



# laetus in praesens

Alternative view of segmented documents via Kairos

13 December 2018 | Draft

## Coordination of Wing Deployment and Folding in Politics

### Bird flight and landing as complementary metaphors of global strategic coherence

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Produced on the occasion of the unexpected riots of the *Gilets Jaunes* ("Yellow Vests") throughout France, with images of Paris in flames, symbolically paralleled by a UN Climate Change Summit to implement the [Paris Agreement](#)

## Introduction

The world, and especially France, has been witness to the spontaneous emergence of a popular movement in France -- the *Gilets Jaunes* ("Yellow Vests") -- in reaction to a pattern of multiple financial constraints on the living conditions and purchasing power of the population, especially the more impoverished. Their name derives from the yellow security vests which all motorists in France are obliged to carry in their vehicles. A planned increase in fuel taxation, announced by President Emmanuel Macron, was the primary trigger for the uprising -- especially for those in rural areas without access to public transport.

The emergence and evolution of that movement, and the reaction of the central authorities, is extensively discussed in the document of which this is effectively an annex (*Systemic Function of Highly Unrepresentative Minorities: recognizing the role of the "Dark Riders" of social change*, 2018). That document noted the change of policy of the government as a consequence of the protests, and the proposal for a period of truce in which a national dialogue would be enabled. The question raised there was the possible nature of such a "dialogue", given the evident lack of skills in that respect in many arenas, despite the many claims for fruitful modes of facilitation and moderation.

As framed there, the question raised was whether there was any other way of imagining dialogue otherwise, especially since in France the objective was to achieve a measure of national coherence even though any attempt at central "coordination" would itself be challenged.

The measures announced by the French Government which triggered the uprising were presented as enabling a vital ecological transition -- as envisaged by the UN Paris Agreement and the current discussions at COP24. Previous uprisings in France have been against the markets and globalization. The Yellow Vest rebellion can be understood as being against a change in way of life, as argued by Andrés Ortega (*"Yellow Vests": The First Rebellion Against the Ecological Transition*, *The Globalist*, 4 December 2018). The reaction evoked

can therefore be usefully understood as one which will in all probability be variously aroused in many countries if more stringent efforts at implementation are made as an outcome of COP24, the [United Nations Climate Change Conference](#) (Katowice, December 2018) -- reaching its conclusions at the time of writing.

The main document endeavoured to reframe the dilemmas and misrepresentations of the French authorities in responding to the *breakers* (*casseurs*), who subverted the demonstrations of the *Gilets Jaunes*, intended as peaceful. The central authorities notably endeavoured to present the left- and right-wing political extremes of France as having enabled the action of the *breakers* -- in order to further their distinctive agendas.

The destructive actions of the *breakers* resulted in extensive media coverage of Paris in flames and in security lock-down mode. The reframing explored the role of the *breakers* in contrast with the *makers* -- the *Gilets Jaunes* with their constructive proposals. It was freely admitted by commentators that the central authorities would not have radically changed their policy (if only temporarily) had it not been for the destructive action of the *breakers*.

The argument here focuses on the role of "wings", especially "extremes", in any political system -- and in relation to the centre. This is done through the use of metaphor, as previously explored ([Counteracting Extremes Enabling Normal Flying: insights for global governance from birds on the wing and the dodo](#), 2015). The success of projects and programmes for social change, by whomever they are instigated, tends to be framed in terms of the metaphors of flying. Many projects do not "get off the ground". They "never fly", whether or not they "crash". The technological innovation for the development of flight has been inspired by the flight of birds whose movements have been intensively studied for that reason -- notably in France.

So framed, the question to be asked is how birds make use of their wings, and especially with the extremes of those wings so vital to fine control of flight. It is dangerously naive for authorities to assume that by requiring calm, as they have repeatedly done, they can elicit dialogue appropriate to stormy weather. Using a related metaphor, this could be described as "winging it".

Although "wings" are typically deprecated as undesirable by central political authorities, this is inconsistent with the preoccupation of military generals over millennia, namely with how to make tactical and strategic use of the "wings" in responding to an opponent -- notably with the possibility of [flanking maneuvers](#), [pincer movements](#), and encirclement. Use of four wings is a feature of an Indian classic by [Kautilya \(Arthashastra\)](#). The [order of battle of Roman legions](#) was specific in this regard. Curiously it could be assumed that the "wings" of any political system are no longer held in high regard by the generals at the centre -- even to the point of being superfluous and a danger to strategic coherence. That metaphor continues to be used however ([Cracks are appearing between Russian political and military wings](#), *The National*, 20 October 2018).

It would appear that political strategists have failed to explore the much-quoted insight of [Carl von Clausewitz: War is the continuation of politics by other means](#). Phrased as *Politics is the continuation of war by other means*, the reversal is variously discussed ([Massimiliano Guareschi, Reversing Clausewitz? War and Politics in Foucault, Deleuze-Guattari and Aron](#), 2010; [Jesse Crane-Seeber, War by Other Means: Politics as Force-Relations](#), International Studies Association, 2007; [Ulrike Steglich and Carsten Jost, Politics is the continuation of war by other means](#), 1990).

What misunderstanding could then be recognized as undermining coherent policy-making and its implementation, if the centre and the wings fight against each other? Is governance now to be caricatured as undermined by [back-seat drivers](#), arguing vociferously with each other and the driver? More generally, is this a reflection of hyperdependence on agreement -- a dysfunctional policy towards others: [You're either with us, or against us](#).

The question can be explored through insights from the simple process of walking. If the right and left legs are at odds, conflicting with each other for priority, the result can be usefully explored in terms of the pathologies of locomotion and gait. Is the coordination of governance at this time to be caricatured as [spastic](#) or a [random walk](#)? Missing from the control of such movement is some kind of transcendent perspective -- an issue of concern in relation to transdisciplinarity ([Transcending Duality as the Conceptual Equivalent of Learning to Walk](#), 1994; [Walking Elven Pathways: enactivating the pattern that connects](#), 2006)

The focus here on the use of wings follows from the inspiration it has long offered to the development of flight technology, now partially recognized in terms of [biomimicry](#) and its potential extension to technomimicry ([Engendering a Psychopter through Biomimicry and Technomimicry: insights from the process of helicopter development](#), 2011). In achieving "lift-off" and sustainable "flight" for socio-political systems, is there anything that might still be learned from birds about the use of wings?

With respect to dialogue, there is a long tradition of the quest to rediscover the [language of the birds](#) -- a central feature of the study by [Umberto Eco \(The Search for the Perfect Language: the making of Europe](#), 1997). As a mystical language -- a "green language" -- this was imagined as the modality through which birds communicated with each other and the initiated. It is now strange to note the extent to which the metaphor is central to Twitter as a preferred mode of social dialogue ([Re-Emergence of the Language of the Birds through Twitter?](#) 2010). In this sense, with current interest in [trending movements](#) of opinion, there is delightful irony to the importance associated with interpreting omens from the observed flight of birds in ancient Rome -- the practice of [augury](#).

Dynamically understood, with what "wings" does the [dove of peace](#) "take off", "fly" and "land"? How is the operation of those wings to be imagined?

