



laetus in praesens

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Global Civilization through Interweaving Polyamory and Polyanimosity?

Loving/Hating the world otherwise through contractual bonding with any significant other

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Introduction

Much is currently made of same-sex marriage as a breakthrough in the legality of consensual bonding between those of the same gender. The matter remains highly controversial, as with issues of divorce, contraception and abortion. Individually they are all potentially the focus of a national referendum of some kind. With respect to same-sex marriage, examples include: *Australian Marriage Law Postal Survey*, 2017; *Croatian constitutional referendum*, 2013; *Irish same-sex marriage referendum*, 2015; *Slovak same-sex marriage referendum*, 2015; *Slovenian same-sex marriage referendum*, 2015. The issue typically proves highly divisive (*Same-sex marriage in France*, 2013), whether or not it has been formally recognized in the various countries in which it is debated (*Status of same-sex marriage*).

As noted by *Wikipedia*, in a [summary of the situation by religious institution](#), some recognize same-sex relationships to some degree but may avoid using the terms "marriages" or "weddings", and instead call them "blessings" or "unions." The concern here is whether the debate has been too narrowly focused in response to the legitimate concerns of the Lesbian, Gay, Bisexual, and Transgender communities and active [LGBT](#) advocacy (*LGBT rights by country or territory*). These notably focus on the civil rights of partners in the event of divorce or death.

The question explored here is whether the nature of any bond in contractual and symbolic terms could be more fruitfully extended to any form of elective affinity deemed in some way to be a "significant other". Use of "elective affinity" is usefully inspired by the much-cited novel in German of [Johann Wolfgang von Goethe](#), (*Elective Affinities*, 1809), otherwise translated as "kindred of choice". For Goethe, as noted by *Wikipedia*, the title is taken from a scientific term once used to describe the tendency of chemical species to combine with certain substances or species in preference to others.

Goethe's novel is based on the metaphor of human passions being governed or regulated by the laws of chemical affinity, and examines whether or not the science and laws of chemistry undermine or uphold the institution of marriage, as well as other human social relations. A more general argument of this nature has been made by [Johan Galtung](#) (*Chemical Structure and Social Structure*, 1977; *Structural Analysis and Chemical Models*, 1977).

With respect to the exploration here, the question is to what extent the debate could be reframed to include the bonds which a human being can form with an animal (most notably a pet), a place (most notably a home), a vehicle (most notably an automobile or motorbike), a weapon (most notably a sword), or even a plant (most notably a tree). The latter example recalls the sense in which a tree, a river, or a mountain can be deemed especially significant for a community -- if not held to be sacred in some way, as with the tradition of [sacred](#)

groves.

Any sense of being sacred raises the question as to how this subtle understanding may be experienced or claimed by an individual or community in relation to an animal. This has traditionally been the case with respect to [totem animals](#), for example -- a significance now attributed in some cases to mascots, most notably by sports teams and military regiments (*Religious symbolism in U.S. sports team names and mascots; Military mascots*).

Whether by custom or by law, this subtle bond is variously recognized, with respect to [sacred natural sites](#), whether [sacred rivers](#), [sacred rocks](#), [sacred mountains](#), or [sacred trees](#) (*New Zealand gives Mount Taranaki same legal rights as a person, The Guardian*, 22 December 2017; *Elven safety: the rocky homes of Iceland's 'hidden people', The Guardian*, 25 March 2015). In Australia it is notably recognized by the indigenous peoples with respect to "[songlines](#)". Another manifestation of this bond may be recognized and celebrated in the relation of a person to a group, whether a student [fraternity/sorority](#), a team, a military regiment, or a corporation.

The term "marriage" is readily applied to some of these bonds -- whether in the bond with a team, a vehicle, or a companion animal. Some may notably consider themselves married to the institution by which they are employed. As noted by PETA:

Many people consider their animal companions to be part of the family, so it's no surprise that they want to take their furry friends along with them on vacations. Tens of millions of animals make journeys with their guardians within the U.S. every year. Vacation packages are being designed around animals and their guardians (*Traveling With Companion Animals*)

If Goethe's "elective affinities" can indeed be translated as "kindred of choice", there is then the intriguing more general question as to whether the multiplicity of such bonds in which a person may be engaged can be understood in terms of [polyamory](#). Understood more generally as "consensual, ethical, and responsible non-monogamy", there is nevertheless confusion in its interpretation, especially given its focus on bonds between humans only and those of a sexual nature (*Terminology within Polyamory; Glossary of Poly Terms*). Is there a sense in which the psychosocial "contract" between an individual and features of the world of experience deemed significant can be understood as "loving the world" -- but radically otherwise?

Might this reframing offer a new approach to engagement with the environment as a whole at a time when this is increasingly subject to challenge -- much as is the institution of conventional marriage? In terms of the metaphorical implications, how then to explore [polygamy](#), [polygyny](#), [polyandry](#) and [promiscuity](#)? What might then be the wider implications of "divorce", "contraception" and "abortion"?

This exploration follows an earlier discussion of *Marrying an Other whatever the Form: reframing and extending the understanding of marriage* (2013).

The more general concern here is with "polyamory" as a new paradigm with cognitive implications -- rather than with the specifically sexual preoccupation of a number of published titles on that theme. In a global culture in which the possibility of a genuinely [multipolar](#) distribution of power has been envisaged, the contrast with unipolar and bipolar conditions merits reflection.

If the aspirations to "peace" are most fruitfully associated with multipolarity, how might this be informed by insights into polyamory or polyempathy in contrast with tolerance? What then of the opposite condition of mutual alienation, increasingly obvious at the present time, but which as yet goes unnamed -- perhaps "polyanimosity", "polyhatred", "polyodium", or "polyantipathy"?

"Marrying" an "other" whatever the form

The concern here necessarily goes beyond the earlier argument (*Marrying an Other whatever the Form*, 2013). This included the following sections:

- [Recognized criteria of marriage](#)
- [Marriage more inclusively understood](#)
- [Marriage more inclusively understood: commentary](#)
- [Questionable criteria of marriage](#)
- [Subtler insights into the "chemistry" of the marriage bond](#)
- [Ionic marriage versus Covalent marriage?](#)
- [Bonding with an "other" articulated through the language of molecular bonding](#)
- [Complementary languages required for articulation of human bonding](#)
- [Extending understanding of the "other" as a potential partner](#)
- [Extending the family of "family values" -- wisely](#)
- [Enabling the other to be otherwise](#)

The reference there to "chemistry" features in jargon regarding relationships and sympathetic bonding -- as with other metaphors of mutuality. That discussion includes the following paragraph:

Of suggestive interest is therefore the classic text *Chymical Wedding of Christian Rosenkreutz* (*Chymische Hochzeit Christiani Rosenkreutz anno 1459*), edited in 1616 in Strasbourg. Its anonymous authorship is attributed to [Johann Valentin Andreae](#) (cf. *The Chemical Marriage*,). It is recognized as embodying a wealth of symbolic meaning, much valued by the mysterious "Fraternity of the Rose Cross" (Rosicrucians). As a metaphor, the symbolic marriage -- the [sacred marriage](#) between sun and moon -- was the focus of the last work of [Carl Jung](#) (*Mysterium Coniunctionis*, 1963). Jung argued that the stages of the alchemists, the blackening, the whitening, the reddening and the yellowing, could be taken as symbolic of individuation -- his

favourite term for personal growth. There is extensive literature on the symbolism of an "alchemical marriage" from various perspectives (cf. Ibn al'Arabi, *The Alchemical Marriage of Intellect and Soul*).

Missing however is any sense of the varieties of bond which humans can experience with other features of their environment. The bond with particular animals constitutes a powerful example for some -- well-illustrated by iconic movies such as *The Horse Whisperer* (1998) or *Dances with Wolves* (1990).

Given the mystique of "marriage", also missing is the sense in which any such non-human "other" participates in some kind of reciprocal manner in the formation of the bond. What indeed is the "resonance" associated with such reciprocity? In the case of an animal, those with such a bond are typically vigorous in their inferences in that regard. A companion animal is felt to be a companion animal for such reasons. A pet goldfish is clearly a challenge to any such subtle interpretation -- but dismissal of all significance attributed in that case calls for careful reflection, given the importance associated with such fish in the light of the principles of *feng shui* (Victor Cheung, *Benefits of Keeping a Fish Tank and the Science and Feng Shui Behind It*, *Feng Shui Nexus*, 2 February 2018).

Many human marriages can of course be deprecated as being unilateral to a problematic degree. This does not however call into question the contractual dimension of such a bond -- even in the most unromantic relationships. More intriguing is the nature of the reciprocity imbued in a relationship with an inanimate feature of the environment -- most obviously an automobile.

This reciprocity is notably inferred by naming the vehicle and framing its quirks through [anthropomorphism](#), irrespective of how this may be deprecated as superstition by sceptical observers. This bond has featured in movie depictions of the relation between a decrepit steam engine and its driver, only too familiar with its failings and its fading potential. Any sceptical observation is of course readily applied to observation of those "in love" -- however successful they are in embodying their relationship contractually.

Promiscuity, "domestic abuse", alienation and divorce

These terms merit exploration as metaphors of the nature of potentially problematic bonds between one human and what are variously categorized as "others" in the environment.

As noted in the earlier discussion, it is of course the case that the Western counter-culture has explored relationships of varying duration -- even [one-night stands](#) -- possibly held to continue over years as bonds of special friendship or elective affinities. Framed in contractual terms, a contracted relationship may be understood to hold for the briefest of periods to the lifetime of the individual and beyond (as in the case of blood feuds between families). An individual could be usefully recognized as having a highly promiscuous relationship with whatever is framed as an "other" -- whether humans, animals or objects. People switch readily among a set of multiple cognitive bonds, whatever the significance imbued in them in the moment -- and however they are reciprocated or held to be so.

The point is well made in a line of the iconic song *Cause*, by [Sixto Rodriguez](#) (*Coming from Reality*, 1971): *I make 16 solid half hour friendships every evening*.

Any brevity in bonding is of course matched by frequency of "divorce" -- usefully recognized in cognitive terms. Rather than a marriage contract holding "until death do us part", there is "dissociation" following an emerging sense of alienation from the other. It is however the case that a bond may indeed be recognized over a lifetime, most notably in the case of bonds of honour and respect. These are exemplified by the Japanese understanding of *giri* -- otherwise found in the lifelong bonds between members of secret societies and those who have shared a traumatic experience.

Alienation from nature has long been widely deplored (Richard Joseph Doherty, *The Alienation of Humans from Nature: media and environmental discourse*, 2015; Steven Vogel, *Alienation, Nature, and the Environment*, *MIT Press Scholarship Online*, January 2016). This could be explored cognitively as a form of "marital violence" or "domestic abuse" -- with its implications for "intercourse" ("*Human Intercourse*": "*intercourse with nature*" and "*intercourse with the other*", 2007). Given current interest in harassment, this also merits exploration in such terms (*Beyond Harassment of Reality and Grasping Future Possibilities: learnings from sexual harassment as a metaphor*, 1996).

Polyamory: polygamy, polyandry and polygyny

These terms merit exploration as metaphors of the nature and possibility of multiple bonds between one human and what are variously categorized as "otherness" in the environment.

