an integrative perspective.



Animations made using *Stella Polyhedron Navigator*

The cuboctahedron has been the subject of extensive commentary from a systemic perspective, most notably by Buckminster Fuller (*Synergetics: explorations in the geometry of thinking*, 1975). However, despite the cognitive emphasis implied by the title, the relevance to strategic "thinking" is less than evident, as discussed separately (*Geometry of Thinking for Sustainable Global Governance: cognitive implication of synergetics*, 2009).

The rhombic dodecahedron is the geometrical dual of the cuboctahedron, meaning that the polygonal fields configured by the latter are transformed into the vertices of the former. This offers the contrast between virtues-values as semantic "fields" and their comprehension as "points" -- then more suggestive of their recognition as principles. This alternative representation of the polyhedral configuration above is presented below.



Animations made using *Stella Polyhedron Navigator*

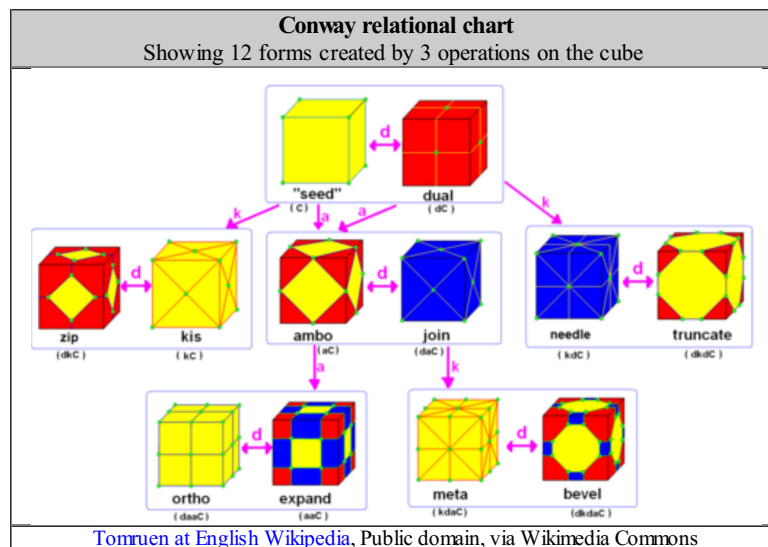
Clues from symmetry-preserving operations on polyhedra?

As noted above, use is surprisingly made of polyhedra to encode fundamental cognitive operations. For those specifically preoccupied with the geometry of polyhedra in their own right, particular significance is attached to the manner in which one may be transformed into

another. It is therefore of interest to seek clues as to the cognitive relevance of symmetry-preserving transformations for dialogue, as discussed separately (*Encoding Coherent Topic Transformation in Global Dialogue: memorability of cognitive implication in symmetry-preserving operations on polyhedra*, 2021). This was explored under the following headings:

- | | |
|--|---|
| Overview of a variety of approaches to dialogue and conversation | Dialogue coherence through formalization of local symmetry-preserving operations |
| Uniquely indicative encoding of processes of educational dialogue | Operations transforming polyhedra as modelling transformations of dialogue coherence |
| Controversies and consensus in dialogue research | Rendering a 64-fold pattern dynamically comprehensible via 20-fold and 12-fold patterns |
| Uniquely systematic approach of potential relevance to dialogue | Dialogue interpreted morphogenetically |
| Metaphors of dialogue and dialogue through metaphor | Dialogue as a navigational challenge in knowledge space |
| Re-cognition of N-fold sets of "modes", "ways", "moves" and "ploys" | Global dialogue via a 17-fold pattern of Sustainable Development Goals? |
| Potential relevance of unrelated patterns of order to dialogue transformation | Embodiment of dialogue operations in crafts and skills |
| Re-cognition of clustering of fundamental N-fold sets | |
| "Cognitive tiling" or "conceptual tiling"? | |
| Cognitive implications of operational modification of polyhedra -- "global tiling" | |

As noted there, distinctive polyhedra may be created through modification of a seed polyhedron by various prefix operations, as described by the Conway polyhedron notation, and discussed separately (*Topological operations on polyhedra as indicative of cognitive operations*, 2021). The following example shows how 11 new forms can be derived from the cube using 3 operations (named **d**ual, **a**mbo and **k**is). The new polyhedra are shown as maps on the surface of the cube so that the topological changes are more apparent.



The three basic operations (when used successively) are sufficient for generation of the 5 Platonic and the 13 Archimedean polyhedra are:

- **d**ual: replaces each face with a vertex, and each vertex with a face
- **a**mbo: creates degree-4 vertices (otherwise known as rectification)
- **k**is: raises a pyramid on each face

Other operations have been distinguished, together constituting a more conventional total of 13 and denoted by the letters *abdegjkmoprst*. These have been extended in the Antiprism application of Adrian Rossiter to a further set of 18 -- although how they might together be understood as a set remains unclear (*Conway Notation Transformation, Antiprism; Wythoff-style constructions, Antiprism*).

In the exploration of the relationship between contrasting configurations of virtues and values (and sins), an obvious question is how different polyhedra might be used for their distinctive mapping -- with the implication that their relationship might then be understood in terms of cognitive operations analogous to the geometry of "symmetry-preserving operations".

Interrelating alternative configurations of value polarities

Challenges: There would appear to be five distinctive difficulties in reconciling sets of value-virtues and any problematic counterparts

- **Disparate preferences for set size:** Consensus is clearly challenged by the preferences for the number of values distinguished in value statements. Aristotle's *Nicomachean Ethics* distinguishes 12. The Christian tradition has preferred 7. Daoism identifies 10 ethical precepts. Buddhism proposes a set of 5 Precepts, and another of 10 Precepts, in response to cognitive hindrances (*Kleshas*), together with a Noble Eightfold Path (Anne Muldoon, *A Comparison of Aristotelian and Buddhist Ethics*, University of Glasgow, 2008). There is no guidance as to how many values are appropriate for any value statement as may be articulated in support of a collective initiative.
- **Semantic ambiguity of interpretation:** It is too readily assumed that a value or virtue can be successfully and definitively

defined by a single word in one language. It is only too obvious that any such descriptor lends itself to multiple interpretations, whether or not it can be unambiguously translated into other languages. This problem was addressed through the Human Values Project by a systematic collection of synonyms for words which could be considered to be indicative of "constructive values" -- and relating them to their antonyms, understood to be indicative of "destructive values". Together these then constituted value pairs, or "value polarities"

- **Polarity as indicative of mean or opposition:** Resistant as is a value or virtue to unambiguous definition, its essentially elusive nature can be indicated as a (golden) mean between dysfunctional excess or deficiency as in the articulation of each of Aristotle's 12 virtues. An alternative is to recognize that any one term is fundamentally misleading in purporting to encompass the cognitive significance of a value. Synonyms of "constructive values" can be clustered at one pole of a polarity -- with their collective significance highlighted by the dynamic with their opposing "destructive values".
- **Values as static or dynamic:** There is a long tradition of framing virtues and values as essentially static in nature -- as with many nouns, categories and objects. As an assumption this can be usefully challenged -- especially in the light of the ethical frameworks of other cultures and languages. From a grammatical perspective, they could be understood as adjectives, for example. Potentially is the recognition of values as indicative of a fundamental dynamic, as separately explored (*Freedom, Democracy, Justice: Isolated Nouns or Interwoven Verbs?* 2011). This questions whether the quest for qualities and principles as static and invariant is essentially misleading -- if they are in effect "dynamically disguised" or calling for comprehension "otherwise", potentially in the light of insights into **complementarity**. Might virtues and sins be more fruitfully interpreted in terms of "wave functions" for example, especially in the light of the potential relevance of quantum mechanics, as argued by Alexander Wendt (*Quantum Mind and Social Science: unifying physical and social ontology*, 2015; *The mind-body problem and social science: motivating a quantum social theory*, *Journal for the Theory of Social Behaviour*, 48, 2018, 2).
- **Values as "enantiomers":** With any understanding of values as embodying a dynamic -- as might be the case with a virtue -- the relation between potentially problematic opposites could be recognized as having the degree of paradoxical complexity typically illustrated with a **Möbius strip**. For Maurice Yolles and colleagues, an enantiomer is one of a couple of entities that exist together within a given frame of reference, and the nature of one of the couple is a mirror image of the other. As clarified:
 - We use it in the sense of complementary polar opposites. The related word **enantiodromia** is also a key Jungian concept used in his notions about consciousness... it is the process by which something becomes its opposite, and the subsequent interaction of the two: applied especially to the adoption by an individual or by a community, etc., of a set of beliefs, etc., opposite to those held at an earlier stage. For Jung the word enantiodromia represents the superabundance of any force that inevitably produces its opposite. Consequently the word enantiodromia often implies a dynamic process which is not necessarily implied by the word enantiomer. By using the simpler word enantiomer we shall not exclude the possibility of any dynamic action that may have been implied by the term enantiodromia... In order to understand the way in which *yin yang* enantiomers arise, we can model how a trait achieves its values that constitute personality types. (*Toward a Formal Theory of Sociocultures: a yin-yang information-based theory of social change*, *Kybernetes*, 37, 2008, 7; *Agency Theory, Values, and Early Evolutionary Economic Theory*, 2012; *Personality, Pathology and Mindsets: Cultural traits and enantiomers*, *Kybernetes*, 2014)
 - The three-trait Sagiv-Schwartz [2007] personality enantiomers constitute eight possible cognition Mindset modes. Agency has a five-trait schema which calls on both the cultural... enantiomers and delivers thirty-two *agency possible meta-types*. However, there are complications. While traits are bipolar, composite types may also emerge from the balance between a bipolar pair of enantiomers, as in the case of the cultural orientation trait. We shall take it... that these balance points indicate that the epistemic elements of both of the bipolar enantiomers can coexist with equal validity for a given agency. As such balance occurs the indicate that the epistemic elements of both of the bipolar enantiomers can orientation trait. (Maurice Yolles and Gerhard Fink, *A Configuration Approach to Mindset Agency Theory: a formative trait psychology with affect, cognition and behaviour*, 2021).