## Flying in the winds of change?

The quest of the Government of France for a viable ecological transition, as with the UN-inspired responses to climate change, could be said to be preoccupied with getting their initiatives "off the ground" and ensuring that they "fly". Is there anything useful that these could learn from birds, especially with respect to the forms of communication which could enable such "flight"? How indeed do projects achieve and sustain lift -- rather than crashing into the ground?

Great emphasis is placed by French authorities (at the time of writing) on the need for calm. This is seen as essential to the viability of the dialogue scheduled for the period of truce to come. Is calm a condition through which flight is best understood -- if the remarkable capacity of birds is to be understood? Are all birds "grounded" in windy weather? Should all projects be precautiously "grounded" when faced with the [winds of change](#)? No flying in rough and stormy weather?

This recalls use of the sailing metaphor extensively employed in the commitment of Emmanuel Macron not to change strategic direction (the "heading"), despite pressure from opponents. In stormy weather, by contrast, one strategy for yachts is "heaving to" (Chris Beeson, [Heavy weather sailing](#), *Yachting Monthly*, 5 August 2015).

## Calm required for balloon flight?

Calm as an absolute requirement for dialogue is more consistent with the principle of [flight in a balloon](#) -- with which many understandings of projects can be compared, as in the phrase a [trial balloon](#). France was a notable pioneer in balloon flight through the innovations of the [Montgolfier brothers](#) (ca. 1780). These preceded the more widely acknowledged innovations of the [Wright brothers](#) a century later -- which enabled flight under a wider range of conditions. Is the current emphasis on calm to be recognized as unfortunate manipulation -- whether inadvertent or deliberate -- to enable a dialogue technology ill-adapted to the winds of change?

Does the balloon metaphor offer a means of recognizing the inadequacy of a prevailing approach to dialogue -- drifting pleasantly across the land with a view from on high, sustained by hot air? This could even be seen as especially relevant to the challenge of global warming ([Globallooning -- Strategic Inflation of Expectations and Inconsequential Drift: global, glo-bull, glow-ball, glow-bawl](#), 2009; [Sins of Hot Air Emission, Omission, Commission and Promission: the political challenge of responding to global crises](#), 2009).

Is the current French approach to the critical debate triggered by the *Gilets Jaunes* to be understood as inspired by what in French are termed [Montgolfières](#) -- hot air balloons? Much use was made of a hot air ballooning phrase *lâcher du lest* (namely discharging ballast).

In the case of dialogue, will the dangerous dependence on this "technology" only become apparent following an archetypal event like the [Hindenberg disaster](#) (1937)? The argument is of some relevance given any foreseen future transition to hydrogen-powered vehicles.

## Birds as national symbols of identity -- and of peace

It is intriguing to note the many nations which attach particular importance to birds as a national symbol, most typically an eagle. This could be considered as holding together the qualities of *breakers* and *makers*. It is not a "nice" bird, if that it is considered a primary characteristic with which dialogue should be associated -- or of the solutions it should enable.

Most countries have [national animals](#) holding together contrasting qualities -- a matter for reflection in terms of any ecological transition. In the case of France, it is the [Gallic rooster](#) which is recognized as the unofficial animal symbol -- in contrast to Marianne as the official symbol. The flying capacity of the rooster can of course be questioned, in comparison with that of the eagle for example.

Considerable significance has been attributed to the Gallic rooster in France, as articulated in the French language version of *Wikipedia* ([Coq dans la culture](#)), but not in English. The articulation distinguishes strength of personality (virility, bravura, identity), a religious symbol as a solar animal (notably in announcing the dawn), a Christian symbol, a sacrificial symbol, a legendary, heraldic and mythological animal. In France aspects of this have been evoked by the *Chantecler* de [Edmond Rostand](#) (1910). A rooster is typically to be seen there as topping the wind vanes on church steeples.

It could be asked how this nexus of associations is reflected in the person of President Macron, whether consciously or unconsciously -- and for whom.

Of greater relevance are the questions raised in the introduction. Dynamically understood, with what "wings" does the [dove of peace](#) "take off", "fly" and "land"? How is the operation of those wings to be imagined? In an ecosystem, what role does the eagle then play in relation to the dove -- given the problematic nature of both?

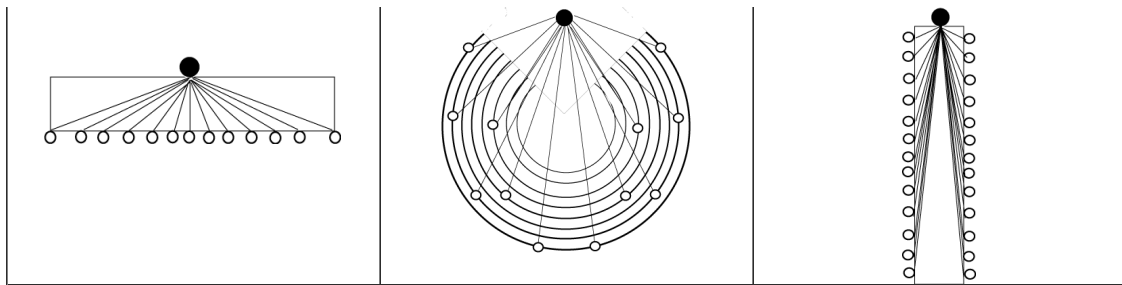
## Bird flight and wing clipping: constraining dialogue

Arguably it is of some symbolic importance to the French as to whether chickens can fly, and especially roosters, as carefully clarified separately ([Can Chickens Fly? 5 Myths Debunked](#), *The Happy Chicken Coop*, 15 September 2015).

The general answer is that they can indeed fly for short distances and at no great height, but this capacity is dependent both on the breed of chicken, most notably its size, and whether or not their wings have been either clipped or brailed. [Wing trimming](#) may focus only on the primary flight feathers or also on the secondary flight feathers ([Wing Clipping: why, when, and how](#), *Winged Wisdom*, January 1998). However these feathers continue to grow, so the trimming process may have to be repeated each year. Some skill is required to avoid pain and bleeding.

Trimming ensures disqualification in the case of exhibition birds -- as could be understood to be the case with national symbols. The favoured alternative is wing brailing which involves wrapping or binding the wing with some soft cord so that the wing cannot be opened for flight ([Brailing... A Flight Restraint Technique](#), *AFA Watchbird*, 28, 2001).

<b>"Wing-clipping": styles of constraining "dialogue" inhibiting collective "lift-off"</b>		
French presidential style	European parliamentary style	Russian presidential style



The lines of communication in all the configurations above merit comparison with the pattern of muscles, blood vessels and nerves in the wings of a bird -- especially in the light of the necessary feedback processes to enable controlled flight. Little thought is given to the desirability of interaction between participants, other than the president -- or mediated by that function.

## Dialogue misunderstood as wingless flight?

As a metaphor, it is strange to note the extent to which sustained flight and its achievement is so obviously dependent on the wings which birds "manipulate" with the greatest skill and elegance. Whilst technology has focused on fixed wing aircraft -- after vain attempts to emulate the mobility of birds in this regard -- features on those rigid wings are indeed mobile and are vital to the dynamics of flight. Winglessness proved to be a subsequent stage in the technology of rocketry?