The term polyamory reframes and conflates the contractual distinction between "husbands" and "wives" in order to emphasize the bonding as being one of "lovers". Similarly polyanimosity would reframe the "anti-bond" characteristic of the breakdown of the pattern of bonds sustaining community, as recently argued with respect to the USA by Umair Haque (*Why We're Underestimating American Collapse: the strange new pathologies of the world's first rich failed state*, *Information Clearing House*, 15 February 2018).

The literature on polyamory relevant to the following argument is reviewed in depth by [Jorge Ferrer](#) (*Beyond the Non/Monogamy System: fluidity, hybridity, and transcendence in intimate relationships*, *Psychology and Sexuality*, 9, 2017, 1, pp. 3-20; *Mononormativity, Polypride, and the "Mono-Poly Wars"*, *Sexuality and Culture*, 2018). The focus there, as in the literature on polyamory, is however on the bonding between humans rather than on the extension to other "others". The concern there with "beyond" in relation to such bonding offers remarkable insights into transcendence of the currently constrained understanding which could be extended to the focus of this argument. As he concludes in the first study:

In order to overcome the non/monogamy system and associated mono/poly binary, in this article I have mobilised the notion of the "third" [as] that which questions binary thinking... through the discussion of three plural relational modes: fluidity, hybridity

and transcendence. Mindful that some may prefer to avoid any categorisation to refer to nonbinary or transbinary relational modes, I have nonetheless coined the term *nougamy* for existential (i.e. providing self-identity and belonging), enactive (i.e. the 'bringing forth' of novel experiential realities) and communicative reasons.

In contrast to Ferrer, the focus here is however with encompassing both love/like and hate/dislike with respect to experiential bonds in addition to those between humans. Given Ferrer's review of the mutual deprecation of humans in the "mono-poly wars" -- an exemplification of binary cognition -- the question here is whether the mutual dislike of those warring perceptions can itself be encompassed by an interweaving of polyanimosity with polyamory.

"Cognitive polygamy": In its simplest form, an individual can be understood as having a "polygamous" relationship with the features of the environment, whether the bonds are understood as permanent or of varying duration -- recognized by some form of contract or not. Irrespective of the legal connotations, any bond can usefully be considered as a form of contract. This is notably exemplified by the phrase: *my word is my bond*.

More challenging is the distinction between the metaphors offered by polygyny and polyandry. The first refers to the case of a single man having multiple wives; the second to the case of a single woman having multiple husbands. These are distinct from **polygynandry**, the mating system of some animals in which both males and females have multiple mating partners during a breeding season.

"Cognitive lovers": In the context explored here, it is this sense of "lover" which calls for careful consideration, especially given the variety of "others" with which a person can engage.

Obvious criticism of this argument is that it implies a case for:

- **bestiality** -- to the extent that a human may claim to "love" their dog or horse, for example, and to be "loved" by them. That implication clearly only holds in the smallest percentage of cases, as owners of companion animals would vigorously claim. Understood as a bond with sexual implications, the **Kinsey reports** rated the percentage of people who had sexual interaction with animals at some point in their lives as 8% for men and 3.6% for women, and claimed it was 40-50% in people living near farms -- estimates that have been disputed.
- **fetishism** -- to the extent that a feature of the environment, whether natural or man-made, is held to have supernatural powers and to have power over others. It can be described as the **emic** attribution of inherent value or powers to an object. However deprecated conventionally, the characterization could be applied to whatever is held to be of value with which one has a bond of some duration
- **animism** -- understood as a religious belief that objects, places and creatures all possess a distinct spiritual essence.

"Cognitive participation": Much more interesting is the sense in which people may claim to "love" nature in all its many forms -- and to experience a bond with those forms, however subtle. The question would be how this is to be distinguished from what is deprecated as "animism" -- or perhaps rather the cognitive significance to be attributed to the experience of "objects, places and creatures" possessing a distinct "spiritual essence". A valuable pointer toward such insight is the **participatory theory** elaborated by various authors to bridge the subject-object distinction:

- through the reappraisal of animism as a complexly nuanced and uniquely viable worldview, as first proposed by **David Abram** (*The Spell of the Sensuous: perception and language in a more-than-human world*, 1996). Human cognition is then understood as the dynamic sentience of the body while affirming the ongoing entanglement of our bodily experience with the uncanny sentience of other animals, encountering the same world from an outrageously different angle and perspective.
- extensively discussed by cultural historian **Richard Tarnas** (*Cosmos and Psyche*, 2006), and held to have been originally proposed by **Goethe**
- from a transpersonal perspective, transpersonal phenomena are understood as participatory and co-creative events as variously articulated by **Jorge Ferrer** (*Revisioning Transpersonal Theory: a participatory vision of human spirituality*, 2002; *Participation and the Mystery: transpersonal essays in psychology, education, and religion*, 2018) and notably with Jacob Sherman (*The Participatory Turn: spirituality, mysticism, religious studies*, 2009)
- from a psychoanalytical perspective, as a means of fostering clinical pluralism, a participatory understanding has been promoted by **Robin S. Brown** (*Psychoanalysis Beyond the End of Metaphysics: thinking towards the post-relational*, 2017)
- in terms of ecological philosophy, a related understanding has been articulated by **Henryk Skolimowsky** (*The Participatory Mind: a new theory of knowledge and of the universe*, 1994).

Such arguments can be explored as modes of embodying the perceived environment (*Psychology of Sustainability: embodying cyclic environmental processes*, 2002).

"Cognitive polygyny" as "likes"? The cognitive subtlety to which the above authors refer can be usefully considered as somewhat analogous to widespread understanding of "likes" -- as a feature in communication software such as social networking services, Internet forums, news websites and blogs. There the user can express that they like, enjoy or support certain content through use of a **like button**. It could have been termed a "love button" -- given the degree to which like and love tend to be synonymous in that context.

In the case of the **Facebook like-button** (often a "thumbs-up" icon), once clicked by a user, the designated content appears in the **News Feeds** of that user's friends. This could be seen as an expression of the number of "loves" with which the originator has been associated, however briefly. In contrast to "like", Facebook has recently endeavoured to enable users to distinguish between 5 kinds of "reaction". These now include "love" (*Facebook Reactions Now More Important Than Likes*, *Search Engine Journal*, 1 March 2017). Reactions are held to indicate a deeper level of engagement. "Love" is reported as being the most popular reaction.

Whilst less use is made of a dislike-button (typically a "thumbs-down" icon, it is intriguing to note the long history of the two **thumb**

signals, ironically dating back to popular indication of whether those in a gladiatorial arena in Ancient Rome should be allowed to live or die.

"Cognitive polyandry" as "liked"? Using this analogy, the consequence of use of the Facebook like button is that it also results in the display of the number of other users who have "liked" the content, with a full or partial listing of them. Understood as a "love button", this can be considered as the number of "lovers" which that person has attracted.

In this respect, the top ranked with respect to the number of "lovers", in the light of Facebook rankings, typically include musicians, athletes and actors -- for example, Cristiano Ronaldo (122,564,834) and Eminem (89,602,779). An equivalent pattern is evident in the case of academic papers with, for example, the *The Magical Number Seven, Plus or Minus Two* (*Psychological Review*, 1956) by George Miller being recognized as one of the most highly cited papers in psychology.

Closer to the sense of polyandry is the indication in social media of the number of "followers" which a person attracts (but not those repelled).

"Cognitive polygynandry"? The nature of social media is such that an individual is both at the originating nexus of a pattern of multiple "likes" (as a "liker" / "lover") and a receiving nexus of multiple "likeds" (as "beloved"). This suggests a degree of analogy to polygynandry -- with individuals variously switching "gender" in the complex "mating system" enabled by computer technology. A "transgender" process of alternation of role merits recognition (*Alternating between Complementary Conditions -- for sustainable dialogue, vision, conference, policy, network, community and lifestyle*, 1983; *Metaphors of Alternation: an exploration of their significance for development policy-making*, 1984).

This "mating system" is of course comparable to that enabled by the network of citations made and received between academic papers -- and by implication between their authors. Controversially, this has long been the focus of [citation analysis](#) in order to determine the ranking of authors and the impact of their work. Missing however is the sense in which some in the academic environment may have the most intense dislike for each other -- to the point of being life-long mortal enemies.

"Cognitive polyamory" as mutuality and contractual relationship? Whether in the case of "likes" or "citations", there remains the question of "mutuality" and "reciprocity" -- as held to be fundamental to a viable love-enabled marital relationship. Arguably, for there to be a meaningful relationship, a "like" of A for B, should be matched by a "like" of B for A.

There is clearly considerable disparity in this respect. Many iconic figures are much "liked", possibly by numbers in the millions (as noted above). It is difficult for many to express large numbers of "likes" and to sustain them for any length of time. Statistics on Facebook users indicated that they generate **4 million likes** every minute, the average (mean) **number of friends is 338** -- both figures to be set against the estimated **81 million fake Facebook profiles**. Analogous data can be derived for academics through [citation analysis](#).

Should "loves" be considered equally disparate and temporary? Efforts at match-making in such a context are evident in proactive marketing by social media platforms making suggestions for "friends", "followers" and "contacts".

Varieties of love and like required for comprehension of polyamory

Given the importance attached to the experience, there is clearly a case for extensive exploration of the variety of forms of "love" which may be distinguished. These can be usefully related to any sense of "like", most notably as a matter of degree, intensity or intimacy, since they are readily treated as synonymous in practice -- as discussed in the following:

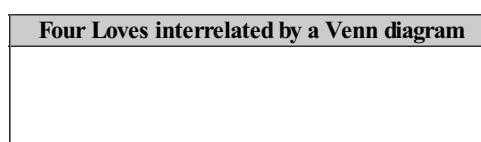
- *Difference Between Love and Like* (*Difference Between*)
- *What's The Difference Between Like And Love In A Relationship?* (*Elite Daily*, 14 July 2017)
- *What is the difference between liking and loving?* (*Quora*, 2016)

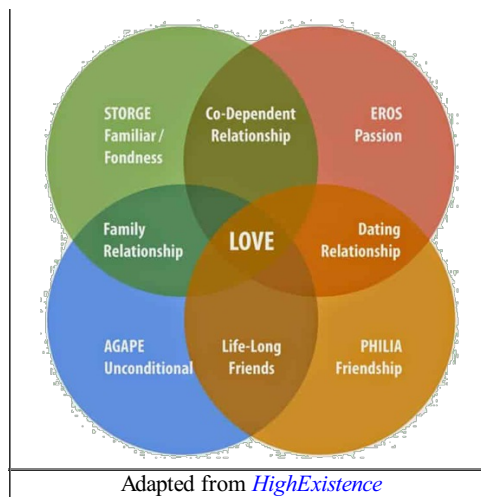
Personal interest in this topic dates from early recognition that people seemed to have to discover for themselves the variety of such forms -- in the absence of any meaningful systematic articulation (*An Approach to Systematic Classification of Interpersonal Relationships: conceived as essential to alternative life styles, social and personal transformation*, 1978).

