



laetus in praesens

20 July 2020 | Draft

Baseball Cap Implications in the Quest for Global Hegemony

Comprehension of elusive order through the dynamics of angels and demons

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Introduction

This speculative exploration follows from an earlier argument regarding the challenge of mapping the opposing forces of good and evil -- in anticipation of any prophesied final battle. There it was argued that the "problems" recognized today could be understood as the "demons" of yesteryear, and that the "angelic forces" of traditional belief systems were comparable to the remedial "strategies" now variously proposed. Given the subtlety of such forces, and their embodiment of appreciated and deprecated values, the challenge is how their multiplicity might be most fruitfully ordered to facilitate comprehension (*Mapping options for 144 distinctive features of a dynamic global system*, 2020).

The earlier argument noted the worldwide familiarity with sports balls, most notably those of football and tennis, the stitching patterns of which suggest a curiously indirect appreciation of global order -- however unconscious (*Game ball design as holding insight of relevance to global governance?* 2020). The question is explored more conventionally through the need to develop projections of the spherical globe in 3D to enable its representation in 2D on printable maps. Many such projections have been explored to that end (*List of map projections*, *Wikipedia*).

The manufacture of balls used in sports poses the problem otherwise, namely how to curve materials in 2D in order to create a viable ball in 3D. As discussed, of particular importance in this respect is the seam of the tennis ball, which is the feature of the *tennis-ball theorem* of mathematics. This is of the same form as that of the baseball curve of 108 double stitches (*Seam Curve on Sports Balls*, *Wolfram Demonstration Project*). The argument concluded by suggesting that the form of *sports visors* in general, and the *baseball cap* in particular, might bear an unsuspected relation to that curve -- with cognitive and strategic implications (*Enabling flying capacity with "headgear" -- cognitively comprehended?* 2020).

The question to be explored is whether what is appreciated as especially "cool" in such headgear, and its implied relation to game-playing, somehow implies a capacity to "fly" as understood metaphorically -- especially with regard to enabling collective initiatives to "fly like an eagle" rather than be grounded "like a turkey". Such flying metaphors are well-recognized in relation to viable corporate strategy.

Of obvious significance in this period of global crisis is the role of the acclaimed leader of the world's greatest superpower, namely Donald Trump. As the subject of more daily media coverage than any leader in history, his signature headgear is the baseball cap. Through this he achieves a degree of identity in the popular imagination, and presumably his own, which has yet to merit the attention it deserves -- despite the exposure it has evoked. Critics have endeavoured to make the strongest case for his essentially pathological condition, whilst failing to acknowledge that -- pathological or not -- this reflects a mindset of an electorally significant proportion of the American people, as may be explored otherwise (*Who to Blame: "Donald Trump" or the "American People"? Let's get real clear on any responsibility for imminent global disaster*, 2019).

Rather than focus on the political convenience of any such conclusion by mental health professionals, of greater relevance is the systemic function that his mode of operation continues to represent. This can be better explored through the archetypal role of *Loki* (as a *trickster deity*) in his relation to the realm of the gods in Norse mythology (*Identity in question via Trump: Narcissus vs Loki?* 2017;

Unconscious civilization and "reality distortion"? 2018). Loki's relation with the the deities claiming to embody the highest values of humanity varies by source; Loki sometimes assists the gods and sometimes behaves maliciously towards them. Loki is a [shape shifter](#) enabling the onset of [Ragnarök](#) -- consistent with current anticipation of civilizational collapse.

Whereas the deities of that mythology are readily depicted as wearing a [winged helmet](#) (as with Hermes of Greek tradition), for the purpose of this argument it could be asked whether the most obvious form of headgear for a modern Loki would indeed be the baseball cap -- especially given the possibility of wearing it reversed or sideways (Rod Dreher, [Trump the Trickster](#), *The American Conservative*, 8 March 2016; Jo Brewis, [The baseball cap: a symbol of pathological consumption?](#) *Social Worlds Project*, 26 March 2014). There is the further irony that the headgear most evident in the demonstrations, now so manifest worldwide as indicative of popular unrest, is indeed the baseball cap. Is there a curious modern connection between "demonstrator" and "demon" that calls for attention from the perspective of those who perceive such action to be "demonic" or "evil" in some way?

It is a fact that the existence of "evil" is now widely recognized by world leaders, irrespective of how questionable this is to secular science (*Existence of evil as authoritatively claimed to be an overriding strategic concern*, 2016). However it remains curious that so little is seemingly done to explore how the organization of the "demonic forces" might be comprehended -- beyond the geometrical allusion to an [Axis of Evil](#). Especially problematic, as explored in the earlier argument, is the degree to which those qualifying others as evil tend to be so qualified in return (*Framing by others of claimants of evil as evil*, 2016).

Even more remarkable is the failure to clarify how the "angelic forces" -- those opposing the "forces of darkness" -- are organized. In this respect it can be argued that the degree of understanding of such order is as problematic and questionable as the organization of pantheons and angelic hierarchies, especially given the unreconciled views of the Abrahamic religions in this regard ([Angels in Judaism](#), [Christian angelic hierarchy](#), [Angels in Islam](#)). Reference to such supernatural forces, hypothetical or not, may appear irrelevant to many. It is however a fact that many popular baseball teams specifically name themselves as "demons", "devils" or "angels", thereby meriting consideration of this dimension in this context.

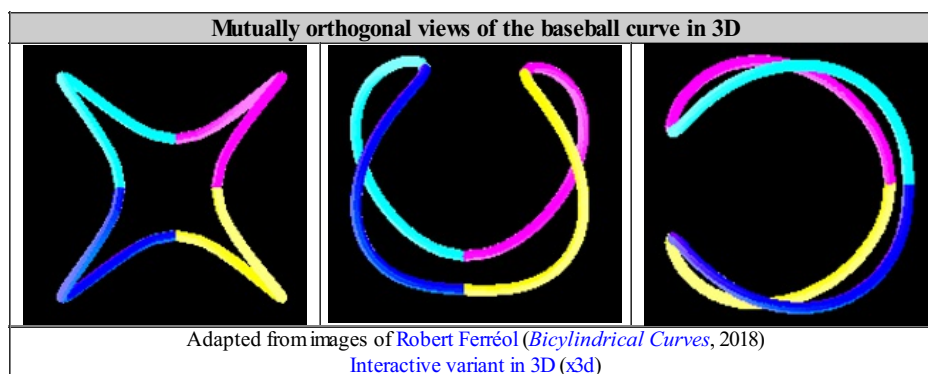
The quest for global hegemony under the leadership of Donald Trump is increasingly well-documented, notably in the light of the memoir of John Bolton (Michael Brenner, [The Impossible Dream](#), *Consortium News*, 13 July 2020; Ashley Smith, [Illiberal hegemony: The Trump administration strategy for US Imperialism](#), *International Socialist Review*, 109; Alexander Cooley and Daniel H. Nexon, [How Hegemony Ends: the unraveling of American power](#), *Foreign Affairs*, July/August 2020).

Trump's adoption of the red baseball cap has been central to the symbolism of this aspiration -- as an extension of the [American Dream](#) - - despite the controversy it has aroused (['Make America Great Again' hat wins Symbolic Systems' symbol of the year for 2016](#), *Stanford News*, 9 January 2017; Issac Bailey, [Why Trump's MAGA hats have become a potent symbol of racism](#), *CNN*, 12 March 2019).

There is therefore a case for an exploration -- however speculative -- of the degree to which the headgear favoured (however unconsciously) by the culture seeking global hegemony is in some way a reflection of that mindset and conducive to it (Maude Bass-Krueger, [Everything to know about the history of the baseball cap](#), *Vogue*, 28 May 2019; Jim Lilliefors, [Ball Cap Nation: a journey through the world of America's national hat](#), 2009). One study concludes with commentary on "American aspirations to a baseball-led cultural hegemony" during the first half of the twentieth century (Donald G. Kyle and Robert B. Fairbanks, Eds., [Baseball in America and America in Baseball](#), 2008). These would indeed be consistent with the forms of headgear favoured in their quest for dominance by imperialist forces of the past.

Correspondence between the baseball curve and the baseball cap?

The earlier argument offered interactive models in 3D of the baseball curve (namely the tennis-ball curve). Views of the same curve from different perspectives are presented below with quarter portions distinctively coloured



As a preliminary exploration of the speculative hypothesis of this argument, an interactive 3D model of a baseball cap can be integrated into a model of that curve. Given the focus of students in mathematical faculties and their use of the baseball cap -- frequently bearing symbols of significance to that discipline -- it is somewhat surprising that there has seemingly been little exploration of the mathematics of the baseball cap. In geometrical terms the rounded cap is effectively the intersection of a portion of a cylinder with half a sphere.

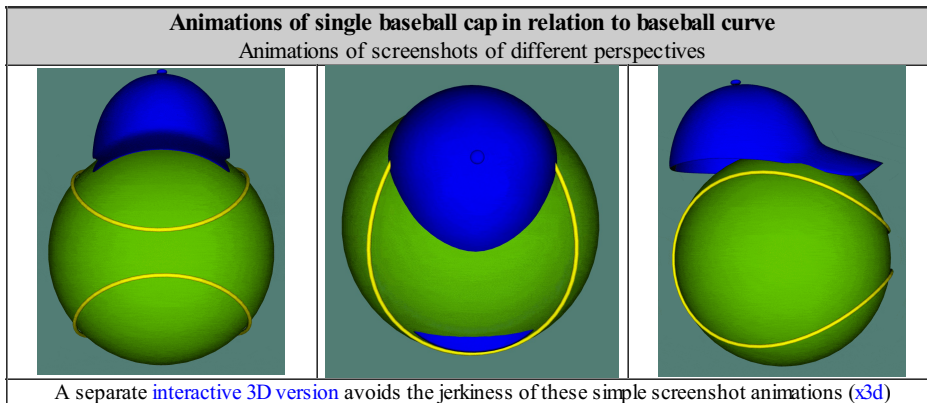
One exception is the work of Shelly Harkness and colleagues ([Using Mathematics to Design Costumes: Hat Making](#), *Ohio Journal of School of Mathematics*, 70, Fall 2014), Another is that of ; Richard B. Thomson ([Designing a Baseball Cover](#), *The College Mathematics Journal*, 29, 1998, 1). In that sense it is somewhat surprising that baseball-playing mathematicians have not employed the curve as a symbol on their caps.