There has been extensive commentary on the socio-political relevance of a particular flap, known as the [trim tab](#) (Jonette Christian, *Finding the Trimtab: the failure of the United States immigration policy*, *Vital Speeches of the Day*, 68,2002, 22; *(To turn the ship of state, use the trim tab*, *Citizens Climate Lobby*, 28 February 2014; Steve Schein, *Multinational Executives as Human Trim Tabs*, 2017; Amy C. Edmondson, *Take a Trim Tab Approach to Climate Change*, *Harvard Business Working Knowledge*, 24 Sep 2014). Buckminster Fuller is reported to have identified with the metaphor to the point of having it inscribed on his tombstone (*The Anticipatory Leader: Buckminster Fuller's principles for making the world work*, *The Futurist*, September-October 2006)

If the metaphor is of relevance to sustainable dialogue, it has to be asked whether this is to be understood as "wingless" -- in the hope of emulating balloon flight in some way. Or is the winglessness to be framed as an aspiration to dialogue based on the technology of rocketry -- framing "winged dialogue" as obsolete?

Alternatively, is the inspiration somehow derived from the essentially wingless drone? This would be especially unfortunate in that discourse by politicians is frequently deprecated as a drone. Both as a vehicle and a metaphor, the primary characteristic is observation from on high, with extremely limited capacity on the ground.

Reference to "wing" is of course a primary feature of political discourse. Much is made of the contrasting preoccupations of left-wing and right-wing political movements. The centre is embodied at this time in France by the movement instigated by Emmanuel Macron. Typical of that discourse is the deprecation by the centre of both wings -- with the implication that their perspectives are best ignored, if not eradicated from political life (irrespective of the proportion of the population identifying with it). The point developed by Pierre Chevillard (*Pour Macron, les opposants à ses réformes sont "soit fainéants, soit cyniques, soit extrêmes"*, *Marianne*, 8 September 2017; *"Fainéants" promet d'être à Macron ce que "sans-dents" a été à Hollande*, *Marianne*, 11 September 2017). Each wing is of course remarkable for its continuing deprecation of the other -- and of the centre.

## Extremism and flight capacity?

The deprecation from the centre is all the greater in relation to the "extremes" of each wing -- whose policies are seen as an existential threat to the survival of the nation, meriting sanctions wherever these are possible. As noted above, the inability to integrate such contrasting perspective results in amazing behavioural and procedural contortions which invite recognition in pathological terms. Achieving flight with such understanding is the vainest of hopes.

This may have been the condition which condemned the flightless Dodo to extinction. Are political systems vulnerable to "dodification"? Is this suggestive of another way of exploring the preoccupation of [Jared Diamond](#) (*Collapse: How Societies Choose to Fail or Succeed*, 2005)?

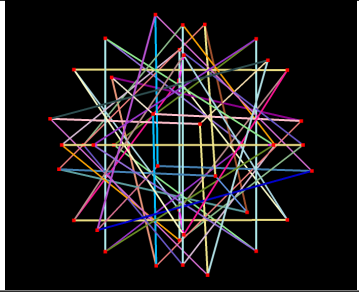
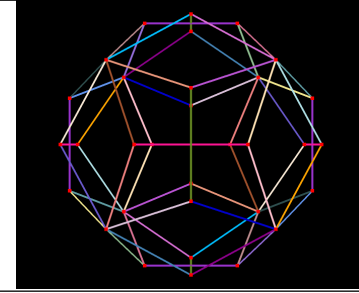
The contrast between flying and non-flying capacity is a feature of a commonly cited metaphor contrasting the capacity of the eagle with that of a turkey (*You can't soar with the eagles if you're hanging with the turkeys*; Robert Stevenson. *How to Soar Like an Eagle in a World Full of Turkeys*, 2011; Harry McGee. *Reform Alliance could soar like an eagle...or turn into a turkey*, *The Irish Times*, 16 January 2014). Somewhat ironically the contrast is also the focus of a controversy (*Eagle vs. Turkey: America's First Bird Controversy*, *National Wildlife Federation*, 1 November 2007). While eagles are *breakers* of the highest order, turkeys tend to be deprecated as *making* a tasty meal -- and only good for consumption. Many international projects which fail to "get off the ground" can be seen in this light.

In the light of the metaphor, and learning from birds, the attitude of the centre to the wings could be understood in terms of the title of a study of financial systems by [Pablo Triana](#) (*Lecturing Birds on Flying*, 2009). This discusses the effects that quantitative/theoretical models can have on real-life financial markets. This could be seen as caricaturing the trap that Emmanuel Macron has created for himself in engaging with the dynamics of social system.

The caricature may also be of some relevance to the understanding of climate scientists in their naive expectation that society will transform itself in the light of the urgency of their warnings. Triana's study has a foreword by [Nassim Nicholas Taleb](#) (*The Black Swan*:

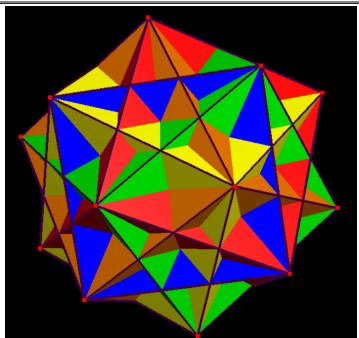
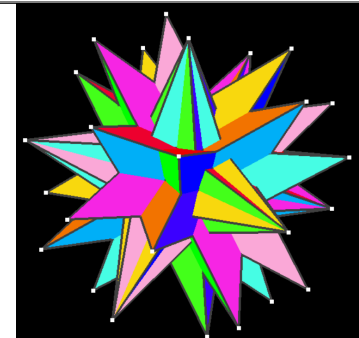


is suggestive by the wire frame versions of the animations above -- which could be seen as suggestive of both the information and/or funding flows with which coherence is ensured in governance. The spherical configuration suggests the value of another approach to accounting (*Spherical Accounting: using geometry to embody developmental integrity*, 2004). Coherence in information and cybernetic terms has been explored by [Stafford Beer](#) (*Beyond Dispute: the invention of team synteegrity*, 1994). That study focused notably on insights offered by the icosahedron.

Wire frame equivalents of mapping of 40 <i>Gilets Jaunes</i> issues onto selected polyhedral compounds (animations)	
6+4 tetrahedra compound (edges coloured by parallels)	2-dodecahedra compound (edges coloured by great circles)
	
Animations prepared using <a href="#">Stella Polyhedron Navigator</a>	

It is appropriate to note that a recent "Report to the Club of Rome" has been prepared by [Ernst von Weizsaecker](#) and [Anders Wijkman](#) (*Come On! Capitalism, Short-termism, Population and the Destruction of the Planet*, 2018). Its declared mission was to promote understanding of the global challenges facing humanity and to propose solutions through scientific analysis, communication and advocacy. The report was divided into 40 systemically unrelated segments. As an exercise, a mapping corresponding to that above was produced, as discussed separately in a review of the report (*Exhortation to We the Peoples from the Club of Rome*, 2018). There is obviously a degree of irony to the articulation of a 40-fold pattern of issues from both an unelected elite and from an unrepresented mass movement.

