10 May 2014 | Draft

Investing Attention Essential to Viable Growth

Radical self-reflexive reappropriation of financial skills and insights

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Introduction

Little needs to be said of the importance of the financial system and its intricate relationship to the growth of the global economy. The same can be said of the financial crisis to which the world has recently been witness. The following is however an exploration of the curious degree to which many terms framing engagement with the financial system, and the thinking involved, offer an alternative interpretation of potentially greater interest in this period. It might even be said that many financial terms are descriptive of cognitive processes initially recognized otherwise with respect to attention -- processes now effectively "buried" in that restrictive usage.

The prime examples making the point are: interest and investment. **In what does one invest one's attention? What then is one's "investment portfolio"?** On what basis are decisions made to invest or disinvest? Framed in this way, upholding a set of values is indicative of a more generic investment portfolio -- typically more evident through engagement in the preferred activities of daily life. This could even be seen as a chicken-and-egg situation. Which should be understood as a generative metaphor for the other?

The highly problematic operation of the financial system in this period, despite the degree of attention accorded to its processes, suggests that there is a critical disconnect between the nature of that attention and that required to recognize the risks incurred. This can perhaps be caricatured as an "inability to keep an eye on the ball", as so questionably demonstrated by regulatory bodies and the self-acclaimed "masters of the universe" of Wall Street.

Could a more generic understanding of the terminology of investment engender unexplored possibilities of greater "interest", and of greater "return on investment"? The argument is that a very considerable amount of creative thought has been invested in the tangible implications of finance -- as reflected in the explosive development of the associated terminology.

Missing is any consideration of what this thinking might imply for forms of ongoing investment in intangibles of more direct relevance to quality of life -- so challenged in this period for the "99%". The question is whether a more generic understanding might shift the centre of gravity from the purely tangible material focus of economics to one of a more intangible nature of greater potential -- of which the tangible is but a particular instance, implying a particular choice of investment. **Can the language of finance be used to reinterpret the subtleties of investment of attention?**

Although the intangible has been deprecated in past considerations of economics and finance with respect to the derivation of profit, the ongoing financial crisis has made it clear the degree to which there is dependence on the intangible -- as evident in issues of confidence and trust. More surprising is the explicit recognition of the increasing importance of the so-called attention economy as a key to economic success in the global knowledge-based civilization of the future. This has major implications for the design of web interfaces through which investment attention is solicited (Ronald Rensink, *The Management of Visual Attention in Graphic Displays*, 2011).

Is there a continuum to be recognized between investing in the tangible (as more conventionally understood) and investing in the intangible through attention to it in some way?

Curiously this more generic framing suggests that **everyone is in fact an "investor" -- of attention**. Most live -- and even thrive -- from "interest" generated by their "investments". This of course implies that the "income" generated in this way is -- for most -- better framed by the term "psychic income". From this perspective, the questions may be asked: what has one got to invest, and how much has one got to invest. **To what does one give attention, and what is the return on that investment?**

The argument is effectively an exploration of the extent to which attention as a scarce resource has been misappropriated by conventional thinking -- and thereby trapped into modalities offering a lower return on investment in terms of quality of life. This is evident in the exploitation of susceptibility to illusion in the face of skilled presentations by advertisers, and politicians. Can global civilization be understood as heavily invested in attractive illusions -- partially "spoiled" by revelation of systematic complicities associated with the financial crisis, diplomatic cable disclosures, use of torture by the intelligence agencies, and sexual abuse by clergy?

As framed, the question is whether the cognitive skills deployed can be radically re appropriated. The argument is itself an invitation to a speculative investment of attention -- potentially offering a valuable return on investment.

Beyond investing attention in attention economics

Attention economy: The argument in subsequent sections is remarkably well framed by current preoccupation with the emerging attention economy -- beyond that of knowledge and information (T. H. Davenport and J. C. Beck, *The Attention Economy: understanding the new currency of business*, 2001; Michael H. Goldhaber, *The Attention Economy and the Net*. *Telepolis*, 27 November 1997).

For Davenport: *Understanding and managing attention is now the single most important determinant of business success*. For Goldhaber: *The currency of the New Economy won't be money, but attention*. As described by *Wikipedia*: attention economics is an approach to the management of information that treats human attention as a scarce commodity, and applies economic theory to solve various information management problems. In the extensive review of issues relating to the *Attention economy* by the P2P Foundation, it is recognized as an economy driven by the exchange of attention with the implicit goal of tightly intertwining everyone at the level of mind.

This economic preoccupation with the commodification of attention is not the concern here, but the associated literature makes fruitful distinctions of value to recognition of radical possibilities with respect to attention.

The current debate is usefully summarized by several authors. It has been the subject of a special journal issue on *Paying Attention* (*Culture Machine*, 13, 2012). In their editorial introduction to the freely accessible contents, Patrick Crogan and Samuel Kinsley indicate:

> In this introduction we identify four particular, yet related, ways of thinking about how attention is commodified, quantified and trained. First, the attention economy has been theorised as the inversion of the 'information economy', in which information is plentiful and attention is the scarce resource. Second, post-Marxist critics have identified 'cognitive capitalism', the enrolment of human cognitive capacities as 'immaterial labour' par excellence, as the foundation for an attention economy. Third, several continental philosophers have identified the cerebral and neural as an object or site of politics, with a neural conception of attention becoming, particularly for Stiegler, a key issue. Finally, the internet, as a mediator of contemporary intellectual and social activities, has been identified by popular commentators as a threat to our mental capacities, devaluing them, and thus posing a risk to our ability to contribute to society. They are by no means exhaustive, but it is betwixt and between these various understandings of an attention economy that the discussions within this issue are accordingly positioned. (*Paying Attention: Towards a Critique of the Attention Economy*. *Culture Machine*, 13, 2012).

From a philosophical perspective, the debate is fruitfully summarized by Jörg Bernardy as follows:

> In general there are four main fields in which attention plays a more or less important role and where it is [the] object of theoretical works: (1) cognitive sciences and psychology, (2) cultural studies and literature (Frank Kermode, Aleida and Jan Assmann), the field of (3) economics which is the most problematic field because it is not only rooted in economics but seems to be rather an interdisciplinary approach of psychological, sociological, philosophical and economic thinking within the paradigm of media culture and communication (Herbert Simon, Georg Franck, Michael Goldhaber, David N. Lanham). Finally attention appears in the discourse of (4) phenomenology which is, regarding the phenomenon of attention, represented primarily by Edmund Husserl, Paul Valéry and Bernhard Waldenfels in philosophy (*Attention as Bounded Resource and Medium in Cultural Memory: a phenomenological or economic approach?* *Empedocles: European Journal for the Philosophy of Communication*, 2011)

Implications of the attention economy: A sense of the implications of the attention economy is perhaps most eloquently offered by Georg Franck (*The Economy of Attention*. *Telepolis*, 7 December 1999). He notably develops his argument with respect to the communication processes of science as one primarily preoccupied with gaining attention, and acquiring prominence thereby (*Scientific communication - a vanity fair?* *Science*, 286, 1999)

> Attention by other people is the most irresistible of drugs. To receive it outshines receiving any other kind of income. This is why glory surpasses power and why wealth is overshadowed by prominence. This is also why it is becoming popular in our affluent society to rank income in attention above money income....
>
> Attentiveness as such is more than, and of ontologically higher order than, anything appearing to or in it. Dedicated attentiveness

> imparts dignity to the person receiving the attention. This alone makes receiving somebody's benevolent attention a most highly valued good for creatures who are attentive themselves. Receiving alert attentiveness means becoming part of another world. No attentive being has direct access to the world of another being's attention. By receiving another being's attention, however, the receiving one becomes represented in that other being's world.
>
> Is the economy of attention thus an already practically experienced preliminary stage of future ecologically non-harmful lifestyles? Could the transformation of economic competition into a sharper battle for attention ultimately be the "cunning of reason" which will save us? Are we perhaps - unknowingly and without wanting it - on the right track? We should not take looking for answers to these questions too lightly.

Mental capitalism: Franck reframes this argument in terms of *Mental Capitalism* (2005):

> What we have is mental capitalism. To all appearances, there exists a nearly perfect reflection of the material base in our mental superstructure. It is a great pity that the old reflection theory is so completely dead that it can no longer enjoy this fact. However, imagine how the old warriors would rub their eyes if they saw what has happened to the old relationship between basis and superstructure! According to materialist doctrine, the mental superstructure is only a dependent reflex of the material production conditions. This doctrine claimed to have put the idealist world view, which had been standing on its head, back on its feet. But what are those conditions doing now? They are standing on their head out of their own accord. Idea-economy has taken the lead. However, the production conditions were indeed what brought about the reversal. Not at all just by volume of attention turnover are the media big industry....
>
> It would, therefore, be completely wrong to think that the capitalisation of attention is limited to the phenomenon of prominence. This view would be as erroneous as thinking that only received attention is scarce and expensive. This is the case, but it is also true of one's own self-generated attentive energy. That energy can be accumulated through investment in oneself. A higher income attained through education may also be considered as a kind of dividend. But in this case it is the investment of one's attention in oneself which is the important aspect. However, education is also a kind of capitalisation of other persons' attention, if one thinks of the teachers' contributions....