Although the cap may be manufactured with a flat visor (or bill), of particular relevance to this argument is the encouragement to users to curve the visor around a large softball (Joshua Smothers, *How to Shape a Baseball Cap Brim*, *SportsRec*, 16 April 2009). This would be consistent with achieving a degree of approximation to the form with which the baseball curve is associated, given the necessarily spherical form of the softball.

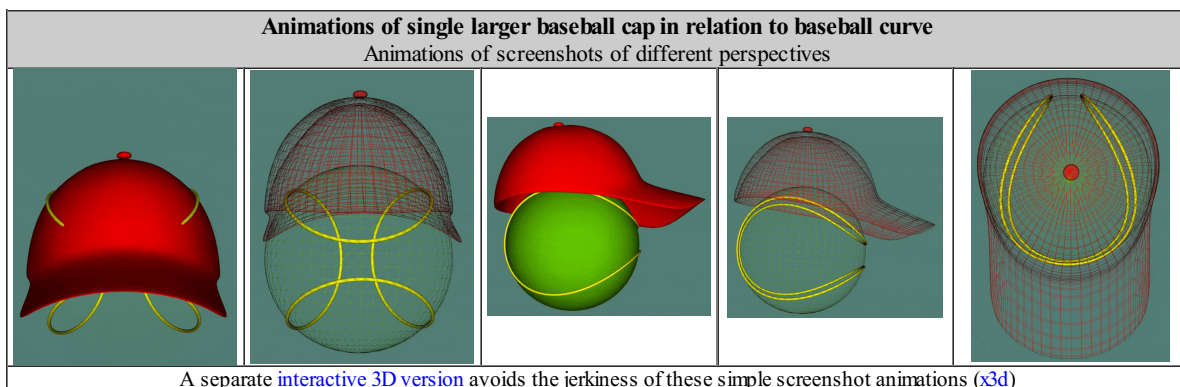
In mathematical terms, the merger of the two models in 3D can be understood in terms of curve fitting. On the one hand however, the parametrization of the baseball curve can take several forms, as indicated in the most comprehensive study detected (Dean Allison, Ricardo Diaz, and Nathaniel Miller, *Generalized Baseball Curves: Three Symmetries and You're In! Loci*, *MAA Mathematical Sciences Digital Library*, September 2008, Article ID 2866). On the other, it is less than clear whether the conventions of baseball cap design are based on distinctive understandings of the form the brim may take -- since there seems to be no accessible parametrization of the form of the brim. This may well be implied by some manufacturing patents for basketball caps, as suggested by a recent Chinese patent (*Parameterized brim-structure design method on basis of clothing CAD (computer-aided design) software*, CN102609565B, 2012).

Rotating the combined model, with which a dynamic has been associated for convenience (as shown below), then frames questions such as the following:

- how well does the brim fit the curve -- at least as perceived from different angles?
- could the model be adjusted to increase the correspondence?
- does the fundamental nature of the baseball curve even suggest that the brim might be designed slightly differently -- if that correspondence is to be increased?
- given that it is recommended that users adjust the curve of the brim using a softball, does the sphere shown offer the curvature in question?
- would a larger sized cap offer a better fit with a significant portion of the curve (as discussed below)?



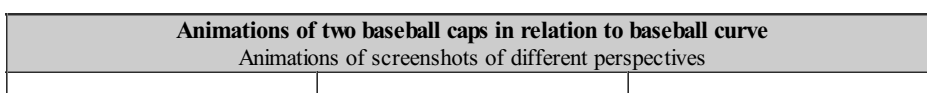
The approach in the modelling above relates to the possible conformity of the visor (or bill) of the baseball cap with the baseball curve -- inspired by the use of any softball to form it. The approach can however be modified to explore how the cap fits the ball around which the curve is wrapped, namely by increasing the size of the cap as shown in the following animations.

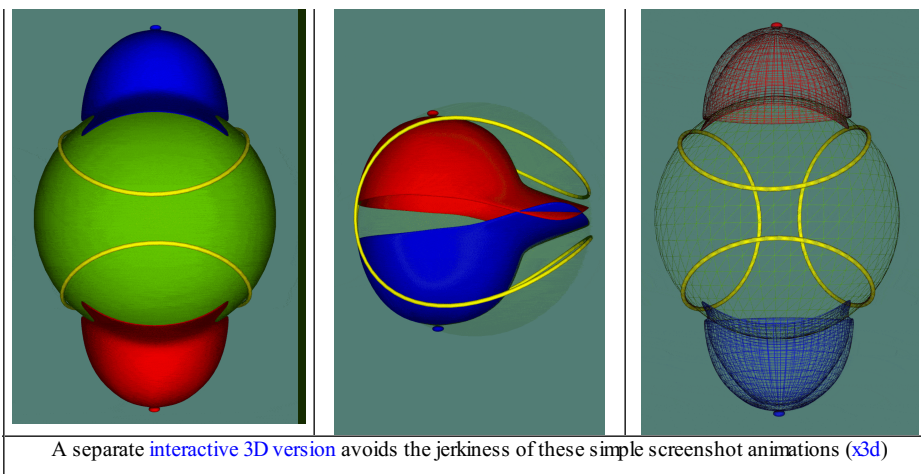


In this speculative exploration of whether there is any "correspondence", it is appropriate to note the distinction made between mathematical (or geometrical) correspondence and that associated with aesthetic appreciation (*Theories of Correspondences -- and potential equivalences between them in correlative thinking*, 2007).

Oppositional placement of two baseball caps around a single baseball curve

Given the symmetry of the curve, the baseball cap may be positioned with a different orientation to the curve, as shown below using two caps. The oppositional placement merits careful consideration since it exemplifies the case of two opposing teams -- necessarily fundamental to the game playing which is the focus of baseball. How is the relationship of the opposing teams to be signified otherwise?





The animations above show one cap positioned "above" another; rotation of the images by 90 degrees would have the caps "confronting" one another at the same level. This can be used to evoke discussion of the relationship to an opposing team. As portrayed above, this would reinforce any implication that the Red Team is superior to the other team. The Blue Team is then recognizable inferior and should necessarily be "crushed" or "eliminated". The rotated form implies a degree of equality, namely a confrontation between equals, whatever the outcome.

Potentially intriguing with respect to such imagery is the importance attached to the [curveball](#) in the relation between opposing teams. In baseball and softball, the curveball is a type of pitch thrown with a characteristic grip and hand movement that imparts forward spin to the ball, causing it to dive as it approaches the plate. Several variations are recognized.

With respect to the wider significance of this argument, there is no lack of reference to curveball in national and international politics:

- Ephrat Livni: *Political Curveball: the US Supreme Court may be trying to dodge Trump's tax case* (*Quartz*, 29 April 2020)
- Anna Palmer, et al: *John Bolton throws an impeachment curveball* (*Politico*, 1 June 2020)
- Lauren Fox and Deirdre Walsh: *Trump throws curveball at Republicans with call for immigration deal* (*CNN*, 1 March 2017)
- Jordan Carney: *Barr throws curveball into Senate GOP 'spying' probe* (*The Hill*, 15 May 2019)

Especially noteworthy is the historical role of a person with the pseudonym of [Curveball](#):

- Bob Drogin: *Curveball: spies, lies, and the con man who caused a war* (Random House, 2007)
- Bob Drogin and John Goetz: *How U.S. Fell Under the Spell of 'Curveball'* (*Los Angeles Times*, 25 November 2005)
- Eric S. Margolis: *How 'Curveball' Made Monkeys of U.S. Intelligence and the Bush White House* (*HuffPost*, 21 February 2011)
- Michael White: *Curveball's confession: another dent in the Iraq conspiracy theory* (*The Guardian*, 16 February 2011)

It might then be asked how use of the metaphor relates -- possibly intuitively -- to the fundamental nature of the basketball curve when it is understood as relating two orientations seemingly in opposition.

Systemic and cognitive implications of baseball cap framing?

Sub-systemic perspective: The argument developed in the earlier exploration in relation to the baseball curve/tennis-ball curve focused on the implications of the curve as a process traversing eight "octants" of a global "whole system" framing -- of which four constituted a "lower" hemisphere (*Systemic recognition of the "cognitive underworld" -- integrating the "netherworld"*, 2020).

This endeavoured to show that in systemic terms there is a process involving 8 distinctive cognitive orientations with corresponding systemic functions -- in a viable system -- as this might need to be comprehended. Opponents might well be recognized as associated with such an underworld. Whether the primary focus is on the "objective" systemic, or the "subjective" cognitive perspective, is a matter of interest in its own right (*World Introversion through Paracycling: global potential for living sustainably "outside-inside"*, 2013; *Cognitive Osmosis in a Knowledge-based Civilization: interface challenge of inside-outside, insight-outsight, information-outformation*, 2017)

A particular challenge of the curve, as is obvious from the animations above, is its nonlinear -- even counter-intuitive -- nature (*Non-linear pathways curving between octants*, 2020). The elegance of the curve, and the familiarity with it on baseballs or tennis balls, emphasizes the sense in which it is readily comprehensible, even though it is essentially and unusually complex.

The particular question of relevance here is how **any constrained, restrictive or partial engagement with the curve is effectively sub-optimal to a potentially dangerous degree in systemic terms**. It is in that sense that the baseball cap may be indicative of a sub-systemic perspective.

Cognitive conditioning by fashion: Curiously there is an extensive range of references on the psychology and symbolism of clothing and how it is indicative of attitudes -- and of how it conditions such attitudes to some degree (*Fashion Psychology: what clothes say about you*, *Psychologist World*). Unfortunately the references in question only allude to this dimension through examples, but do not explore the matter in detail. What does wearing a baseball cap do for the wearer's worldview as a statement of "coolth", especially in comparison with the style sought and especially exemplified by wide-brimmed hats, as may typically be worn by women?