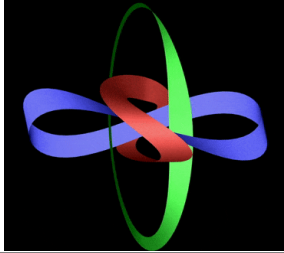
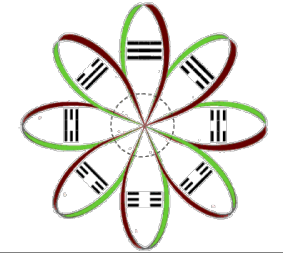

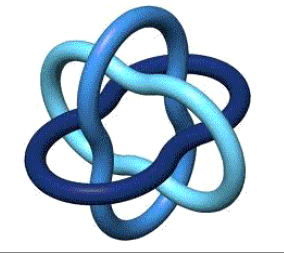
Obstacles to effective strategic implementation? Given the recognized resistance to global calls for action, is there some relevance to the 20-fold pattern of *Upakleshas* of Buddhism, namely the 20 secondary "hindrances" binding people to illusion. These are:

20 Secondary hindrances according to Buddhism			
<ul style="list-style-type: none"> • belligerence • resentment • concealment • spite • jealousy 	<ul style="list-style-type: none"> • miserliness • deceit • dissimulation • haughtiness • harmfulness 	<ul style="list-style-type: none"> • non-shame • non-embarrassment • lethargy • excitement • non-faith 	<ul style="list-style-type: none"> • laziness • non-conscientiousness • forgetfulness • non-introspection • distraction
Reproduced from <i>Chinese Buddhist Encyclopedia</i>			

A tentative proposal for reconciling those "Eastern" hindrances with "Western" value polarities was presented separately (*Reconciling "positive" and "negative" operational insights*, 2018).

Paradoxical cognitive relation between polarities: Multiple Möbius strips could therefore be understood as holding the relation between multiple "virtue-vice" pairs. This is especially useful when either extreme may be appreciated or deprecated in the dynamic, as is typical both of vices (of excess or deficiency) and of a virtue contrasted with a sin. A configuration of Möbius strips might then be suggestive of a complex of values, as in the exercises below left.



Indications of challenge to comprehension of opposites			
Borromean ring configuration in 3D of three Möbius strips	Arrangement of BaGua pattern embodied within four interwoven Möbius strips	Logo of the International Mathematical Olympiad	Logo of International Mathematical Union
			
Video (mp4); Virtual reality (x3d ; wrl)		(reproduced from <i>Wikipedia</i> ; see IMO animation)	(see <i>Wolfram Mathematica animation</i>)

The configurations above variously suggest how and where the cognitive locus may be located -- potentially detached from the container by which it is framed, but to which it may be unfruitfully attached. Use of the Möbius strip and Klein bottle in clarifying this paradoxical framing is a primary focus of the extensive studies of [Steven Rosen](#) (*How Can We Signify Being? Semiotics and Self-signification, Cosmos and History: the journal of natural and social philosophy*, 10, 2014, 2).

In contrast with textual presentations of sets of values, polyhedra have been extensively studied. They have the advantage of opening the possibility of comprehensible geometrical transformations between them. This offers a sense of coherence between many alternative mappings. Potentially this addresses the number difficulty (between 7 and 12, for example), as discussed below.

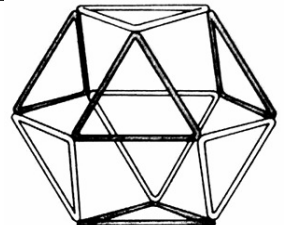
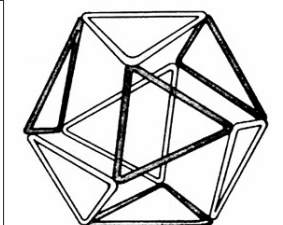
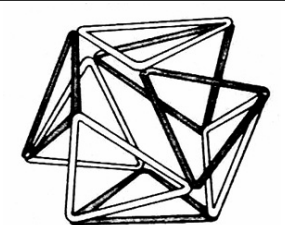
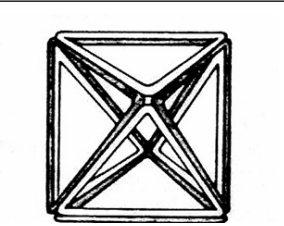
The geometry of polyhedra may encompass contrasting interpretations of polarity -- especially to the extent that **polyhedra may be understood to frame a cognitively or semantically elusive central locus distinct from the explicit nature of the surrounding framework**. Whilst the polyhedral framework may indeed take static form, its elements can also be indicative of the systemic relationships so tragically absent from value statements. Especially significant, if only potentially, are the geometrical properties implied by any such framework -- but not explicit -- most obviously their axes of symmetry. It is with these that the elusive significance of polarity might be associated.

Transformations between alternative configurations of potential systemic significance: With respect to the cuboctahedral mapping of virtues-sins, of particular relevance is Fuller's recognition of the manner in which the cuboctahedron (otherwise known as the vector equilibrium) can be transformed dynamically into other polyhedra (*Vector Equilibrium and its Transformation Pathways*, 1980; Buckminster Fuller, *Vector equilibrium jitterbug*, (20 October 1975). This process, as shown below, is termed the **kinematics of the cuboctahedron**, now widely known as **jitterbug transformation** (H. F. Verheyen, *The complete set of Jitterbug transformers and the analysis of their motion*, *Computers and Mathematics with Applications*, 17, 1989; Lynnclaire Dennis, et al *Building on the Known: a quintessential jitterbug*, *The Mereon Matrix*, 2018).

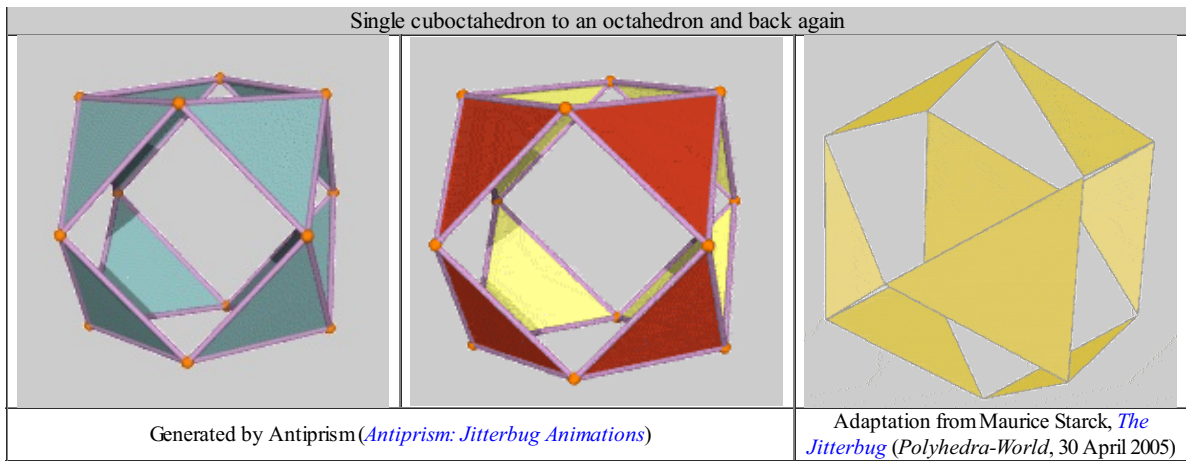
From both a mapping and a cybernetic perspective, these transformations are especially valuable in indicating how semantic fields might be conflated or distinguished coherently. This is an additional response to the challenge of synonyms through which value-virtues or sins-vices may be variously recognized through simpler or more complex articulations. This suggests an approach to the conflation (or articulation) of the distinctions considered memorable with respect to representation of the virtues-sins complex -- namely conflating or differentiating the potential synonyms and antonyms used as labels in the mappings.

Many videos and animations of that "jitterbug" movement are readily accessible :

- Maurice Starck: *The Jitterbug* (*Polyhedra-World*, 30 April 2005)
- [Adrian Rossiter: Jitterbug Animations](#) (*Antiprism*)
- Bob Burkhardt: *Jitterbug* (applet)
- Robert W. Gray: *Jitterbug defines polyhedra; The Jitterbug Motion*
- *Buckminster Fuller's Jitterbug* (YouTube, 5 May 2007)
- *Bucky's "Jitterbug" -- Vector Equilibrium* (16 October 2008).
- Joe Clinton: *R. Buckminster Fuller's Jitterbug* (YouTube, 15 March 2008)

Schematic indication of transformation of cuboctahedron			
cuboctahedron	(pre) icosahedron	(post) icosahedron	octahedron
			
Adapted from <i>Vector Equilibrium and its Transformation Pathways</i> (1980)			

The cuboctahedron can be progressively transformed into an **icosahedron**, and an **octahedron** by folding along the diagonals of its square sides.



Exploratory global mappings of Aristotle's virtues in relation to vices

It is potentially instructive to consider how Aristotle might have imagined a representation of the virtues indicated in the *Nicomachean Ethics* in relation to the vices of their excess or deficiency (as noted above) -- given his familiarity with a number of polyhedra and the particular significance with which they were associated at that time. These explorations are potentially valuable for mnemonic purposes. Given that the virtues and their deficiencies were originally indicated in the Greek of those times, this offers a helpful reminder that **any translation is potentially misleading, as stressed with regard to the use of definitive terms for any value or vice.**

The 12 virtues of the *Nicomachean Ethics* can of course be conveniently mapped onto the faces of a dodecahedron or onto the vertices of its dual, as shown below. There they have been positioned arbitrarily, usefully raising the question as to how greater systemic significance could be elicited from more judicious placement of one in relation to another. These mappings avoid consideration of Aristotle's basic argument that the virtues are associated with a (golden) mean between two vices (as considered in later mappings).

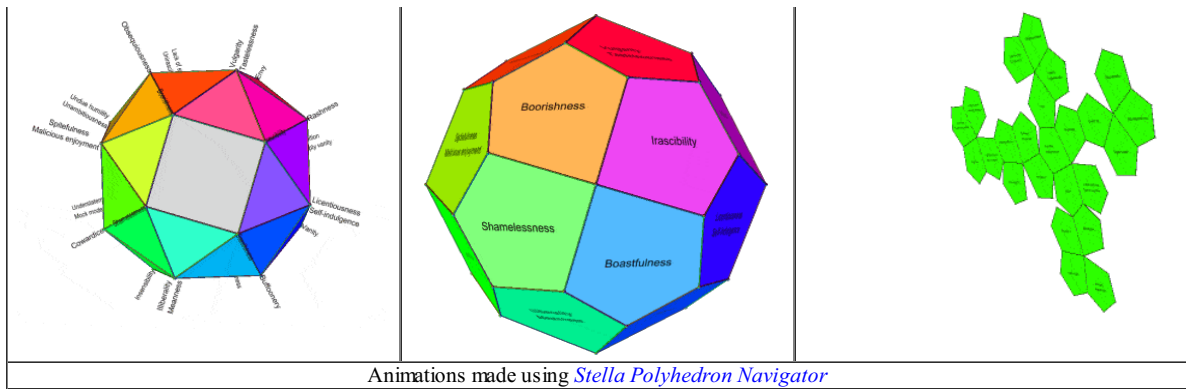
Animated folding of the facial mapping is included in the mappings below as being indicative of the challenge of configuring any set of recognized categories into a coherent pattern -- as would be applicable to those articulated in any value checklist. How is the process of "getting one's act together" to be understood in relation to any configuration of values-virtues -- and their challenges? Wireframe renderings offer another perspective of potential significance.