Forms of love: If "love" is indeed to be understood as a form of contract, it is then of interest to distinguish between the various forms of love, as suggested by the following:

- Roman Krznaric: *The Ancient Greeks' 6 Words for Love -- And Why Knowing Them Can Change Your Life* (*Yes Magazine*, 27 December 2013)
- Mateo Sol: *8 Different Types of Love According to the Ancient Greeks* (*Lonerwolf*, 2016)
- Neel Burton: *These Are the 7 Types of Love ... and how we can ignore the most available and potentially fulfilling types* (*Psychology Today*, 25 June 2016)
- Gary Chapman: *The Five Love Languages: how to express heartfelt commitment to your mate* (1995)
- United Church of God: *The Different Kinds of Love Mentioned in the Bible* (*Beyond Today*, 8 December 2010)
- *The 4 Hidden Flavors of Modern Love and How They Radically Impact Your Relationships* (*High Existence*)

Unusually the last of these commentaries offers the following Venn diagram to clarify some of the distinctions made in those preceding it.





The indications above clearly do not take account of the understandings of other cultures and especially of the variety of [religious views on love](#) (Kovie Biakolo, *What Different Cultures Can Teach Us About Modern Love*, *Thought Catalog*, 12 February 2016; Brittany Kuhn, *Expressions of love displayed in different cultures*, *Daily Titan*, 7 February 2005; *10 untranslatable words about love from different cultures*, *Xpose*, 24 November 2017).

Degrees of love, liking and friendship: Also of relevance is the distinction of degrees or levels of love (and liking), with the suggestion of progressively greater depth, strength, elusiveness or intimacy. The distinction between love (possibly including sexual relationships) and friendship has been debated with limited resolution since Aristotle (Maria Popova, *The Science and Philosophy of Friendship: lessons from Aristotle on the Art of Connection*, *Brain Pickings*, 18 September 2011). The distinctions are readily conflated as implied by the argument of Karen Karbo:

The conventional wisdom is that we choose friends because of who they are. But it turns out that we actually love them because of the way they support who we are. (*Friendship: The Laws of Attraction*, *Psychology Today*, 1 November 2006)

The confusion is illustrated by the following -- potentially to be deprecated as a "mess" inappropriate to the crisis of the times:

- "Levels":
 - Genevieve Field: *The Seven Levels of Love* (*Glamour*, 31 October 2006)
 - Sally Kempton: *What Is Love? Understand the 3 Spiritual Levels of Love* (*Yoga Journal*, 28 August 2007)
 - Shan White: *Score Yourself on the Four Levels of Love* (*Divorce Magazine*, 1 November 2016)
 - Jamel Devon Bryant: *The 3 Levels of Love* (CreateSpace, 2016)
 - *Levels of love of neighbor -- Thomas Aquinas* (*Paths of Love*, October 2008)
 - *There Are 5 Levels of Love. Which One Are You On?* (*Power of Positivity*)
 - Abu Hakeem Bilal Davis: *The levels of love and infatuation* (*Salafi Sounds*, 22 March 2017)
 - Aaron L. Raskin: *Loving Your Fellow as Yourself: Five Levels of Love* (*Chabad*)
 - Maya Sayvanova: *What Is Love? How To Achieve Highest Levels Of Love?* (*Wisdom Times*)
 - Martin Luther King: *Levels of Love* (*Sermon Delivered at Ebenezer Baptist Church*, 16 September 1962)
 - *What are the four levels of friendship?* (*Institute in Basic Life Principles*)
 - Steve Schapell: *The seven levels of friendship* (18 April 2011)
- "Degrees":
 - Bill Gaultiere: *Four Degrees of Love -- Bernard of Clairvaux* (*Soul Shepherding*, 19 August 2013)
 - *Three Degrees of Love I Shall Tell Thee -- Richard Rolle of Hampole* (*Bible Hub*)
 - Archie Norman: *Does the Bible teach a hierarchy of love or are there degrees of love based on Matthew 22:37-38?* (*Henry Baptist Church*, 4 June 2013)
 - Andrew Kraebel: *Richard of St. Victor, On the Four Degrees of Violent Love* (*Academia.edu*)
 - Matt Asay: *Degrees of Friendship: Facebook, email, texting, IM, phone...* (*CNET*, 19 November 2017)
 - Lee Pitts: *Six Degrees of Friendship* (*Tri-State Livestock News*, 14 August 2017)
- "Stages":
 - Rayana Khalaf: *14 stages of love according to the Arabic language* (*Stepfeed*)
 - Jed Diamond: *The 5 Stages of Love: Why Too Many Stop at Stage 3* (*MenAlive*, 6 August 2015)
 - Harleena Singh: *10 Stages Of Love Relationship That Most Couples Go Through* (*Aha-Now*)
 - Olivia Goldhill: *The five stages of love: let's get real* (*The Telegraph*, 31 October 2014)
 - Cherie Burbach: *Stages of Friendship Development: different types of friends* (*Live About*, 29 September 2017)

Reconciling varieties and degrees of love/like: It would clearly be useful to explore the possibility of a spectrum of forms and varieties of love in relation to the degree or intensity of love, as suggested by the following indicative schema (for discussion purposes only).

| Reconciling degrees of liking/loving with varieties of liking/loving | |
|--|-----------------------------------|
| | Varieties / Forms / Types of Love |

| | | A | B | C | D | E | F | G | H |
|---------------------------------------|---|----|----|----|----|----|----|----|----|
| [Low] | 1 | A1 | B1 | C1 | D1 | E1 | F1 | G1 | H1 |
| | 2 | A2 | B2 | C2 | D2 | E2 | F2 | G2 | H2 |
| | 3 | A3 | B3 | C3 | D3 | E3 | F3 | G3 | H3 |
| | 4 | A4 | B4 | C4 | D4 | E4 | F4 | G4 | H4 |
| | 5 | A5 | B5 | C5 | D5 | E5 | F5 | G5 | H5 |
| | 6 | A6 | B6 | C6 | D6 | E6 | F6 | G6 | H6 |
| | 7 | A7 | B7 | C7 | D7 | E7 | F7 | G7 | H7 |
| Degree / Intensity of Liking / Loving | | | | | | | | | |
| [High] | 8 | A8 | B8 | C8 | D8 | E8 | F8 | G8 | H8 |

Varieties of hate and dislike required for comprehension of "polyanimosity"

As author of *Forms of Hatred: the troubled imagination in modern philosophy and literature* (2003), [Leonidas Donskis](#) offers a morphology of hatred. This is described as a five-part taxonomy of hatred to bring under a single unitary framework what has been witnessed of its manifestations in recent times. This distinguishes:

- the hatred of the single truth, or the hatred of the true believer
- hatred of a convert
- hatred as a classificatory system
- organized, or manufactured, hatred
- self-hatred

In a summary of that insightful study, Donskis argues:

Modifying St. Augustine's classical definition of evil as a privation or corruption of good, we could metaphorically describe hatred as love gone astray. Love and hatred are in some ways interchangeable in the sense that hatred is a kind of love that, having lost its object and direction, finds itself unable to live in the world in peace. Instead, it starts searching for a threat to the object of love and devotion, even though the object itself is lost, and even though it may have, or seem to have, rejected the lover. With the object now overtaken and oft forgotten, all that remains is the expenditure of enormous energy to expiate a pain one cannot even name. Hatred may find some outlet for its energy, and when it does it breeds fanaticism. (*Forms of Hatred: or, how to understand the Age of Trump*, *The American Interest*, 14 October 2016)

As with the distinction between "like" and "love", so frequently treated as synonymous, there is a similar challenge to the distinction between "dislike" and "hatred", usefully discussed in the following -- typically making the point that the difference is a matter of degree or intensity:

- *Difference Between Dislike and Hate* (*Difference Between*, 13 December 2010)
- *Difference Between Hate and Dislike* (*Pediaa*, 7 September 2015)
- *Is there a difference between disliking someone and hating someone?* (*Quora*, 2017)

With respect to the argument, most online thesauri fail to suggest an antonym for polyamory or its grammatical variants. One asks *What is the opposite of polyamorous?* (*WordHippo*), and then proposes *8 Perfect Antonyms of Polyamorous*: closed, exclusive, monogamous, one-to-one, committed, faithful, married, and steady.

Far more intriguing are the possibilities suggested by "polyanimosity", "polyodium", "poly-alienation", "polyantipathy" or "polyhatery" -- especially given the biblical end-times predictions of "brother against brother" (*End Times Brother Against Brother*, *OpenBible.info*).

Varieties of hate and dislike: Given the references above to the articulations of the varieties of love, and to the degrees of love, there is clearly a case for enriching insight into polyamory by any references to the varieties of hate, and to the degrees of hate. Few would deny their significance at this time (Andrew Sullivan, *What's So Bad About Hate*, *The New York Times Magazine*, 26 September 1999). However the latter makes the point that:

The modern words that we have created to describe the varieties of hate -- "sexism", "racism", "anti-Semitism", "homophobia" -- tell us very little about any of this. They tell us merely the identities of the victims; they don't reveal the identities of the perpetrators, *or what they think, or how they feel.* [*emphasis added*]

A study by Semir Zeki and John Romaya examined the brain areas that correlate with the sentiment of hate and shows that the "hate circuit" is distinct from those related to emotions such as fear, threat and danger -- although it shares a part of the brain associated with aggression. The circuit is also quite distinct from that associated with romantic love, though it shares at least two common structures with it (*Brain's 'Hate Circuit' Identified*, *Science News*, 28 October 2008).

The results are an extension of previous studies on the brain mechanisms of romantic and maternal love from the same laboratory. Explaining the idea behind the research, as declared by Semir Zeki:

Hate is often considered to be an evil passion that should, in a better world, be tamed, controlled, and eradicated. Yet to the

biologist, hate is a passion that is of equal interest to love. Like love, it is often seemingly irrational and can lead individuals to heroic and evil deeds. How can two opposite sentiments lead to the same behaviour? (*Neural Correlates of Hate, PLoS ONE*, 2008)

Missing however is recognition of the varieties comparable to those of love and liking

Degrees of dislike/hatred: With respect to degrees of hate, understood as prejudice, **Allport's Scale** is a measure of the manifestation of prejudice in a society (also known as Allport's Scale of Prejudice and Discrimination or Allport's Scale of Prejudice). It distinguishes 5 stages: *antilocution*; *avoidance*; *discrimination*; *physical attack*; *extermination*. Relevant at the present time is the preoccupation with a synonym of the latter (*Eradication as the Strategic Final Solution of the 21st Century? Indicative checklist of possible domains of application*, 2014). In contrast to the varieties of love, the emphasis is necessarily on verbal and physical expression rather than distinctive cognitive characteristics (Brian Mullen and Tirza Leader, *Linguistic Factors: antilocutions, ethnonyms, ethnophaulisms, and other varieties of hate speech*, 2005).