A sense of the dynamics of the core debate is provided by a review by Michael H. Goldhaber (*How (Not) to Study the Attention Economy: a review of The Economics of Attention: style and substance in the Age of Information*. *First Monday*, 11, 2006; John Hagel, *Goldhaber and Attention Economy*, June 2005).

Economic commodification of attention: The enthusiasm for recognition of the attention economy follows from the pattern of seeking ever more invasive ways of deriving tangible financial benefits from both natural resources and virtual resources -- through their progressive commodification. In this case it follows from recognition that attention is indeed an increasingly scarce resource, as noted by Ursula Georgy (*The Theory of Attention and the Economy of Understanding as a New Price Model in the Information Economy?* 2008):

> Most prices in the information economy (scientific information) are based on length of information, duration of online time, actuality etc., but most of these price concepts give little satisfaction to the customer because they are irrational and not comprehensible. Till today there exist no price concepts in the information economy considering the attention or understanding of information. Therefore the theory of Georg Franck (1999, 2002) will be an interesting attempt for new price models.

Psychology of investing attention as a missing dimension

Seemingly missing from the descriptive approach from an economic perspective -- although arguably implicit -- is the psychological engagement of the individual in investing attention. This is partly evident in the literature on time management and its specific focus on attention management. The latter refers to models and tools for supporting the management of attention at the individual or at the collective level, whether in the short-term or over longer periods (Thierry Nabeth, et al, *Approaches and Tools for Addressing the Attention Challenge in the Knowledge Economy*. 2006).

As qualified by Kay Grossman (*Your Attention Investment Portfolio*. *Focus Dammi*t, 29 February 2012):

> The "time management" solution is not about managing time. Rather, it's about managing ourselves, and more specifically, about managing our attention. Many wiser people before me have asserted that what we pay attention to determines the essence of our reality, let alone what we accomplish in the course of a day.

Grossman continues:

> The solution, then, is to consciously choose where to pay attention, to bring intention to the act of attending. Neuropsychologist Elkhonon Goldberg perfectly captures this phenomenon: *The best defense against the manipulation of our attention is to determine for ourselves -- in advance -- how we want to invest it...* Goldberg's words merit parsing. Let's start with "invest", which implies that there is both value and cost to the allocation of attention. In fact, we implicitly acknowledge that attention is finite and valuable by the ways we talk about it. We give attention, or pay attention. We hold a sense that it is a limited resource.

Psychological capital: Also missing is the relation between investing attention and the accumulation of psychological capital in the work on flow psychology of Mihaly Csikszentmihalyi (*The Psychology of Optimal Experience*, 1990). For Csikszentmihalyi flow is a state where attention can be freely invested to achieve one's goals. He argues: *attention is our most important tool in the task of improving the quality of experience* and *when we feel that we are investing attention in a task against our will, it is as if our psychic energy is being wasted*. With Jeanne Nakamura, in the *Encyclopedia of Positive Psychology* (2011), their understanding of positive psychological capital is defined as the positive and developmental state of an individual as characterized by high self-efficacy, optimism, hope and resiliency.

> We call PK [psychological capital] the ability to allocate attention so as to generate positive experiences in the present, and in ways that are likely to provide positive experiences in the future as well.... When a person is able to derive positive experiences from the moment, while at the same time doing something that is likely to improve the quality of experience in the future, that person is *forming psychological capital*. The ability to choose a desirable focus for one's attention, and the ability to keep attention concentrated on desired objects, is what makes the building of capital possible

Four ways of investing attention (reproduced from Csikszentmihalyi and Nakamura, 2011)			
		Is the experience positive now?	
		Yes	No
Is it likely to be positive in the future?	Yes	capital formation	postponed gratification
	No	resources consumed	resources wasted

Framing experience of life: This emphasis contrasts somewhat with that of Winifred Gallagher, as a behavioural science author, who argues that how what attention is paid determines how life is experienced. As summarized:

> *Rapt* makes the radical argument that much of the quality of your life depends not on fame or fortune, beauty or brains, fate or coincidence, but on what you choose to pay attention to. *Rapt* introduces a diverse cast of characters, from researchers to artists to ranchers, to illustrate the art of living the interested life. As their stories show, by focusing on the most positive and productive elements of any situation, you can shape your inner experience and expand your world. By learning to focus, you can improve your concentration, broaden your inner horizons, and most important, feel what it means to be fully alive. (*Rapt: Attention and the Focused Life*, 2009)

Focus: This emphasis is also evident in other arguments with respect to attention focus (Daniel Goleman, *Focus: the hidden driver of excellence*, 2013; Brian Bruya, *Effortless Attention: a new perspective in the cognitive science of attention and action*, 2010).

As might be expected, this enthusiasm for attention from a conventional "western" academic and economic perspective is remarkable for the manner in which it excludes the consideration of attention as it has long been fundamental to many disciplines of meditation -- from which it might be assumed that many insights could be elicited. Meditation has even been said to be the science of attention and the manner of its investment (Chiyoko Osborne, *Meditation Simplified: why it's the wisest investment in yourself*, *The Huffington Post*, 15 April 2014). For example, with respect to *Mindfulness versus Concentration*:

> Mindfulness picks the objects of attention, and notices when the attention has gone astray. Concentration does the actual work of holding the attention steady on that chosen object. If either of these partners is weak, your meditation goes astray. (Vipassana Meditation)

The concern here is **not** however to consider such resources. Nor is there any implication that those studying attention should themselves be exemplars of its practice -- as would be the aspiration of those investing in meditation.

The argument which follows emphasizes rather the subjective sense of investing attention, as an extension of familiarity with the financial investment process and the experience of any investor -- but irrespective of conventional economic considerations. The **psychology of investing is thereby treated here somewhat as a "meditative discipline" in its own right -- from which insights may be drawn, as framed by the financial language of investing**. Provocatively it might be suggested that the language of investment, as employed by the financial community, bears exploration as a functional equivalent to the famed *Spiritual Exercises of Ignatius of Loyola*.

Enabling metaphor: This approach may be facilitated by the literature regarding the use of metaphor in relation to financial investment and economics (Magdalena Bielenia-Grajewska, *The Role of Metaphors in the Language of Investment Banking*, *Ibérica*, 2009; A. Davidson, *How to Understand the Financial Pages: a guide to money and jargon*, 2005; A. Espunya and P. Zabalbeascoa, *Metaphorical expressions in English and Spanish stockmarket journalistic texts*, 2003; D. McCloskey, *Metaphors Economists Live By*. *Social Research*, 1995; Arjo Klamer and Donald McCloskey, *Accounting as the Master Metaphor of Economics*, *European Accounting Review*, 1992; H. Skorczynska, *Metaphor in Scientific Business Journals and Business Periodicals*, *Ibérica*, 2001).

The striking relevance of metaphor to this argument has been most recently made by Mark Forsyth (*The Poetic Pageantry of the Financial Mind: in the picturesque patois of bankers, money can seem a mere afterthought*, *International New York Times*, 14 April 2014; *The Poetry of the Trading Floor: going beyond bears and bulls*, *The New York Times*, 13 April 2014).

Missing link? Use of metaphor in relation to investment may even be suggestive of a form of cognitive disconnect -- a missing link -- as explored in relation to theories of information by Terrence W. Deacon (*What's Missing from Theories of Information?* 2010; *Incomplete Nature: how mind emerged from matter*, 2011).

A fruitful possibility to be explored is the manner in which inattention is exploited through illusion, as is now a focus of the cognitive sciences (G. Kuhn, et al, *Towards a Science of Magic*, *Trends in Cognitive Sciences*, 2009). Arguably illusion -- as semblance -- is partly enabled by a form of visual metaphor. Attentive vigilance to such susceptibility is especially important in a period in which sustaining illusion can be considered the art of finance, advertising and politics -- with the aid of public relations "spin".

Investing attention in interesting opportunities

The argument can be readily accepted that people choose to invest attention in features of their environment perhaps, ironically, to be understood as "environ-mental". From these they derive particular interest: sport, music, friends, politics, nature, etc -- in which they are interested. Less clear is how this "investment" is to be understood and the nature of the "interest" received -- the "return on investment".

Clearly advertisers are especially preoccupied with this process. In effect they have to present "investment opportunities" to potential customers much as is done in presentations of projects for which capital investment is sought. The intricate mix of associations is evident in this phrase in that "capital" can be construed through its associations with the head -- typically engaged thereby in the investment process, whether or not emotional or gut feelings are fundamental to the investment process as a whole.

How is interest embodied in an advertised product or service? Curiously, although it is thereby rendered "interesting", the latter term is not a feature of financial terminology -- however "interesting" an investment proposal may be claimed to be. To be "very interesting" is not explicitly indicative of a financial "return on investment" -- however much this may be implied. The same might be said of the verb form -- as in "to interest" a potential investor.

It is very clear that attention can be "invested" in a wide variety of processes unrelated to those which are a preoccupation of economics and finance. These may include many forms of recreation, social and family relations, cultural activities, and personal development practices. Those active professionally in the financial markets may well claim they are retiring in order to invest in these activities. This might be better understood as a shift in investment priorities -- a rethinking of the investment portfolio.