Other possibilities for such mappings are suggested by the following.

Alternative conceptual "containers" for a 40-fold pattern	
5-Cube compound (30 faces, 60 edges, 40 vertices)	Great Stellated Dodecahedra (24 faces, 60 edges, 40 vertices)
	
Images prepared using <a href="#">Stella Polyhedron Navigator</a>	

## Enfolding complexity comprehensibly

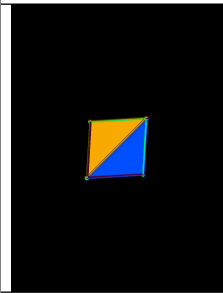
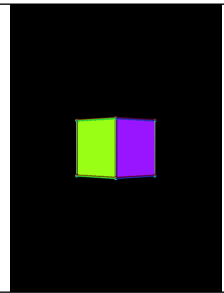
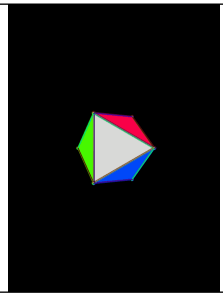
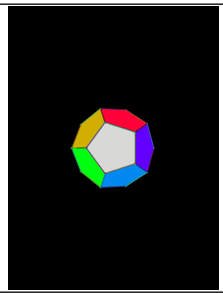
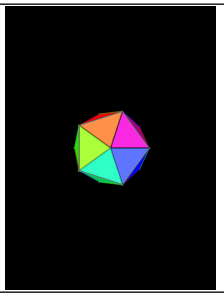
Again there is the question of what comprehensible, coordinated coherence may imply. Of interest with respect to the wing metaphor, is the further question of how they may be "joined" to the body -- exemplified by calls for "joined up thinking". Curiously it could be asserted that there is very little that is rational about the relationship between political parties or to any central body. Each typically accuses the other of being irrational. In systemic terms, what is their disagreement for? What functions does it perform? How does it enable lift-off and flight?

Use of polyhedra helps to clarify another question, given that they are characterized by axes, vertices, edges, and faces. The question is how strategic directives or issues are then to be understood. As principles, they might be understood as axes. Strategic directions, variously oriented, might be understood as edges. Issues might be understood as vertices. Faces might be seen as domains of discourse, perhaps as (round) tables. Edges are especially suggestive of joins, whose potential flexibility may require joined up thinking.

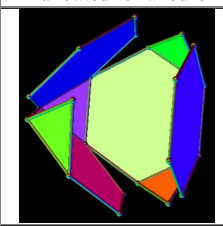
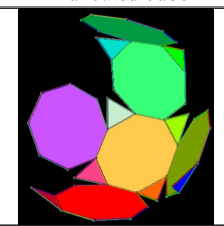
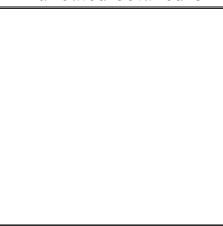
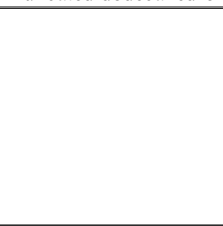
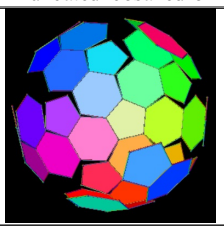
The elaboration above of a pattern of 40 focal points then raises the question of hold these are to be "folded" into a simpler and more readily comprehensible configuration. If their deployment is somehow essential for flight, then how might they be enfolded when "grounding" is the requirement -- calling for greater simplicity with respect to issues of coherence and coordination? There is familiarity with the "zooming" facility required for consulting maps of greater or lesser scale. Missing is an analogous form of conceptual or cognitive "packing". This is more readily exemplified by origami, or by the challenge of packing, and especially sphere packing.

Given widespread opposition to "globalization" as it is variously experienced, notably as implicit in the concerns of the *Gilets Jaunes*, folding and unfolding polyhedra approximating a sphere suggests an unexplored relationship between flatter (2D) depictions and those of

global (3D) form. How then to "fold" or "unfold" a 40-fold pattern of issues into simpler and more comprehensible forms -- emphasizing the folding and deployment of wings, whatever their number and however they might be symbolically coloured? Possibilities in this respect are illustrated by the following [Platonic polyhedra](#).

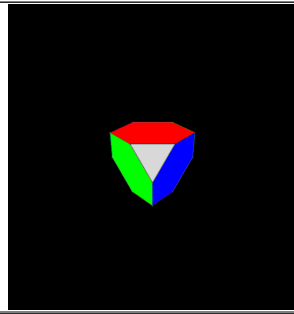
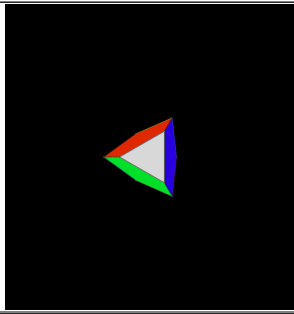
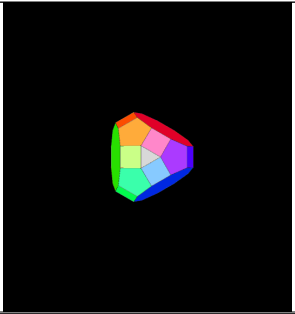
Use of Platonic polyhedra to enable comprehension of folding and unfolding of political wings (animations)				
Tetrahedron	Cube	Octahedron	Dodecahedron	Icosahedron
				
Animations prepared using <a href="#">Stella Polyhedron Navigator</a>				

The argument can be developed by considering the folding and unfolding of 5 of the 13 [Archimedean polyhedra](#), highlighting the presence of "minority" features of distinctive form, in contrast to the equal-sized features in the Platonic equivalents above.

Use of Archimedean polyhedra to enable comprehension of folding and unfolding of political wings (screen shots of animations)				
Truncated tetrahedron	Truncated cube	Truncated octahedron	Truncated dodecahedron	Truncated icosahedron
				
Images prepared using <a href="#">Stella Polyhedron Navigator</a>				

Given the 40-fold patterns of the *Gilets Jaunes* and of the Club of Rome, of particular interest is how the articulation could be enfolded into smaller configurations -- potentially enabling greater comprehensibility, especially in terms of coherence and coordination. From this perspective, the dodecahedral and icosahedral forms are of particular interest. Each has 30 edges (rather than the 60 of the 40-fold pattern), with the dodecahedron having 20 vertices and 12 faces, and the icosahedron with 12 vertices and 20 faces -- the one being the dual of the other.

The different images suggest the possibility of dialogue (round) tables with 3, 4, 5 or 6 distinct representatives -- and are indicative of the challenge of how these different dialogues might be "joined". Of interest in that respect is whether the 40 issues are understood as distinctive "dialogues", strategic "directives", or "principles", and how understanding may alternate between such perspectives.