Allport's Scale might be said to encompass the degrees of hatred which may be experienced, although again this does not reflect the subtleties analogous to those distinguished in the case of love. The correspondence is specifically addressed by Thomas Aquinas in his treatment of the *Question of Hatred (Summa Theologiae)* as follows:

For this reason, love is felt more keenly in the absence of the object loved; thus Augustine says (*De Trin.* x, 12) that "love is felt more keenly when we lack what we love." And for the same reason, the unbecomingness of that which is hated is felt more keenly than the becomingness of that which is loved. Secondly, because comparison is made between a hatred and a love which are not mutually corresponding. Because, **according to different degrees of good there are different degrees of love to which correspond different degrees of hatred.** Wherefore a hatred that corresponds to a greater love, moves us more than a lesser love. [*emphasis added*]

One framework equivalent to those for love is that of Jack Schafer (*The Seven-Stage Hate Model: the psychopathology of hate, Psychology Today*, 18 March 2011). Rather than being focused on linguistic expression, it is framed in terms of collective behaviour -- traces of which are currently only too evident at the global level. Schafer usefully distinguishes:

1. the haters gather
2. the hate group defines Itself
3. the hate group disparages the target
4. the hate group taunts the target
5. the hate group attacks the target without weapons
6. the hate group attacks the target with weapons
7. the hate group destroys the target

Reconciling varieties and degrees of hate/dislike

| Reconciling degrees of disliking/hating with varieties of disliking/hating | | | | | | | | | |
|--|---|-----------------------------------|----|----|----|----|----|----|----|
| | | Varieties / Forms / Types of Hate | | | | | | | |
| | | S | T | U | V | W | X | Y | Z |
| [Low] | 1 | S1 | T1 | U1 | V1 | W1 | X1 | Y1 | Z1 |
| | 2 | S2 | T2 | U2 | V2 | W2 | X2 | Y2 | Z2 |
| | 3 | S3 | T3 | U3 | V3 | W3 | X3 | Y3 | Z3 |
| | 4 | S4 | T4 | U4 | V4 | W4 | X4 | Y4 | Z4 |
| | 5 | S5 | T5 | U5 | V5 | W5 | X5 | Y5 | Z5 |
| | 6 | S6 | T6 | U6 | V6 | W6 | X6 | Y6 | Z6 |
| | 7 | S7 | T7 | U7 | V7 | W7 | X7 | Y7 | Z7 |
| | 8 | A8 | T8 | U8 | V8 | W8 | X8 | Y8 | Z8 |
| [High] | | | | | | | | | |

Interrelating love and hate in terms of degrees and depths of intensity

The two distinct tabular presentations above can be combined -- for purposes of discussion -- into the following table. The two parts are separated by what might be understood as a zone of indifference or neutrality.

| Reconciling varieties loving with varieties of hating in terms of intensity/degree | | | | | | | | | | | | | | | | | |
|--|---|-----------------------------------|----|----|----|----|----|----|-----------------------------------|----|----|----|----|----|----|----|----|
| | | Varieties / Forms / Types of Love | | | | | | | Varieties / Forms / Types of Hate | | | | | | | | |
| | | A | B | C | D | E | F | G | H | S | T | U | V | W | X | Y | Z |
| [Low] | 1 | A1 | B1 | C1 | D1 | E1 | F1 | G1 | H1 | S1 | T1 | U1 | V1 | W1 | X1 | Y1 | Z1 |
| | 2 | A2 | B2 | C2 | D2 | E2 | F2 | G2 | H2 | S2 | T2 | U2 | V2 | W2 | X2 | Y2 | Z2 |
| | 3 | A3 | B3 | C3 | D3 | E3 | F3 | G3 | H3 | S3 | T3 | U3 | V3 | W3 | X3 | Y3 | Z3 |
| | 4 | A4 | B4 | C4 | D4 | E4 | F4 | G4 | H4 | S4 | T4 | U4 | V4 | W4 | X4 | Y4 | Z4 |
| | 5 | A5 | B5 | C5 | D5 | E5 | F5 | G5 | H5 | S5 | T5 | U5 | V5 | W5 | X5 | Y5 | Z5 |

| | | | | | | | | | | | | | | | | | |
|-------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| of | 6 | A6 | B6 | C6 | D6 | E6 | F6 | G6 | H6 | S6 | T6 | U6 | V6 | W6 | X6 | Y6 | Z6 |
| | 7 | A7 | B7 | C7 | D7 | E7 | F7 | G7 | H7 | S7 | T7 | U7 | V7 | W7 | X7 | Y7 | Z7 |
| Loving/ Hating | | | | | | | | | | | | | | | | | |
| [High] | 8 | A8 | B8 | C8 | D8 | E8 | F8 | G8 | H8 | A8 | T8 | U8 | V8 | W8 | X8 | Y8 | Z8 |

The form of the table is reminiscent of that of the classical *Periodic Table of Chemical Elements* -- again echoing the above-mentioned association of interpersonal bonds with those of chemistry. This also recalls the widely cited compilation by [Primo Levi](#) (*The Periodic Table*, 1975) linking personal experience to qualities of the elements. The book has been named by the [Royal Institution of Great Britain](#) as the best science book ever written.

This calls for exploration of **the questionable assumption that the fundamental pattern of bonding implied by the organization of the chemical elements (of which humans are composed) has no determining implication for patterns of bonding in psychosocial organization**. It also calls for a challenge to the assumption that the variety and complexity of human bonding should be understood as much less than that of the relationship between the chemical elements in the environment.

With interpersonal relations so framed, the organization of the table can be used to evoke reflection on issues of positive and negative in relationships, recognizing that both may well have their place in any global culture informed by polyamory and polyanimosity. **With love/like understood as some form of attraction, and hate/dislike as a form of repulsion, the question then becomes how to understand and navigate the dynamics of the formation and dissolution of "contractual" bonds of both kinds.**

Provocatively it might be asked whether excessive population growth engendered by unthinking polyamory is tragically complemented and counterbalanced by excessive killing -- as the extreme consequence of polyanimosity.

It would indeed be helpful to transcend any simplistic effort to eliminate negativity in order to ensure the triumph of the positive, as features so widely in discourse incapable of handling the negative other than by its absolute condemnation. This argument is developed separately (*Being Positive Avoiding Negativity: management challenge of positive vs negative*, 2005). This is most usefully explored through the work of [Nikola Tesla](#) (*Reimagining Tesla's Creativity through Technomimicry: psychosocial empowerment by imagining charged conditions otherwise*, 2014).

The increasing number of "electron shells" characteristic of the "heavier" elements in the table is extremely valuable to reflection on the experience of every deeper bonds in both love and hatred. The former has notably been articulated by [Martin Buber](#) (*I and Thou*, 1923). The "bond" experienced with a mortal enemy merits consideration in such terms.

Should it not be considered highly improbable that the number of electrons in a shell (characteristic of a chemical group) is extremely similar to the varieties of love or hatred distinguished by the human mind? And even more improbable that the number of concentric shells should also be of the same order as the number of degrees or levels of love or hatred that are distinguished?

The Periodic Table offers a valuable metaphor for new approaches to psychosocial relationships, as separately discussed (*Periodic Pattern of Human Knowing: implication of the Periodic Table as metaphor of elementary order*, 2009; *The Periodic Pattern of Human Life: the Periodic Table as a metaphor of lifelong learning*, 2009).

As noted there, of considerable significance is the variety of [alternative forms](#) proposed for that "table" in contrast with its classical presentation -- many of a strange form considered to be more appropriate to encompass patterns not adequately held by any tabular form. These include an [extended version](#), indication of [isotopes](#) of the elements (of widely varying [half-life](#)), and concern with insights deriving from more recent understandings of the relationships between the elements by physicists (Denis H. Rouvray and R. Bruce King, *The Mathematics of the Periodic Table*, 2005).

Use of the term "half-life" is intriguing in a context of "fake news" in that it has been borrowed in reference to facts and the [half-life of knowledge](#) and psychology (Samuel Arbesman, *The Half-life of Facts: why everything we know has an expiration date*, 2012; Donald O. Hebb, *Science and the World of Imagination, Canadian Psychological Review* 16, 1975). With respect to this argument, and the incidence of relationship and marital breakdown, it is clearly of relevance to the degree to which cognitive contracts fail -- despite mutual commitment "for eternity".

Of particular relevance to this argument is the work of [Edward Haskell](#) (*Full Circle: The Moral Force of Unified Science*, 1972) which proposes a generalization of the original Mendeleev periodic table in an attempt at the unification of human knowledge, assembling the sciences (physical, biological, and psycho-social) within a single periodic system. This was one inspiration for the development of a *Functional Classification in an Integrative Matrix of Human Preoccupations* (1982) and for consideration of the possibility of *Tuning a Periodic Table of Religions, Epistemologies and Spirituality -- including the sciences and other belief systems* (2007). The latter indicates other precedents in the exploration of periodicity in the psychosocial realms.

The considerable merit of such approaches is that they offer a way of thinking about different kinds and degrees of bonding -- whether "positive" or "negative". These may be vital to comprehension of a global culture informed by constantly shifting patterns of agreement and disagreement -- potentially to be understood in contractual terms otherwise understood.

Contractual relationship cognitively framed

Contractual bonding: A formal [contract](#) is defined as a voluntary arrangement between two or more parties that is enforceable by law as a binding legal agreement. There are clearly issues with regard to the meaning of "voluntary", as highlighted by the case of [arranged](#)

marriages, the process of "child grooming" in abusive relationships of dominance, and in the variety of understandings of bondage (consensual BDSM bondage, debt bondage, wage slavery), and obligations more generally.

Similarly there are issues with regard to "law" and "binding", given the nature of informal contracts and handshake agreements (*Law and Order vs. Lore and Orders? Imagining otherwise the forceful engagement of singularity with plurality*, 2013).

Disparities and "mis-matching" are especially obvious in the case of academic citations. If mutuality is the basis for some form of contractual relationship a further distinction is necessary, most notably with respect to duration. As noted, conventional marriage is typically framed contractually "until death do us part" -- despite the probability and incidence of divorce.

Disparity may also be evident in the degree to which someone is "liked", or "likes", with minimal reciprocity -- if any -- whatever the longing and yearning of the liker or lover.

Duration of bonds: How long can mutual "liking" or "loving" be expected to last in the social media environment? And in the case of a pattern of citations -- effectively "written in stone" in academic archives? Clearly people "move on" in both cases -- both being relatively dynamic, if not highly so. Given the inspiration of chemical bonding, further insight for an understanding of a contractual relationship can be obtained from the sense of the half-life of an isotope -- some of which are so momentary as to be measured in nanoseconds, with others expressed in thousands of years.

More intriguing is the sense in which a "like", or a citation, is expressed for someone long dead -- and possibly valued for the life of the person expressing it. And what of those in which both parties to the relationship are dead, but have that relationship variously recorded in archival form? A contract indeed "written in stone" for all eternity.

Depth of bonding: The situation with respect to patterns of likes, citations and loves merits careful deconstruction with respect to the nature of a "contract" -- whether its legal implications, its psychosocial implications, or the spiritual implications so valued from a religious perspective. Given the origins of the term as "drawing together", its elements call for further reflection:

- "con" as the expression of mutuality and togetherness, as explored separately (*Considerable Conglomeration of "Cons" of Global Concern*, 2012; *Prefix "Re-cognition" as Prelude to Fixing Sustainability -- "Pro" vs "Con" ?* 2017)
- "tract" as the articulation of a collective agenda however explicitly articulated, for whatever period. This is exemplified by the sense of "traction" and gaining traction together -- "pulling together". It is otherwise suggested by phrases such as "singing from the same hymn sheet", "being aligned", and "getting with the plan". In the sense of following a particular "way", the related term of "track" is also suggestive

More subtly, there is the previously mentioned sense of resonance -- a dynamic field effect, potentially analogous to that explored with respect to chemical bonding. This implies a reframing of linear bonds, typical of network maps and the like, into some sense of a field -- possibly as a cognitive field, semantic field, or emotional field. Hence the widespread recognition of "vibes" as an abbreviation of vibration.