The point can be made otherwise by contrasting the baseball cap with the Stetson or a Fedora, for example, where there a well defined

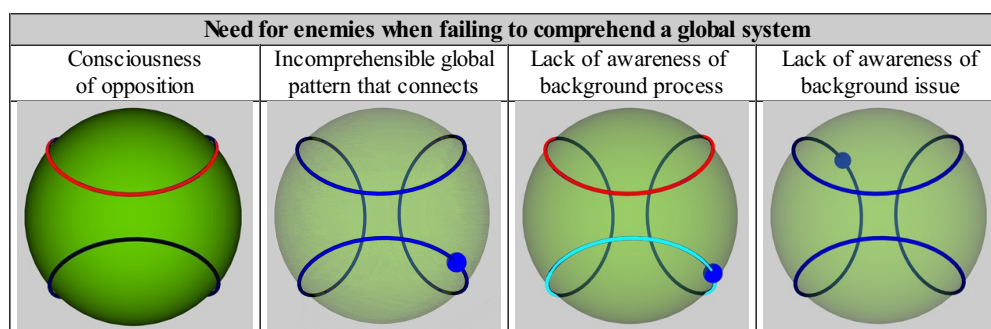
brim takes a wave-like form around the circumference. In the use of such headgear, quite distinctive "statements" are made, presumably indicative of quite distinctive attitudes -- in contrast to use of a baseball cap. Donald Trump is not commonly depicted wearing a Stetson or any hat with a circumferential brim. What might that then imply in systemic terms? Is there a case for recognizing a "baseball cap worldview"?

Consciousness of quarter of global system: The animations above with a single cap suggest that the brim of a **baseball cap conforms to some degree with one quarter of the global curve only** -- not a single octant, but bridging two of them. Associated with this limitation is the design of the baseball field -- the **baseball diamond**. Unlike most team sports that play on a rectangular field, baseball is played on a wedge-shaped field, which resembles a quarter of a circle. The diamond is framed by two lines -- "foul lines" -- which meet at **home plate** and extend outward, perpendicular to each other. The lines create a boundary on each side of the field between fair territory and foul territory.

This raises the question of the degree to which the remaining three quarters (with their six octants in spherical terms) are encompassed systemically, or simply neglected and ignored -- to what might be considered a potentially dangerous degree. What happens in those cognitive-systemic domains -- if only unconsciously?

Conflictual engagement with otherness: The argument can be developed further in the light of the animations above with two baseball caps in relation to a single curve. The second cap then bridges a second quarter of the global system -- across two other octants. The merit of the juxtaposition of the two caps is the manner in which it frames the engagement between two competing teams -- a Red Team and a Blue Team. Baseball -- as a game -- needs two teams. As suggested by the animations, this "need" is fundamental to the cognitive dynamics implied by a baseball cap -- as an approximation to requisite global systemic dynamics. The wearer of a cap needs a "them" to exemplify the identity of the wearer -- collectively understood as an "us", especially in the US.

This point is consistent with the well-developed argument that the USA has long demonstrated its need for enemies to confirm and sustain its sense of identity (Francis Wilkinson, *Trump's Inexhaustible Need for Enemies*, Bloomberg, 11 June 2018; Michael Streich, *Americans Need an Enemy: common enemies have united the nation since independence*, Decoded, 18 July 2013). Curiously, in metaphorical terms, it could be said that an "enemy" is framed and perceived as anybody failing to follow the straight line favoured in linear strategic thinking -- or adhering to the plan in 2D thinking. Unfortunately there is every probability that "progressives", in order to ensure their coherence and identity, have a similar need for "regressives" as enemies -- a phenomenon which goes unexamined.



The animations help to clarify how, in the absence of comprehension of the whole, engagement with what is perceived as an "other" -- as an apparent opponent -- offers a degree of connection with the whole of which both are a part within a global system that is only recognized unconsciously (John Ralston Saul, *The Unconscious Civilization*, 1997).

The animations then serve to illustrate the much studied cognitive challenges of engagement with "otherness" and any "shadow" (*Us and Them: Relating to Challenging Others patterns in the shadow dance between "good" and "evil"*. 2011; *Reframing the Dynamics of Engaging with Otherness*, 2011). Such studies extend into oppositional logic and "oppositional geometry" (Fabien Schang, *Agreeing about Disagreement Academia; International Disagreements, Academia*, 2014) as argued separately (*Oppositional Logic as Comprehensible Key to Sustainable Democracy: configuring patterns of anti-otherness*, 2018).

Illusory effort to eradicate apparent opposition: By increasing the size of the baseball cap (in the later animations above) a further argument can be developed. With the green sphere understood as the global system -- the planet as a whole -- a degree of aspiration to whole system dominance is usefully illustrated. This is consistent with what is defined in military terms as **full-spectrum dominance** and the eradication of all opposition (*Eradication as the Strategic Final Solution of the 21st Century?* 2014). It could be understood in terms of any effort to "set a cap" on the world -- "to cap it all" -- the unchecked desire for global hegemony, curiously confused with any sense of "putting a cap on it".

Use of a "big cap" in this way usefully raises the question as to the dynamics imagined as following from such hegemonic dominance. What happens when all opposition has been eliminated, and there is nobody left with whom to "play ball", in order to engender an elusive sense of fulfillment (*Embodying Global Hegemony through a Sustaining Pattern of Discourse: cognitive challenge of dominion over all one surveys*, 2015).

However the animations also suggest the limitations on any such ambition when defined in this way. Systemically, as framed by the dynamics of the baseball curve, a bigger cap does not englobe the system as might be imagined from a sub-systemic perspective. In jargon terms, it does not deal with what is commonly described by the strategic acronym of CYA. Using a different metaphor, the challenge can be described in terms of the need for a "bigger tent" -- rather than a bigger cap -- potentially a tent of multidimensional nature (*Global Brane Comprehension Enabling a Higher Dimensional Big Tent? Strategic implication in encompassing nothing and coming to naught*, 2011).

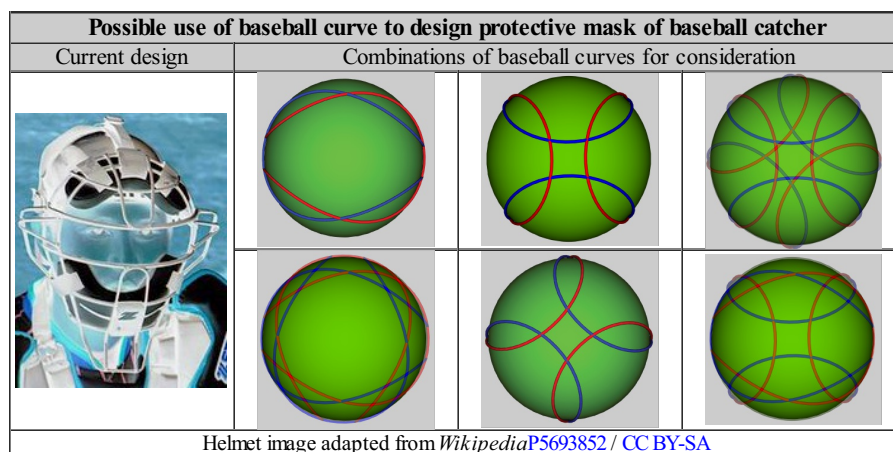
Beyond the binary: The previous argument highlighted the nature of these other dimensions -- the neglected octants -- in terms of a cognitive "underworld" or "netherworld". The associated systemic processes are only too evident in the proliferation of organized crime and corruption -- and complicity with it. In traditional terms it may be inferred in terms of the existence of "demons" and "evil" -- perhaps to be reframed in policy science terms as "wicked problems".

The baseball curve is helpful in framing perception of the alien otherness of a potential enemy. This enables a desperate effort to eradicate what is experienced as a threat to an integrative identity. Triumphant in this way, and recognition for doing so, is then an affirmation of identity. It does not require any need to recognize the pattern connecting the two parties via what might be otherwise ignored as an unconscious dimension. The curve also highlights the meaningless of 4-way ball games to the conventional mindset, as could otherwise be explored (*Destabilizing Multipolar Society through Binary Decision-making: alternatives to "2-stroke democracy" suggested by 4-sided ball games*, 2016).

Systemic significance of the catcher's mask? Whilst the baseball cap is a simple form of headgear worn by most of the players in a team, the opposite is the case with the mask worn only by the **catcher**. The catcher crouches behind home plate, in front of the (home) umpire, and receives the ball from the pitcher. From that position, the catcher can see the whole field, and is therefore in the best position to direct and lead the other players in a defensive play.

Extensive research has been devoted to the development of the design of the **catcher's mask** in order to offer appropriate protection from any ball from the pitcher that is missed by the batter. The mask incorporates a complex pattern of carbon-steel wire mesh with a cage-like opening at the front for optimum visibility. The baseball mask has benefitted from parallel development of the **goaltender masks** used in other sports. The masks tend to be extensively decorated with logos and other symbols.

It could be seen as curious that the wiring pattern of baseball mask echos to some degree the pattern of the baseball curve which is the theme of this argument. There is a case for exploring the use of combinations of the baseball curve in designing the mask as suggested by the images below.



The baseball mask is currently evoked in relation to the worldwide preoccupation with masks as a protection against the global threat of coronavirus (*Coronavirus face masks: Buy your MLB-themed face covering to help curb the spread COVID-19*, 12 May 2020; *New NY Yankees, Mets, MLB face masks help baseball fans curb spread of coronavirus*, 12 May 2020; *The Healing Power of Baseball*, *The New York Times*, 1 May 2020). Given the design of themed masks against the virus, there is presumably a case for using the baseball curve for that purpose.

Whilst much is written about the role and symbolism of masks in general, there is seemingly little reference to those used in baseball from that perspective. The form clearly implies a more "global dimension" than the design of the baseball cap -- a personal implementation of "full-spectrum dominance".

More intriguing in symbolic terms is the manner in which the mask is specifically designed to protect the catcher from the ball. With the ball bearing the baseball stitching curve, this might otherwise be construed as a powerful "message" to both batter and catcher -- even one with "global" implications, given its form. It could be argued that the ball is a smaller reflection of the head protected by the mask. It could even be argued that the mask as a metaphor is designed as a protection against any more comprehensive understanding of the globe and its potential impact on the individual.

As with the polyhedral pattern of the common association football, the future may see a huge irony to the manner in which a symbol of the globe is kicked or struck as forcefully and skillfully as possible. This is done in order to "score" by out-manoeuvring and breaking through the defence of an opponent -- especially given the sexual connotations of use of that term in American culture. The competitive engagement of cap-wearing players to the baseball may come to be seen as implying a pattern of relations sustaining a dysfunctional engagement with global challenges -- ironically involving a curious form of "rejection" of the message it carries and "social distancing" therefrom.