The mappings presented here make use of suitable [Platonic polyhedra](#) and [Archimedean polyhedra](#), as well as the [stella octangula](#) (or stellated octahedron). These serve to emphasize the argument that no particular polyhedron may respond completely to the need, with the further possibility that alternation between contrasting polyhedra may be instructive. This is consistent with the challenge of mapping the Earth as a globe -- for which a very extensive set of projections are variously considered ([List of Map Projections, Wikipedia](#)). A primary purpose in presenting the mappings below is **the challenge of how best to elicit imaginative insight into comprehension of the sets as a viable (systemically coherent) whole, rather than in the conventional focus on particular virtues (or vices) in isolation.**

Animated mapping of 12 virtues of Aristotle onto dodecahedron and its dual (icosahedron)			
Dodecahedral faces	Icosahedral vertices	Icosahedral vertices	Folding dodecahedral virtues
Animations made using Stella Polyhedron Navigator			

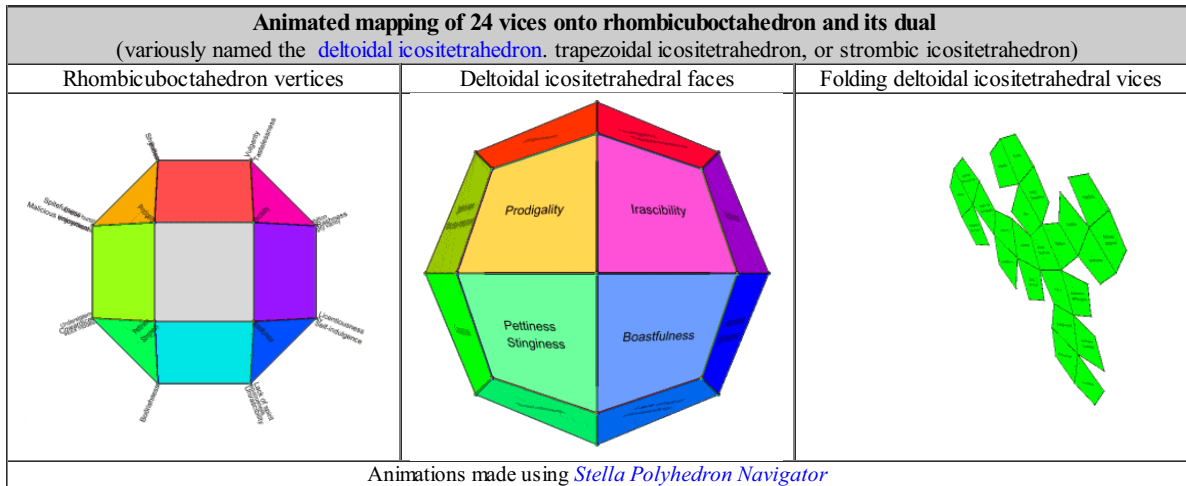
Another possibility is use of the cuboctahedron and its dual to map the 12 virtues -- with the same reservations as above. Whereas the mapping above uses a regular Platonic polyhedron, the cuboctahedron is a semi-regular, Archimedean polyhedron -- as with the mappings which follow.

Animated mapping of 12 virtues of Aristotle onto cuboctahedron and its dual (rhombic dodecahedron)			
Cuboctahedral vertices	Rhombic dodecahedral faces	Cuboctahedral vertices	Folding rhombic dodecahedral virtues



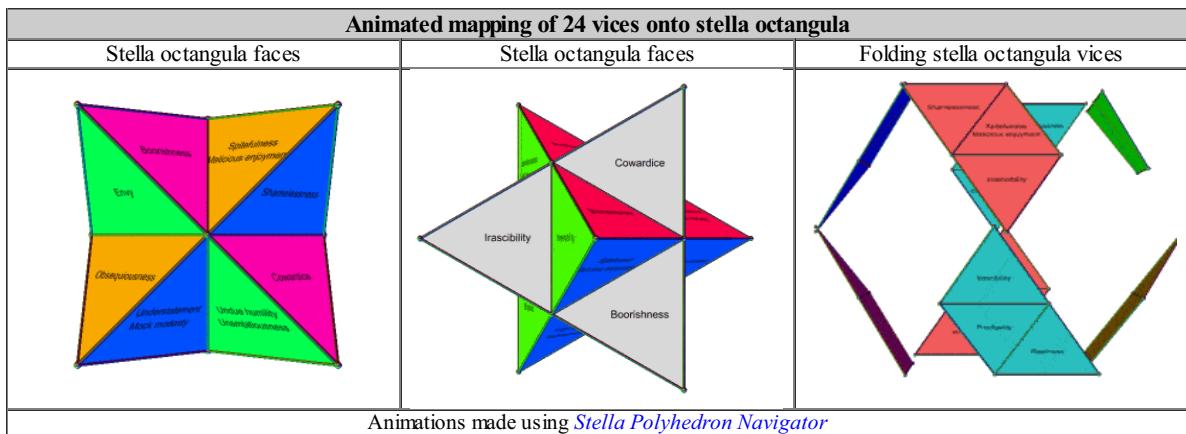
Animations made using *Stella Polyhedron Navigator*

The 24 vices are mapped arbitrarily, as indicated in the reservation above.



Animations made using *Stella Polyhedron Navigator*

The 24 vices are mapped arbitrarily below, as indicated in the reservation above. As a 3D variant of the Star of David, its potential significance is discussed separately with other animations (*Richer pattern of significance through complexification of the Star of David?* 2017).



Animations made using *Stella Polyhedron Navigator*

The progressive integration (and visualization) of the data of the *Encyclopedia of World Problems and Human Potential* engendered tables indicative of future possibilities of relating [value categories with problems](#) and [value categories with strategic responses](#) -- distinguishing tendencies to excess and deficiency (as anticipated in Aristotelian ethics).

Virtues-Values in relation to the viable system functions of cybernetics

"Virtues" versus "Virtual"? Rather than any relevance to "values", curiously the use of "virtue" with respect to governance and management is now most commonly evident in references to "virtual reality" and "virtual organizations". Some clarification in this regard is offered by Markus Schwaninger in discussing virtual organizations as viable systems:

Virtual stands for "existing or resulting in essence or effect though not in actual fact, form, or name" or "existing in the mind, especially as a product of the imagination". The term is derived from the Latin word *virtus* meaning virile force or manly spirit, and later "virtue". In principle, a virtual organization is capable of manifesting its potential through the most diverse variants. This would mean, for example, that from available resources project teams are formed in many different constellations, tailor made according to the task that needs to be accomplished. With this definition the meaning of the word "available" can be expanded almost indefinitely. What is not available "in house" can be acquired through outsourcing, partnerships and co-operation.

Virtues and ethics? Somewhat surprisingly current studies continue to refer to the articulation of Aristotelian ethics. For example, in a study of organizations as social systems conducting experiments with their survival, Jan Achterbergh and Dirk Vriens offer concluding chapters on *Towards Rich Survival: Aristotle and Organizational Structures Supporting Rich Survival (Organizations: Social Systems Conducting Experiments)* (2010). The first chapter reviews the *Virtues Involved in Eudaimonia and Eupraxia: Moral Virtue, Practical Wisdom, and Choice* from the perspective of Aristotle. Earlier chapters review the cybernetics of **Ross Ashby**, the observing systems of **Heinz von Foerster**, the general theory of social systems of **Niklas Luhmann**, and the functional design principles for viable infrastructures of **Stafford Beer**.

An Aristotelian ethical emphasis is evident in the proposal for a "Freely Adaptive System" by **Juan A. Pérez López** (Domènec Melé, et al., *The "Freely Adaptive System": application of this cybernetic model to an organization formed by two dynamic human systems Philosophy of Management*, 18, 2019, 1). This model, although it is within the management cybernetic paradigm (and does not propose any anthropological philosophy), is consistent with several features of the Aristotelian anthropological tradition, including epistemology, practical reason, and virtues. The merit of the proposal is variously argued by **Josep Rosanas** (*Beyond Effectiveness: attractiveness and unity as criteria for decision-making in organizations, European Business Review*, January-February 2012; *Beyond Economic Criteria: A Humanistic Approach to Organizational Survival, Journal of Business Ethics*, 78, 2008, 3; *Loyalty and Trust as the Ethical Bases of Organizations, Journal of Business Ethics*, 44, 2003).

As noted by Miles Weaver, et al (*Systems and Systemic Approaches for Attaining the SDGs Across Partnerships, Encyclopedia of the UN Sustainable Development Goals* 2020), a widely cited definition for the term "values" is provided by Gerald Midgley (*Systemic Intervention: Philosophy, Methodology, Practice*, 2000; *Moving Beyond Value Conflicts: Systemic Problem Structuring in Action*, January 2016). Values are understood there to be the purposes that people pursue in action in contrast with general principles and virtues (such as kindness and modesty).

With respect to virtues such as "kindness" however, it is now argued that they may well be vital to achievement of the UN's SDGs, as by Anantha Duraipapp (*Is Kindness the Secret to Achieving the Sustainable Development Goals? UN Chronicle*, 1 November 2019):

There is no mention of kindness -- the act of giving without expecting anything in return—in the ambitious 2030 Agenda for Sustainable Development, which was adopted by 193 countries in 2015.... This brings me to the importance of kindness, which, by its neurobiological nature, improves the happiness and well-being of the receiver and the giver. The act of giving is key, but the act of refraining from decadence can also be seen as an act of kindness. If we continue with the present mindset that we must produce more to narrow the inequality gap, we are doomed to failure. We must instead start to learn to share and come to terms with the notion that monetary wealth alone is not the key to happiness.