More controversial is any distinction of degrees of bonding. What does "deeply in love" imply in contrast to any superficial sense of love in the light of the variety of forms of love? How might this play out with respect relationships of a more temporary nature, in contrast with those of a more permanent nature? How is a "binding contract" to be distinguished from one from which people can easily free themselves?

Momentary bonds: Of particular interest are the most ephemeral forms of contract, as in the engagement with other vehicles in traffic. There is then a form of bond with others travelling in the same direction, when following one another, or driving in adjacent lanes. Some of the complexity of "likes" is evident in that context, as can be variously explored (*Being in the Flow on Strategic Highways and Byways: enabling sustainable self-governance through traffic signage*, 2011).

As a driver, one may "dislike" to some degree the behaviour of the driver of the vehicle in front or behind -- a form of bond in its own right, especially when mutual. Those travelling in the opposite direction clearly lend themselves to being framed as "negative" through failing to travel in the more "positive" direction -- and may well be a focus of "dislike" of a different degree. Especially intriguing for a driver is the requirement to switch repeatedly between use of the accelerator, as a form of "like button", and use of the break as a form of "dislike" button.

With the phenomenon of traffic flow in the opposite direction (or cutting across), this metaphor highlights the problematic issue of "dislikes" so evidently neglected with respect to the focus on "likes" in social media. In the latter context, this is achieved by simply ignoring contrary indications as being "negative" -- a process fatal in the former case. Curiously the pattern of citations between academic papers also fails to distinguish likes and dislikes, although again it is typically the case that contrary arguments are simply ignored -- potentially with fatal consequences where negative feedback is vital to higher orders of learning.

"Eye contract": Beyond the sense of any "contact" implying a form of "contract", the most ephemeral form of interpersonal contract is perhaps the glance, as in contrast with any longer form of bonding through eye contact (*Eye Contact and Attraction, The Art of Charm; Eye Contact: The Secret Language of Attraction, Evolution: Male; Eye Contact: The Look of Love, Evolution: Male; Rebecca Endicott, Eye Language: How People Communicate With Just A Glance*). 10 levels of eye contact are distinguished by Mark Manson (*The Levels of Eye Contact in Attraction*, 5 September 2011).

In this regard Islam makes a relevant distinction between a first -- "accidental" -- glance and any further glancing, whether or not this involves eye contact (*First and second glance at women, Islam Question and Answer*). The accidental glance is "free of sin", whereas any repeated glance is *haram* (*What is a "haram/lustful look"? Shiachat*, 27 September 2009). However, given current controversy regarding harassment, and the cultivation of attractiveness, any such wording with regard to "look" calls for reflection on its alluring

sense and what that may evoke.

Global implications of dynamic interweaving of polyamory and polyanimosity

The argument here suggests that the nature and patterns of bonding between chemical elements -- whose complexity remains a challenge to comprehension by science -- together offer a metaphor of requisite complexity for a precautionous exploration of psychosocial bonding.

The simplicity of the legal contract of marriage can then be seen to obscure the mystery of bonding experienced in love -- and in the dislike and intensity of hatred frequently associated with failure of that contract and divorce. Both are more readily experienced as subtle field effects rather than as depicted in simplistic relational diagrams.

There are then a number of suggestive metaphorical threads towards a more fruitful comprehension of the dynamics of polyamory (polyempathy?) and polyanimosity (polyantipathy?), both in society world wide and at a global level.

Challenging reframing of binary relationships: The current focus on sexual harassment of women by men has significantly reinforced the radicalization of feminism. Arguably this is now sustaining an emergent culture of polyanimosity of women toward men -- potentially matched by a corresponding culture of polyanimosity of men toward women.

This current framing emerges from a long-standing culture of disparagement of women by men -- despite the paradoxically powerful attraction of women as experienced by men. The corresponding attitude of women has long been tinged by a degree of fear associated with a culture of abusive dominance. This has not prevented either from endeavouring to render themselves attractive to the other, however perverse the circumstances in which this is done

Clues from the LGBT pattern of relationships: As previously explored, there is the intriguing possibility that the distinctive LGBT relationships might offer further clues in relation to polyamory and in contrast to any conventional binary marriage contract (*Encompassing the "attraction-harassment" dynamic with a notation of requisite ambiguity?* 2017).

As noted in the latter, **it is useful to see the 4-fold LGBT distinctions more generally**, with the sexual connotations as only a potential specific instance in each case of: female-female bonding, male-male bonding, male-female bonding, and bonding transcending any gender focus. They might better be understood as **indicative of a set of modes of self-reference** of a "higher" order -- beyond that of **second-order cybernetic feedback processes** (third order? fourth order?).

4-fold LGBT distinctions understood more generally



In contrast with any abstract binary symbolism, these qualitative dimensions add to its simple "positive/negative" distinction an as yet unresolved sense of what is "right" or "wrong" ("good" or "evil") -- variously distinguished through "shades of grey", as with the problematic distinction "overt/covert". Whether within the LGBT context, or with respect to it from a binary perspective, various degrees of like/dislike are typically evident -- clearly including both intense love and hate.

It is of course notable that women continue to be framed -- by men of some religious persuasions -- as more closely associated with "evil". Arguably this is now being reciprocated by radical feminists. The charged nature of the basic distinction continues to play out in the distinction between "right" and "left" -- especially in many political contexts. The complexity of such associations is evident with respect to "Alt-Right" and "Alt-Left" -- and the unreasonableness of the arguments of each with respect to the other.

The relevance of a fourfold reframing of polyamory/polyanimosity is notably suggested by **schooling behaviour** of birds and fish, as argued by **Jamie Davies** (*A Closed Loop, Aeon*):

We still have much to learn about how schooling works, but it seems obvious that each fish can't have a detailed choreography stored in its head, nor a detailed map of the location of every other fish in the school. Instead, each individual seems to base its behaviour on purely local influences: most importantly, the distances and speeds of its immediate neighbours. Computer models produce quite convincing schooling behaviour when their constituent fish -- all the same, with no special leader in charge -- have four basic behaviours: **attraction** (closing up to another fish), **repulsion** (increasing the distance from another fish), **alignment** (altering direction to swim parallel to a neighbour) and **searching** (looking for a school of fish). Searching happens only if a fish finds itself isolated. Repulsion is strong at short distances and attraction kicks in at larger ones, which tends to keep fish an optimal distance apart, and they reorientate to swim in the average direction of their various neighbours. [*emphasis added*]

"Polygamy" and "polyandry" understood in terms of valency: A periodic table can be seen as evoking the possibility of valency -- of one-to-many bonds and many-to-one bonds. This can be explored in terms of the number of partners a person finds meaningful and the role cultivated in that partnership.

These raise the question of any inherent constraint on the number of bonds of a particular kind with are viable at any one time (*Conceptual clustering and cognitive constraints*, 2014). This is a feature of the **Dunbar number** of 150 -- a suggested cognitive limit to the number of people with whom an individual can maintain stable social relationships. Such a possible constraint can be evoked with respect to:

- Facebook "friends" and "likes"
- **Concubines**. Most striking are the historical instances of rulers with an extensive **harem** of wives and/or concubines -- possibly

numbering in the hundreds.

- Extra-martial sexual partners (paramours)
- Employees, notably understood as work-slaves. Considerations of **span of control** have evoked other constraints regarding the number of employees with whom an employer can have an effective management relationship
- Public speaking, namely the number of people a speaker can effectively address -- and presumably from whom questions and comments can be received
- Effective group size identified as the "**Spreadthink number**" (John Warfield, *Spreadthink: Explaining ineffective groups*, 1995). This reflects the fact the inability of groups to reach agreement on complex issue.

The complexity is evident in the degree to which such examples blur into deprecated forms of bondage -- readily to be described as slavery, for which the historical incidence of slavery offers multiple examples. The variety of forms of bondage is clearly a challenge to any framework capable of encompassing the nature of human relationships. Any assumption that the probability of their emergence should not feature in such a framework are more appropriately understood to be naive -- however much the commitment to their eradication.

Presented in this way, there is the question of how a generic understanding of "polygamy" and "polyandry" can be used to distinguish such patterns. Given the relationship of employees to an employer, can this be usefully understood as a form of polygamy -- especially when the employer claims to "love" the employees? What of the complementary condition in which the employees claim to "love" the employer -- as currently the subject of comments with respect to North Lorea?

Where the relationship is characterized by dislike (even hatred), is this the polygamous variant of polyanimosity? Beyond the case of sex workers, can forms of polyandry be distinguished in social bonding -- also framed by polyanimosity?

Can the operation of a team or committee be understood as a form of polyamory? If the group is one of rivals, is this then an instance of polyanimosity?

Coaction cardioid emerging from a generalization of the periodic table: An insightful pointer is provided by Edward Haskell (*Generalization of the structure of Mendeleev's periodic table*, 1972) through which he proposes a coaction cardioid to distinguish in cybernetic terms the patterns of relationship between a "controlling function" and a "work function", as discussed separately (*Cardioid Attractor Fundamental to Sustainability: 8 transactional games forming the heart of sustainable relationship*, 2005). He notably uses the ecosystemic relationship between species as an example.

Haskell's framework suggests the possibility of applying this to psychosocial relationships -- seemingly ever more highly charged, especially since the implications of "control" and "work" are controversially called into question.

| Possible 8-fold Positive-Negative Hybrid Conditions (following Haskell) | | | | |
|---|----------|---|--|---|
| | | Y = "Control component" | | |
| | | Negative | Neutral | Positive |
| X = "Work component" | Positive | <i>predation</i> (positive negativity) | <i>allotrophy</i> (positive neutrality) | <i>symbiosis</i> (positive positivity) |
| | Neutral | <i>amensalism</i> (neutral negativity) | O (neutral neutrality) | <i>commensalism</i> (neutral positivity) |
| | Negative | <i>synnecrosis</i> (negative negativity) | <i>allopathy</i> (negative neutrality) | <i>parasitism</i> (negative positivity) |

In endeavouring to apply such a framework to patterns of psychosocial bonding, it is curious to note how some of Haskell's terms are indeed familiar as descriptors of some relationship conditions -- especially parasitism and predation. The uses of "mensalism" are themselves significant as a reference to the "table" at which people may meet and eat.

Challenge to recognition of a multiplicity of dynamically emergent conditions: Metaphorical indications, like those above can best be considered, part of a larger set of ways of perceiving love and hate. It is the complementarity of the metaphors in the larger set which offers a form of stereoscopic perspective on the nature of the interweaving of polyamory and polyanimosity which may be fundamental to sustainable psychosocial relationships in a global society -- and to a richer understanding of the "peace" to which so many claim to aspire.

Specifically the argument challenges the lack of articulation of "love" and "hate" by reinforcing the assumption that each is well-defined and fundamentally distinct from the other -- however mysteriously infinite they may be claimed to be (Ann Purcell, *The Infinite Depths of Love*, *The Huffington Post*, 18 February 2014). Christianity typically preaches that God "loves the world with infinite love" but "hates sin with infinite hate".