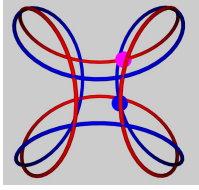
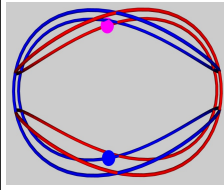
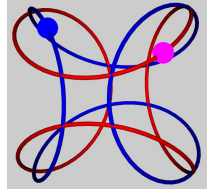
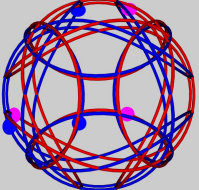
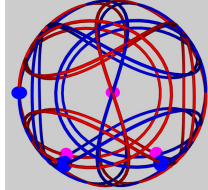
Requisite complexification offered by multiple baseball curves differently oriented?

Just as a baseball cap can be worn reversed, it is obvious from the form of the baseball curve that its direction can be reversed, as shown below left with the addition of a second curve. The coherence of the twofold pattern can be seen from some perspectives (as shown), although more confusingly twisted perspectives are also possible.

Clearly a second cap could be added to the twofold model, namely giving a total of four -- following the pattern of animations above (as shown below).

There is a sense in which the pattern of curves is indicative of the challenges highlighted through a different metaphor, namely that of hemispheric integration. To what extent does the single curve, or the addition of a second, imply the existence of two hemispheres in a global context -- whether of the human brain, the global brain, or the distinction of the hemispheres of the planet for political purposes? North vs South; East vs West?

That metaphor can be variously explored (*Engendering Viable Global Futures through Hemispheric Integration: a radical challenge to individual imagination*, 2014; *Corpus Callosum of the Global Brain? Locating the integrative function within the world wide web*, 2014).

2 curves			6 curves	
Coherent views		Twisted view	Distinctive coherent views	
				
Interactive variant in 3D (x3d)			Interactive variant in 3D (x3d)	

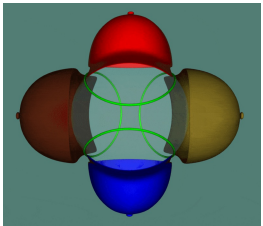
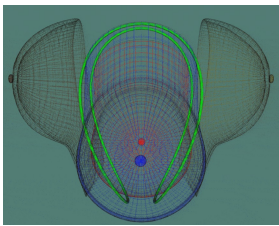
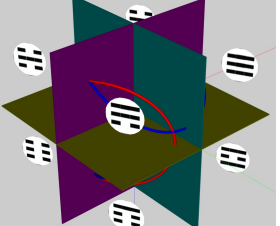
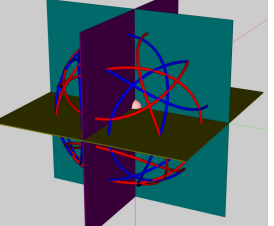
The reversal of the curve does not exhaust the possibility for meaningful complexification since this only accords with one of the three Cartesian coordinate axes. The approach can be continued by adding two such curves for each of the two other Cartesian directions. This makes for a total of 6 curves as indicated on the right above.

Eastern martial arts tend to distinguish eight "directions of unbalancing" (*kuzushi* in Judo and Kendo) These may be associated with eight compass directions (in two dimensions) in which an opponent may be moved so as break their balance. In three dimensions they might be understood as the eight corners of a cube within which the fighter is centered. In Aikido these eight directions are understood as ways to move one's body (*Unsuiko*), to move one's opponent (*Kuzushi*), or to throw one's opponent (*Tsukuri*). Of some relevance to any appreciation of coherence is the sense in which comprehension of this complex eightfold pattern is dependent to a degree on a form of aesthetic engagement somewhat foreign to Western strategy (*Ensuring Strategic Resilience through Haiku Patterns: reframing the scope of the "martial arts" in response to strategic threats*, 2006).

Any Western strategic limitation to a quarter of the global system (2 octants), or to one hemisphere (4 octants) in the dynamics with an opponent, is clearly vulnerable to strategies which takes account of an 8-octant understanding of "directions of unbalancing". This consideration recalls the analysis of **Scott Boorman** (*The Protracted Game: a wei ch'i interpretation of Mao's revolutionary strategy*, 1971). The pattern of curves then suggests how some curves, given their form, may effectively serve as "blinkers" when their existence is ignored.

This vulnerability has been addressed from a different perspective by **Magoroh Maruyama** (*Peripheral Vision: Polyocular Vision or Subunderstanding? Organization Studies*, 25, 2004, 3). It merits consideration in the light of recent commentary by **Heinz Dieterich** (Ekaterina Blinova, *Why the US Has No Chance of Winning Either a 'Cold' or a 'Hot' War Against China*, *Information Clearing House*, 16 July 2020).

Some sense of a need for eightfoldness in sports and performance in general is variously recognized (Jeff Janssen (*Eight sure-fire strategies for building a thriving program, Coaching and AD*, 6 November 2013; No Kageyama, *Eight Strategies for Breaking Out of a Performance Slump. Allegro*, 119, 2019, 4; Tamar Chansky, *Disturbances in the Field: eight strategies to parent a resilient athlete, HuffPost*, 17 November 2011). It could indeed be argued, given the 9-member nature of baseball teams, that 8 members of the fielding team are disposed in 2D in a way which remotely recalls the 8-fold dimensionality of the system as a whole in 3D -- with the 9th member then to be understood as pitcher or catcher.

Animations of four baseball caps in relation to baseball curve		Representations of 8 octants	
Solid	Wireframe	2 curves	6 curves
			
Interactive 3D version (x3d)		Interactive variant in 3D (x3d)	

Irrespective of any relation of baseball caps to these more complex patterns, the curve can be understood as systemically more complete in a global sense. As feedback loops or the pathways for transformative processes, the curves together then traverse the pattern of

octants (above right) in a manner which can be understood as encompassing a more complete recognition of globality.

Evocation of angels and demons in the "imaginary world" of baseball

For a culture renowned for its religious sensitivities, it is remarkable to note how many popular baseball teams deliberately evoke a degree of recognition of the supernatural by specifically naming themselves as "demons", "devils" or "angels" (as indicated below). In a period of heightened political correctness, it could be asked why this pattern is not called into question in some way, as with controversy with regard to the name and logo of the [Washington Redskins](#) of football fame (*Washington Redskins name controversy*).

In American culture, as might be imagined, there are indeed efforts, serious or otherwise, to explore the theological significance of sports and baseball (Meg Stapleton Smith, *Baseball and Catholic Faith*, *Daily Theology*, 28 October 2014; John Sexton, *Baseball as a Road to God: seeing beyond the game*, 2013; Kim Fabricius, *Ten reasons why baseball is God's game*, *Faith and Theology*, 25 May 2007; Justin Ruddy, *Baseball, Theology, and Contextualization*, *The Center for Gospel Culture*, 10 March 2011).

There is indeed an extensive literature on sports as religion (Jeremy R. Treat, *More than a Game: a theology of sport*, *Themelios*, 40, 3) and the parallels to be drawn between sport and religion. Given the extraordinary evocation of angels and demons in baseball, it is however curious that seemingly little reference is made to that phenomenon from a theological perspective.

In this context, it is then appropriate to ask how baseball-as-religion relates to the agenda of [dominion theology](#) and the American quest for global hegemony (Sarah Leslie, *Dominionism and the Rise of Christian Imperialism*, *Discernment Research Group*, 2005). Will the new imperialism be disguised in the form of a marketing approach to branding, as argued by Michael Butterworth (*Branding Faith in the Church of Baseball*, *National Communication Association*, 1 August 2011)? Elsewhere Butterworth argues:

Baseball has enjoyed its status as the "national pastime" in part because it has been associated with democracy. To the extent that baseball, as an institution of civil religion, fosters pluralism and inclusion, it can indeed be viewed in democratic terms. In recent years, the advent of conservative Christian events called "Faith Nights" threatens the democratic health of the "church of baseball". In particular, Faith Nights depend on a logic of branding that masks the political commitments that support the events. Thus, although many baseball fans and followers may not be aware of all aspects of Faith Nights, they are constituted in a hegemonic relationship with Christianity in ways that demand critical attention. (*Saved at Home: Christian Branding and Faith Nights in the "Church of Baseball"*, *Quarterly Journal of Speech* 97, 2011, ,3)

As noted by Joseph Price:

By the beginning of the twenty-first century, more than 200 professional teams participated in Baseball Chapel, whose services were attended by about 3,000 players, managers, umpires, and team each Sunday. (Joseph L. Price, *Rounding the Bases: Baseball and Religion in America*, 2006)

Given the symbolism of wings, dating from the winged deities of mythology and the theology of angels, this tendency extends to the adaptation of the [winged football helmet](#) to that used by baseball catchers. The Redskin helmet logo, as used by a football team, includes a wing. Is it assumed that sports teams in some way incarnate or embody the contrasting qualities associated with such supernatural connotations.

Examples of naming of basketball teams in demonic and angelic terms in the USA	
Devils and Demons	Angels
<ul style="list-style-type: none"> • Devils Baseball Club • Arizona State University Sun Devils • Metro West Devils Baseball • Kansas City Blue Devils Baseball • Moscow Blue Devils (Idaho) • Diamond Devil Baseball (South Carolina) • North Coast Red Devils Baseball • Watertown Red Devils (Minnesota) • Duncan Demons baseball • Demon Baseball (Northwestern State) • Westlake Demons • Albia Blue Demons • Des Moines Demons • Desert Demons (Arizona) • Greeneville Demons • Blue Demons (DePaul University) • Wickliffe Blue Devils 	<ul style="list-style-type: none"> • Los Angeles Angels / California Angels • Alexandria Angels • Texas Angels • Minneapolis Angels • Milwaukee Angels • Humble Blue Angels Baseball • Anchor Bay Angels • San Antonio Angels • Midland Angels • Hebron Angels • Hell's Angels • Archangels (Illinois) • St. Michael Archangel Baseball • Archangels 8U (Illinois) • Blue Angels

Clearly there is a case for exploring how such entities, in all their diversity, populate and enrich the world of the imagination for many Americans -- whatever their relation to religion or to any surrogate. Do players and supporters of "demons" participate in "faith nights"? Do religions explicitly deprecate demonic references whilst promoting their angelic counterparts (*Religious symbolism in U.S. sports team names and mascots*, *Wikipedia*)?

Far more challenging for the appropriation of baseball as religion is the extent to which baseball has impregnated American culture with [baseball metaphors for sex](#), as extensively indicated by *Wikipedia*, most notably with respect to sexual connotations of: [strikeout](#), [first](#)

base, second base, third base, and home run (home base or scoring).