Clues from the simplest ? round tables and conference "break-out" sessions		
Truncated tetrahedron (8 faces, 18 edges, 12 vertices)	Tridiminished icosahedron (8 faces, 15 edges, 9 vertices)	Tridiminished rhombicosidodecahedron (32 faces, 75 edges, 45 vertices)
		
Images prepared using <a href="#">Stella Polyhedron Navigator</a>		

## Star symbols as schematic birds?

The argument above explores the sides (or faces) of polyhedra as schematic indications of the possible wings in a political system -- whether simple or potentially far more complex. They could be coloured according to that favoured by the wing in question. The suggestion is that any capacity to visualize wings in political systems has been essentially lost -- although they may be depicted (and caricatured) by animal symbols. Greater attention to such visualization has long been evident in description of military tactics and strategy and the much-valued role of wings (as noted above).

If the relevance to political systems is then to be understood as a form of "lost knowledge", it is intriguing to note the extent to which it

could be said that the extremely widespread use of stars as national symbols (most notably on flags) is an unconscious reminder of the strategic significance of birds and their capacity to fly. As a focus of national aspirations, such stars could be understood as implying the mysterious capacity for "lift-off" -- and even the nostalgic possibility of being collectively "great again".

The visualization argument above using polyhedra can therefore be reversed to explore the sense in which stars (as polygons) can be deconstructed as implying (forgotten) schematic wings, whether in 2D or 3D. Arguably insight into the "flying capacity" has been lost because the symbols have been reduced from 3D (in which wings operate to enable flight) down to 2D (where flight can only be a dream). Any flying capacity could be caricatured as effectively "squashed". The symbols in 2D have to read otherwise to elicit the manner in which they offer clues to flying in the sense discussed above.

Wikipedia offers a [List of symbolic stars](#), notably including those associated with awards. Military rankings may be denoted through stars: 1-, 2-, 3-, 4-, or 5-star rank, officer ranks used in many armed services, as well as the rare 6-star rank.

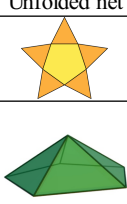
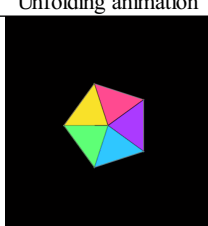
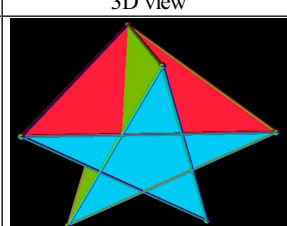
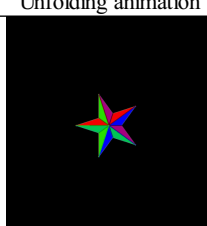
The forms, notably used on flags, are the:

- **4-pointed stars:** notably used in Christianity (styled as a cross, as with the [Star of Bethlehem](#)) and employed by NATO
- **5-pointed stars:** appear on the flags of 35 countries. notably favoured by Islam, Communist countries, and the USA, and with particular military associations. Also features on the [Flag of Europe](#) and as a [Christian symbol](#) (and also known as the Star of Bethlehem)
- **6-pointed stars:** notably favoured as the [Star of David](#) of Israel; the [Great Seal of the United States](#) includes such a star
- **7-pointed stars:** most notably favoured by Australia, but also on the flag of Jordan.
- **8-pointed stars:** most notably on the flag of Azerbaijan, with various [Biblical references](#)
- **9-pointed stars:** most notably as a symbol of the [Baha'i Faith](#), but also in Christianity ([Galatians. 5:22](#))
- **12-pointed stars:** most notably on the flag of Nauru, but also as a [symbol in Christianity](#)
- **14-pointed stars:** most notably the flag of Malaysia

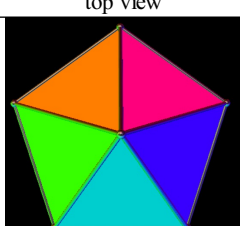
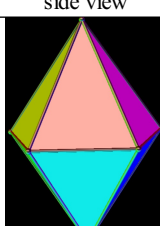
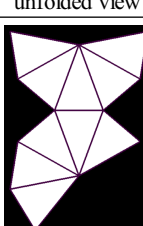
One previous exercise focused on the 4-pointed star as widely used by NATO ([Envisaging NATO Otherwise -- in 3D and 4D? Potentially hidden faces of global strategy highlighted through polyhedra](#), 2017). This included a brief discussion of the 5-pointed star used by the Pentagon. With respect to NATO, the many visualization exercises discussed there could be further adapted in the light of the wing metaphor in order to clarify the "flying capacity" of NATO.

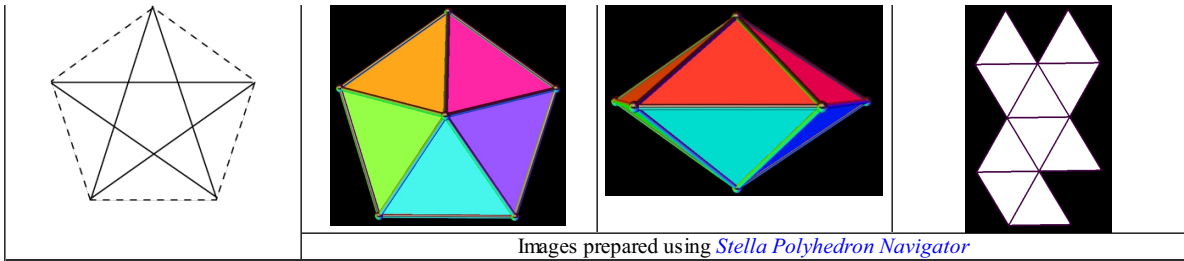
## Flying capacity implied by "wings" of a 5-pointed star?

Following the process above, it might be assumed that the 5 triangles based on the central pentagon (as depicted in 2D) could unfold as wings in relation to it in 3D. The [pentagonal pyramid](#) is suggestive of one possibility. The structure is related to that of the [pentagrammic pyramid](#) offering another.

Pentagonal pyramid		Pentagrammic pyramid	
Unfolded net	Unfolding animation	3D view	Unfolding animation
			
Reproduced from <a href="#">Wikipedia</a>		Prepared using <a href="#">Stella Polyhedron Navigator</a>	

There are two variants of the pentagonal dipyrmaid suggestive of the possibility of unfolding in this way. As a dipyrmaid, the structure is mirrored as clarified in the following table. Although readily seen as identical, the two variants differ primarily in the length of the edges of the triangles, and therefore their form.

2D schematic	3D representation of 5-pointed star as pentagonal dipyrmaid (2 variants) (10 "wings", 15 edges, 7 vertices)		
	top view	side view	unfolded view
			



Images prepared using *Stella Polyhedron Navigator*

As shown, neither of the above variants folds around the "joints" of the central pentagon -- if that is how wing movement is most appropriately to be understood. Missing from the above examples is an animation showing the deployment of wings symmetrically around the central pentagon. The operation of the "wings" is perhaps better understood from the following animations below, where the wire frame versions of the wings rotate around the pentagon sides -- serving as "points".