Despite the extensive insight into interest in the financial realm, it is relatively unclear how interest in the non-financial realm is to be understood. It may even be somewhat of a mystery as to the interest someone derives from this intangible realm -- especially when an investment is claimed to be "disinterested". Such interest may even be seen as obsessive, possibly framed as pathological. A common phrase is the "devotion" of attention to some such focus -- as a "focus of attention". How is the financial sense of "payment" associated with use of the phrase "pay attention" -- and its extension to the payment of some to "attend"? What payment does an advertiser make to a potential consumer to elicit attention? Curiously, rather than payment, French emphasizes lending (as with *prêter attention*), to be compared with "lend me your ear".

Perhaps more intriguing is how and why such investment is sensed as corresponding to an interesting opportunity to which it is appropriate to "pay attention". So framed, the investment becomes understandably one of investing time -- attention and time then to be seen as inextricably entangled in the "attention time" sought by advertisers, or in the "quality time" so valued in relationships. The two are provocatively associated through the manner in which attraction is cultivated to elicit interest, most obviously in sexual relationships -- as offering an interesting investment. Time is then especially evident in the interplay between the short-term and long-term preoccupations of those involved.

Although experientially obvious, the nature of the interest-generating dynamic may elude conventional description. How is a potential investor "turned on"? The possibility has been speculative explored separately (*Global Governance via a Double-breasted Strange Attractor: cognitive implication in a dynamic sexual metaphor*, 2009). Potentially highly relevant is the nature of the boredom-generating dynamic which triggers "turning off" and disinvestment (Lars Svendsen and John Irons, *A Philosophy of Boredom*, 2005). Taken together, the two dynamics are significant in defining direction of movement in cyberspace (and the noosphere).

This more general understanding of interest has been associated with the term interestingness, most notably as highlighted with respect to artificial intelligence by Douglas Lenat. The term now figures in a US patent (*Interestingness Ranking of Media Objects*). With respect to an early paper, now a sociology cult classic, by Murray S. Davis (*That's Interesting: towards a phenomenology of sociology and a sociology of phenomenology*, *Philosophy of Social Sciences*, 1971), Oliver Burkeman (*This column will change your life: interestingness v truth*, *The Guardian*, 5 April 2014) notes:

> What is it, Davis asks, that makes certain thinkers - Marx, Freud, Nietzsche - legendary? *It has long been thought that a theorist is considered great because his theories are true,* he writes, *but this is false. A theorist is considered great, not because his theories are true, but because they are interesting.* Even in the world of academia, most people aren't motivated by the truth. What they want, above all, is not to be bored. ...We live in the Era of Interestingness: attention is money, and purveyors of the interesting can make millions from Twitter feeds of amazing facts - even if they're not always true facts - or from books or blogs offering intriguingly counterintuitive perspectives... Moreover, Davis argues, there are only a handful of main ways for an idea to be interesting. To grab people's attention, you should argue that something we think of as bad is good, or vice versa; that some apparently individual phenomenon is really collective; that several seemingly disparate things are actually part of the same thing; and a few others....

In his paper, Davis included *The Index of the Interesting*.

Varieties of investment and their implication for investment of attention

Types of investment: As framed by *Wikipedia*, investment is the time, energy, or matter expended in the expectation of future benefit. This may have distinct meanings:

- In economics, investment is the accumulation of newly produced physical entities, such as factories, machinery, houses, and goods inventories.
- In finance, investment is putting money into an asset with the expectation of capital appreciation, dividends, and/or interest earnings. This may or may not be backed by research and analysis. Most or all forms of investment involve some form of risk, such as investment in equities, property, and even fixed interest securities which are subject, among other things, to inflation risk. It is indispensable for project investors to identify and manage the risks related to the investment.

The process of investment (namely "investing") may be conflated with what is acquired or achieved by that process (namely an "investment"). The concern here is the process of investing attention (as a resource) -- irrespective of the terminology by which what is acquired thereby is distinguished. Clearly it is appropriate to be attentive to the consequence of conflating the process with what is acquired by the process.

As presented by *Wikipedia*, there are various clusterings of types of investment.

- Traditional investments, namely referring to bonds, cash, real estate, and stocks and shares.
- Alternative investments, as contrasted with traditional investments, may be held to loosely include:
  - tangible assets such as precious metals, art, wine, antiques, coins, or stamps
  - some financial assets such as commodities, private equity, distressed securities, hedge funds, carbon credits, venture capital, film production and financial derivatives.
  - investments in real estate and forestry are also often termed alternative despite the ancient use of such real assets to enhance and preserve wealth.

The *Investopedia* summary (*Investing 101: Types of Investments*) distinguishes:

- Bonds (debt)
- Stocks (equity)
- Mutual funds of different types (equity funds, fixed-income funds, money market funds). These may be clustered otherwise as: money market funds, fixed income funds, mortgage funds, growth of equity funds, balanced funds, index funds, specialty funds, real estate funds.
- Alternative Investments: options, futures, FOREX, gold, real estate, etc

However a second clustering by *Investopedia* (*Defining the 3 Types of Investment*) distinguishes:

- Ownership investments: stocks, businesses, real estate, precious objects
- Lending investments: savings accounts, bonds
- Cash equivalents: money market funds

Other clusters distinguish:

- asset classes, namely as: bonds, shares, property, cash.
- bank savings, term deposits, bonds, shares, property, managed funds, alternatives
- bonds, stocks, mutual funds, money market accounts (offering a competitive interest rate), Exchange-Traded Funds ("baskets" or portfolios of securities) that trade like stocks on an exchange

One seemingly comprehensive clustering is suggested by Gaurav Akrani (*Types of Investment*, June 2011):

- autonomous (or government) investment: unchanging with change in income generated
- induced investment: changing with the change in income level
- financial investment: through purchase of financial instruments with fresh funds
- real investment: as with investment in new tools or infrastructure
- planned investment: undertaken with a conscious objective
- unplanned investment: undertaken spontaneously without any coherent plan
- gross investment: funds expended on capital assets
- net investment: as a consequence of deducting depreciation of the value of capital assets

Classification of investments: Whilst terminological variants are to be expected, it is striking to note the variety of ways in which the variety of investments can be distinguished at the most general level. Many more detailed distinctions are made amongst those variants, as documented by *Investopedia*. Different institutions and disciplines appear to claim good reason in variously clustering investments.

More troubling is the sense in which the variety of distinction and terms may be partly a consequence of opportunistically repackaging financial instruments in the competitive quest for financial opportunities. This is exemplified by the complexity of the investments repackaged as derivatives -- intimately associated with the sub-prime mortgage crisis of 2008 which triggered the recent financial crisis.

It is unclear who is expected to have comprehensive understanding of the array of investment possibilities and of how that array might be best presented in the interest of potential investors. **How might the array of opportunities for investment of attention be clarified** by that insight? It is useful to ask how progress in the classification of investments might be compared with classification in other domains (species, chemical elements, astronomical objects, etc).

The "classification of investments" is understood somewhat differently between the *Generally Accepted Accounting Principles* (GAAP) and the *International Financial Reporting Standards* (IFRS). As clarified by Nathan Holcombe (*Classification of Investments*, 31 July 2012):

> GAAP and IFRS differ in many ways about how to record investments.... Investments can range from stocks to bonds to

> money market accounts. When a company buys a security for the purpose of an investment, they must classify that security at that time. There are three types of classifications: trading, available for sale, and held to maturity. Trading securities are ones that you plan to sell within three months. Available for sale are usually short-term, between three months and a year, and held to maturity are long-term. GAAP states that these three classifications be only used for securities. On the other hand, IFRS allows all assets to be classified as one of the three types. Also, GAAP states that once a security has been classified as trading that you cannot change it to any other classification later. IFRS allows you to keep switching your securities between the three classifications.

Accountants distinguish two broad categories of investments:

- Passive investments are made in order to earn a return, either in the short or the long term, with no view to control or influence the investee (entity that issued the instrument). These can be voting or non-voting instruments.
    - Debt investments:
        - Held-to-maturity investments (HTM, amortized cost): securities with fixed or determinable payments and payment dates, and a maturity date to which management has positive intent and capability to hold securities. The objective is to hold investments to collect contractual cash flows.
        - Fair-value-through-profit-and-loss (FVTPL) investments: a debt investment that is held for the purpose of resale
    - Equity investments:
        - Financial-Assets-Liabilities-Fair-Value-Through-Profit-Loss (FVTPL, held-for-trading or HFT) investments. These are held for the purpose of resale (so market value is important); or subject to certain accounting rules (e. g., hedges).
        - Fair-value-through-other-comprehensive-income (FVTOCI) investments (also Available-for-sale or AFS): irrevocably designated by management at time of acquisition; not acquired primarily for resale
        - Cost investments: Investments for which fair value cannot be reliably determined
- Strategic investments are made in order to influence or control the investee company. Typically, these investments are in voting instruments.
    - Controlled investments (subsidiaries): give "continuing power to determine strategic operating, investing and financing policies of investee without cooperation of others." (usually, more than 50% of voting shares)
    - Significant influence investments (associates): give influence over investee management but not control (usually between 20% and 50% of voting shares)
    - Joint ventures: two or more venturers jointly control the entity (one venturer cannot decide without consent of other venturers)
- Classification by stage (as distinguished by venture capitalists): seed (startup) stage, early stage, expansion stage, later stage

One study of approaches to classification (Anatoliy H. Semenov and Volodymyr O. Vasylyev, *Classification of Investments as an Economic Category*, *Business Inform*, 2013, 10, pp. 43-49) endeavours to systematize the main classification features and identify those that facilitate identification of investments as an economic category. It considers the most frequently used, from the point of view of revelation of economic essence of the "investments" category, classification features: by the object of investment, by the term of investment, by regional features of investment, by forms of ownership on investment resources, by the degree of risk and by the character of participation in investment.