This is seemingly contrary to widespread experience of "shades of grey" and the paradoxical challenge of "love-hate" relationships -- to say nothing of the depths of love and hate which some experience in contrast to forms which cannot be distinguished from the most superficial forms of liking and disliking. Conflating such experiences into singular understanding, however mysterious it is alleged to be, is less than helpful in a society which has to engage with complexity. The same can be said of "peace" contrasted simply with "violence" -- both being equally challenging to comprehension, although this is readily denied (*Global Incomprehension of Increasing Violence*, 2016).

Encoding meaningful psychosocial complexity otherwise

Exemplary challenge of the Freud-Jung relationship: Given their considerable influence with respect to thinking regarding sexuality and love, the friendship and enmity between Sigmund Freud and Carl Jung merits particular attention in relation to this argument:

- Ora Gruengard: *Freud-Jung controversy: a failed intercultural dialogue* (*International Wittgenstein Symposia*, 2006)
- William Todd Schultz:
 - *Why Freud and Jung Broke Up* (*Psychology Today*, 19 March 2009)
 - *Why Freud and Jung Broke Up: Part II* (*Psychology Today*, 21 March 2009)
- Stephen A. Diamond: *Freud, Jung and their Complexes* (*Psychology Today*, 21 March 2009)
- Linda Donn: *Freud and Jung: years of friendship, years of loss* (Scribner, 1988)
- Duane Schultz: *Intimate Friends: the turbulent relationship between Freud and Jung* (Tarcher, 1990)

In this context their relationship is especially significant in the light of the little known role of [Sabina Spielrein](#), the first female psychoanalyst, who endeavoured to reconcile their perspectives:

- John Kerr: *A Most Dangerous Method: the story of Jung, Freud, and Sabina Spielrein* (Knopf, 1993)
- Aldo Carotenuto: *A Secret Symmetry: Sabina Spielrein between Jung and Freud* (Pantheon, 1982)
- C. Covington and B. Wharton (Eds.): *Sabina Spielrein: forgotten pioneer of psychoanalysis* (Brunner-Routledge, 2003)

The question to be asked is the capacity of either Jung or Freud to reframe fruitfully the associated conditions between them within their respective worldviews during their lifetimes. With those worldviews subsequently valued by their respective followers -- who continue to cultivate that enmity -- the question then extends to current capacity to reframe friendship and enmity arising from fundamental intellectual disagreements and the experiential significance with which these are associated.

Nominative determinism? There is a speculative case to be explored regarding the extent to which [nominative determinism](#) (in German) may have influenced the interplay of these iconic figures in framing comprehension of relationships. That *Wikipedia* entry cites Jung's own listing of striking instances among psychologists -- including himself: *Herr Freud (Joy) champions the pleasure principle, Herr Adler (Eagle) the will to power, Herr Jung (Young) the idea of rebirth...* In that sense "spielrein" offers an emphasis on "pure play" or a "clean game". This recalls the insightful study by [James Carse](#) (*Finite and Infinite Games: a vision of life as play and possibility*, 1986).

Appropriately the latter includes the relevance of sexuality, and follows from an earlier study of themes which were a particular focus of Spielrein (James Carse, *Death and Existence: a conceptual history of human mortality*, 1980). Spielrein had delivered a seminal paper on sexuality and death (*Destruction as the Cause of Coming into Being*, 1912) arguing that human beings are torn between a static desire to remain as they are, and a dynamic one to reproduce, but that the reproductive instinct contains an aspect that is destructive of oneself as well as creative (Frank J. Marchese, *Coming Into Being: Sabina Spielrein, Jung, Freud, and psychoanalysis*, 2015).

Interweaving through interplay: There is then a case for exploring how polyamory and polyanimosity might be understood through the most fruitful forms of game-playing, as can be variously argued (*Humour and Play-Fullness: essential integrative processes in governance, religion and transdisciplinarity*, 2005). Some sense of this is offered by the [art of flirting](#) as a form of infinite game (Krystal D'Costa, *Decoding the Art of Flirtation*, *Scientific American*, 14 February 2013; Elizabeth Clark, *Flirting For Dummies*, John Wiley, 2011; Nicholas Boothman, *The Art of Flirting, Love and Harmony; How To Flirt: the art of effortless flirtation*, Attraction Institute). The sense of "interweaving" might then be offered by "interplay" and "playfulness", in contrast to the finite games only too characteristic of harassment, as once defined by the [Anti-Flirt Club](#).

Could the currently influential set of psychoanalysts be explored as being engaged in an archetypal game analogous to that which might be suspected of the "gods" in their realm?

| Influential psychoanalysts with surnames suggestive of nominative determinism? | | |
|--|----------------|----------------|
| Jung, Carl | Lacan, Jacques | Laing, Ronald |
| Freud, Sigmund | Klein, Melanie | Rank, Otto |
| Adler, Alfred | Guntrip, Harry | Reich, Wilhelm |
| Spielrein, Sabina | Horney, Karen | Fromm, Erich |

The potential implications of nominative determinism could be extended through anagrams of the names, as suggested by the work of [Andrea Bachner](#) (*Retroping Concepts by Sigmund Freud, Jacques Lacan, and Jean-Francois Lyotard: why anagrammatize psychoanalysis?*, *Comparative Literature Studies*, 40, 2003). The primary anagram of "Lacan" is "canal", perhaps appropriately.

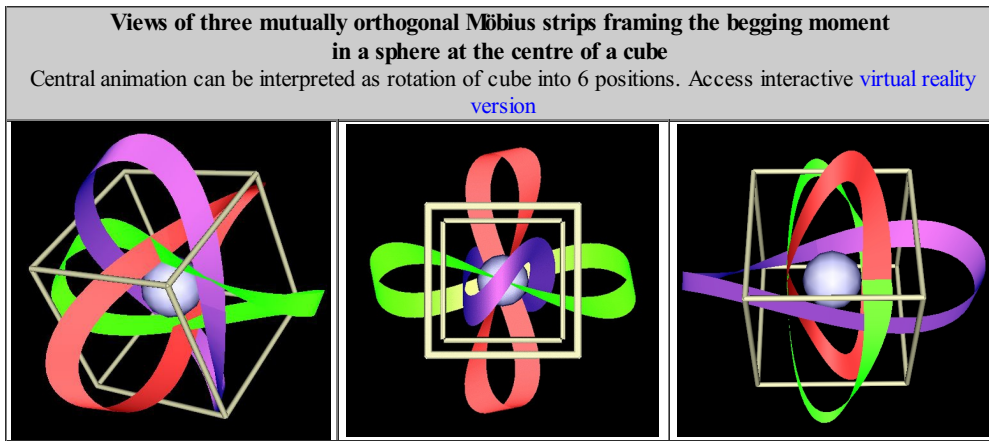
Knot theory: If the challenge indicated by the title is one of "interweaving" polyamory and polyanimosity then reference to topology is appropriate, given its association with [knot theory](#). This is notably a feature of the work of psychiatrists [R. D. Laing](#) (*Knots*, 1972; *The Politics of Experience and The Bird of Paradise*, 1967) and of [Jacques Lacan](#) (*From the Bridges of Königsberg: why topology matters in psychoanalysis*, *LacanOnline*, 2015).

The relevance of the metaphor is also echoed by references to any "tying of the marital knot" -- or of the "contractual knot" (Shabnamzehra Bhojani, *The Marital Knot: arranged marriages, love marriages and the ties that bind*, 2017). Use of "weaving", also evokes a related metaphor (*Warp and Weft of Future Governance: ninefold interweaving of incommensurable threads of discourse*, 2010).

Of potential relevance is then the concept in knot theory of the [unknot](#) as it might apply to understanding the dynamics of the interplay of polyamory/polyanimosity. This can be related to the [Möbius strip](#) -- occasionally used in depictions of relationships, especially the ambiguity of the love/hate variety. A Möbius strip with one half twist has the unknot as its boundary; one with two half twists has a link of two unknots; one with three half twists has the trefoil knot as its boundary (*Mathematics Stock Exchange*).

Could the interplay of the iconic psychoanalysts be most usefully exemplified by interweaving Möbius strips -- whether between one another or with respect to any integrative comprehension of love/hate relationships? One such exercise is reproduced here from a

discussion of strange attractors in relation to the relational "begging moment" (*Mapping the cognitive dynamics of the begging moment*, 2015)



For example, with such an approach, Jung (rebirth), Freud (joy), Adler (power), and Spielrein (play), could form the vertices of a tetrahedron whose 6 edges took the form of 6 Möbius strips. Other configurations of the drivers of the polyamory/polyanimosity dynamic are suggested by the following, reproduced from discussion of *Reframing a strategic attractor as a vortex involving a "cognitive twist"* (2014) and *Game-playing, bull-leaping and laurel wreaths* (2014).

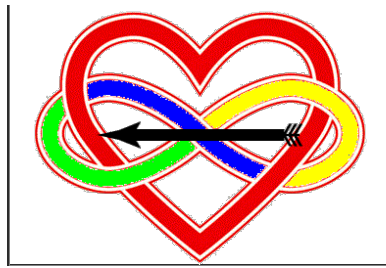
| Suggestive configurations of the drivers of the polyamory/polyanimosity dynamic | | |
|---|---|---|
| Representation of BaGua embodied within four interwoven Möbius strips | Logo of the International Mathematical Olympiad | Logo of International Mathematical Union |
| | | |
| ("Earlier Heaven" arrangement) | (reproduced from <i>Wikipedia</i> ; see IMO animation) | (see <i>Wolfram Mathematica</i> animation) |

Bonding ambiguity: In contrast to the conventional line as variously used to depict a relational bond, use of the Möbius strip as an alternative has great value in emphasizing the potential ambiguity of contractual bonding with its typical alternation -- like/dislike or love/hate. It offers another way of encoding what is indicated by the *yang/yin* (line/broken line) encoding in the *I Ching* system. Especially valuable is the paradox it embodies and the associated cognitive challenge of *liminality*, as separately argued (*Living as an Imaginal Bridge between Worlds: global implications of "betwixt and between" and liminality*, 2011). The form of the strip also usefully recalls both the wave function by which chemical bonding is characterized and the "waves" by which emotional bonds may be experienced and described metaphorically (*Being a Waveform of Potential as an Experiential Choice: emergent dynamic qualities of identity and integrity*, 2013).

It is in this way that the patterns of friendship/enmity bonds claimed between psychoanalysts could be used to exemplify those of polyamory/polyanimosity more generally. Beyond the binary bond, especially intriguing would then be the depictions of bonding configurations of smaller numbers of participants (3, 4, 5, etc). A tetrahedron of 4 participants with 6 such Möbius strips between them is the simplest, as suggested above. A cubical configuration of 12 strips could be used to suggest relationships between 8 participants, for example. However, given the fundamental biological role of the benzene molecule, with its integrity based on resonance, most intriguing is a configuration of 6 participants with 6 bonding strips -- possibly in the form of an octahedron. Clearly there would be value in exploring the two other Platonic solids -- the icosahedron and the dodecahedron -- given the patterns of 5-foldness and 12-foldness that they embody.