This perspective is reinforced by a review of the scientific evidence supporting the value of the pursuit of "acts of kindness" by the Mahatma Gandhi Institute of Education for Peace and Sustainable Development of UNESCO (*Kindness: the force that will help us achieve Sustainable Development Goals*). This presents supporting arguments to posit that the explicit cultivation of intentional acts of kindness may also be fundamental for the achievement of the SDGs, and for building peaceful and sustainable societies.

Viable configurations of virtues? The argument here can be tentatively developed by exploring the possible relation between configurations of virtues-values (with their corresponding "sins-vices") and the systemic functions identified by cybernetics as necessary for operational viability. The assumption in doing so is that **the action implied by the embodiment of virtues-values is conventionally dissociated to an unfortunate degree from the analytical articulation of the functions ensuring the viability of a system**. In practice the former is the domain of theology, morals and ethics, whereas the latter is the domain of strategic management and organization. Reconciling these two extremes is a challenge of potential significance to viable strategic development, its comprehension, and its uptake.

With respect to viability, as summarized by *Wikipedia*, the **viable system model** (VSM) is a model of the organizational structure of any autonomous system capable of producing itself. A viable system is any system organized in such a way as to meet the demands of surviving in the changing environment. One of the prime features of systems that survive is that they are adaptable. The VSM expresses a model for a viable system, which is an abstracted cybernetic (regulation theory) description that is claimed to be applicable to any organisation that is a viable system and capable of autonomy.

Stafford Beer built the VSM by developing Whitehead and Russell's notion of the metasystem that controls the system, as noted by Ayham A. Fattoum (*Holistic Complexity Management During Disasters: Enhancing the Resilience of Rapidly-Evolving Viable Systems*, Alliance Manchester Business School, 2018, pp. 66-70). The VSM is an epistemological contribution that uses cybernetic principles to explain the survival mechanisms of social systems (Maurice Yolles, *Organizations as Complex Systems: an introduction to knowledge cybernetics*, 2006). Beer recognized four functions that the metasystem needs to perform to maintain a system's viability (*Diagnosing the System for Organizations*, 1985; *The Viable System Model: its provenance, development, methodology and pathology. Journal of the Operational Research Society*, 35, 1984; Patrick Hoverstadt, *The Viable System Model*, Systems Practice, 1990).

Further clarification continues to be provided (Raul Espejo, *The Viable System Model: a briefing about organisational structure*, SYNCHO, 2003; Frank van Caspel, *VSM as a Tool for Organizational Change? a critical examination*, 2011).

In the development of this argument, it is assumed that **a stable configuration of virtues-values (with its complements) is necessarily a viable system** -- but understood and described otherwise. Whether any value statement does in practice constitute a viable system -- rather than an aspiration to one -- is another matter. The merit of articulations of viable systems is that they are

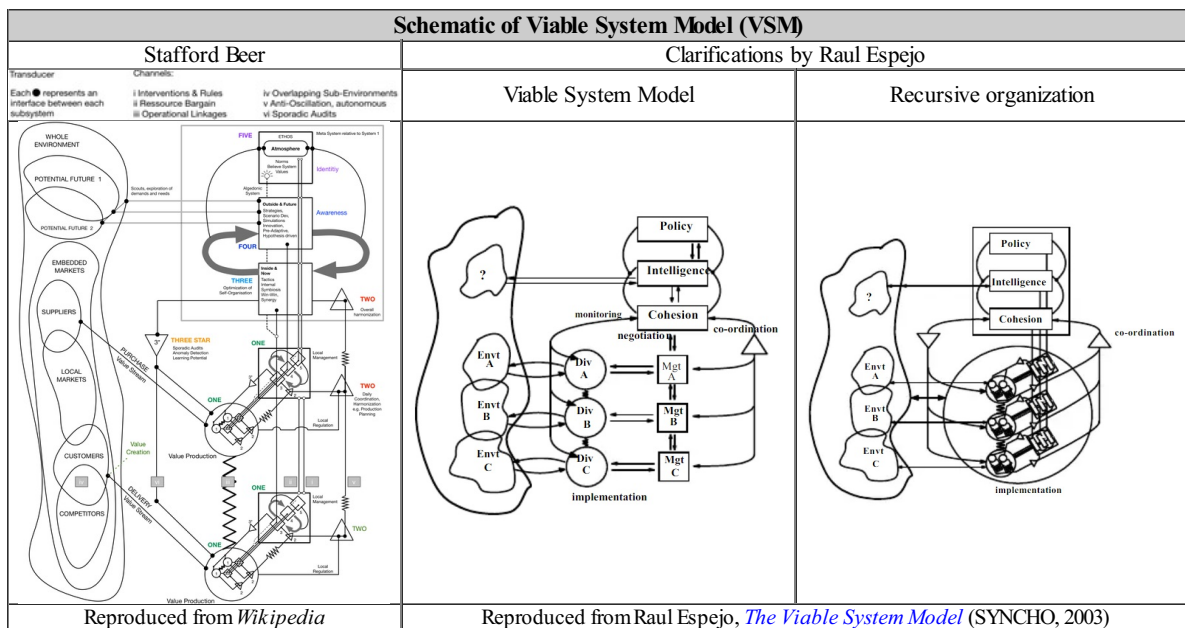
indicative of a language through which what is implied by any configuration of virtues-values can be explored in greater detail as an integrated system such as to offer insight into the systemic functions with which virtues-values are associated.

It is of course the case that it is rare, if not extremely rare, to find values and their converse articulated within the same framework. This contrasts with articulations of virtues and vices. The representation of a VSM is helpful in that the cybernetic emphasis necessarily requires an integration of [positive feedback](#) and [negative feedback](#).

Coherent organization of a VSM: As summarized by *Wikipedia*: A viable system is composed of five interacting subsystems which may be mapped onto aspects of organizational structure. In broad terms Systems 1–3 are concerned with the 'here and now' of the organization's operations, System 4 is concerned with the 'there and then' -- strategic responses to the effects of external, environmental and future demands on the organization. System 5 is concerned with balancing the 'here and now' and the 'there and then' to give policy directives which maintain the organization as a viable entity:

- *System 1* in a viable system contains several primary activities. Each System 1 primary activity is itself a viable system due to the recursive nature of systems as described above. These are concerned with performing a function that implements at least part of the key transformation of the organization.
- *System 2* represents the information channels and bodies that allow the primary activities in System 1 to communicate between each other and which allow System 3 to monitor and co-ordinate the activities within System 1. Represents the scheduling function of shared resources to be used by System 1.
- *System 3* represents the structures and controls that are put into place to establish the rules, resources, rights and responsibilities of System 1 and to provide an interface with Systems 4/5. Represents the big picture view of the processes inside of System 1.
- *System 4* is made up of bodies that are responsible for looking outwards to the environment to monitor how the organization needs to adapt to remain viable.
- *System 5* is responsible for policy decisions within the organization as a whole to balance demands from different parts of the organization and steer the organization as a whole.

The model is derived from the architecture of the brain and nervous system. Systems 3-2-1 are identified with the ancient brain or [autonomic nervous system](#). System 4 embodies cognition and conversation. System 5, the higher brain functions, include introspection and decision making.



Alternative VSMs? It is appropriate to note the possibility of confusion with other uses of the abbreviation "VSM", although the potential relation of that work on values to this argument is not explored here:

- *Value Survey Module*: As developed by Geert Hofstede and Michael Minkov (*Values Survey Module: Manual*, 2013). This is based on the related work of Geert Hofstede (*Cultures and Organizations: software of the mind*, 1991; *Culture's Consequences: comparing values, behaviors, institutions and organizations across nations*, 2001).
- *Value Stream Mapping*: As described by Karen Martin and Mike Osterling (*Value Stream Mapping*, 2013). [Value stream](#) maps offer a holistic view of how work flows through entire systems. (*What is Value Stream Mapping (VSM), benefits, process and value*, Plutora; *A Complete List of Value Stream Mapping Symbols*), Most notably associated with the [Six Sigma](#) method, VSM is a workplace efficiency tool that integrates material processing steps and information flow. VSM is an essential tool for organizations that want to plan, implement, and improve their lean journey.
- *Viable System Management*: As discussed by Mario Calabrese, et al. (*From Requisite Variety to Information Variety through the Information theory: the management of viable systems*) and by Sergio Barile, et al. (*A Theoretical Framework for Measuring Value Creation Based on Viable Systems Approach (VSA)*, *Contributions to Theoretical and Practical Advances in Management, Viable Systems Approach*, 2013)
- *Viable System Method*: Imply use of a VSM, as above
- *Visualization State Machine*: Assists in visualization and fine-tuning of the memory/power configuration of Lambda functions

([Top 12 Visualization State Machine Open Source Projects](#))

- *Virtual Storage Management*: As used in computer systems


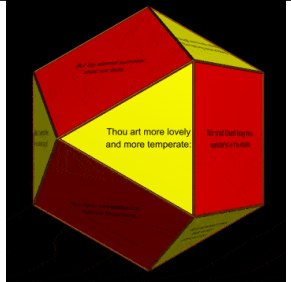
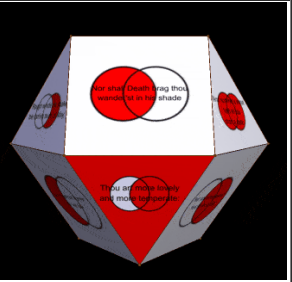
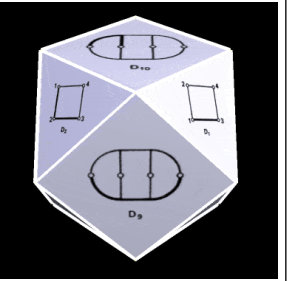
Alternative viable systems of 14-foldness? It has been separately argued that there is a curious correspondence across disciplines and domains suggestive of a 14-fold pattern of organization ([Pattern of 14-foldness as an implicit organizing principle for governance?](#) 2021; [Intuitive pattern recognition and its formal articulation?](#) 2021). As variously noted there, there is seemingly little insight -- or interest -- in the justification for a 14-fold pattern, any more than that for other common preferences of strategic significance.