Alternative "alternative investments" -- of attention?

The financial community distinguishes alternative investment strategies (liquid alternatives, "liquid alts") that are available through alternative investment vehicles such as mutual funds, ETFs, closed-end funds, etc. that provide daily liquidity.

The above distinctions clearly exclude other forms of investment through their very particular focus in terms of economic and financial preoccupations. This recalls the controversies over whether a householder (especially a wife) could be understood as "working" -- or might be better defined as "unemployed". It excludes any investment in the family and other "non-economic" activities -- possibly even "non-profit" activity whether or not financially remunerated. This raises issues with respect to bodies declared to be nonprofit, even though their significant objective may be to enable policy-making by their members (eg trade associations, many professional bodies, etc).

This impoverished framing also avoids issues regarding how those variously institutionalized (prisoners, students, military, etc) are to be understood as "working" -- to say nothing of the myriad plants and animals of the biosphere.

A case can of course then be made for also recognizing investment of attention in:

Possible arenas for investment of attention			
Artefacts	***Relationships / People***	***Activities / Practices***	***Ideas / Beliefs***
• nature • land • house • design / clothes • collectibles • art • books	• contacts • partner / spouse • friends • children • pets • community • network • extra-martial affairs • status / image	• play / gambling • charitable activity • prayer • hobbies • sport • music / song / dance • gardening • shopping	• emotional / sentimental • philosophical • religious • cognitive • psychological

With investment understood as the allocation of resources, of particular interest is the investment of energy as the most fundamental resource -- interpreted more generally to include its psychosocial variants, as separately discussed (*Reframing Sustainable Sources of Energy for the Future: the vital role of psychosocial variants*, 2006). Again there is the question of what engenders boredom and the disinvestment process.

Reconciling varieties of investment of attention: a periodic table?

Standard classification of investments? It could be asserted that people are variously encouraged to "invest" in a wide variety of "things". However this variety can be usefully recognized to be relatively incoherent and susceptible to every form of terminological confusion -- encouraging every form of abuse. The phenomena of "investment fraud" and "mis-selling" can be understood in far more general terms -- incorporating processes otherwise framed as legitimate puffery and misleading advertising.

It is understandable that confusion regarding the complexity of derivatives and the associated mis-selling was creatively elaborated, if inadvertently, to be beyond the immediate comprehension of potential customers, regulators or legislators (with the complicity of academics and the media).

It is therefore useful to ask why it is that there is no recognizable pattern of "investment opportunities" -- understood as the allocution of attention as a resource. This might be inspired by the:

- *International Standard Industrial Classification of All Economic Activities* (ISIC)
- *International Standard Classification of Occupations* (ISCO)
- International Nomenclature Codes (of plant and animal species)
- *Periodic Table of Chemical Elements*

Periodic table as a metaphor: The periodic table can perhaps be used as the most suggestive example, as argued and elaborated with respect to a *Functional Classification in an Integrative Matrix of Human Preoccupations* (1982). This approach was developed further (*Periodic Pattern of Human Knowing: implication of the Periodic Table as metaphor of elementary order*, 2009; *Periodic Pattern of Human Life: the Periodic Table as a metaphor of lifelong learning*, 2009; *Tuning a Periodic Table of Religions, Epistemologies and Spirituality -- including the sciences and other belief systems*, 2007).

Of particular interest is the sense in which the variety of "ways of investing attention" can be understood as "ways of knowing". As with the periodic ordering of the chemical elements, unfruitful simplistic orderings can be challenged from the mathematical perspective of Denis H. Rouvray and colleagues (*The Mathematics of the Periodic Table*, 2005), as separately discussed (*Towards a Periodic Table of Ways of Knowing -- in the light of metaphors of mathematics*, 2009). As noted there, of particular interest is then the design of such a framework -- understood here as a guide to possibilities of investing attention.

Design criteria for a comprehensive classification scheme: Moving beyond the confusion of the variety of investments (as discussed above), criteria for such a design might then include:

- a degree of simplicity to facilitate comprehension
- a degree of complexity to encompass more complex and subtle forms
- a degree of symmetry to facilitate memorability
- a capacity to encompass forms of attention which might otherwise be considered incompatible (and susceptible to being "designed out")
- suggestive of various directions of development, potentially anticipating more sophisticated/subtle forms of attention (perhaps as a consequence of learning, experience or maturity)

Use of the periodic table as an example, with the mathematics of its order, is a valuable indicator of the challenge of any form of financial or economic modelling in relation to types of investment. Beyond the confusing terminology indicated above, such models are obliged to identify formally the parameters distinguishing those types. The current difficulty is that such models are either relatively specialized, or relatively incomprehensible, or both -- in a period in which investors and regulators have need of a general framework which is both comprehensible and comprehensive.

Somewhat paradoxically, **the capacity to encompass the investment of attention in "non-financial" activity could be recognized as a vital means of associating those who do not have financial resources to invest as conventionally understood.** They are however appropriately understood to be part of the larger attention economy.

Typologies engendered by theories of investment? In seeking to benefit from the mathematically significant pattern offered by the periodic table, it is useful to ask whether any theory of investment could be expected to engender a periodic table of investments. Ironically any such equivalence suggest a degree of significance to conventional chemical terminology: financial bond (ionic bond?), shares (covalent bond?), mutual fund (?), etc.

Other possibilities might emerge from a systematic approach to investment (see Johan E. Eklund, *Theories of Investment: a theoretical review with empirical applications*, Swedish Entrepreneurship Forum, 2013). However, despite its focus on "applications", the latter does not indicate how distinct instruments and forms of investment emerge. This contrasts with the case of chemical elements in which the mathematics must necessarily clarify the emergence of distinct elements -- as might be expected in the case of theoretical biology with respect to the emergence of species.

The point is made more clearly by Jaime F. Zender (Optimal Financial Instruments, *Journal of Finance*, 46, 1991, 5) noting that:

> ... a great deal of attention has been focused on the problem of determining the optimal capital structure of the firm... The majority of the existing literature takes the form of the allowable financial instruments as given... We argue here, however, that the characterization of the standard instruments used in much of the literature has been incomplete and that the incentives of decision makers within the form cannot be completely understood until the problem is addressed from a more basic level than is typically done.

If an "occupation", as classified within the *International Standard Classification of Occupations*, can be understood as a form of investment (of attention, at least), to what extent does any "theory of occupation" predict the existence of occupations inadequately recognized by extant classifications? The mindset inhibiting such recognition can be considered a factor in obscuring employment opportunities, as separately discussed (*12 Mindsets Ensuring Disappearance of Employment Opportunities: towards a systemic reframing of the job culture*, 2012). Again of relevance is any insight such a theory and classification might offer in order to distinguish between a potentially "interesting" occupation and one readily perceived as "boring".

Current financial market use of the periodic table metaphor: In comparison with chemical elements again, a fundamental issue is the manner in which positive and negative interplay in the pattern of elements engendered. There is clearly a degree of equivalence to profit and loss and their incorporation in debt and equity. Should more be expected of the theory of financial instruments? How might such theory help to distinguish viable modalities for investing attention? What insights might such theory offer regarding any sense of risk, yield and growth in a given period?

It is therefore very surprising to note the extent to which the financial community has long been inspired by the periodic table of chemical elements, as illustrated by the following:

- *Callan Periodic Table of Investment Returns* by Callan Associates, depicts annual returns for 10 asset classes, ranked from best to worst. Each asset class is color-coded for easy tracking. Well-known, industry-standard market indexes are used as proxies for each asset class:
  - Barclays Capital Aggregate Bond Index: investment grade bonds ***
  - Barclays Corporate High Yield Bond Index
  - Morgan Stanley Capital International Index (MSCI EAFE); MSCI Emerging Markets
  - Russell 2000; Russell 2000 Value and Russell 2000 Growth
  - S&P 500 measures the performance of large capitalization U.S. stocks.
  - S&P 500 Growth and S&P 500 Value measure the performance of the growth and value styles of investing in large cap U.S. stocks.
- *Periodic Table of Commodity Returns* by kitco
- *20-year Periodic Table of Asset Class Returns* by Blackrock
- *Periodic Table of Bank Regulation and Compliance* by Alacra (also described as *Periodic Table for AML (Anti-Money Laundering)*
- *Periodic Table of ETFs: What Popped and What Dropped in 2013* by Stoyan Bojinov
- *Periodic Table of Dow Jones Total Market Index Sector Total Returns* (through 2013)
- *Periodic Table of Business Strategies*.