A configuration of a single Möbius strip and a heart is commonly used as one logo for polyamory -- curiously appropriate, especially given the above-mentioned significance of the coaction cardioid. However, as depicted, the "Möbius strip" is more probably understood as an *infinity symbol* -- in 2D rather than 3D. A further point could also be made by adding to that image the arrow traditionally associated with Cupid and the heart. Given the essentially linear nature of the arrow, this could also serve as a reminder of its role as a weapon, whether a stick, a gun barrel, or a missile -- typically characteristic of polyanimosity, if only as a metaphor of reduction of the subtle complexity of the Möbius "wave function" to linearity. The elements can be combined in the following simple animation to offer a suggestion of the dynamics implied in the argument above.

Polyamory/Polyanimosity logo?
(indicative animation)



Indicating transformations between forms of polyamory and polyanimosity as "visual anagrams"?

Anagrams in psychoanalysis: The detailed argument of [Andrea Bachner](#) (*Retroping Concepts by Sigmund Freud, Jacques Lacan, and Jean-Francois Lyotard: why anagrammatize psychoanalysis?*, *Comparative Literature Studies*, 40, 2003) is remarkable in many respects of relevance to that presented here. For that paper she was awarded the [A. Owen Aldridge Prize](#) in 2002. The paper is not concerned with love or hate, but rather with the arguments of those who have variously framed comprehension of the associated emotional and cognitive trauma, potentially as expressed by the unconscious and through dreams.

Bachner's paper makes not reference to the above-mentioned argument by Sabina Spielrein on sexuality and death that human beings are torn between a static desire to remain as they are, and a dynamic one to reproduce, but that the reproductive instinct contains an aspect that is destructive of oneself as well as creative (*Destruction as the Cause of Coming into Being*, 1912). Inviting further consideration of their perspectives, Bachner does however suggest a reshaping of Freudian theory:

The psyche really has to be seen as a *Kampf- und Tummelplatz entgegengesetzter Tendenzen* ["battlefield of opposite tendencies"], as an agon between the destructive, untying forces of *thanatos* and the linking, combinatory forces of *eros*. In this dynamics, pleasure and repression would have to be rethought, too. Pleasure can be seen as inherent in both of those forces, but, as neither of them can ever exist on its own, they are both fulfilled and cancelled out in their mutual game. (p. 11)

Bachner's conclusion usefully frames the justification for the anagrammatical approach:

Perhaps the anagrammatizing of psychoanalysis as I tried to sketch it out in this essay partakes of what Freud calls combinatorial paranoia. Perhaps, not unlike Saussure, the attempt to trace the presence of a phenomenon in a given field leads to the danger of seeing it everywhere. But, as my essay does not lay claim to scientific verifiability, this is of secondary importance. As long as this anagrammatic view contributes to the opening up of a different perspective on the authors treated here, provides some hints on a strange, displaced, in termitent threat that binds them together, adumbrates some insights into specific condensations and displacements at work in their theories, it will have done enough. Ultimately, the work of interpreting is highly anagrammatical. It is a work of *bricolage*, of disassembling and recombination. On the one hand, this could be seen as its drawback. On the other, it is also its greatest asset. It is thus that interpretation forecloses monolithic totalizations. It is itself a selection and recombination of elements and forms the basis for another such process performed with its body. Such is the material dialogue is made of. (pp. 22-23)

"Visual anagrams": Given the interest of psychoanalysis in symbolism, topology and knots, a case can be made for extending the grammatical, textual approach to their use of anagrams, as primarily developed by Bachner, to visual forms employed in those symbols. As discussed separately, this implies a somewhat distinctive understanding of "figurative" (*Questionable Classification of Figures of Speech -- as fundamental to the need for powerful rhetoric in governance*, 2016)). Bachner characterizes her notion of anagram as follows:

1. The anagram is the product of and the name for a process that consists in a disassembling and reassembling of parts of the same basic material.
2. The anagram is a meeting place of different sign systems and does not have to consist of units of only one of these systems. Transpositions of units from one system into the other are possible.
3. The anagram can consist of parts that can go beyond conventional units of discourse required for signification in the different sign systems.
4. The anagram is the site which makes the combinatorial character of sign systems visible. This visibility can be achieved by different means (and their combinations): through a potential incompleteness of the anagram, through a palimpsestic thickening of a text (in its widest sense), through a mixing of units of different sign systems, or through a destruction of the conventional textual units. The anagram as a figuration shows itself to be only the petrified trace of the anagram as a process, a permutation beyond the laws of specific discourses. (p. 6)

Such considerations could be applied to the animated symbol of polyamory/polyanimosity presented as an exercise above. On reflection (especially in geometrical terms), the heart symbol and the Möbius strip/infinity symbol are curiously related through particular transformations, as with the linearity of the arrow. As noted above, the Möbius strip is itself curiously related to the circle or unknot. The question is whether such forms are more fundamentally related as "visual anagrams" potentially indicative of the unconscious processes characteristic of the interplay of polyamory and polyanimosity.

It could be useful to explore whether the set of 4 distinctive curves of which the heart symbol is conventionally composed can be

understood like "letters" in an anagram -- combined in a particular way in that instance. Are they to be understood as associated with the fourfold pattern of attraction, repulsion, alignment and searching noted above -- variously rendering 4 feedback loops explicit, if not as indicative of cybernetic feedback loops of fourfold order?

Animating the interplay of "visual anagrams"? In quest of a pattern to interrelate such geometric/topological "anagrams", more extensive arguments are developed separately with respect to:

- heart/cardioid in 2D and in 3D
 - *Cognitive heart dynamics framed by two tori in 3D* (2016)
 - *Radical Localization in a Global Systemic Context: distinguishing normality using playing card suits as a pattern language* (2015)
- interrogation mark / exclamation mark and their inversions
 - *Markings: ¡¿ Question 8 Answer ?!* (2013)
 - *Conferencing as putting identity to the question* (2013)
- linearity as an edge view of a circular form, especially in 3D
 - *Mutually orthogonal Abrahamic symbols from the perspective of projective geometry* (2017)
 - *Configurations of symbols within a sphere and implications of higher dimensionality* (2017)

So framed, an interesting question is whether the 4 distinctive playing card symbols (hearts, diamonds, clubs, spades) lend themselves to exploration as "visual anagrams" of each other. The same might be asked of the 8 trigrams and 64 hexagrams of the Chinese *BaGua* and *I Ching* systems -- or the 12 signs of the zodiac. The more general point would then be that symbolic notations of any pattern language may derive a degree of coherence from such a relationship -- as may be the case with musical notations.

Generation of a pattern of systemic symbols? Towards an understanding of possible patterns of visual anagrammatic transformation, an unsuccessful attempt was made to use a tabular presentation based on the geometric transformations typically available in graphic illustrator software (Adobe, Inscap, etc). It could be readily imagined that a set of patterns could be systemically generated according to some geometrical algorithm. Indeed a number of resources are indicated for "symbol generators" valued for their role in providing visual codes for extensive sets of distinctive entities, as might be required in some artificial intelligence applications.

The issue here with respect to polyamory/polyanimosity was to derive a set of symbols from a more fundamental symbol indicative of coherence, most notably the circle. Additionally ther quest was for how to include within the articulation the heart as the most commonly recognized symbol of love/like, with its extension to the infinity symbol / Möbius strip now favoured for polyamory. However the concern was also to include the "arrow" of Cupid, notably as being ambiguously indicative of the violence potentially associated with polyanimosity (as used with respect to jealousy, and the like).

A speculative experiment can be undertaken using graphic illustrator features to generate the following non-tabular array centred on a circle:

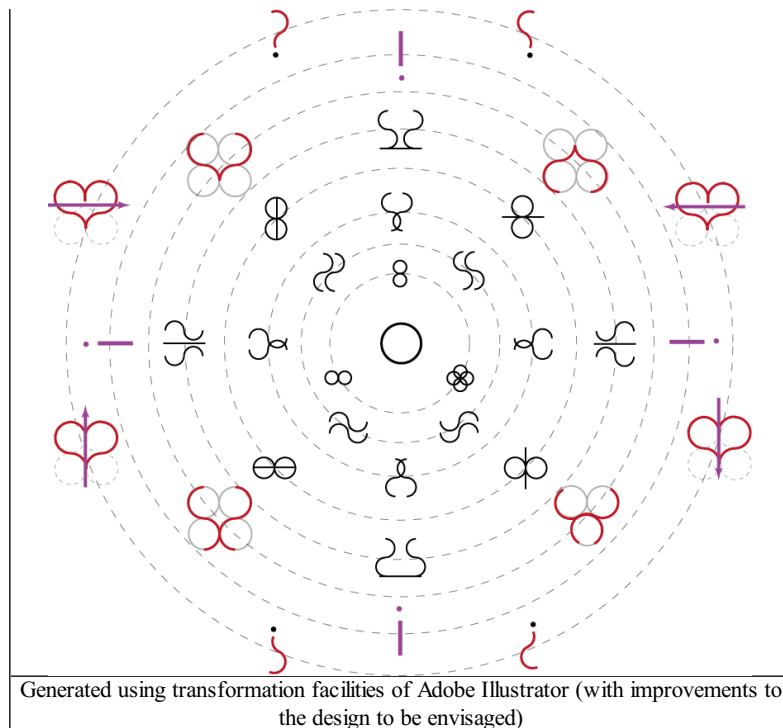
- Successive rings of the array are then suggestive of increasing complexity.
- Both the exclamation mark and question mark in various configurations (including reflections) are included in the outer rings -- as being characteristic of both the surprise of "falling in love" (or being "betrayed") and the questioning associated with the experiential ambiguity.
- Transformation through inversion/reflection recalls the significance associated with cognitive processes of mirroring and enantiodromia (*Stepping into, or through, the Mirror: embodying alternative scenario patterns*, 2008; *Enantiodromia: cycling through the "cognitive twist"*, 2008).
- Reversal of symbols, typically highly controversial, recalls the questions raised by directionality of reading and its reversal (*Unquestioned Bias in Governance from Direction of Reading? Political implications of reading from left-to-right, right-to-left, or top-down*, 2016; *Doublespeak, reverse speech and Freudian slips?* 2016).

The exercise is deficient in that it can be usefully recognized as implying an extension from 2D into 3D, as separately argued with respect to individual symbols (*Cognitive Implications in 3D of Triadic Symbols Valued in 2D: representations of the triskelion in virtual reality and implications for quantum consciousness*, 2017). However a 3D spherical array might itself be more appropriate as being indicative of the globality of the experience (of love or hate) of which the central circle is only potentially suggestive. The symbols would then be variously mapped onto the surface of that sphere.

Such a mapping, with the experiential implications of the symbols so arrayed, would offer the possibility of relating those derived through particular types of transformation -- possibly using the patterns of edges of the Platonic and/or Archimedean solids (*Nesting polyhedra to enable comparison of patterns of discourse*, 2015; *Polyhedral meta-patterns of relationships?* 2015; *Pathway "route maps" of potential psychosocial transformation?* 2015).