Contrasting views of 3D representation of 5-pointed star (10 "wings", 15 edges, 7 vertices)		
pentagonal dipyramid (wire frame)	"side view" (animation)	"top view" (animation)
Image prepared using <i>Stella Polyhedron Navigator</i>	Animations derived from virtual reality variant (wrl, x3d; also mp4)	

### Flying capacity implied by "wings" of a 6-pointed star?

2D schematic 6-fold star	(Un)folding of prism/pyramid (animations)		3D representation of 6-pointed star (animations)	
	Hexagonal dipyramid (12 faces, 18 edges, 8 vertices)	Hexagonal deltohedron (12 faces, 24 edges, 14 vertices)	"side view"	"top view"
	Animations prepared using <i>Stella Polyhedron Navigator</i>		Animations derived from virtual reality variant (wrl, x3d; also mp4)	

An earlier visualization exercise took the 6-pointed *Star of David* as its point of departure (*Framing Global Transformation through the Polyhedral Merkabah: neglected implicit cognitive cycles in viable complex systems*, 2017). This explored how it might be understood to "operate" in 3D in terms of the *Merkabah*, notably in the following sections:

Star of David as reinforcing dangerous cognitive reductionism?  
 Richer pattern of significance through complexification of the Star of David?

Controversies inherent in the cognitive significance of the Merkabah?  
 Cognitive implication in Merkabah as configuration of cycles essential to systemic viability

### Star rotation: achieving and sustaining controlled flight?

The argument above is focused on how the wings of any political system might be imagined to be deployed and folded in relation to a more central body. Birds naturally offer the principal inspiration for such reflection, as has been the case with the development of airplanes. Considerable attention has however been devoted to winged insects and *insect flight* for similar reasons -- with the added feature of their use of four wings rather than two.

It is appropriate to note that socio-economic transformation has been explored in terms of the transformation into a 4-winged butterfly via a chrysalis (*John Elkington, The Chrysalis Economy: how citizen CEOs and corporations can fuse values and value creations*, 2001).

Missing from that insight however are how the butterfly can so elegantly fly (Katharine Gammon, *The Mathematical Butterfly: simulations provide new insights on flight*, *Scientific American*, 22 April 2013; *Researchers Study Butterfly Flight Dynamics to Create Small Airborne Robots*, *SciTechDaily*, 2 February 2012).

There are no 6-winged insects, deemed to pose too much of a coordination problem and requiring too much energy (*Why are there no six winged insects these days?* *Quora*, 2016). It is however intriguing to note that one of the highest orders of angels, the **seraphim**, are imagined by the Abrahamic religions to be 6-winged (*What is a six-winged angel?* *Quora*, 2018).

Flight technology (using fixed wings and controlling flaps) can be understood as having developed the "winged star" further through rotation of the star -- as in the **propeller**. Through variously angling the blades of the propeller, an equivalent to the wing (and its flaps) is created -- as exemplified in the **helicopter**. The use of multiple propellers has recently been taken further through their combination in drones and other **rotorcraft** with rotary blades or wings.

Given the star symbolism so vital to collective identity in many circumstances, and the suggestion above that this implies a lost understanding of cognitive flying capacity, how might the rotation of symbols offer new insights into that capacity in psychosocial systems? This was a later preoccupation of the designer of an early helicopter, **Arthur Young**, as discussed separately (*Engendering a Psychopter through Biomimicry and Technomimicry: insights from the process of helicopter development*, 2011). He saw the helicopter as a metaphor for the "winged self",

Can a symbolic star -- if rotated -- be imagined otherwise as a form of propeller? The considerable insight into the design of **propeller blades**, in relation to the design of aircraft wings (or bird wings), suggests that the elements of any star -- as adjustable "wing-blades" -- have to be specially angled and curved, carefully distinguishing the leading and trailing edges to ensure lift. It is however intriguing to recognize that -- as typically viewed -- these subtleties would not be recognized in a star. Symbolic stars are essentially 2D, whereas it is only in 3D that these features would become apparent and meaningful. In 2D they are effectively "squashed" visually, with all that that implies cognitively in terms of their significance for enabling flight -- and for their role as empowering symbols.

Of relevance are the design distinctions recognized in the case of propellers: curved propeller blades, variation in pitch (variable pitch, constant speed, feathering, reverse pitch), counter-rotating propellers, contra-rotating propellers. How might these relate to psychosocial empowerment? How might a star symbol be "morphed" into a propeller?

As noted above, it is also the case that such stars are portrayed as **static**, whatever the **dynamics** of the psychosocial system they may be held to imply. Arguably this reverses the sense in which the static should emerge, temporarily, from the static -- rather than imaging the static as a rigid container for the dynamic. This is of course the mindset cultivated by nation states.

Explored schematically above as unfolded polyhedra, the emphasis is placed on their winged function. **Missing from that representation is both the rotation and the requisite angling and shaping of those wings -- as with the flexibly adjustable wings of birds enabling controlled flight.** These features are designed into the adjustable curved blades of rotorcraft. The polyhedra sides variously portrayed above should instead be shown as incorporating curvature -- potentially as **spherical polyhedra**, for example. It is highly ironic that one of the most commonly recognized forms is the football -- kicked around world wide, and as such a symbol in its own right.

It is somewhat extraordinary that symbolic stars are effectively a metaphorical nexus for the propulsion implied by their adaptation as bladed propeller, with the blades recalling the swords which such stars evoked in the propagation of their significance, and the blade-wing movement fundamental to lift and flight.

## Symbolism of the Flag of Europe -- imagined in the light of bird flocking

There are many studies of **bird flocking** and **bird migration** -- of a single species -- readily experienced as a wondrous experience of sustainability and elegance. This process has been remarkably simulated in terms of the **boid dynamics** of artificial life by **Craig Reynolds** in 1986. This has resulted in current interest in **swarm intelligence** and **collective intelligence**.

It is therefore intriguing to note that national and international symbolism may involve multiple use of the same star symbols -- as with the 12 5-pointed stars on the **Flag of Europe** and the 50 5-pointed stars on the **Flag of the USA**. These could be understood as a static representation of the dynamics of "psychosocial flocking" -- with the implication of travelling somewhere, possibly "migrating" to a space where it is possible to be "great again". Other flags use multiple stars in this way.



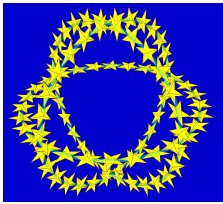

Is any configuration of symbolic stars in this way to be recognized as an intuitive ("primitive") insight into the operation of what is now suggested by emerging designs of rotorcraft? How do the stars need to be rotated? How do the features of the stars -- their winged blades -- need to be angled and formed to constitute the leading and trailing edges required for lift? How do those stars need to be angled together to provide directional movement and separately to counteract instabilities?

Given the argument above for comprehending social systems dynamically, there is therefore a case for indulging in various exercises in re-imagining the Flag of Europe otherwise, as it might be presented dynamically, possibly in 3D. Such an exploration is consistent with current concerns regarding the future of the "European project", especially the engagement of Emmanuel Macron in that regard -- despite the challenge of the *Gilets Jaunes*.

Such exercises can elicit imaginative exploration of other ways of imagining Europe, as previously argued (*Animating the Representation of Europe: visualizing the coherence of international institutions using dynamic animal-like structures*, 2004). The examples below are merely indicative of some possibilities, whether or not the emphasis is placed on a 12-star flag or a 28-star flag (possibly plus or minus 1, as a consequence of Brexit and future adhesions).