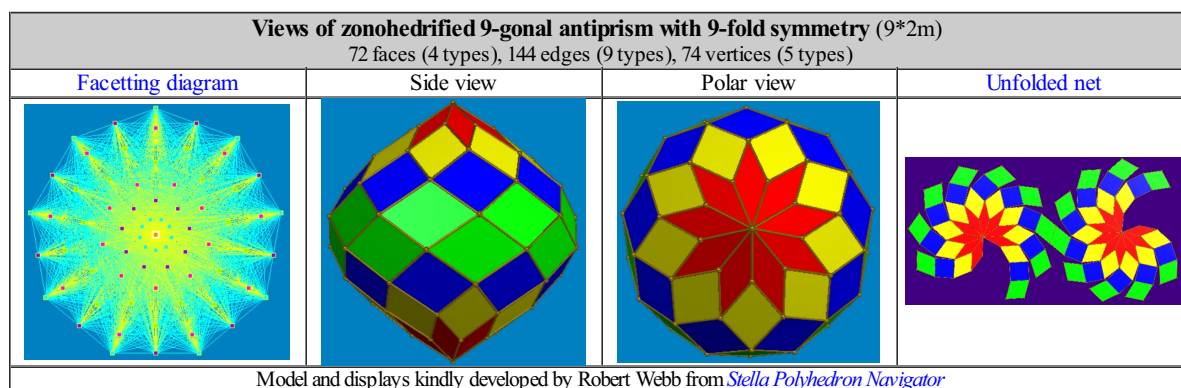
Given the common slang reference to "balling" and having "balls", it is curious that there has been so little psychological focus on the complex of associations of the ball itself for those who engage so intensively with one. Elements of that recognition are evident in the study by Mike Stadler (*The Psychology of Baseball: inside the mental game of the Major League Player*, 2007) as notably reviewed by the Association for Psychological Science (*The Psychology Of Baseball*, *ScienceDaily*. 1 April 2007). However with the sexual connotations of "hitting on" and "performance", the arguments of H. A. Dorfman invite other interpretation (*The Mental Keys to Hitting: a handbook of strategies for performance enhancement*, 2017; *The Mental Game of Baseball: a guide to peak performance*, 2017).

Given current preoccupations with the challenges of "global", of potentially related relevance is the inclusion of "ball" within the term and the form shared by both, as speculatively explored separately (*From Glo-Ball-ization to Lo-Cal-ization: agenda-bending conspiracies within the global community*, 2000; *Globallooning -- Strategic Inflation of Expectations and Inconsequential Drift: global, glo-bull, glow-ball, glow-bawl*, 2009).

Such investigation would call upon the extensive studies of [worldbuilding](#), [imaginary worlds](#) and [paracosms](#) (George Janes, *Paracosm: the unchaining of reality*, *Artefact*, 22 October 2019; Serena F. Konkin, *Between Worlds: Paracosms as Imaginal Liminality in Response to Trauma*, *ProQuest / Pacifica Graduate Institute*, 2014). The possibilities are actively developed through the [Paracosm Project](#) (*YouTube*, 13 June 2019). Understood as an expression of [liminality](#), the possibility can be discussed otherwise (*Living as an Imaginal Bridge between Worlds: global implications of "betwixt and between" and liminality*, 2011).

Given the confusion in traditional articulation of the numbers of demons or angels, of potentially curious relevance is the 9-fold pattern of a single baseball team in a game which would necessarily involve interaction between 9 "demons" and 9 "angels" -- or between "demons" and "demons". Such numbers are an approximation to the higher sets of angels and demons of tradition. The previous exploration discussed the more complex pattern of 72-foldness with which the larger numbers of each are associated, namely 8x9. Is there some sense in which baseball leagues involve competition among numbers of an equivalent order?

Whether the systemic challenge is to be understood through 8-foldness or 9-foldness (or both) is clearly a matter inviting further exploration. The framing by baseball curves does indeed suggest that their relationship is in some way non-linear and is characterized by "curveballs". The [zonohedron](#) variously illustrated below, "holds" these patterns to some degree, including the 18-fold pattern of a baseball game (below left), as discussed separately (*Ninefold configuration in practice and its comprehension constraints*, 2016).



A more classical approach to sets of angels is through assumptions regarding a 12-fold pattern, despite controversy between the Abrahamic religions with respect to the number (Chantel Lysette, *Get to Know the 12 Archangels*. *BeliefNet*, 2008; *Who were the 12 archangels? Answers*, 2014). Similar confusion is evident in the traditional efforts at the [classification of demons](#). In the light of both such controversies, it is highly ironic to note the similar confusion in the efforts to classify values and strategies (as the modern equivalent of angels) and problems (as the modern equivalent of demons). This is variously addressed in the *Encyclopedia of World Problems and Human Potential*.

Major League Baseball imagined as a "global" system

In exploring the role of organized baseball in framing an American worldview, it is appropriate to consider the complex organization of the [Major League Baseball](#) (MLB) in North America. The MLB is an American professional baseball organization and the oldest of the major professional sports leagues in the United States and Canada. A total of 30 teams play in Major League Baseball: 15 teams in the [National League](#) (NL) and 15 in the [American League](#) (AL). Only one of the teams is Canadian.

As of 2020, there have been no female MLB players. The inclusion of African-Americans has long been a matter of controversy, to say nothing of representatives of the transgender and the broader LGBTQ communities. The distinction of hemispheres, quarters and octants indicated above, as characteristic of a global system, could be understood as indicative of alien worldviews from that of the professional baseball perspective (*Encompassing the "attraction-harassment" dynamic with a notation of requisite ambiguity?* 2017).

MLB also oversees [Minor League Baseball](#), which comprises 256 teams affiliated with the major league clubs. MLB and the [World Baseball Softball Confederation](#) jointly manage the international [World Baseball Classic](#) tournament. The [MLB season schedule](#) generally consists of 162 games for each of the 30 teams, played over approximately six months -- a total of 2,430 games, plus the [postseason](#).

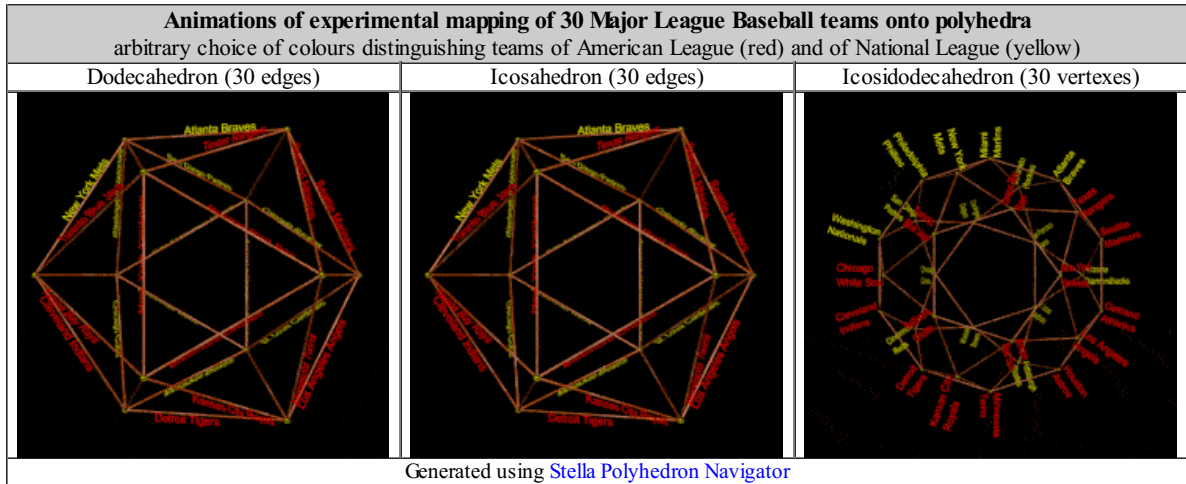
It could of course be argued that the 30 teams of Major League Baseball are variously perceived in angelic or demonic terms by their supporters and opponents. However, despite the use of "devils" and "angels" in the names of many baseball teams (as noted above), only

one team in the Major League is so named. Those having such names (as listed above) are presumably organized within the Minor League.

A question here is how this complex organization might be comprehended as a "global" system effectively determining an essentially closed worldview to a degree which has yet to be explored. Historical pointers in that respect are offered by [Peter Panacy](#):

From its roots in the mid-19th century, baseball represented the hegemony of the nation as a whole and, as the country grew, so did the game. (*Major League Baseball Finds Its Roots in Progressive America*, *Bleacher Report*, 12 April 2011)

Given the emphasis here, one approach is through mapping the teams onto suitable polyhedra offering some sense of the global pattern framed by the MLB structure and dynamics. Given the confusion regarding angels, for example, whether 12-fold or otherwise, the use of the dodecahedron and the icosahedron in the animations below are interesting in that both offer the implication of 12-foldness: 12 faces in the case of the dodecahedron and 12 vertexes in the case of the icosahedron. By mapping its 30 teams on the 30 edges of the dodecahedron or the icosahedron, the MLB then offers a framing of a 12-fold angelic value system -- but without rendering it explicit.

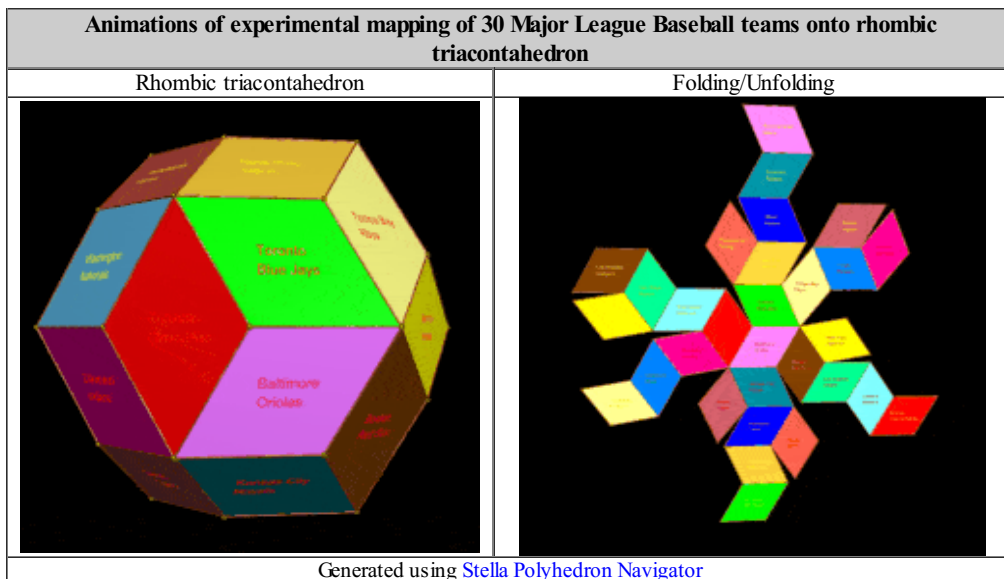


In the case of the dodecahedron of 5-sided faces, that pentagonal form could potentially be seen as consistent with the design of the [home plate](#) -- so fundamental to the game.