It has been suggested that 14 process elements identified from a cybernetic perspective constitute a comprehensive performative epistemology for the viable system model (VSM) process (David Lowe, Angela Espinosa and Mike Yearworth, [Constitutive Rules for Guiding the Use of the Viable System Model: reflections on practice](#), *European Journal of Operational Research*, 287, 2020, 3). As noted by the authors, and of relevance to the disparate nature of those processes, these are held to be representative of the range of VSM practice but not an exact reproduction of the coverage in each of the sources analyzed, keeping with the requirement to capture process elements that would be generative of variability of practice rather than prescriptive of it. A mapping of these onto a cuboctahedron is presented below left.

A 14-line poem is traditionally called a "sonnet" -- widely appreciated in aesthetic terms and most notably those of Shakespeare. Most sonnets have 14 lines, with 10 syllables in each line, but some may have less and some may have more. For example, some sonnets have 12 lines, and some have 16 lines. There are very few references to polyhedra in relation to the sonnets, although the 14-fold relation to the cuboctahedron may be noted. As an illustrative exercise there is therefore a case for configuring the lines of a much-cited sonnet on the faces of such a polyhedron (below) to frame the question as to how that attribution might give another focus to the attractiveness, coherence and memorability of the sonnet ([Embodiment of logical connectives in sonnet form](#), 2021). In one animation, the contrasting Venn diagrams (above) are added -- potentially to be used to distinguish the significance of quatrains.

A set of Venn diagrams can be used to distinguish the set of logical connectives (illustrated above and discussed separately) as potentially corresponding to the set of Sustainable Development Goals of the UN ([Configuring the variety of "voices" and dialogue modalities coherently?](#) 2021). They can therefore be mapped experimentally onto a cuboctahedron.

The possible [relevance of quantum field theory to cognitive organizations](#) is discussed separately. As noted by Robin Ticciati ([Quantum Field Theory for Mathematicians](#), Cambridge University Press, 1999), all Feynman diagrams constitute a high-dimensional polytope. At second order there are 14 connected Feynman diagrams which represent scattering processes (p. 108). As confirmed by I. T. Todorov ([Analytic Properties of Feynman Diagrams in Quantum Field Theory](#), Elsevier, 2014), a class of primitive diagrams for scalar meson-nucleon scattering consists of 14 Feynman diagrams, as shown below right.

Experimental mappings onto cuboctahedral faces of disparate 14-fold sets			
Mapping of 14 process elements of viable system model	Attribution of 14 lines of Shakespeare's <i>Sonnet 18</i>	Addition of Venn diagram of logical connectives	Feynman diagrams for scalar meson-nucleon scattering
			
Animations prepared using Stella Polyhedron Navigator			

Value-Virtue systems? An inspiration for the development of the VSM was originally offered from a general systems perspective by the architecture of the brain and nervous system and the higher brain functions (as noted above), as implied to a degree by titles of Beer's much-cited earlier work (*Brain of the Firm*, 1981; *The Heart of Enterprise*, 1979).

Relevant insights are evident from the review of a form of paradigm shift -- from epistemology to ontology, from representation to performativity, agency and emergence -- by Andrew Pickering ([Cybernetics and the Mangle: Ashby, Beer and Pask](#), *Social Studies of Science*, 32, 2002, 3). With respect to [Gordon Pask](#), Pickering notes his much appreciated insights into [conversation theory](#). With respect to Beer, he subsequently notes a fundamental transformation of perspective ([Stafford Beer: From the Cybernetic Factory to Tantric Yoga](#), *The Cybernetic Brain*, 2019).

Such a shift could have been expected to engender a "Virtue System Model", a "Virtuous System Model", or a "Value System Model". It is therefore appropriate to search for any references to application of VSM to "virtues" or ethics (other than to the ethically-related [Victorian Specific Model](#)):

- P. Cardoso-Castro: [The viable system model as a framework to guide organisational adaptive response in times of instability and change](#) (*International Journal of Organizational Analysis*, 27, 2019, 2). This offers a summary of the virtues and criticism of the main metaphors of organization
- Sergio Barile, et al: [Sustainability and the Viable Systems Approach: Opportunities and Issues for the Governance of the Territory](#) (*Sustainability*, 10 2018, 3) refer to the theme of the congress of the International Society of Business, Economics, and Ethics ([Re-Inventing Globalization: Community, Virtues and the Power of Purpose](#), Bilbao, 2020)

"Viable Sins Model" for democratic society? Especially provocative, but potentially instructive, is the speculative elaboration of a

cybernetic **model of "viable inappropriateness"**. This could be framed as the design of a system which would enable a collective to "get away with" as much inappropriate behaviour as possible -- for the longest period of time. It is a challenge to the significance so widely attributed to "appropriateness" (*Comprehension of Appropriateness*, 1986).

The exercise would be instructive in that it is very possible that some collectives -- if not many -- are effectively doing just that, whether consciously or unconsciously. The behaviour of major corporations could be explored in that light. Notions of "getting away with it" are readily confused with viability and survival. However it is also possible that some initiatives, upheld as "positive" and "hopeful", could be recognized as operating successfully according to such a model -- carefully ignoring the consequences of their action.

More challenging is the possibility that democratic governance might be fruitfully understood from that perspective -- as suggested above. As a dynamic of co-dependency, together they get away with "being unfit for purpose". Any one political party could be seen as exaggerating selectively, in its pursuit of particular strategies, in order to achieve viability "for as long as possible" -- namely until the following election, crisis, or paradigm shift. **The problematic implications and contradictions of "business-as-usual" may well be usefully recognized as a "viable pattern of sins"**.

Variety of systems and the viability of democracy

The argument above has referred to a disparate variety of systems: ethical, cybernetic, and logical. It has indicated their relationship to polyhedra. In his *magnum opus* on the geometry of thinking, Buckminster Fuller asserted that: *All systems are polyhedra: All polyhedra are systems.* (1979, 400.56).

Paradigm wars of systems scientists: In a guest editorial on behalf of the International Society for the Systems Sciences (ISSS), the challenging variety of systems is addressed by Gerald Midgley and Jennifer Wilby (*Learning across Boundaries: exploring the variety of systems theory and practice*, *Systems Research and Behavioral Science*, 32, 2015). That theme was chosen:

... because there are now many thousands of systems thinkers, complexity scientists and cyberneticians worldwide, all sharing a general interest in systems theory and practice but often diverging when it comes to the *particular* systems paradigms, theories and methodologies that they embrace... Fragmentation is the inevitable result of the proliferation of new systems ideas in response to new issues and contexts. While this might, at first, appear to be a negative consequence of our success, it brings with it an enormous opportunity: mutual learning from each other to enhance systems, cybernetic and complexity theories and practices in all our diverse domains.

The editorial notes the relevance of a paper awarded the Sir Geoffrey Vickers Memorial Prize -- normally awarded for outstanding qualitative or systemic action research studies that help participants navigate complex issues relating to human values (Anne Powel Davis, et al., *A Conceptual Model of Systems Thinking Leadership in Community Colleges*, *Systemic Practice and Action Research*, 28, 2015, 4).

The editorial highlights the paradigm war between the physical systems and intentional systems, as a consequence of failing to explore the correspondence between the relations embodied in physical systems and the relations as components of intentional structures that may or may not correspond to physical systems (Peter Caws, *General Systems Theory: its past and potential*, *Systems Research and Behavioral Science*, 32, 2015, 5). The editorial goes on to note:

It is interesting to speculate that, had this distinction been widely accepted 40 years ago, the systems community might have avoided the paradigm war between 'hard' and 'soft' systems thinking that became so pernicious in the 1980s and early 1990s.... The reason that acceptance of the difference between physical and intentional systems might have prevented the paradigm war is that hard systems thinking concentrated primarily on the former... and soft systems thinking on the latter.... Whether we are richer or poorer for having had this paradigm war is a matter of perspective, but there is the opportunity to pick up and use this distinction between physical and intentional systems now that Caws (2015) has drawn our attention to it.

Asystemic perspective on variety: The argument above focuses on the "viability" of systems for which there is necessarily a variety of understandings -- of which some may be especially relevant to the viability of democratic systems. It raises the question of applicability of the viable systems model of cybernetics to both ethical systems and to those of oppositional logic. The nature of polyhedral systems itself usefully frames the question as to their respective viability -- most notably explored by Buckminster Fuller with regard to geodesic domes. This subsequently justified the naming of the unexpectedly viable C60 carbon molecule as [buckminsterfullerene](#).

There is a vast range of polyhedra -- with analogues in 4D, known as polychora. The relevance of only a very small selection is currently recognized in the geometry of oppositional logic. As with ethical systems and those of cybernetics, the extent of this range opens the possibility of a far richer approach to the articulation of both ethical systems and those of potential relevance to the viability of democracy (or its future evolutionary alternatives).

The point can be emphasized in the case of oppositional logic which makes extensive use of a binary coding system -- the 16-fold articulation from 0000 to 1111. It is extremely ironic that this is effectively a subset of the coding system of the Chinese classic which confirmed [Gottfried Leibniz](#) in his original insight resulting in the development of the binary coding (Mary von Aue, *Gottfried Wilhelm Leibniz: how the 'I Ching' inspired his binary system*, *Inverse*, 1 July 2018). The original 64-fold coding system, now so fundamental to computer operations, offers a range from 000000 to 111111.

Oppositional logic reduces its focus even further by excluding the two extremes (0000 and 1111) in the representation of logical operations on polyhedra in 3D, whilst acknowledging the possibility of their inclusion in representation in 4D on the hypercube

(*Questionable confusion in configuring strategic frameworks: "fudging" self-reflexivity?* 2019).

Neglected possibilities; Extending the coding system to a 5-fold pattern 00000-11111 would allow for 32 possibilities, potentially of relevance as noted above with respect to values:

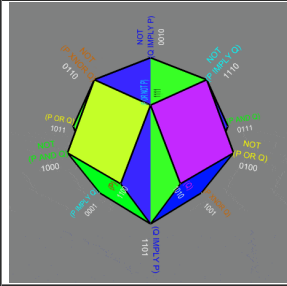
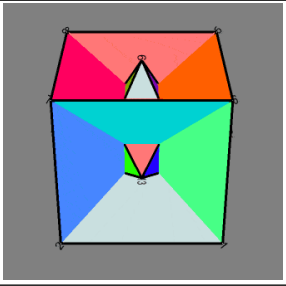
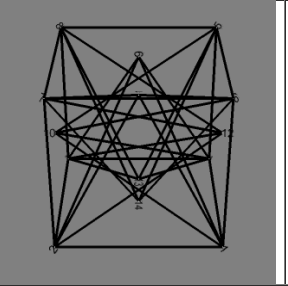
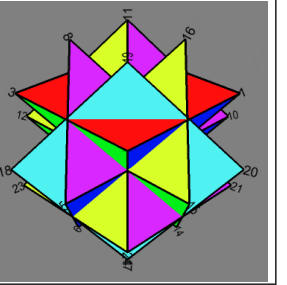
The three-trait Sagiv-Schwartz [2007] personality enantiomers constitute eight possible cognition Mindset modes. Agency has a five-trait schema which calls on both the cultural... enantiomers and delivers **thirty-two agency possible meta-types**. (Maurice Yolles, et al, *A Configuration Approach to Mindset Agency Theory: a formative trait psychology with affect, cognition and behaviour*, 2021).