It is also appropriate to note the use of that metaphor in caricature and satire (*Periodic Table of Finance Bloggers* and the *Periodic Table of Wall Street Criminal Elements*). Although more or less inspired by the table of chemical elements, the manner in which "periodic" is interpreted with respect to annual returns on investment may embody a time dimension -- even cyclicity -- which is far less evident in the case of the chemical elements (although potentially fundamental to any deeper understanding of that pattern).

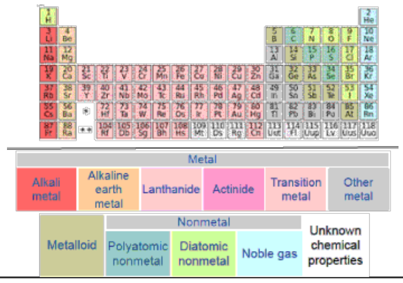
Design of a periodic table of attention investment: With the focus here on attention as a resource, to what extent would a more general theoretical framework encompass those forms of investment beyond those subject to definition as financial instruments -- namely the alternatives to "alternative investments" as noted above?

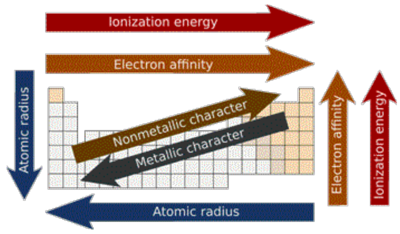
Reduced to a tabular pattern in this way, with its value as a familiar mnemonic framework, of concern is how investment distinguished by its quantitative attributes (as in the financial case) is related to the investment of attention having more qualitative characteristics. There is however some irony to distinctions made in investing:

- "metals" as a class -- given the manner these are distinguished in the periodic table of elements.
- some assets qualified as "toxic" investments -- reminiscent of an attribute of certain chemical elements
- some investments as "hot" -- potentially reminiscent of radioactive elements

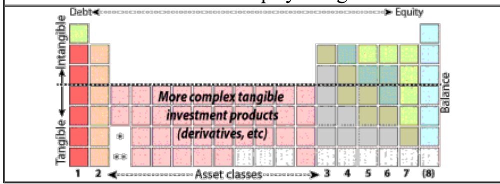
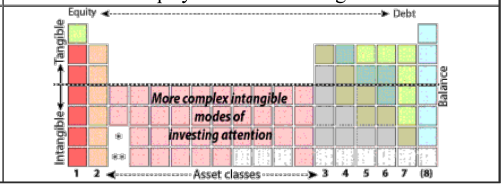
The concern here is to recognize that there is a challenge to the design of such a "table". The many alternative configurations creatively explored with respect to ordering the chemical elements (see gallery) -- still understood to be a work-in-progress -- are an indication that non-tabular possibilities may remain to be discovered. Using the standard table for purposes of discussion, several design issues can be highlighted.

Periodic table of chemical elements	
Adaptation (from *Wikipedia*, with removal of some elements and addition of a legend	Periodic trends (reproduced from *Wikipedia*, corresponding to table on left)





As in the left-hand image above, some variants of the periodic table have zones coloured to indicate the characteristics of elements (as with the the shading in the investment variants cited earlier). Might that be expected of a periodic table of attention investment? Are the periodic trends in the right-hand image indicative of the coherence desirable in any adaptation to attention?

<table>
<tr><th colspan="2">Possible design metaphors for a periodical table of investing attention
(using the pattern of periodic table of chemical elements)</th></tr>
<tr><td>Design metaphor A:
intangible above / tangible below
debt on left / equity on right</td><td>Design metaphor B:
intangible below / tangible above
equity on left / debt on right</td></tr>
<tr><td>
</td><td>
</td></tr>
</table>

The design schematics indicated above are merely proposed as indicative of ways of thinking about the design challenge when it encompasses attention more generally. Related points of interest which might influence such a design could include:

- a deeper understanding of the **debt/equity polarity** as it relates to investing attention, perhaps taking account of nuances offered by other languages. French, for example, makes a distinction between *obligations* (bonds) and *actions* (shares)
- the more general implications of **return on investment** of attention (in a given period) -- otherwise understood in relation to interest, dividend and yield. Through encompassing investment of attention more generally, without the restriction to a quantitative return, the delicate question of how a relationship (for example) yields a "return on investment" calls for careful consideration -- given sensitivity to expectations in that regard
- a deeper sense of the **role of time and cyclicity** in the investment of attention. This is partly sensed through the cycles in any relationship, especially those of a long-term nature. However, also of relevance is the nature of investment in a short-term relationship and what it may yield. With financial investment relatively explicit in recognizing that it is an investment in time (futures market, etc), is this sense recognized to a greater degree when the pattern of investment encompasses subtler forms of investment of attention? The classical Chinese proverb is relevant: *If you are planning for a year, sow rice; if you are planning for a decade, plant trees; if you are planning for a lifetime, educate people*. (currently reflected in world ranking of educational environments)
- in the case of chemical elements, portions of the table have elements with **unusual properties**, variously valued (radioactive, toxic, precious). As applied to attention, it is to be anticipated that unusual forms of attention might be recognized, perhaps concentration, flow, charisma, eidetic memory, etc
- more obviously, the chemical elements are distinguished (in some presentations of the table) as being solid, liquid or gaseous as normally encountered. It is curious to note the extent to which related terms have been adopted as metaphors with respect to the financial markets, most notably with respect to **"liquidity" and the "solidity" of an investment** (implying low risk). With respect to attention more generally, the liquidity and gaseous nature of opinion ("winds of change" etc) are consistent with such use of metaphor -- and possibly to be fruitfully related to illusions (as with those characteristic of a misty context). This might be extended to the recognition of the more fiery, explosive nature of incidents and happenings, tending to influence investment decisions (as with a "hot" opportunity).
- more complex forms of the table of chemical elements distinguish any associated isotopes (*Table of nuclides*; *Table of nuclides -- segmented, narrow*) -- with indication of their half-life (*List of radioactive isotopes by half-life*). This is suggestive of a way of framing any time-related investment of attention or its deficit, as in attention deficit hyperactivity disorder
- as a periodic table, the general form is suggestive mnemonically of a weave (warp/weft) and of a raft (usefully understood as a form of cognitive life raft, vital to survival)

The more general interpretation of the "asset classes" inviting attention and investment -- and tentatively associated with the design of a periodic table -- first calls for deeper consideration of the psychological and cognitive processes of investing attention. In this speculative exercise, it might be supposed that they would be discovered to be intimately related to classes or sets of values -- the values to which people are attentive (beyond financial wealth).

Cognitive implication and engagement through investing attention

The reference in this argument to investing attention endeavours to elicit the nature of the continuum between investing in the tangible (as more conventionally understood) and investing in the intangible through attention to it in some way.

Cognitive feel of the investing process: Of particular interest is the cognitive feel of "investing" -- perhaps most vividly experienced in gambling, and games involving risk and reward. The etymology is variously indicative of senses which may continue to be conflated in any use of the term:

- "act of putting on vestments", as continues to be found in investiture, namely "to clothe in the official robes of an office,"
- "act of being invested with an office, right, endowment, etc."
- "surrounding and besieging of a military target"
- and only more recently the sense of "conversion of money to property in hopes of profit," and the amount of "amount of money so invested; property viewed as a vehicle for profit." giving one's capital a new form.

Some of these senses are evident in jargon use of the expressions "getting into" or "buying into".

Understood metaphorically in terms of clothing and enrobing, the cognitive feel may include the sense of taking on a role, as in a drama -- with associations to enrolling. There is then investment in a dramatic role with the "in-vestment" understood as a form of vestment. This frames the question as to the number of stories in which one is effectively invested -- if only in the eyes of others? The clothing may constitute a facade, as in the famed investment in Potemkin villages -- but now evident in any process of cultivating an image and a look.

There is then also the sense of investing as embodying -- echoed by the strange implications of "incorporation", as used with respect to an investment initiative, and as a means of acquiring a form of identity. It may even be understood as the activation of subpersonalities. It can also be understood as incarnation -- a term used on occasion with respect to the re-emergence of a bankrupt initiative in a "new incarnation".

Although vestments may be adopted and "donned", they may also be "doffed" as in the process of divestment (or disinvestment). Again it is the psychology of disassociation from a previously adopted role -- its abandonment -- which is a key to the shift of focus of attention and of its reframing. This is usefully recognized in the comments of actors regarding detachment from the patterns required of a previous role.

Illusory nature of investment: The preoccupation here with how investing attention "works" therefore calls for recognition of how any "investor" of attention "gets into" or "gets out of" the investment.

A surprisingly relevant approach to the cognitive processes is through vulnerability to illusion -- as a mistaken form of attention, possibly enabled by skilled exploitation of visual metaphor. This then attributes patterns where none exist -- but which may well be usefully understood to exist for a period as providing a credible explanation. Reference to illusion is of course of significance in relation to financial investment and the anticipation of reward suggested by the presentation of an opportunity -- most notably in investment fraud.