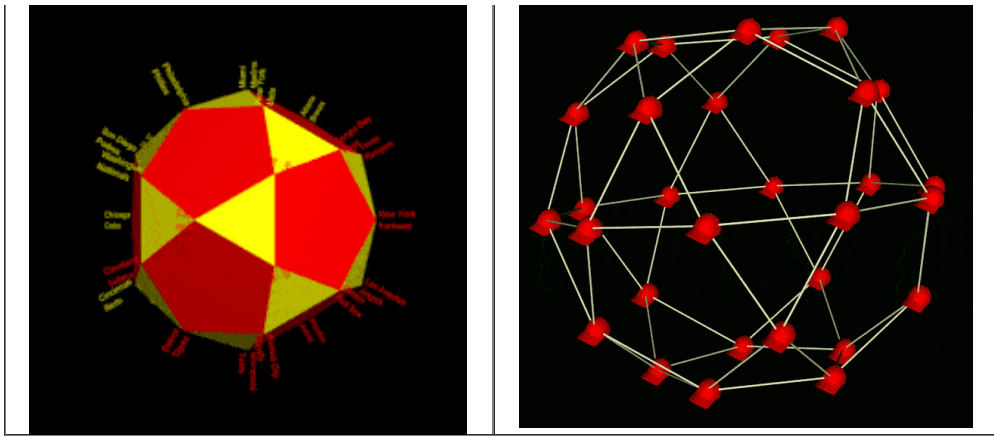
In systemic terms, the use of the icosahedron is especially interesting from a cybernetic perspective, as determined by [Stafford Beer](#) (*Beyond Dispute: The Invention of Team Syntegrity*, 1994). The relation between competing teams could be explored in terms of what Beer described technically as "jostling", although he applied it to "problem jostling" by mapping distinctive issues onto the edges of an icosahedron (see Beer, *Origins of Team Syntegrity*).

An alternative mapping could present the 30 teams on the 30 faces of a [rhombic triacontahedron](#), namely on the dual of the [icosidodecahedron](#) (above right).

3



Animations of experimental mapping of 30 baseball teams onto icosidodecahedron	
Morphing of MLB to icosidodecahedron	Baseball cap perspective on global hegemony?



More complex versions of such animations would show the pattern of interactions between the teams (across the sphere) during the course of a season.

In exploring the further complexity of the 256 teams associated with Minor League Baseball, these do not readily lend themselves to any mapping onto edges or vertices of a simple polyhedron. The only polyhedron which appears to offer an intriguing insight into that pattern is the following unusual form, the 3D view of a structure in 4D -- a **polychoron**, namely the Prismatictruncated 16, more commonly called the **Cantetruncated tesseract**. Are four dimensions necessary, or is the complexity of the global pattern of Minor League Baseball able to be represented more simply? Whilst potentially intriguing for mathematical enthusiasts of baseball, there may well be no need to do so for those otherwise immersed in its dynamics.

Animations of experimental mapping of 256 Minor League Baseball teams onto polyhedra arbitrary choice of colours distinguishing the 13 face types of the Cantetruncated tesseract (358-Proh Proj)		
3D projection of 358-Proh Proj	Folding/Unfolding of 358-Proh Proj	Folding/Unfolding of dual of 358-Proh Proj
256 faces (13 types), 480 edges (21 types), 192 vertexes (8 types)		192 faces (8 types), 480 edges (21 types), 256 vertexes (13 types)
Generated using Stella Polyhedron Navigator		

As an exercise in evoking imaginative modelling of the dynamics of a baseball season, the models above can be combined as follows. That on the right might usefully suggest how baseball operates as the "engine" of American culture -- then to be understood metaphorically in electromagnetic terms. The configuration recalls the challenges currently faced in the design of the toroidal **ITER nuclear fusion reactor** which are then suggestive, however ironically, of baseball as a psychosocial analogue (*Enactivating a Cognitive Fusion Reactor: Imaginal Transformation of Energy Resourcing (ITER-8)*, 2006).

Indication of modelling possibilities for dynamics of elements of a baseball season Separate interactive 3D versions (below) avoids the jerkiness of these simple screenshot animations		
Rotation of icosahedron within dodecahedron	Rotation of Cantetruncated tesseract within dodecahedron	
	Solid faces	Wireframe
Interactive variant in 3D (x3d)	Interactive variant in 3D (x3d)	Interactive variant in 3D (x3d)

Negligence of a "global wave" from a "wavelet" perspective?

Cognitive twist and sub-understanding: As explored through the animations relating to one or two baseball caps, their curvature apparently conforms to distinctive portions of a single baseball curve -- to a degree which merits consideration. This is consistent with the dynamics between opposing teams. The two portions can be understood as corresponding to two quarters of a global curve which relates them through a somewhat complex twist (around the ball). This can be recognized as echoed in a form of cognitive twist through which the two opposing teams are connected (*Enantiodromia: cycling through the "cognitive twist"*, 2007; *Clarifying subtle complexity and a necessary "cognitive twist"*, 2019).

Within that framework, as noted above, this echoes the pattern through which any distinctive team needs an "enemy" in order to sense its identity with the whole. More problematic is the sense in which the "enemy" has to be triumphantly defeated (or preferably "crushed") to affirm that conviction and the associated self-esteem to which it aspires.

This can be recognized as a form of "sub-understanding", as framed from a cybernetic perspective by Magoroh Maruyama (as noted above) with respect to the need for a "polyocular" understanding (whose "eyes" he distinguishes, potentially corresponding to the octants identified above). Given the familiarity with the baseball seam, this ironically reflects a failure to "keep an eye on the ball". The form of the baseball cap visor could then be caricatured as only defining a "wavelet", disassociated from the global wave as a whole, so well exemplified by the subtly elegant form of the baseball seam around the ball.

Wave metaphor: The wave metaphor is a useful means of exploring this systemic issue from a cognitive perspective (*Encountering Otherness as a Waveform*, 2013). A single baseball curve twists around between octants in order to traverse the 8 octants into which the sphere can be divided. This twisting can be understood as wave-like -- sinusoidal in 3D rather than 2D. It is the cognitive appreciation of such twisting which is seemingly elusive and unfamiliar in a world which tends to prefer the simplicity of the linear.

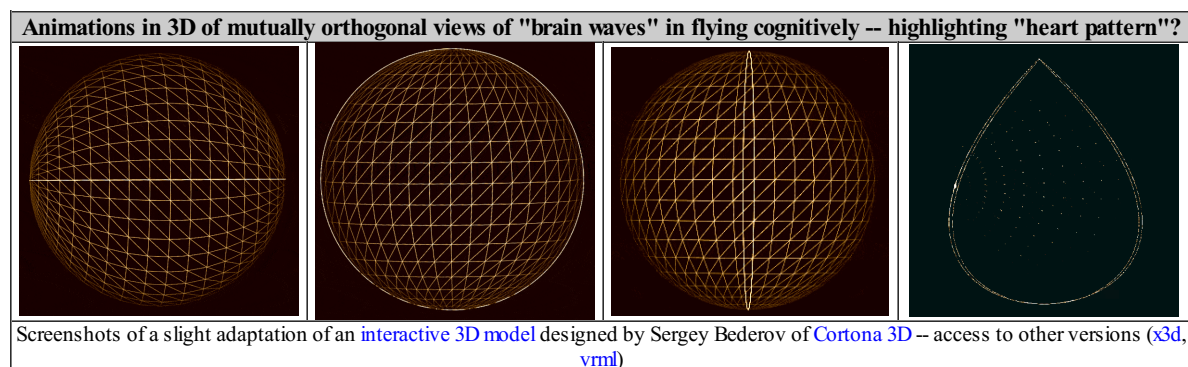
However appreciation of such twisting is especially evident in roller coaster rides. Such a ride could even be designed in the form of a baseball curve. However the twisting is even more evident in the acrobatics associated with roller blading and similar activities. Riding a wave is of course especially evident in the case of surfing. A case could be made for comparing the distinctive movements in each case with the kinds of convolution which would be required in passing through a tunnel in the form of a baseball curve -- perhaps in a Disney World feature.

Wave as a strange attractor: The argument above (and in the previous paper) contrasted the limited curvature of the baseball cap with that of wide-brimmed hats such as the Stetson. Even more striking however are hats of that form which are appreciated by women as ultimate expressions of style and striking affirmations of identity. As noted above however, women are not welcomed as players in Major League Baseball in practice -- despite legal provisions for their inclusion. This suggests that the currently favoured baseball cap logo of "Make America Great Again" (MAGA) could be more realistically recognized as applying to American men alone.

Provocatively it might even be argued that there is a case for a MEGA cap -- "Make Eve Great Again". This could be seen as echoing the preoccupations of feminism and the #MeToo movement in America, faced with the harassment they experience at the hands of "great men". Ironically it could be further argued that women do indeed feature prominently in baseball games, and the nature of their engagement exemplifies a degree of recognition of wave-forms -- through the role of "ball girls" (David Tyau, *SI.com's MLB Ball Girls and Dance Team Gallery, Ultimate Cheerleaders*, July 2016; *The Pirates Ball Girls, MLB.com*). The question has however been raised regarding their relatively negligible role compared to that of cheerleaders in other American sports (Bob Gill, *Why Doesn't Baseball Have Cheerleaders?* *HuffPost*, 3 March 2017).

For a culture seeking global dominance at any cost, the role accorded to women -- in the sport acclaimed to reflect its national ethos -- is as problematic as the American critique of that role in other cultures. Whilst the focus could be understood as on the thrival of "Adam" worldwide through "MAGA", could the negligence of appropriate global curvature be caricatured as "MEGA", as might be argued more provocatively (*America as Eve-ill Empire and the Evocation of Authenticity Elsewhere*, 2003).

Global brain waves? The following animations endeavour to indicate the cognitive embodiment associated with the "brain waves" of what might be termed "flying cognitively", especially given the appreciation of that metaphor by users of psychoactive drugs (*Brainwaves and feedback loops in a global brain?* 2019). They were generated by slight modification of an interactive 3D implementation of a [hypotrochoid](#) and indicate a relation between various patterns of relevance to this discussion, including: the circle, the baseball curve, and the lemniscate. The animations as presented are all of the same curve, but viewed from different angles.