It might then be asked what insights into opposition (of possibly vital relevance to the viability of democratic systems) are omitted by the reduction from 32 to 14 (not even 16) -- and from 4D to 3D, despite the logical challenges of the emerging role of **quantum computing**?

Whether or not the argument of Yolles and colleagues is considered obscure, the argument can be even further emphasized by recalling the value to the practice of governance of Chinese empires of the past of the 64-fold set of distinctions of the *I Ching* (*The Book of Changes*). Those distinctions were traditionally configured in 2D as the **Shao Yong** circle (as communicated to Leibnitz). Following the geometrical approach of oppositional logic, it may then be asked how a richer and subtler array of 32-fold and 64-fold distinctions might be memorably configured on polyhedra, whether in 3D or 4D (*Framing Cognitive Space for Higher Order Coherence: toroidal interweaving from I Ching to supercomputers and back?* 2019).

The following animations follow from the use above of an augmented cube to configure 14 of the 16 operations of oppositional logic. The "simplest torus" offers the possibility of configuring 16. Whereas the cube above is augmented outward (placing pyramids on each face), in the central animations below the faces are excavated such that the peak of each pyramid is level with the opposite face -- thereby framing a 6-pyramid diamond structure enabling 6 "internal" operations to be distinguished from 8 "external" operations associated with vertices of the cube. Rather than being understood as an "excavation", the pyramid on each face could also be understood as "sinking" into the cube until it encountered the other pyramids. As the dual of that excavation model, the animation on the right offers a set of 24 vertices which featured in the configurations of vices above.

The set of logical connectives can be understood as a form of pattern language potentially offering a remarkable degree of coherence. Given their role in formal logic and in the design of computer logic gates, their inadequacies in practice merit particular attention in the light of ever higher dependency on them in global modelling and the detection of misinformation (*Misleading Modelling of Global Crises: unquestioned bias in authoritative representations of reality by science?* 2021).

Potential cognitive systems suggested by modifications of a cube			
Simplest torus (16 vertices)	Face-excavated cube (14 vertices; 24 faces)	Face-excavated cube (wire) (14 vertices)	Face-excavated cube (dual) (24 vertices; 14 faces)
			
Animations made using <i>Stella Polyhedron Navigator</i>			

What would it take to explore the possibility of reconciling disparate N-fold patterns of "functions" (values, virtues, etc) as recognized by different disciplines? Potentially more intriguing are questions regarding the lack of motivation for doing so.

Global ethical nexus of disparate challenges

Global ethic? The necessity and possibility of a global articulation of values has been a theme espoused and promoted by the **Parliament of the World's Religions** in the form of a Global Ethic, as originally drafted by **Hans Küng** (*Towards a Global Ethic: An Initial Declaration*, 1993; *A Global Ethic in an Age of Globalization*, *Business Ethics Quarterly*, 7, 1997, 3). Although widely endorsed, its wider acceptance has been constrained (Richard Falk, *Hans Küng's Crusade: Framing a Global Ethic*, *International Journal of Politics, Culture, and Society*, 13, 1999, 1; Myriam Renaud, *The Global Ethic: Hans Küng's lasting gift to the world*, *Berkley Center for Religion, Peace and World Affairs*, 3 May 2021).

Aspirations to a global ethic now appear to take a variety of forms, seemingly characterized by limited reference to each other and what that may indeed imply for any articulation of a "global ethic": *World Ethic Forum*, *World Ethical Data Forum*, *World Forum for Ethics in Business*, *Global Ethics Forum*, *World Ethical Electronics Forum*, *Forum for Global Health Ethics*, *Global Forum on Bioethics in Research*, The Carnegie Council for Ethics in International Affairs introduced a *Global Ethics Day* in 2014.

Axes of bias: As the above argument has variously implied, there is every reason to suspect that **conventional use of text for the presentation of a global ethic would not reflect the challenges of its requisite complexity, its comprehension and its memorability**. The challenge can be indicated by a summary of the sets of articulations of preferences and biases presented by various authors (*Systems of Categories Distinguishing Cultural Biases*, 1993).

As yet to be discovered is the "distillation" process whereby disparate articulations of qualities and values can be confronted in order to elicit their functional commonalities of systemic significance -- especially when a systemic perspective is a bias in its own right. The "distillation" metaphor, given the relative simplicity of the process, could be usefully contrasted with the far more complex process of [uranium enrichment](#) (and [isotope separation](#)) -- with which eliciting "active" virtue might be more appropriately compared.

The challenge has been clearly stated by [Nicholas Rescher](#) in concluding his study of divisiveness:

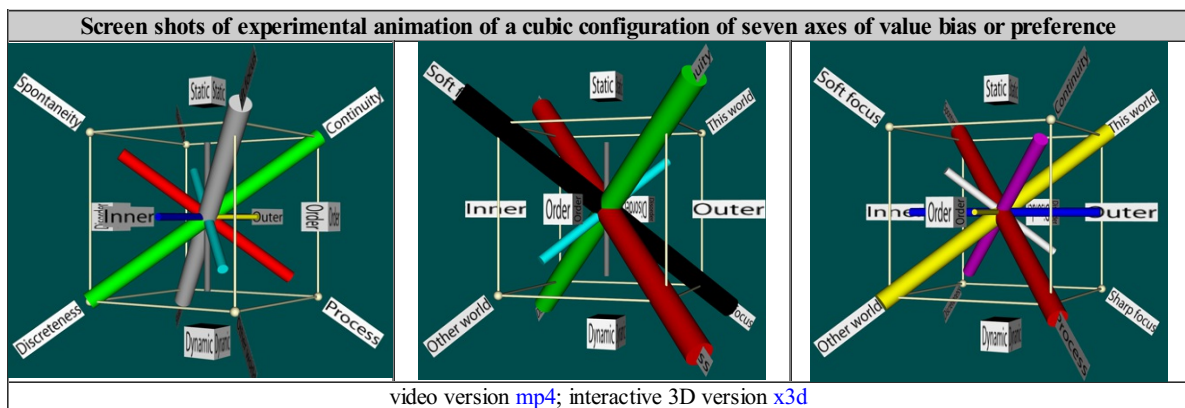
For centuries, most philosophers who have reflected on the matter have been intimidated by the strife of systems. But the time has come to put this behind us -- not the strife, that is, which is ineliminable, but the felt need to somehow end it rather than simply accept it and take it in stride. To reemphasize the salient point: it would be bizarre to think that philosophy is not of value because philosophical positions are bound to reflect the particular values we hold. (*The Strife of Systems: an essay on the grounds and implications of philosophical diversity*, 1985).

Despite its title, one of the studies of cultural biases cited offers some clues towards a possible way forward through distinguishing seven axes of bias from a philosophical perspective ([W. T. Jones](#), *The Romantic Syndrome: toward a new method in cultural anthropology and the history of ideas*, 1961):

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

It is possible that these axes could be usefully understood as indicative of systemic biases of which a set of seven values-virtues could be similarly indicative. In the light of the polyhedral emphasis above, the axes could be recognized as corresponding to those through the vertices and faces of a cube as depicted below. The animation then suggests that the nexus of virtuous-viability-sustainability is at the central intersection of the seven axes -- recalling the emphasis of Aristotle on the mean between extremes.

In its current form the animation changes the diameter, length and colour of the axial cylinders to suggest a dynamic. As a preliminary exercise, the model suggests many possibilities for its improvement to indicate different conditions.



The images below show various attempts to facilitate comprehension of 4-dimensionality suggested by a central nexus. The animation of a [hypercube](#) (tesseract) on the right is helpful in suggesting the necessarily paradoxical interplay of the alternation between an inner and an outer perspective.

Contrasting representations facilitating comprehension of 4-dimensionality and a central nexus			
Cubic configuration of <i>BaGua</i> trigram symbols by Z. D. Sung	Logic Alphabet Tesseract - a four-dimensional cube by Shea Zellweger (see coding).	Topological 4-statement Venn diagram (graph of edges of a 4-dimensional cube as described by Tony Phillips)	Tesseract animation simulating requisite 4-dimensionality?

<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>A vertex is labeled by its coordinates (0 or 1) in the A, B, C and D directions; the 4-cube is drawn as projected into 3-space; edges going off in the 4th dimension are shown in green.</p>	<p>by Jason Hise [CC0], via Wikimedia Commons</p>

Given obvious ambiguity in interpretation of the labels of the axes above in relation to the value-virtue nexus, the dynamics indicated can be presented otherwise using a traditional Chinese binary coding system. The image on the left below positions 8 contrasting extremes in 4 pairs on the diagonals of a cube -- following the pattern indicated above left by Sung (1934). A second animation presents 6 contrasting extremes on 3 mutually orthogonal axes. The 3-line traditional trigram coding (on the left) offers the 8-fold range (000 to 111). A 4-line quadgram coding with its 16-fold range (0000 to 1111) is used in oppositional logic, but requires use of a representational "fudge" by omitting the two conditions 0000 and 1111 to give a 14-fold range to enable presentation on a cube. Together the 3-fold and 4-fold patterns offer 14 extremes on 7 axes in the third animation below.

Use is made of the 14 faces on the cuboctahedron (below right) to present the 8 extremes of the diagonal axes on the 8 opposing triangular faces, with the 6 extremes of the orthogonal axes positioned on the squares faces. As an alternative, the conventional binary codes could have been mapped there. By rendering parts of the line coding transparent, the cuboctahedron animation also offers the suggestion that each facet acts as a distinctively barred window through which the external world is perceived from the centre of what is effectively a "cognitive cage". Oppositional logic makes extensive use of the [rhombic dodecahedron](#) (dual of the cuboctahedron) in order to associate the extremes with vertices rather than faces.