All 28 stars rotate in all examples. In that on the left the circle as a whole rotates. The stars can be enlarged so that alternative stars

interlock in their rotation (in contrast with the simplest case). The ring of counter-rotating stars can be presented as 3 mutually orthogonal rings. With some adjustment, these can be made to interlock (or interlace), as in the animation on the right, to form a [Borromean ring configuration](#) of great significance in logic and mathematics. It has been chosen as the logo of the International Mathematical Union. Borromean rings have the property that each two rings are not interlocked with each other, but the three rings as a whole are connected and not separable.

Design exercises for animated 28-country Flag of Europe based on 28 rotating stars			
Simple rotating circle of 28	Counter-rotation of alternate stars	3-orthogonal circles of 28	Borromean ring configuration
			

As configured above, the "Borromean rings" are not correct since any two rings are interlocked with each other. This misinterpretation is the basis for separate clarification (*Engaging with Elusive Connectivity and Coherence: global comprehension as a mistaken quest for closure*, 2018).

The animations were all prepared using virtual reality software enabling interaction with them in 3D -- allowing the animations to be variously rotated. Different parameters can of course be adjusted for other design effects of potential significance -- most notably the size and rate of rotation of the stars (and of the ring of stars). Distinctive colouring could be used.

How rapid do such rotations need to be to suggest the possibility of European "lift-off"? The presentations above suffer from the fact that better versions, showing more perspectives when rotated in 3D, would be excessively large in size (hence the jerkiness in the extracts on the left).

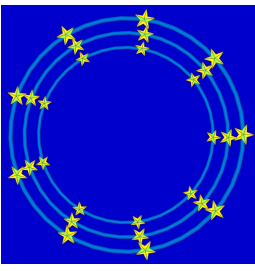
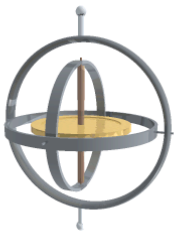
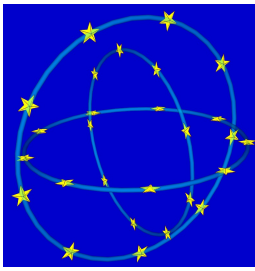
## Sustainable revolution gyroscope -- recycling "bread and circuses"?

Another design approach would be to focus on the original 12 stars of the Flag of Europe. Assuming 27 countries after Brexit, yet another approach could be based on 3 rings of 9 stars, presented orthogonally or in a Borromean configuration. Understood in this way, such animations offer insight into a form of "revolution" which is "sustainable". The challenge is then to recognize how this might constitute a [gimbal](#) framework for a [gyroscope](#) to enable strategic stability -- as with the function of one (or more) gyroscopes on rocking boats or on orbiting spacecraft.

In this respect of great interest is the use of [control moment gyroscopes](#) in orbiting spacecraft. A CMG is an attitude control device generally used in spacecraft attitude control systems. It consists of a spinning rotor and one or more motorized gimbals that tilt the rotor's angular momentum. As the rotor tilts, the changing angular momentum causes a gyroscopic torque that rotates the spacecraft. Several designs have been considered: single gimbal, dual gimbal, and variable speed. The *Wikipedia* discussion offers insight into the range of problems encountered with the use of CMGs in practice: singularities, saturation, anti-parallel alignment, and hitting the gimbal stops. What do these imply for governance of psychosocial systems?

Given the counteracting nature of wing movement for control, this can be explored in terms of oppositional logic (*Oppositional Logic as Comprehensible Key to Sustainable Democracy*, 2018), including consideration of possible insights required in more than three dimensions (*Gyroscopes for balance in higher dimensional navigation*, 2018).

This recalls the argument of policy scientist [Geoffrey Vickers](#) (*Freedom in a rocking boat: changing values in an unstable society*, 1972), as discussed separately (*Strategic compass*, 2009; *Governor control*, 2009). This is consistent with the frequently stated preoccupation of Emmanuel Macron to maintain the strategic direction for France -- despite the popular uprising by the *Gilets Jaunes*.

Prior to mutually orthogonal rotation	Gimbal animation	Screen shot of gimbal animation
		
	Reproduced from <i>Wikipedia</i>	

Of further interest is the manner in which the gimbal metaphor, as a "cognitive container" for complexity, recalls the fascination of both a 3-ringed circus and multi-movement [amusement rides](#) at fairgrounds. Additionally the animation could therefore be understood as a holding nexus for both recycling and the insight of the Roman Empire regarding "bread and circuses". The advantage of such an

animation is that any interactive 3D version enables a higher order of cognitive engagement with complexity -- especially for the young.

Flag of Europe animation design exercise options (as might be incorporated into a computer application)			
Parameters	Design options		
Stars (number)	28	3 x 9	12
Stars (size)	small	medium	larger
Stars (colour)	all same	3 colour	distinctive colours
Stars (rotation)	(much) slower	medium	(much) faster
Star rotation (direction)	same direction	-	opposite directions
Rings of stars (number)	1	(2)	3
Rings of stars (rotation)	(much) slower	medium	(much) faster
Ring rotation (direction)	same direction	-	opposite directions
Ring interrelation (concentric)	flat	orthogonal	Borromean
Mutually orthogonal ring rotation	(much) slower	medium	(much) faster


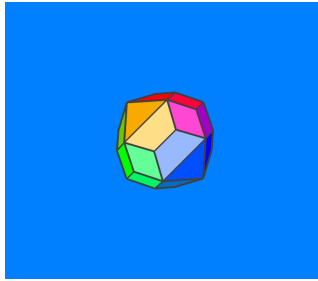
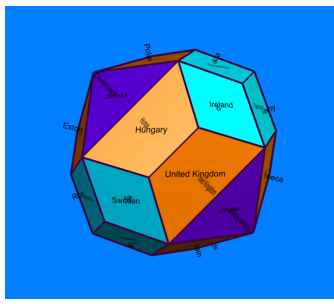
From a system dynamic perspective, of some interest is the sense in which an interactive computer application would then constitute a systemic framework for the variety of dynamics -- a cognitive analogue to the abacus -- especially if a gaming dimension could be added.

Of some relevance to this argument is the attention which mutually orthogonal rotation attracted in the iconic 1997 movie *Contact*, based on a novel by Carl Sagan (*Contact*, 1985). That motion was central to the machine enabling inter-stellar travel -- of which many images are now available (video). The machine continues to evoke commentary (*How was the machine from "Contact" supposed to work, and could it work in real life?* Quora, 2017; *20 Years Ago, Hollywood Imagined a Wormhole Machine at Kennedy Space Center*, Observer, 20 July 2017; *Contact: More Than Just a Film*, SETI League, 1997).

## Globalization otherwise understood through spherical configuration of stars?

Despite the possibility of 3D viewing, using any seemingly "flat" 2D flag (however much it flutters in the winds of change) detracts from the argument above for a spherical configuration of star symbols, as suggested by the Middle East peace example of spherical geometry (see animation below). What kinds of imagination would be encouraged by configuring the stars of the Flag of the USA as rotating on a spherical form?