A valuable discussion of the hypotrochoid is offered by Robert Ferréol, with many illustrations of relevance to the following argument (*Hypotrochoid*, 2017). Those in 3D are related to knots (as highlighted below with respect to Celtic knots).

Cognitive specialization as negligent subdivision of a global wave: The argument has focused on the baseball curve as it so

obviously features on the baseball. Mathematically, as noted, there is a generalization of such curves which has more fundamental implications for this argument (Dean Allison, et al, *Generalized Baseball Curves: Three Symmetries and You're In! Loci*, MAA Mathematical Sciences Digital Library, September 2008, Article ID 2866). Curiously this could be understood as conforming "problematically" to the slogan of the UN Earth Summit of 1992: *Think globally, act locally*. The difficulty is that "acting locally" is only questionably related to "thinking globally", so that slogan resolves into "thinking locally" through specialized disciplines, with little ability to "act globally" -- as the unfruitful global strategies since that time have demonstrated only too clearly.

The animations above can be used to clarify the argument further since the baseball curve, as commonly recognized, is only apparent as a phase in a complex pattern of global wave movement which is both attractive and relatively easy to comprehend. It is however difficult to represent satisfactorily in two dimensions as the technical inadequacies of the animations make evident. It would be preferable to develop the animations further by variously colouring portions of the curve in the course of their transformation, most obviously by distinctively colouring portions of the curve between [points of inflection](#), and whether on the visible face of the sphere or behind it (if the sphere is rendered transparent, as shown above). More challenging is the possibility that some relevant global insights might only be evident in curves on a [four-dimensional sphere](#).

Such colouring would then offer a means of exploring how different specialized disciplines are effectively associated with portions of lines coloured differently -- irrespective of how the line encompasses the globe through its continuity. The apparently elegant patterns highlighted in the animations could then prove to be formed by distinctive disciplines which may be formally disconnected in institutional terms. How the patterns could be understood as framing domains on the surface of the globe (in terms of spherical geometry) would then be of interest (as argued with respect to the [Pentagramma Mirificum](#)). More problematic is the sense in which the elegant coherence of many of the patterns is only perceptible through the transparent sphere -- the "back" portion being otherwise invisible (as may be explored with the interactive models). This offers useful clues to the nature of complementarity in a global context.

Appreciating the global significance of the "generalization" of the baseball curve is also complicated by the fact that this generalization is only rendered comprehensible by changing a value (typically represented by "c") in the equation defining the curve (as is evident in the x3d or vml models with use of a slider). Of particular relevance are the extreme conditions when $c=0$, for the curve then appears as a straight line from some angles, but is in reality a circle around the globe, as seen otherwise. As it normally appears on a baseball, the curve corresponds to a value for c greater than 0.95 (approximately, but less than 1). The 3 animations on the left above derive from mutually orthogonal perspectives of the sphere with changing values of c. Missing is any understanding of the psychosocial significance of all three parameters defining the form of such generalized curves.

Especially intriguing in relation to this argument is the condition when $c=1$, as illustrated in the animation on the right above. The elements of the curve, normally apart in the curve as it appears on a baseball, then touch (recalling the expression "kiss touch", as used by Buckminster Fuller with respect to the tensegrity structure of a geodesic dome). In this condition the surface of the globe is divided into a pattern of what appears as four contiguous "hearts": two "upright" and two "inverted". The configuration is one of the simplest forms of [clelia curve](#) and is recognized as the limit case of the seam line on a ball (Robert Ferréol and Jacques Mandonnet, *Clelia*, 2018). A polar view of this is perceived as a [Quatrefoil curve](#), otherwise recognized as a four-leafed clover (Robert Ferréol, *Quatrefoil Curve*, 2017).

Although those "heart" patterns are seemingly not [cardioids](#) in the technical sense, they invite further exploration in the light of the insights of [Edward Haskell](#). into a "coaction cardioid", as discussed separately (*Cardioid Attractor Fundamental to Sustainability: 8 transactional games forming the heart of sustainable relationship*, 2005).

Consensus protocols: In the literature of multi-agent control systems, problems involving the coordination of a team of agents such as flocking, swarming, etc., are referred to as consensus problems, and the underlying control strategies enforcing team coordination are commonly referred to as consensus protocols (Benjamin Kowatscha, *Consensus Protocols: a key to cluster management? Computer Science Blog*, 17. March 2019). As remarkably discussed by [Panagiotis Tsiotras](#) and Luis Ignacio Reyes Castro (*The Artistic Geometry of Consensus Protocols*, 2014), the authors show with many illustrations how elaborate patterns that are closely related to trochoidal curves can be generated as the paths followed by a team of interacting agents moving on the plane:

Consensus problems have been extensively used for many years in the area of distributed computing and management science. Their recent popularity in the controls community stems from their utilization in formulating and solving a variety of multi-agent, mobile network problems... we propose a generalization of the standard consensus algorithm used widely in the literature... and we show how this algorithm can be utilized to generate intricate geometrical patterns for the ensuing agent paths. Using minimal assumptions, the proposed feedback control is able to generate geometric patterns for the agent trajectories that go beyond formation-type geometric models, which deal mainly with identical agents in cycle pursuit.... As a direct consequence of the proposed extended consensus protocol... we particularize this control law to the case of periodic and quasi-periodic pattern generation, and show how it can be used to generate elaborate, esthetically beautiful patterns

This approach is potentially of great relevance to the challenges of governance understood in global terms.

From sports visors to hypervisors: enabling global governance otherwise?

Symbolism: This argument derives from the form of the baseball cap -- a soft cap with a rounded crown and a stiff bill projecting in front. There is some confusion with regard to the terminology, since the bill may be named as a brim or a visor. Related headgear is described as a sports visor (as noted above). As the national pastime, baseball is recognized as a national symbol (*A Complete List of National Symbols of the United States*, *Science Struck*).

Much creativity is associated with the symbols, logos and messages on the rounded crown. Such use recalls the heraldic function of shields and other emblematic devices in offering and promoting a sense of individual and collective identity.

It is less evident whether the baseball cap as such is to be recognized as a symbol of freedom, although the [Phrygian cap](#) has figured widely in US iconography and was a traditional symbol of liberty -- but is no longer worn or esteemed as such.

To the extent that the baseball cap is indeed a symbol of freedom by association with the game, irrespective of the logos it may bear, the question here is whether the freedom it symbolizes is especially constrained in any way by its very form. The argument suggests that the freedom it exemplifies may be only a quarter of the freedom with which a global system is potentially associated. The effective exclusion of women and others would be consistent with that argument.

Designers have long recognized that shapes convey a meaning (Catherine Beyer, *Geometric Shapes and Their Symbolic Meanings*, *Learn Religions*, 8 July 2019; Steven Bradley, *The Meaning Of Shapes: developing visual grammar*, *Vanseo Design*, 5 April 2010; Carrie Cousins, *The (Sometimes Hidden) Meaning of Shapes*, *Design Shack*, 12 May 2015; David Fontana, *The Secret Language of Symbols: a visual key to symbols and their meanings*, Chronicle Books, 2003; *The Psychological Meanings Behind Familiar Shapes (And How to Use Them)*, *Shutterstock*, 20 November 2015).

The question here is how the symbolism of the baseball cap is used (or misused) in order to advance a particular agenda as would be a normal feature of [memetic warfare](#) and propaganda (*Missiles, Missives, Missions and Memetic Warfare: navigation of strategic interfaces in multidimensional knowledge space*, 2001; *Information warfare as predominant feature of future civilization*, 2019).

As variously implied above the baseball cap could be recognized as a pattern within a complex of patterns, whether or not it is at its nexus. The [baseball diamond](#) features in one such exploration (Richard C. Crepeau, *Baseball: America's Diamond Mind*, University Presses of Florida, 1980). That framing has been adapted to [Diamond Mind Baseball](#) -- a computer baseball simulation game. This offers a curious degree of allusion to [Diamond Way Buddhism](#) (Rob Nairn, *Diamond Mind: a psychology of meditation*, Shambhala, 2001).

Potentially more fundamental is the symbolism associated with the central role of baseball's pentagonal home plate -- most obviously given that associated with the global role of [The Pentagon](#) as the headquarters of the US Department of Defense. That pattern is curiously fundamental to Islam through the [Islamic star](#), to Chinese culture through the *Wu Xing*, and to the Western tradition of health through [Hygieia](#) (*Memorable dynamics of living and dying: Hygieia and Wu Xing*, 2014). Is there an extraordinary dimension to players "running the diamond" to get to home plate?

Fashion accessories: It is therefore to be expected that the capacity to carry significance in this way should be complemented by other fashion accessories. This is indeed the case with respect to the wide range of jewelry variously indicating affiliation to the pattern of belief associated with baseball -- whether for women or for men. However, whereas this argument focuses on the significance of the baseball curve (and its tennis-ball equivalent), it is curious to note that these do not feature significantly in that range of baseball-themed jewelry.

Strangely it is the detailed stitching of the baseball seam which is most evident in that jewelry, with little evidence of any focus on the pattern of the curve as a whole. Most evident are baseball seam bracelets highlighting a portion of that stitching pattern, but not the curve -- potentially recalling widespread concerns with a "stitch-up" in American culture. The stitching pattern may even feature on wedding rings. By contrast, tennis-themed jewelry may occasionally focus more specifically on the tennis-ball curve -- but as an "S-curve" -- as one of the curves which feature in ring design for mathematicians (or their spouses). The three-dimensional sweep of the twisting curve is however scarcely evident.

A notable exception is the reference to bicylindrical curves, and their use by the Swiss jeweller [Philippe Mingard](#) (Robert Ferréol, *Bicylindrical Curves*, 2018; *Archytas Curve*, 2018; *Seam Line of a Tennis Ball*, 2018). As the first nonplanar curve, described by [Archytas](#) (428-347 BC), the latter features more commonly in mathematical jewelry. As quoted by Ferréol, Mingard deems the curve to be the "the manifestation of simplicity and purity incarnate". For American baseball enthusiasts with an inclination to Christian mysticism, the bicylindrical form of the curve could similarly be recognized as "binding" the transcendental juncture of the vertical and horizontal arms of the Cross.