Animations variously indicative of semantic "integration" of cubic configuration of axes of bias			
4 Diagonal axes	3 Orthogonal axes	Central conflation of axes	Cuboctahedral configuration

Such animations necessarily reinforce impressions of abstraction and obscurantism in relation to values and virtues -- otherwise acclaimed as simply experienced and recognized. Such acclaim fails however to acknowledge that it would seem to be such assumptions about the ease with which these can be appreciated which is engendering a global system in fundamental crisis.

Transcending binary constraints in the light of quantum reality? It is profoundly curious that global challenges are so vigorously framed in binary terms, readily deprecated as a Stone Age mentality (*Destabilizing Multipolar Society through Binary Decision-making*, 2016). This has been contrasted by Edward de Bono as that between "rock logic" and "water logic" (*Water Logic: an alternative to I am Right, You are Wrong*, 1987). Ironically this is reflected in the exclusive us-and-them mentality of many "clubs" -- perhaps exemplified to a high degree by the "Club of Rome" (*Club of Rome Reports and Bifurcations: a 50-year overview*, 2018).

De Bono's advocacy of a contextual 6-fold framework for strategic "operacy" merits exploration in the light of the 3 orthogonal axes above (*Six Thinking Hats*, 1985; *Six Frames For Thinking About Information*, 2008). That framework is extended to values and their embodiment in action (*Six Value Medals*, 2005; *Six Action Shoes*, 1991), as discussed separately (*Requisite 20-fold Articulation of Operative Insights?* 2018). The discussion clarifies the [constraint of the 7-fold on comprehension of the 20-fold](#) and [reconciliation of "positive" and "negative" operational insights](#).

There is a provocative charm to the possibility of a degree of correspondence between the six "hats", "values" or "shoes" and the lines of a hexagram -- with one or other cognitive mode being active or passive, in combinations indicative of a range of 64 decision-making conditions articulated by the *I Ching*.

Towards a Standard Model of metaphysics? A contrast can therefore be usefully made with the fundamental dissatisfaction of physics with conventional representations of reality. This has resulted in a so-called [Standard Model](#) of the physics of fundamental particles -- phenomena which are elusive in the extreme and beyond ready comprehension (as are values). As the most appropriate pattern humanity has been able to produce, the sophisticated pattern of thinking which has engendered the Standard Model can be cited as a reflection of the requisite subtlety potentially required to frame the value-virtue nexus of global civilization at this time.

With what justification could it otherwise be so widely assumed -- as at present -- that **the pattern of fundamental values-virtues is**

necessarily less complex than the pattern of fundamental particles as currently comprehended by humanity's most fundamental research? As illustrated by the critique of Alasdair MacIntyre (*Beyond Virtue*, etc), it could be more fruitfully assumed that the conventional approach to values-virtues, and virtue ethics, is trapped in what amounts to a worldview characterized by classical mechanics -- at a time when society is challenged by perspectives partially addressed in terms of quantum reality (Alexander Wendt, *Quantum Mind and Social Science: unifying physical and social ontology*, 2015; Lothar Schäfer, Diogo Valadas Ponte and Sisir Roy, *Quantum Reality and Ethos: a thought experiment regarding the foundation of ethics in cosmic order*, *Zygon(r)*, 44, 2009, 2; Diogo Valadas Ponte and Lothar Schäfer, *Carl Gustav Jung, Quantum Physics and the Spiritual Mind: a mystical vision of the Twenty-First Century*, *Behavioral Sciences*, 2013, 3, 2).

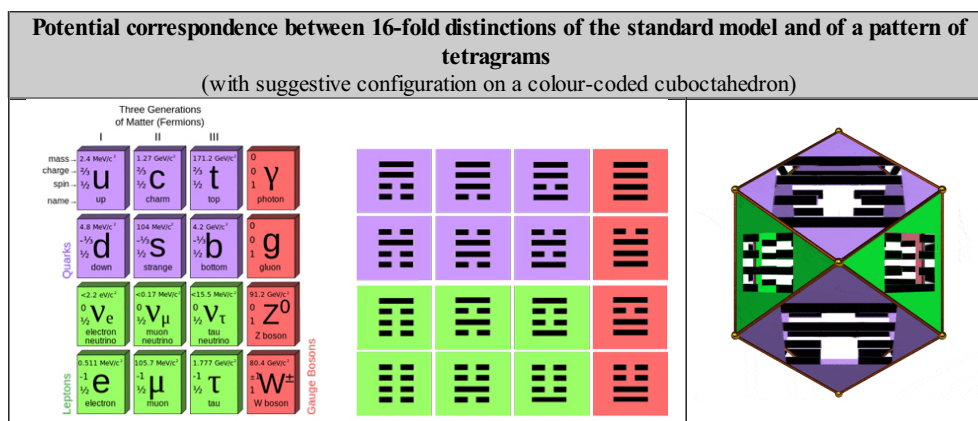
There is some irony to a tendency of authors about the quantum perspective to argue for its "virtues" -- whilst avoiding any consideration of a quantum perspective on "virtue". More relevant insight is offered by Alexander Wendt's suggestion that people can be understood experientially to be "walking wave functions", as discussed separately (*On being "walking wave functions" in terms of quantum consciousness?* 2017). This new language invites reflection on the nature of the "axes" in the animations above. They might be better understood as contrasting wave functions engendering a values-virtue complex of a nature reminiscent of a resonance hybrid (*Configuration of alternatives as a resonance hybrid*, 2008; *Operational insight sets as resonance hybrids?* 2018. This would then offer a degree of consistency with Aristotle's original insight.

Speculatively it might then be asked whether the dynamics of a value-virtue nexus can be fruitfully explored in some way through the organization of the Standard Model. Visually that model is succinctly presented below (left). Such thinking may offer clues to the organization of what really "matters" for many, as argued separately (*Beyond the Standard Model of Universal Awareness: Being Not Even Wrong?* 2010; *Metaphorical Insights from the Patterns of Academic Disciplines: learning from the Standard Model of Physics?* 2012). Meriting careful attention are the many correspondences explored in the work of Frank Dodd Smith, Jr. (*McKay Correspondence between Physical World and Mental World*, 2010).

The following presentation tentatively positions a complete set of tetragrams (as employed above to distinguish values-virtues) such as to correspond to the pattern of the Standard Model. Although the pattern of tetragrams has a degree of internal coherence corresponding to that of the standard model, as a tentative exercise this is merely designed to encourage reflection on any more appropriate ordering -- as suggested by the puzzle of *Rubik's Cube*. The order of rows and/or columns could be changed -- as previously done in a second iteration (when columns 2 and 4 were switched to approximately more closely to the criterion of a magic square).

In mnemonic terms it can be asked whether trigrams, tetragrams or hexagrams can be configured together, such that when overlaid they form a visual pattern effectively constituting a magic square or a magic cube (*9-fold Magic Square Pattern of Tao Te Ching Insights*, 2006). Also curious from a mnemonic perspective is that the symmetry of any cuboctahedral mapping can only be effectively demonstrated by an orderly rotation on a single axis.

The attribution of 16 colour-coded tetragrams to a cuboctahedron, as used above, can only be achieved by the "fudge" of oppositional logic in reducing 16 to 14 -- by omitting the tetragrams encoding 0000 and 1111 (then best understood for mnemonic purposes as being at the centre of the configuration). The 6 mauve-coloured tetragrams are mapped onto squares. The remainder are mapped onto the 8 triangles -- 5 in green, but with three coloured red.



Reconciling disparate challenges with axes of bias?

- **Terminological confusion?** The argument above has noted a degree of terminological confusion in relation to virtues and values, however carefully defined. This calls for a special methodological clarification of terms in contrast to the simplistic tendency to assume that particular words encompass the significance of the value indicated in "value statements". The challenge is exacerbated by contrasting interpretations by different schools of thought and the languages of different cultures.

A degree of correspondence between such disparate modalities is explored separately in the light of correspondences between their polyhedral representation (*Comparable Modalities of Aesthetics, Logic and Dialogue*, 2021). This notably contrasts a variety of perspectives, extended to the "non-logical" as suggested by quantum mechanics (*Variety of "ways of looking" -- binary or otherwise*, 2021).

Indication on the vertices of polyhedra of the binary coding from oppositional logic of the **logical operators** (indicated above) opens the possibility of exploring how a given vice might well be associated with the particular triangular space defined by each

group of three vertices -- a conflict between three logical operations, perhaps then to be usefully recognized as a [trilemma](#). This could be contrasted with a [dilemma](#) between vices across any edge of the polyhedron. Alternatively each vertex might itself be considered indicative of a trilemma, namely that between the three vice-spaces common to it. A similar argument could be made with respect to use of polyhedra with rectangles, pentagons or hexagons.

That earlier discussion explores the possibility framed by the primary set of 14 logical operators as being but one instance of a [Pattern of 14-foldness as an implicit organizing principle for governance?](#) (2021).

Whereas "Western" reference to values and virtues relies primarily on words on the assumption that these are readily comprehensible, it is intriguing to note the recourse to metaphor in corresponding "Eastern" articulations. Use may indeed be made of an array of figures of speech, although these may exacerbate any aspiration to coherence, despite being fundamental to powerful rhetoric in governance ([Questionable Classification of Figures of Speech](#), 2016). Related arguments may be made with respect to values associated with tone of voice ([Varieties of Tone of Voice and Engagement with Global Strategy](#), 2020). These issues can be contrasted with the pattern of metaphors used to distinguish the 64 hexagram-encoded conditions of the *I Ching* and their relationships.

The insight of [Kenneth Boulding](#) could indeed be relevant to the personal (or collective) embodiment of values as virtues: *Our consciousness of the unity of the self in the middle of a vast complexity of images or material structures is at least a suitable metaphor for the unity of a group, organization, department, discipline, or science. If personification is only a metaphor, let us not despise metaphors -- we might be one ourselves.* ([Ecodynamics; a new theory of societal evolution](#), 1978, p. 345).

- **Complementary disciplinary preoccupations?** The argument has highlighted the relevance of insights from both oppositional logic and cybernetics with regard to ensuring systemic comprehension and its implications for viability. These disciplines naturally have their own methodologies and preoccupations which are relatively insensitive to ethical dimensions -- however they may be challenged by the developing demands of artificial intelligence. Beyond the issues of terminology, there is clearly a need for insight into how those preoccupations and insights translate into the systemic functions vital to viability. It could be asked why [virtue epistemology](#) and mathematical theology are not relevant to articulation of global strategy ([Mathematical Theology: future science of confidence in belief](#), 2011).