Financial success has long been associated with "sleight of hand" and a capacity for "magic" in the market place -- with which some are readily held to be endowed (Neil Charnock, *Investment Magic*, *24hGold*, 26 June 2007). Use is made of the expression magic formula investing. This may be associated with financial alchemy, especially framed as a quest for a "pot of gold" (George Soros, *The Alchemy of Finance*, 1987), or even the Holy Grail (*Holy Blood, Holy Grail: cultivating a murky world of illusion*, 2011).

With respect to investing attention more generally, the role of "confidence tricks" is well recognized, most particularly in personal relationships and commitments. Cultivation of an illusion is a major key to attracting investment -- possibly with the aid of "spin doctors" -- as is most obvious in cultivating an image and a "look" enabling fruitful relationships.

In endeavouring to understand the investment of attention there is therefore a case for understanding illusion as long practiced by illusionists. A report of a meeting by Drake Bennett (*How magicians control your mind*, *Boston.com*, 3 August 2008) notes:

> For the moment, the cognitive scientists looking at magic are confining themselves to these sorts of simple effects, and the fundamental questions they raise. Eventually, though, [Ronald A.] Rensink envisions a sort of periodic table of attention effects: methods for getting someone's attention, methods for deflecting it, methods for causing someone to be blind to something they're looking directly at. Such a taxonomy, he argues, wouldn't just be helpful to magicians. The control and management of attention is vital in all sorts of realms. Airplane cockpits and street signs would be designed better, security guards would be trained to be more alert, computer graphics would feel more natural, teaching less coercive.

A typology of attention was proposed by Davenport and Beck (*The Attention Economy*, 2001), notably distinguishing attention that is "front of the mind" (for instance when someone is talking to another person) from an attention that is "back of the mind".

Typology of illusion: The possibility of a periodic table of illusions -- of fallacious perceptions -- is a theme developed by Richard L. Gregory (*Seeing Through Illusions: making sense of the senses*, 2009). Such a table naturally needs to be based on a systematic typology of illusions and a sense of the variety of illusions. This approach can then be related to Rensink's recognition of the possibility of a periodic table of attention. This is implied by the periodic table approach briefly explored above.

There are many references to types of illusion, about which the work of Peter Mark Roget is commonly cited (Linda Bierds, *Roget's Illusion*, 2014).

As noted with respect to the work of Jean Piaget by Klaus F. Riegel and John A. Meacham (*The Developing Individual in a Changing World*, 2007. p. 233):

> In two early papers Piaget et al, 1942; Piaget and Lambercier, 1944), Piaget set out his basic typology of illusions, dividing them into primary -- those which declined with age and were based on field forces -- and secondary -- those which increased with age

> and were dependent on operations of comparison across time and space. He proposed a single set of mechanisms to account for the ontogenesis of both types (Piaget 1967, 1969) during the course of an extended research program that ... ended with the original French version of *Mechanisms of Perception* (1961).

Aspects of the paradox of a typology of illusion are highlighted by James Barlow (*Jaynes contra Nietzsche: Affinities and Digressions Among Two Seminal Thinkers*, *The Jaynesian*, Summer 2011):

> For to 'know oneself' is not, properly speaking, to know the causes behind why the way you think and act as you do as you do. That is a misunderstanding. Nor is it to know oneself as a person who knows he ought and should do, or refrain from doing, such-and-such, and rather ought to do instead this-and-that. To know oneself is to believe wholeheartedly in who and what you are, and what you seek to do. Everything else is hypothesis. And an hypothesis already contains within itself the typology of illusion, does it not? To become a 'knower,' says Nietzsche, i.e. to seek objective knowledge for its own sake as an inevitable description of what it means to know oneself -- does that endeavor as the definition of self-knowledge render the impossibility of self-knowledge? Does it not destroy the veridical prospect of introspection?

More recently Rensink has framed the challenge in terms of taxonomy (Ronald A. Rensink, *A Function-Centered Taxonomy of Visual Attention*, 2014).

Illusory investment modalities: Of relevance to the argument with respect to investment of attention is the articulation of characteristic illusions associated with financial investment, as presented by Brian Bloch (*Avoid These Common Investing Psychology Traps*, *Investopedia*, 5 June 2013). Distinguished are:

- *Anchoring*: an over-reliance on what one originally thinks.
- *Sunk costs*: inappropriate protection of previous choices or decisions, avoiding acceptance of loss and recognition that a wrong choices was made
- *Confirmation trap*: dependence on the advice of others who have made, and are still making, the same investment mistake
- *Situational blindness*: excluding recognition of prevailing market realties in order to do nothing and postpone the time when losses must be confronted.
- *Relativity*: excessive dependence on what others are doing and saying, when their situation and views may not not necessarily be relevant outside their particular context.
- *Superiority*: assumption by an investor of knowledge superior to experts in the market or to the market itself.

Varieties of attention fixation: It is of course the case that (as noted above) various disciplines of meditation have long been attentive to the varieties of illusion as being complementary to the varieties of attention. With respect to their presentation, those of mandala-like form offer a variety of ways of positioning and relating modes of what may be understood as attention/illusion.

The enneagram may be considered as one form of mandala. The illusory nature of the investment of attention in any form of fixity -- effectively perceived to be a class of asset -- is succinctly clarified in the remarks of Stuart Sovatsky (*The Living Enneagram*, *The Enneagram Monthy*, January, 1996):

> As a map of typical ways people fail in the Heideggerian challenge to know being and time together, the enneagram charts nine thematic reductions from which to see fixity -- permanence, determinacy, absolutism and false-idealization -- where it is not. And in such generalizing and reductive seeing, so the seer himself becomes, to himself and to others varyingly predisposed, more reductively fixed as "himself", with his "own" modes of self expression, tastes and values -- or so it seems.
>
> Thus, the enneagram is a typology of more or less illusory "personality fixations", or typical patterns in which people live "as if" lives -- as if these "patterns" of their lives were bindingly "real" As if the preoccupying themes of avenging the past, becoming more righteous, securing love-feelings and the six other themes, were each adequate to all of being and timebody stuff

From some philosophical perspectives, there is a problematically intimate relationship between attention, illusion and any more insightful form of knowing. As a periodic ordering of ways of knowing, it is in this sense that it is appropriate to note that formulated in the *Brahmajala Sutta*. and presented separately (*Comprehensive set of ways of knowing: the All-Embracing Net of Buddhist culture*, 2009). It is considered to be one of the Buddha's most important and profound discourses, weaving a net of sixty-two cases capturing all the philosophical, speculative views on the self and the world (Bhikku Bodhi (Tr). *The Discourse on the All-Embracing Net of Views; the Brahmajala Sutta and its commentarial exegesis*. Kandy, Buddhist Publications, 1978). It can be seen in terms of attention or illusion, with the further possibility that any such ordering itself has an illusory dimension.

However attention is invested, any associated fixity -- understood as a "fixed investment" -- can be explored in terms of the traditional challenges of philosophy and meditation to forms of "attachment". It is somewhat ironic that the contrasting case for "detachment" and "impermanence" (or the Sanskrit *Neti Neti*) might be fruitfully compared with short-term speculative investment (Joan Stambaugh, *Impermanence is Buddha-Nature*, 1990).

Illusory fixation in a society in crisis: There are many forms of illusion and deceit (Helen K. Gediman and Janice S. Lieberman, *The Many Faces of Deceit: omissions, lies, and disguise in psychotherapy*, 1996). The extent of news management to that end has been made evident with respect both to marketing and cultivation of political agendas (Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: how a handful of scientists obscured the truth on issues from tobacco smoke to global warming*, 2010; Edward S. Herman and Noam Chomsky and *Manufacturing Consent: The Political Economy of the Mass Media*, 1988). The extent of "group think" has been acknowledged with respect to the intelligence failure rendering American society vulnerable to 9/11 (*Groupthink: the Search for Archaeoraptor as a Metaphoric Tale*, 2002).

As suggested above, global civilization be understood as heavily invested in attractive illusions -- seemingly cultivated with great care and skilled misdirection. They only become apparent through being "spoiled" by revelation of systematic complicities associated with the financial crisis, diplomatic cable disclosures, use of torture by the intelligence agencies, and sexual abuse by clergy, as separately noted (*Abuse of Faith in Governance*, 2009). The difficulty with regard to collective illusions of this kind is that there is no concrete proof as to whether they exist or not, as separately explored (*10 Demands for Concrete Proof by We the Peoples of the World*, 2012). Expressed otherwise, it is not whether proof of any kind exists, or not, but rather how much it would cost to fake it, who would need to be paid, and what concrete proof can be offered that they have not.

The non-trivial implications of illusion have been made especially evident during the course and emergence of the financial crisis, perhaps exemplified by the Madoff investment scandal of 2008. The extent of cultivation of illusion has been highlighted by articulated protests of economic students in 19 countries regarding the relevance of their courses to the 21st century, as reported by Phillip Inman (*Economics students call for shakeup of the way their subject is taught*, *The Guardian*, 4 May 2014). Their manifesto indicates that they want courses to include analysis of the financial crash that so many economists failed to see coming, indicating that the discipline has become divorced from the real world (*The manifesto of 42 networks of economics students from 19 countries*, *Real-World Economics Review Blog*, May 2014).