When depicted on a flat surface, the implication is that the stars are propelling the collectivity away from the plane of the flag -- in a direction to be imagined, and perhaps to be contrasted with any cultivated reinforcement of a "flat Earth" perspective (*Irresponsible Dependence on a Flat Earth Mentality -- in response to global governance challenges*, 2008). Configured on a sphere, the implication is that the stars are propelling the collectivity radially -- whether inwards or outwards. Both are more consistent with understandings of globality. An inward direction offers the suggestion of a provocative combination of radicalisation and globalisation.

Mapping of 28 countries of EU onto tetrated dodecahedron (and its dual)		
Dual 28 faces (3 types), 28 vertices (3 types)	Unfolding dual	Variable geometry Morphing to/from dual
		
Animations prepared using <i>Stella Polyhedron Navigator</i>		

In considering the variety of member countries, the integration of the 3 varieties of sides is potentially of interest: 12 5-sided, 4 3-sided, 12 3-sided (the dual has 12 4-sided, 12 4-sided, 4 3-sided).

The further benefit of such exercises is to enable the comprehension of requisite complexity, as can be illustrated below with respect to the 52 States of the USA (2 non-contiguous and excluding DC) --- mapped onto a great icosidodecahedron.

In this context, given the reference to boid dynamics, there is a case for recognizing that the distinction made between the wings and the body of any "collective bird" -- as by central government authorities -- may itself be usefully called into question, as suggested by the following.

**Ode to de Drone as de Boid of de Day**  
(inspired by one of the many improbable variants of the [Brooklyn National Anthem](#))

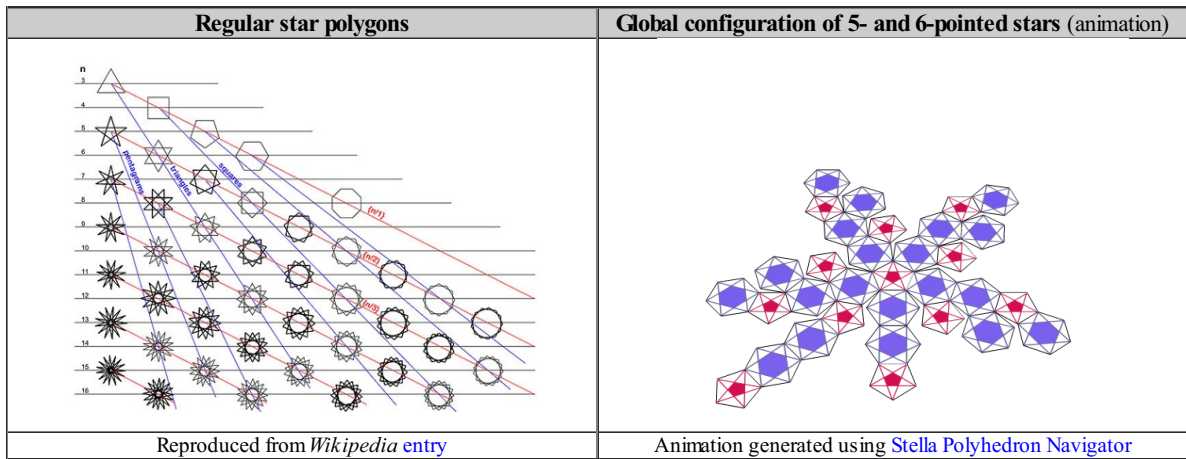
*De spring is sprung, de grass is riz  
I wonder where de boidies is?*

De boid is on de wing, but dat's absoid,  
De wing is on de boid



## Interrelating "star-birds" of different "wing-configuration"?

This argument raises the question of how those identifying more especially with a 4-fold, 5-fold, 6-fold, or N-fold star symbol might see themselves as related -- or mutually alienated. Such alternative "identity valencies" suggest the possibility of a form of "psychosocial chemistry" as yet to be explored. The associated "periodic table" is suggested by the image on the left below.

The highly problematic relation between 5-pointed and 6-pointed stars featured in an exploration of conflict resolution (*Middle East Peace Potential through Dynamics in Spherical Geometry: engendering connectivity from incommensurable 5-fold and 6-fold conceptual frameworks*, 2012). This notably featured animations, including that on the right below. A related exercise focused on use of star symbols by religions in conflict (*Reconciling Symbols of Islam, Judaism and Christianity: catalytic methodology for effective interfaith dialogue*, 2017).



The argument articulated with respect to the Middle East could be adapted to the quest for the "unification" of the two Koreas, given their respective flags with which the two collective identities are associated.

Flag symbolism as fundamental to the quest for collective "unity" and its comprehension	
Republic of Korea	Democratic People's Republic of Korea
	
Reproduced from <a href="#">Wikipedia</a>	

As noted separately, in the further development of the above argument, a particular clue to any such "unification" is to be found at the intersection of knot theory and topology. The focus in that argument is on the interlinkage of three rings, and the Borromean ring condition (*Engaging with Elusive Connectivity and Coherence*, 2018). There is a limit to how many ways three rings can be configured, namely sixty-four. These sixty-four patterns of "links", as topologists call them, can be sorted into five categories. The trigrams unique to the flag of the Republic of Korea are a subset of the 64 hexagrams of the *I Ching*. With the implication that these can be arranged into 5 categories from a topological perspective, there is a conceptual bridge of symbolic significance to the 5-pointed flag of DPRK. Both flags feature a circle into which these distinctive orderings are embedded.,

## References

Stafford Beer:

- The Cybernetic Cytoblast: Management Itself; Progress of Cybernetics. Gordon and Breach, 1969 (Chairman's Address to Congress, International Cybernetics Congress)
- Platform For Change. John Wiley, 1978
- Beyond Dispute: the invention of team synteegrity. John Wiley, 1994

Jared Diamond. Collapse: How Societies Choose to Fail or Succeed. Viking, 2005

Umberto Eco.

- The Search for the Perfect Language: the making of Europe. Wiley-Blackwell, 1997
- La ricerca della lingua perfetta nella cultura europea. 1993

Amy C. Edmondson. A Fuller Explanation: the synergetic geometry of R. Buckminster Fuller. Birkhauser, 1987

John Elkington. The Chrysalis Economy: How citizen CEOs and corporations can fuse values and value creation. John Wiley, 2001.  
[[contents](#)]

Robert Stevenson. How to Soar Like an Eagle in a World Full of Turkeys. Seeking Excellence, 2011

Nassim Nicholas Taleb:

- The Black Swan: the impact of the highly improbable. Random House, 2007
- Antifragile: Things That Gain From Disorder. Random House, 2012

Pablo Triana. Lecturing Birds on Flying. Wiley, 2009 [[summary](#)]

Geoffrey Vickers. Freedom in a rocking boat: changing values in an unstable society. Allen Lane, 1972

Ernst von Weizsaecker and Anders Wijkman. Come On! Capitalism, Short-termism, Population and the Destruction of the Planet. Springer, 2017 [[review](#)]

Arthur M. Young. The Geometry of Meaning. Delacorte Press, 1976

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