As argued by Maurice Yolles: *A link between economic theory approaches and values in social systems can be theoretically founded on a cybernetic and dynamic social viable systems model* ([Organizations as Complex Systems: an introduction to knowledge cybernetics](#), 2006). However for Markus Schwaninger, although "value potentials" can be seen to "precontrol" profit, much as profit determines solvency: *profit is not a strategic control variable and consequently, not a strategic aim either. Rather, its appearance or absence is a consequence of good or bad strategies* ([Embodiments of Organizational Fitness: the Viable System Model \(VSM\) as a guide](#), *Semantic Scholar*, 1 June 1990).

- **Unfruitful reification?** Use of particular terms as indicative of values (or problematic vices) is itself misleading. Whilst failing to encompass the significance of the value, it also reinforces the implication that a value is of a nature that lends itself to definition. As stressed above, a value may call for recognition in more dynamic form rather than constituting an instance of misplaced concreteness ([Engaging with Elusive Connectivity and Coherence](#), 2018; [Comprehension of Unity as a Paradoxical Dynamic](#), 2019).

The challenge of translation of value terms could be usefully reframed to recognize that a term (like "equality") invites "interpretation" as being potentially on a spectrum between a reified extreme (defined legally, for example) and an ideal extreme (understood philosophically, for example). Such a spectrum could be seen as extending from an external (objective) perspective to an internal (subjective) perspective eluding definition. In the contrast made between value and virtue, this suggests that values are primarily externalities to which reference can be objectively made, whereas virtues are best understood as behaviourally and cognitively embodied as internalities. This is somewhat consistent with the contrast between "sensate" and "idealistic" value extremes to which Yolles and colleagues refer.

- **Complementary modes of representation?** Whilst the articulation of values through text may be useful in some contexts, it has clearly proved inadequate to the challenges of eliciting consensus in a global civilization -- if consensus is not itself a valuable illusion ([The Consensus Delusion: mysterious attractor undermining global civilization as currently imagined](#), 2011). The same may be said of the language of logic and mathematics. The value of polyhedral representation has been stressed above, although the wider relevance of its value to oppositional logic is only acknowledged to a limited degree -- despite a degree of association with the Aristotelian ethical tradition.

The value of that modality from a cybernetic perspective features primarily in the later development of the thinking of Stafford Beer with respect to [tensional integrity](#) (tensegrity) and its role in imbuing conversation with a degree of organization -- in the light of the conversation theory of Gordon Pask ([Beyond Dispute: the invention of team syntegrity](#), 1994). Less evident is how Beer's VSM insights "translate" into the explicit articulation of the viability of such polyhedral dynamics as a model of collective discourse.

- **Complementary cognitive modes?** It is remarkable to note the extent to which the articulation of values is appreciated through aesthetic disciplines. It is equally remarkable to note the extremely limited capacity to articulate value statements in such alternative

forms, despite their potential appeal to those for whom text is not a preferred mode (*A Singable Earth Charter, EU Constitution or Global Ethic?* 2006; *Thirty-six Dramatic Situations faced by Global Governance?* 2022; *Reimagining Guernica to Engage the Antitheses of a Cancel Culture*, 2022; *Poetic Configuration of Policy Guidelines*, 1993).

Given the polyhedral potential explored above, correspondences with musical forms could be sought, as discussed and illustrated separately (*Embodiment of logical connectives in sonnet form*, 2021)

- **Requisite variety of ethical articulation?** In the articulation of values, much is made of unity and its capacity to enable diversity -- but with demonstrably problematic success in ensuring this. It is cybernetics which formally recognizes the need for requisite variety, acknowledged otherwise by biology with respect to a sufficiently diverse gene pool. Where the diversity is embodied in disparate disciplines, languages or belief systems, the challenge of any degree of integration has become obvious (*Dynamics of N-fold Integration of Disparate Cognitive Modalities*, 2021; *Global Coherence by Interrelating Disparate Strategic Patterns Dynamically*, 2019)

Mnemonics and memorability? Whilst many different disciplines have clarified issues relating to values, it is abundantly clear that their value with respect to the viability of democratic systems has been limited. Typically such **disciplines exhibit little concern for the comprehensibility of their articulations and the memorability of sets of values generated**. Text publishing constraints tend to restrict their diagrammatic articulations to the simplest black-and-white, 2-dimensional forms, when the coherence of what is presented may call for comprehension of structures in 3-dimensions or 4-dimensions (as with the role of hypercubes in the case of oppositional logic).

The relation of values to memorability is potentially indicated most significantly through recognition of "axiological containers", namely the "packaging" of a set of values whereby an initiative is rendered attractive. This is most obviously cultivated through the art and philosophy of *ikebana* -- of flower arrangement. Ironically the term has been adopted by a packaging corporation (*Axiology: Planet-First Packaging*). Framed in this way it may be asked how various Club of Rome reports have been "wrapped" in order to highlight the values which they strive to uphold and promote: *Come On! Capitalism, Short-termism, Population and the Destruction of the Planet* (2018); *Earth for All: A Survival Guide for Humanity* (2022). How are they to be appreciated as attractive "value containers"?

Reference to axiology is relatively rare when appeals are made to "core values" -- with even fewer to the containers or vehicles by which they are carried. Examples include:

- Teo Ajantaival: *Minimalist Axiologies and Positive Lives* (*Effective Altruism Forum*, 13 November 2021)
- Evgeniia Nilsen: *Axiology of Time* (December 2019)
- Małgorzata Fabiszak: *Axiological Ambiguity of the Container Schema in Multimodal Discourses of Collective Memory* (University in Poznan)
- Tomasz P. Krzeszowski: *The Axiological Parameter in Preconceptional Image Schemata* (*Conceptualizations and Mental Processing in Language*, 1993)

The use of polyhedra is one means of holding conceptual arrays with a degree of coherence and memorability -- suggesting their vital role as mnemonic aids (*Time for Provocative Mnemonic Aids to Systemic Connectivity? Possibilities of reconciling the "headless hearts" to the "heartless heads"*, 2018). Chemistry recognizes a range of cage-like molecules known as **clathrates** -- possibly forming a "host" molecule enclosing a "guest" molecule. This suggests the merit of recognizing "axiological clathrates" -- effectively resonance hybrids.

Such possibilities are explored separately with respect to memorable navigation from 4-fold to 64-fold patterns, and beyond (*Cognitive Embodiment of Patterns of Governance of Higher Order*, 2022).

Any sense of an axiological container highlights the degree to which that container is best understood as inherently dynamic -- with values playing off against each other. This is most obvious in the appreciation of a person (or a community) as a value dynamic rather than simply as a static set of values or virtues -- effectively a "memorial" evoking a eulogy. It is the dynamic which is especially memorable thereby constituting a mnemonic device. This frames the question of the poem or song which is a memorable vehicle for any future global strategy, as noted above (*A Singable Earth Charter, EU Constitution or Global Ethic?* 2006; *Poetry-making and Policy-making: arranging a marriage between Beauty and the Beast*, 1993).

Unconstrained population growth?

It is increasingly evident that the strategic options imagined as appropriate to the complex of global crises are demonstrably inadequate and "unfit for purpose". Despite systematically avoiding its present and future implications, population growth can be recognized as exacerbating many of these crises, directly or indirectly.

In exemplifying the fundamental value of "freedom", engendering progeny is then beyond rational discussion when there is any suggestion of the value of its constraint -- especially when economic growth may be dependent upon it, and therefore also unquestionable (*Institutionalized Shunning of Overpopulation Challenge: incommunicability of fundamentally inconvenient truth*, 2008).

The argument above suggests that the possibility of meaningful discourse regarding population growth may well be increased by framing values as essentially elusive and only misleadingly susceptible to simple articulation in words. Especially in the light of institutional suppression of alternatives to the mainstream pandemic narrative, the systemic negligence is an invitation to satire (*Prohibition of Reference to Overpopulation of the Planet: draft proposal for an International Convention*, 2018).

It is profoundly curious that it is institutional religion, especially the Catholic Church, which continues to be able to influence international discourse to such a high degree with regard to any constraint on population growth. At the same time, through its complicity in the

promotion of capitalism by Christian Democratic political parties, the "vicious" consequences of that "virtuous" agenda have been systematically obscured. The problematic relation of the Church to international finance, epitomised by the continuing scandals of the Vatican Bank (as noted above), is indicative of the negligence evident in the scandalous increase in national indebtedness world wide (*List of countries by public debt*, *Wikipedia*).

The assumption is uncritically made that it is democratic systems which nurture the values and virtues vital to a sustainable future -- and these must be "fought for" at all costs, as in the case of Ukraine, Afghanistan, and Vietnam. [Chris Hedges](#) argues eloquently that there is a fatal disconnect between a political system that promises democratic equality and freedom while carrying out socioeconomic injustices that result in grotesque income inequality and political stagnation (*Let's Stop Pretending America is a functioning democracy*, *MPN News*, 6 September 2022).

Missing as yet is any insight into the manner in which **values and virtues (as comprehended and acclaimed) subtly engender what then manifests as unconstrained population growth** -- a phenomenon necessarily more fundamental and cognitively elusive than is perceived.

Such indebtedness can be usefully reframed more generally as the irresponsible "indebtedness" of democratic societies to the planet and to future generations. This is exemplified by recognition of [ecological overshoot](#), namely when the consumption capacity of humanity exceeds the biocapacity the Earth. Each year this occurs earlier on [Earth Overshoot Day](#) (2022, 28 July; 2012, 4 August). Humanity's demand for resources has now been estimated to be equivalent to that of more than 1.7 Earths. It would seem that the implications of negligence of both population growth and indebtedness are evidence of the elusive manifestation of the [collective unconscious](#).

It is appropriate to suspect that, in framing the challenge of population growth in this way, the set of fundamental values variously engender the challenge that any constraint implies -- in ways which remain to be clarified. It is in this sense that the possibility of such discourse demands recognition as a hyperobject, namely of such vast temporal and spatial dimensions in relation to human life that it defeats conventional ideas about what is indicated. Expressed otherwise, the global challenge can be understood as a memetic dysfunctionality -- or a memetic disease.

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