The purported failure to recognize the vulnerability to crisis can of course be understood as a high order of collective complicity amongst authorities in sustaining the illusion -- reminiscent of Potemkin villages and the tale of the Emperor's New Clothes (*Entangled Tales of Memetic Disaster*, 2009).

It is of course the very nature of illusion that it attracts belief in the coherence it appears to offer -- as was true of the so-called big lie employed in Nazi propaganda. Acceptance of the illusion is indicative of resistance to any "inconvenient truth", as separately discussed (*An Inconvenient Truth -- about any inconvenient truth*, 2008). With respect to the current challenges of global civilization, there is cognitive resistance to problematic information (Karen A. Cerulo, *Never Saw It Coming: cultural challenges to envisioning the worst*, 2006; Nassim Taleb, *The Black Swan: the impact of the highly improbable*, 2007). Irrespective of any typology or periodic ordering, this frames the questionable value of any:

- *Encyclopedia of World Problems* -- variously reflecting the beliefs in their reality by some constituencies, but potentially contested or denied by others, as separately discussed (*Encycling Problematic Wickedness for Potential Humanity*, 2014)
- *Encyclopedia of Ignorance* -- variously reflecting what some believe others are not aware, or what is known to be unknown -- but necessarily without any inability to take account of the unknown of which none are aware. Of relevance are the responses to the 2005 Question of the Edge.org ("*What do you believe is true even though you cannt prove it?*")
- *Encyclopedia of Illusions* -- variously reflecting the capacity for misdirection, notably as practiced by illusionists (*List of optical illusions*) -- but with little capacity or motivation to consider the illusory nature of problems, misdirection by authority, or assumptions regarding absence of ignorance

As separately suggested (*Memetic and Information Diseases in a Knowledge Society: speculations towards the development of cures and preventive measures*, 2008), is society vulnerable to a collective form of Alzheimer syndrome (through erosion of collective memory) or of diabetes (through systematic preference for sugar-coated information)?

The implication of inappropriate fixation can be explored as problematically "frozen categories" and the potential benefits of "unfreezing" them (*Framing the Global Future by Ignoring Alternatives: unfreezing categories as a vital necessity*, 2009). Any questionable "repackaging" of categories to elicit investment of attention can also be explored as somewhat analogous to the past repackaging of toxic financial assets (*Vigorous Application of Derivative Thinking to Derivative Problems*, 2013).

Cognitive constraints in the face of complexity: Investing attention, framed by a pattern of possibilities (whether periodic or not) is usefully to be seen as constrained by the cognitive limitations of the human mind. Any such favoured pattern is effectively a reflection of such constraints, as variously argued (George Lakoff and Rafael Nuñez, *Where Mathematics Comes From: how the embodied mind brings mathematics into being,* 2001). This patterning limitation, constraining the investment of attention, is evident in a wide variety of domains (*Patterns of Conceptual Integration*, 1984).

Some sense of the complexity of any situation, calling for investment of attention, recalls the assessments of the Situational Complexity Index (SCI). In enacting any deployment of attention, key constraints to be recognized include:

- "Miller number" (7 ?± 2): the much cited constraint reported by George Miller (*The Magical Number Seven, Plus or Minus Two: some limits on our capacity for processing information*, *Psychological Review*. 1956). Included in the SCI.
- "Spreadthink number": as identified by John N. Warfield (*Spreadthink: Explaining ineffective groups*, 1995). He states that this collective condition (with implications for investment by any collective) is generally neither recognized nor usually compensated for. Spreadthink reflects the fact that any time a group meets to work together on a complex issue using ordinary and familiar group processes, the individuals in the group will not agree on what are the most important sub-issues, and in general will not have a majority view on the merits of any of the many sub-issues.
- "Dunbar's number": as formulated by Robin Dunbar, This is a suggested cognitive limit to the number of people with whom one can maintain stable social relationships (Christopher Allen, *The Dunbar Number as a Limit to Group Sizes*). These are relationships in which an individual knows who each person is and how each person relates to every other person. In this case "people" might be understood as investments of attention. The limit has been proposed to lie between 100 and 230, with a commonly used value of 150 -- curiously of a similar order to the number of chemical elements distinguished
- Span of control (aka span of management): The number of subordinates a leader can efficiently control or manage (between 4 and

10). Here "subordinates" could also be understood as forms of investment of attention.

Such constraints may be variously implicit in bodily functions (Mark Johnson, *The Meaning of the Body: aesthetics of human understanding*, 2008; George Lakoff and Mark Johnson, *Philosophy In The Flesh: the embodied mind and its challenge to Western thought*, 1999).

The experiential complexity may be partially circumvented through metaphor, as noted above and strikingly argued by Mark Forsyth (*The Poetic Pageantry of the Financial Mind: in the picturesque patois of bankers, money can seem a mere afterthought*. *International New York Times*, 14 April 2014; *The Poetry of the Trading Floor: going beyond bears and bulls*, *The New York Times*, 13 April 2014):

> My point here is the eternal poetic inventiveness of the financial mind. Popular opinion has it that bankers think of nothing but profit. But their brains are fixated on poetic invention. Money seems to be a side issue.

Irrespective of any caricature, such language highlights the extent to which **the processes of investing attention require forms with which the investor can identify** -- to which the investor can be paradoxically "attached". Illusion, as mal-investment of attention, is nevertheless rewarded in the short-term through the certainty offered by explanation -- credible in the moment.

Investment strategies, portfolios, risk and requisite attention

Engaging in a field of play: The argument can be taken further by recognizing a periodic tabular pattern as a form of "field of play". In terms of a financial perspective, various instruments come into play for a period at particular locations in the table. The metaphor of play, as in "playing the market", is well recognized, whether or not it is deprecated as high-risk trading transactions made by inexperienced traders trying to make a quick profit (*Peter Lynch on Playing the Market*, *Investopedia*, 16 November 2011; *Playing the market down the middle*, *Financial Post*, 27 February 2014). How the terrain is variously envisaged by the players is another matter.

In terms of a more general perspective, such a field of play is usefully framed through various board games. *Leela* (of Hindu origin) is a prime example, as the origin of snakes and ladders; chess and go suggest other patterns of insight. Of potential relevance, in the light of the strategic significance attributed to them, are the number-based dice games of the *Mahbharata* (Gilles Schaufelberger, *Dice Game in Old India -- from the essay of Heinrich Lüders Das Würfelspiel im alten Indien*, Berlin, 1906).

It is somewhat extraordinary that playing the market has been variously described as a "numbers game" -- in the light of the earliest numbers game known in the West as Rithmomachy. Known also as *The Philosophers' Game*, it is a highly complex, early European mathematical board game (Ann E. Moyer, *The Philosophers' Game: Rithmomachia in Medieval and Renaissance Europe*, 2001). A literal translation of the name is "The Battle of the Numbers". The game is much like chess, except most methods of capture depend on the numbers inscribed on each piece. It is alleged to have served as a practical exemplar for teaching the contemplative values of Boethian mathematical philosophy, which emphasized the natural harmony and perfection of number and proportion.

The game was undoubtedly an inspiration to the magnum opus of Nobel Laureate Hermann Hesse, as noted by Todd R. Harris (*The Interplay of Opposites, the Language of Experience, and the Geometry of Ascent: a comparison of Hermann Hesse's "Das Glasperlenspiel" and Nicholas of Cusa's "De Ludo Globi"*, 2001).

With respect to the interplay between attention, misdirection and illusion, a fundamental question at this time is what other illusions are being deliberately and strategically cultivated -- and with whose complicity (*Playing the Great Game with Intelligence*, 2013).

Investment strategies implying distinctive forms of attention: Whether framed as a game or not, there is clearly recognition of styles and preferences of investing. These can be more usefully discussed with respect to developing and managing an investment portfolio (below). The concern here is how this might be related to a more general understanding of the strategies for investing attention. This might be explored through a general theory of strategic options, notably those inspired by military philosophy.

It is in this sense that the considerable reflection relating Asian martial arts with both philosophical frameworks and business is potentially fruitful (Gregory Beyer, *Why Business Leaders Are Obsessed With Sun Tzu's Ancient Military Guide, "The Art of War"*, *The Huffington Post*, 24 March 2014; Chin-ning Chu, *The Asian Mind Game: Unlocking the Hidden Agenda of the Asian Business Culture - A Westerner's Survival Manual*, 1991; Troy Bonar and Brian Tracy, *Bushido Business: the fine art of the modern professional*, 2011).

As might be expected, there are numerous references to the philosophy of *BaGua* and *feng shui* in relation to business -- in Asia. Despite reference to strategic treatises like *The Art of War* and *The Book of Five Rings*, it is not clear whether the implications for engagement of attention extend -- other than by implication -- to the codification offered by the *BaGua* pattern considered so fundamental, as separately discussed (*Clues to Movement and Attitude Control*, 2002)

The *BaGua* pattern suggests that its 8 constituent trigrams are indications of distinctive modes of engagement -- of strategic investment of attention. These could of course be seen as potentially related to to the asset classes highlighted with respect to financial investment. There is the additional advantage that the *BaGua* pattern can be further elaborated into a set of 64 hexagrams indicative of more detailed conditions -- traditionally considered to be fundamental to the decision-making process with respect to any form of investing attention. It can of course be seen to be a form of periodic table which might be mapped into the design of the pattern explored above (*Associating metaphor with formal representation: the I Ching of Chinese culture*, 2009).