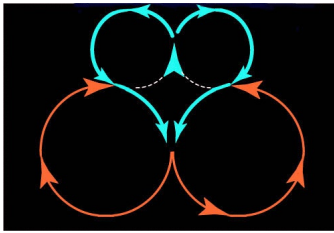
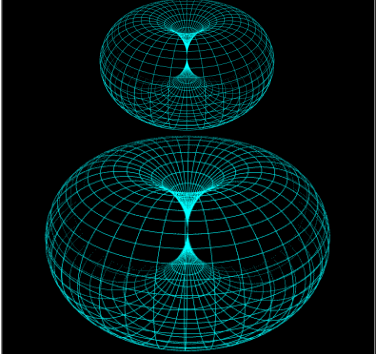
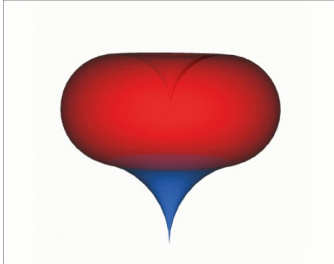
Of interest with respect to a 3D interpretation is the sense in which the linear form of the exclamation mark -- adapted for use as "Cupid's arrow", is better understood as a circle in the third dimension -- seen here edge on. The alternative directionality of the arrow can then be understood as suggesting the two distinctive directions of rotation of that circle.

| Experimental array of visual anagrams derived through progressive geometrical transformation |
|--|
| |





Of interest is the emergence in the array of both familiar and unfamiliar symbolic forms. The various orientations of the interrogation mark and the question mark are one illustration (to which the rarer [interrobang](#) could be added). Also evident are the cup symbol and the coiling serpents (to which the traditional rod could be added).

The possibility of development in 3D is indicated by the following earlier examples of experimental animations Others are presented separately (4 [playing card symbols](#); *Animation of Classical BaGua Arrangements: a dynamic representation of Neti Neti*, 2008; and a possible combination of the *BaGua* pattern with the Möbius strip as indicated above).

| Heart-pattern using juxtapositioned cross-sections of two 3D tori | | |
|---|---|---|
| Dynamics defining 4 conditions | 2 horn tori of major radius in proportion of ϕ | Embedding within 2 contiguous tori |
|  |  |  |
| | Adaptation, with permission, of animation by Wolfgang Daeumler (Horn Torus) | |

The fundamental experience of surprise and ambiguity in polyamory/polyanimosity is suggested by the following tentative animations.

| Animations relating question and answer | |
|---|--|
| Alternation between "question" and "answer" (by rotation "through another dimension") | Possible elements of a question-based meta-narrative using 3D |
|  |  |

Dimensions of an appropriate symbolic pattern language for polyamory/polyanimosity: Beyond any focus on the binary, the general question could be how many symbolic patterns would be conducive to greater comprehension of relational experience. Presumably geometry and topology could indeed generate sets of patterns on the basis of cognitively significant transformations. Relationships traditionally framed and valued in 2D can be fruitfully enriched by remapping into a 3D framework (*Representation of*

Creative Processes through Dynamics in Three Dimensions: global insight from spherical reframing of mandalas, the zodiac and the enneagram, 2014).

Other insights might indeed be derived from knot formation, weaving and knitting. Clues are provided by the following "minimal" sets:

- 2x2: various quadrant patterns
- 3x3: most notably the **magic square**, and those of higher order
- 3x4: various 12-fold patterns (*Checklist of 12-fold Principles, Plans, Symbols and Concepts*, 2011)
- 3x5: especially the transformations distinguished in carpet design by **Christopher Alexander** (*Magic Carpets as Psychoactive System Diagrams*, 2010; *Tentative adaptation of Alexander's 15 transformations to the psychosocial realm*, 2010)

If each concentric circle is used to hold a specific number of symbols as a result of a particular transformation (as characteristic of electron shells) and implied in the schematic map above, an interesting question is how many "transformational steps" are required to navigate from one form to another -- from the circle to the heart, for example. The schematic recalls arguments for **six degrees of separation** -- so that a chain of "a friend of a friend" statements can be made to connect any two people in a maximum of six steps.

Shifting to the potential of 4D, of potentially greater significance for polyamory/polyanimosity cognition, it is possible to transform between any two maximally distinct convex shapes (somewhat regular polyhedra) using a kind of 4D framework, offering animations of cross-sections to see them morph from one into the other.

Multiplicity of relational conditions and any "standard model"

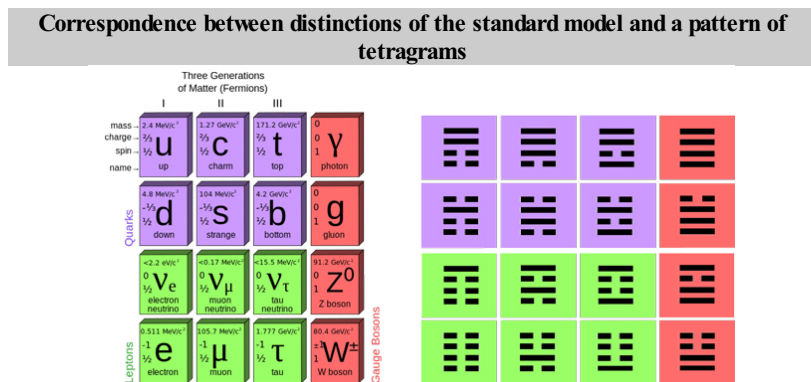
It is therefore a useful challenge to argue that there may well be 64 conditions (or more) to be recognized, as suggested by the tabular presentation above. Beyond the purely sexual connotations, such complexity can be related to the distinctions encoded symbolically by the *I Ching* and the *Kama Sutra* of Eastern cultures. Given the mathematical basis of the former and the topological basis of the latter, there would appear to be a whole realm of possibilities to be explored, as argued separately (*Reframing the Dynamics of Engaging with Otherness: triadic correspondences between Topology, Kama Sutra and I Ching*, 2011).

If physics finds reasons to argue that the pattern of chemical elements is derivative of more fundamental structure, there is a case for exploring the patterns of distinctions made at such fundamental levels to see whether they in any way reflect insights in relation to psychosocial organization. Again, why should it be assumed that cognitive organization is not of commensurate subtlety with the organization of matter? One argument in this respect is that of **George Lakoff** and **Rafael Nunez** (*Where Mathematics Comes From: how the embodied mind brings mathematics into being*, 2000).

It is therefore somewhat ironic to recognize that the range of distinctions of love or of hate is curiously similar to that of the **Standard Model of Elementary Particles** explored with such intensity by physics. (*Beyond the Standard Model of Universal Awareness: Being Not Even Wrong?* 2010; *Metaphorical Insights from the Patterns of Academic Disciplines: learning from the Standard Model of Physics?* 2012).

Of relevance to this discussion, as argued in the latter, is the extent to which metaphor is explicitly associated with complex Chinese encoding systems -- as with the 64 hexagrams of the *I Ching*, and the 81 tetragrams of the *Tao Te Ching* and of the *T'ai Hsüan Ching* (*T'ai Xuán Jing*). Such metaphor is evident in the effort to associate a comprehensive integrative engagement with features of familiar experience by which global governance is notably challenged, whether psychosocial relationships, environmental categories ("earth", "air", "fire" and "water"), or especially their interrelationships.

The following figure positions a complete set of tetragrams such as to correspond to the pattern of the standard model of particle physics -- notably presented as a simple "box", in the light of the concern here with geometrical metaphors. Although the pattern of tetragrams has a degree of internal coherence corresponding to that of the standard model, as a tentative exercise it is merely designed to encourage reflection on any more appropriate ordering. The order of rows and/or columns could be changed -- as was done in a second iteration, when columns 2 and 4 were switched to approximate more closely to the criterion of a magic square (as discussed in that context).



There are six **quarks** (up, down, charm, strange, top, bottom), and six **leptons** (electron, electron neutrino, muon, muon neutrino, tau, tau neutrino). Pairs from each classification are grouped together to form a **generation**, with corresponding particles exhibiting similar physical behaviour. The **gauge bosons** are defined as **force carriers** that mediate the strong, weak, and electromagnetic **fundamental interactions**.

What might such distinctions, and their powerful integration, then suggest with respect to the configuration of psychosocial patterns of love and hate?

Enabling comprehension of complexity through music: Especially intriguing about the form of the depictions above, particularly that on the right, is the degree to which they are reminiscent of the keyboard of a musical instrument -- perhaps the [fret](#) of a guitar or the associated [tablature](#). Given the manner in which the variety of experiences of love and hate are expressed in musical form, there is the possibility that more use could be made of that modality to articulate systematically the patterns of polyamory and polyanimosity and their interrelationship. This could well have global implications, as separately argued (*A Singable Earth Charter, EU Constitution or Global Ethic?* 2006).

Relating the fundamental organization of matter to sound is not as farfetched as might be assumed. Use is made of [sonification](#) to render comprehensible patterns of collisions of fundamental particles (Harriet Jarlett, *Sonified Higgs data show a surprising result*, CERN, 5 April 2017; *Data Sonification from Physics to Health*, CERN, 30 March 2016). Similar techniques are used in biology (Brent Townshend, *Sonification of Genetic Sequences*, CCRMA; Mark Temple, *What does DNA sound like? Using music to unlock the secrets of genetic code*, *The Conversation*, 20 June 2017).

There is an enchanting possibility that, through musical harmony, polyamory and polyanimosity might be insightfully understood through [polyphony](#), as can be speculatively explored (*All Blacks of Davos vs All Greens of Porto Alegre: reframing global strategic discord through polyphony?* 2007). This notes the role of the otherwise incomprehensible value of discord in relation to concord -- easily forgotten when it is assumed that the appeal of music is dependent on concord alone, as is characteristic to a greater degree for proponents of [sacred music](#) as conventionally understood.

It is appropriate to consideration of such "unconventional approaches" that the Nobel Laureate [Richard Feynman](#)'s own interest in art and bongo drumming was much deplored by other physicists as an irrelevancy -- perhaps even to be seen as an "abuse of science". Feynman was notably intrigued by the relationship of rhythmic patterns to physics -- proposing use of a drumhead to demonstrate [Chladni vibrational patterns](#) (Jagdish Mehra, *The Beat of a Different Drum: the life and science of Richard Feynman*, 1994).

Feynman's skill in that respect is illustrated by a recording made two weeks before his death (*Richard Feynman playing bongos*, YouTube; *Feynman plays the bongos*, YouTube). There is some probability that he may have adapted this skill to explore the relevance of patterns encoded by shamanic drumming of the *I Ching* (Florence W. Deems, *Drumming the I-Ching Patterns*, 1999; Hilary Barrett, *Drumming the I Ching*, 2011). Feynman is renowned in fundamental physics for his development of so-called [Feynman diagrams](#). These might indeed prove significant to richer comprehension of contractual relationships (*Potential of Feynman Diagrams for Challenging Psychosocial Relationships? Comprehending the neglect of an unexplored possibility*, 2013; *Credibility of Psychosocial Analogues of Feynman Diagrams: cognitive engagement with challenging visualization*, 2013). There is some irony to the fact that such patterns may be more readily comprehended through music.

Global civilization? Is the reality of global civilization too readily assumed in this period of global crisis? Could it be usefully challenged by adapting the question famously asked of [Mahatma Gandhi](#): *What Do You Think of Global Civilization?* -- to which he is widely quoted as responding: *I Think It Would Be a Good Idea*.

Beyond the questionable implications of [sacred music](#), and given the argument for interweaving polyamory and polyanimosity, what might "peace" and "sustainability" sound like -- in reality? To which question the attitude of Feynman might well be appropriate as a response: *I would rather have questions that can't be answered than answers that can't be questioned*.

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