Curiously there seem to be no depictions of transparent balls enabling the fall sweep of the curve to be highlighted. The many "transparent baseball" images available refer to the transparency of the background (enabling superposition for illustrative purposes). It is rare to find sculptures presenting the curve in free-standing isolation. However, given the many baseball and tennis clubs with entertainment facilities, for which focal symbols are sought, it could be readily imagined that a transparent ball of whatever size could be featured as a water-effect, rotated as is the practice with some fountains.

Curves: Mathematicians cultivate a particular interest in curves (*List of Curves*, *Wikipedia*; *Gallery of Curves*, *Wikipedia*; *List of Famous Curves*, *Mathematica*; Stephen Kokoska, *Fifty Famous Curves*). As with mathematical symbols, these may feature in jewelry and on baseball caps. As noted, this is seemingly not the case with regard to the curving seam of the baseball. This does not even feature explicitly in the lists of curves, despite its importance to mathematics in the [tennis-ball theorem](#) (*Is there a neat way to write the parameterization of this tennis-ball-seam-like curve on the sphere?* *Mathematics Stack Exchange*). It would appear that as a "theorem" it has not justified inclusion in any compendium of curves. More curious is that the only reference to a "baseball curve" in such a list focuses on a ballistic issue.

Of potentially far greater relevance is the manner in which **the baseball curve is fundamental to enabling the creation of a spherical form from flat materials** -- a shift in modality from "flatland" to "sphereland". Irrespective of its relevance to meaningful globalization, this has long been a speculative focus of mathematicians (Edwin Abbott Abbott, *Flatland: A Romance of Many Dimensions*, 1884. Ian Stewart, *The Annotated Flatland: A Romance of Many Dimensions*, 2008; Dionys Burger, *Sphereland: A Fantasy About Curved Spaces and an Expanding Universe*, 1965).

Xen curve? Unlike other curves, the "baseball / tennis-ball curve" does not seem to have a name -- although seemingly included in the class of bicylindrical curves. However a ring closely resembling that curve is produced by a specialist in [wave-inspired jewelry](#) -- and has been named as a [Xen curve ring](#) (designed by Lillian Grace). Further exploration pointed to the existence of [Xen](#) as a type of "hypervisor". This little-known software application enables the simultaneous creation, execution and management of multiple [virtual machines](#) on one physical computer ([Xen Project Software Overview](#), [Xen Wiki](#); [Xen Performance Guide](#); [Xen Hypervisor](#), [Technopedia](#)).

However the only reference to any "Xen curve" found in the associated literature featured in a paper by Michael Sevilla, et al ([A framework for an in-depth comparison of scale-up and scale-out](#), November 2013) where it was only noted that: *the Xen curve is the time to perform one checkpoint, not a fault tolerant Xen word count*. How this might be construed as descriptive of the ring of that name, or of the baseball curve, is unclear.

This may therefore be a case of *se non è vero, è ben trovato*, for what is intriguing is the suggested relation to a "hypervisor" -- to be speculatively contrasted with the "visor" of a baseball cap and its various implications with regard to any "flatland" worldview. The latter featured in the prize winning work by [Thomas Friedman](#) ([The World Is Flat](#), 2005; [Hot, Flat and Crowded](#), 2009), as subsequently reviewed ([Irresponsible Dependence on a Flat Earth Mentality -- in response to global governance challenges](#), 2008).

This argument is further developed with animations in [Re-membering the Globe from a Flatland Perspective: reconciling in 3D the Vitruvian archetype with sports ball curves](#) (2020).

Beyond hegemony: requisite hypervision for global governance? Baseball culture, as exemplified in its symbolic appropriation by Donald Trump, is characterized to a high degree by verbal "hype", as widely noted. This has framed the quest within that culture for global hegemony, as variously noted. This could be understood as taking the form of "supervision" to be exercised in the future by a self-selected superpower -- through the perspective implied by a baseball cap, as argued here.

However, rather than the ambiguity of "oversight" currently associated with "supervision" -- with all the negligence such oversight typically implies, there is a case for recognizing the insight that "hypersight" might offer ([Ambiguity of "democratic oversight": institutionalisation of negligence?](#) 2013; [Enabling oversight through simulation of requisite complexity](#), 2013).

The subtlety of a "hypervisor" in potentially enabling "hypervision" and "hypersight" is indicative of a paradigm shift already embodied by computer technology. As the capacity to enable the operation of multiple forms of virtual organization within a single physical form, it could be understood as effectively simulating what has been so desperately imagined as a requisite modality for global governance. As such it is a practical reflection of the elusive insight into the desirability of unity-in-diversity or diversity-in-unity.

Such a paradigm shift is an invitation to speculative elaboration ([Hyperaction through Hypercomprehension and Hyperdrive: necessary complement to proliferation of hypermedia in hypersociety](#), 2006; [Imagining Order as Hypercomputing: operating an information engine through meta-analogy](#), 2014). What "physical" form might such a psychosocial analogue take in order to enable the coexistence of a variety of "virtual" modalities -- as could be explored in the light of the eight modalities of [Gareth Morgan](#) ([Images of Organization](#), 1986). Could an appropriate legal framework be elaborated in the light of reflection on [variable institutional geometry](#)?

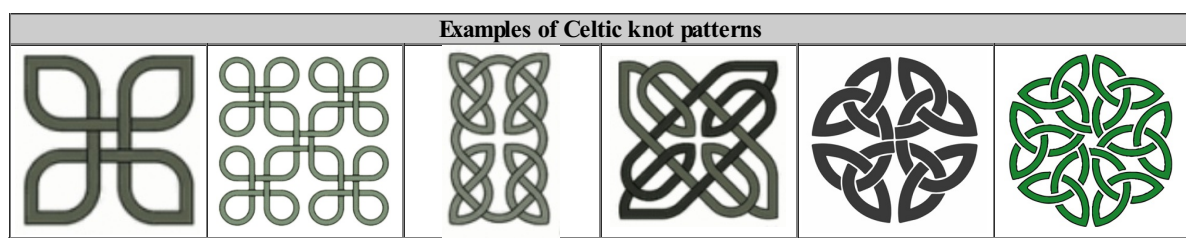
A paradigm shift of that nature clearly requires new forms of vigilance, since it is associated with the increasing role of artificial intelligence and the recognized threats of a [technological singularity](#). Is it only artificial intelligence which would be capable of "hypersight" and "hypervision"? Problematically, global hegemony might even take a new and subtler form ([Emerging Memetic Singularity in the Global Knowledge Society](#), 2009). Ironically this is potentially suggested by the form of the baseball curve as a whole. **Will AI exploit a capacity for pitching "curveballs" to which humanity will be unable to respond?**

Any capacity to shift from the limited perspective of the "front quarter" of that curve (and of the global system) such as to encompass those portions associated with the "back of the head", could then be caricatured as offering a stereoscopic "META" modality in contrast with the oversimplistic "MAGA" modality currently the focus of hyperbole. This could be potentially consistent with the "[wei ch'i](#)" strategy indicated above, which features so fundamentally in the Chinese game of go -- currently a preoccupation of artificial intelligence.

Focusing on the baseball curve as a waveform in such a paradigm shift would be consistent with the argument of [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), as discussed separately ([On being "walking wave functions" in terms of quantum consciousness?](#) 2017).

Arguably the seam curves of the tennis ball and the baseball are particular instances of curves of fundamental significance to future wave comprehension of the globe -- of which sinusoidal waves in 3D are especially indicative ([Robert Ferréol](#), [Spherical Simusoid](#), 2018).

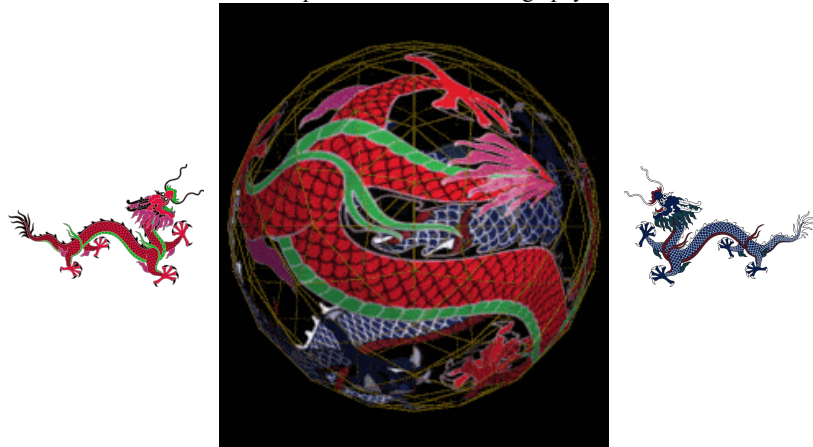
Hypervision as traditionally represented? Despite its seeming complexity, it is therefore especially curious to note that the form of a single baseball / tennis-ball curve features in the simplest traditional [Celtic knot](#) designs -- symbols of great significance to that culture ([The Celtic Knot Symbol and Its Meaning](#), *Mythologian*, net). The patterns, although two-dimensional, do explicitly indicate their three-dimensionality through the interwoven nature of the representation as a whole.



There is a case for exploring how such patterns in 2D could be pulled into a third dimension -- into approximations to a spherical form -- then to be confronted with configurations of one or more 3D variants of the baseball seam curve (Lee Stemkoski, *Parameterized Knots*). The process of comparison could be reversed by "flattening" those 3D baseball configurations into 2D. Might it indeed be the case, as implied by the argument above, that a baseball cap perspective can only "see" one quarter of the global configuration implied by a Celtic knot?

Given the schematic indication by the baseball curve of a cyclic process fundamental to engendering and sustaining globality, there is a case for recognizing analogous representations of that same process in other cultures. A classic example is offered by the depiction in Chinese culture of a **pair of dragons in competitive pursuit of a pearl** -- notably celebrated in architecture and dance. The dragons have long featured weaving undulating patterns on carved puzzle balls (Claire Voon, *The Mind-Boggling Artistry of China's Ivory Puzzle Balls*, *Atlas Obscura*, 3 May 2019; *Chinese Puzzle Balls: the Rubik's Cube of the Ancient World*, 2012). Their depiction on a sphere can now be variously emulated in virtual reality using 3D technology (*Rotation and pumping of nested Chinese "puzzle balls" as symbolizing "worlds-within-worlds"*, 2015).

2 Dragons in pursuit of Pearl-Sphere
an adaptation of Chinese iconography



Generated using [Stella Polyhedron Navigator](#) using dragons depicted in *Wikipedia*

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