The value currently attached within the business world, to such previously deprecated insights from Asia, reinforces the arguments made by Susantha Goonatilake (*Toward a Global Science: mining civilizational knowledge*, 1999). He stresses the competitive advantage of those cultures in deriving insights from their own metaphors. As discussed separately, this suggests the merit of marrying metaphors across cultures (*Enhancing the Quality of Knowing through Integration of East-West metaphors*, 2000).

Portfolio of investments -- of attention: There is of course considerable insight into the nature of investment portfolios. Any given portfolio, selected as a consequence of a pattern of preferences, could be considered as a sub-set of the full range of possibilities of investment -- perhaps framed most generally by the *BaGua* pattern. Preferred selections bear some resemblance to opening moves and playing styles in board games like chess and go.

There is a well developed literature on modern portfolio theory and post-modern portfolio theory from a financial perspective. Such theory does not appear to highlight (or explain) the distinctive types of portfolio encountered in practice -- or to predict the existence of others:

- *Investopedia* distinguishes *5 Popular Portfolio Types* (26 January 2013): aggressive, defensive, income, speculative, and hybrid.
- *Investment Consulting Services* offers an *Explanation of the Different Types of Investment Portfolios*: short-term, conservative, balanced, growth, aggressive growth, most aggressive,
- *InvestingForMe* distinguishes *Categories, Approaches, and Styles*: cash and cash equivalents (sometimes referred to as capital preservation), income (sometimes referred to as conservative), income with growth (sometimes referred to as growth with income or balanced depending upon the portfolio's asset mix), growth, aggressive growth, international growth, alternative (or hybrid)

Examples might include investments in asset classes according to the following percentages, depending on interpretations.

Investment style	**Asset classes**				**Investment preferences**		
	short-term	bonds	domestic stock	foreign stock	return/yield	tolerance of risk and value fluctuations	time horizon
short-term	100%						
conservative	50% (5-15%)	30% (70-75%)	20% (15-20%)		maintain real value, or protect against inflation.	risk averse	shorter
balanced	45%	10%	45%	5%			
growth	25%	5%	60%	10%			
(moderately) aggressive growth	10% (5-10%)	(35-40%)	70% (50-55%)	15%			
most aggressive			80%	20%	highest possible	high	longer

As the table implies, it is a generally accepted principle that a portfolio is designed according to the investor's risk tolerance, time frame and investment objectives. A portfolio's asset allocation may be managed utilizing any of the following investment approaches and principles: equal weighting, capitalization-weighting, price-weighting, risk parity, the capital asset pricing model, arbitrage pricing theory, the Jensen Index, the Treynor Index, the Sharpe diagonal (or index) model, the value at risk model, modern portfolio theory and others.

With respect to this argument, the question is how a "portfolio" might be generalized to encompass the investment of attention in all its forms. This would then relate to some concerns and methods of:

- time management (ABC analysis, Pareto analysis, Eisenhower Method, POSEC method, Implementation of goals, Task list organization). Various software applications are used to assist this process. [see time budget data by country from Center for Time Use Research, *Access Time Use Data*; *Towards a New Science of Everyday Life*]. However, in addition to the conventional relation of time management to any business model, there is a case for reframing this with respect to attention in terms of a "busyness model" (*Developing a Busyness Model*, 2009)
- attention management. Tools are designed for supporting attention. These are often adaptive hypermedia, and may rely on profiling the user in order determine how to better support attention.
- lifestyle design (Timothy Ferriss, *The 4-Hour Workweek: escape 9-5, live anywhere, and join the new rich*, 2007; Mary Catherine Bateson, *Composing a Life*, 1991; *Composing a Further Life: the age of active wisdom*, 2010).

Expressed as a circular pattern, this could be understood as combining the characteristics of a pie chart (often used in representation of contrasting portfolios) and a mandala -- appropriately subdivided and coloured as a sub-set of the full spectrum of possibilities. The complex multi-level form of the mandala is indicative of the multi-level subtleties of investment of attention -- in contrast with much simpler form of the pie chart typical of financial investment portfolios.

The argument might be illustrated by examples such as the following -- raising the question as to how "return/yield" is to be interpreted when it is not purely quantitative or financial. Similarly "risk" may be nebulously understood in terms of disappointment. "Time horizon" may then even relate to a sense of aesthetic closure, as with poetic justice.

Return/yield in relation to risk tolerence and time horizon				
	"return/yield"		***tolerance of risk (and fluctuations of value)***	***time horizon (closure/maturity)***
Examples	***"psychic income"***	***growth in quality of life***		
friendship				longer
partner / family				permanent?
one-night stand				very short
party / dinner	enjoyment			shorter
gambling				very short
sport / exercise				longer
prayer / ritual				permanent?

caring for another				
charitable activity				
psychoactive drugs				
social media				
humour				
democratic protest				
hobby	enjoyment	skill development		longer
conference participation	networking? mutual appreciation?	learning career development		

Clearly the tagging of "likes", "friends" and "followers" confuses the question in the case of social media -- as with "hits" on web pages. The issue even implies an equivalent to the existence of complementary currencies -- even of so-called "local currencies" (Bernard Lietaer and Jacqui Dunne, *Rethinking Money: how new currencies turn scarcity into prosperity*, 2013). The issue goes beyond the conventional distinction between nonprofit and profit in that it raises the question as to the nature of the return/yield in the case of an investment of attention framed as "disinterested" or altruistic.

Evaluation of investment risk -- adapted to attention: Emphasizing again the distinction between a quantitative and a qualitative investment of attention, it is clear that there is a degree of familiarity with the sense of a:

- good investment
- bad investment
- long-term investment
- short-term investment
- speculative investment
- risky investment

Less evident in the case of attention is recognition of the "performance of an investment", a "quick killing" or "pay-off" -- or use of language framing a sense of "over-investment" or "under-investment". The financial terms are of course readily used as metaphors -- however controversially this may commodify the investment of attention.

Investment risk is the possibility of loss of the investment made -- and is evident in the case of investment of attention, then typically framed as a "waste of time". Various forms of risk are distinguished (*No Investment Is Safe! The Varieties Of Investment Risk*, *FinanceCritics*, 26 July 2012):

- *loss of principal*, namely the original investment made.
- *asset backed risk*: risk that the changes in one or more assets that support an asset-backed security will significantly impact the value of the supported security.
- *credit risk* (default risk): associated with a borrower going into default (not making payments as promised). Investor losses include lost principal and interest, decreased cash flow, and increased collection costs.
- *foreign investment risk*: rapid and extreme changes in value due to: smaller markets; differing accounting, reporting, or auditing standards; nationalization, expropriation or confiscatory taxation; economic conflict; or political or diplomatic changes.
- *liquidity risk*: risk that a given security or asset cannot be traded quickly enough in the market to prevent a loss (or make the required profit).
- *inflation risk*, the danger that you cash can hold less price in the longer term than it does now.
- *market risk*: standard market risk factors distinguished are equity risk, interest rate risk, currency risk, and commodity risk
- *operational risk*: arising, in direct or indirect manner, from the people, systems and processes through which a company operates.
- *chance risk (marketability risk)*. This happens when you lock up your money in an illiquid investment, sort of a fixed term deposit with very modest returns, and miss an opportunity to take a position in one thing with a chance of abundant higher returns -- that is the prospect that there will be no buyer accessible when you would like to sell your investment.
- *model risk*: loss resulting from using models to make decisions, initially and frequently referring to valuing financial securities
- *concentration risk*. This occurs when you have got an excessive amount of your cash focused in one area, for instance all in one particular stock or all in one industry.
- *interest rate risk*, which is the likelihood that the relative worth of your investment will decrease because of changes in interest rates.
- *currency exchange risk*. Currency exchange rates are constantly fluctuating and can amendment the price of your investments. If the bottom currency of your investment is totally different than the currency you're buying with, than the value bf your investment will fluctuate depending on the currency exchange rates.

In the case of financial investment, a risk-return spectrum is recognized. Also termed the risk-return tradeoff, this is the relationship between the amount of return gained on an investment and the amount of risk undertaken in that investment.The more return sought, the more risk that must be undertaken. As noted by *Wikipedia*:

> There are various classes of possible investments, each with their own positions on the overall risk-return spectrum. The general progression is: short-term debt; long-term debt; property; high-yield debt; equity. There is considerable overlap of the ranges for each investment class. All this can be visualised by plotting expected return on the vertical axis against risk (represented by standard deviation upon that expected return) on the horizontal axis. This line starts at the risk-free rate and rises as risk rises. The line will tend to be straight, and will be straight at equilibrium - see discussion below on domination.

Clearly this invites more general interpretation to include the investment of attention.

Clues to patterns of investment of attention: If a portfolio is to be understood in its most general sense as potentially involving contrasting modalities of attention, any quest for clues to its design needs to be undertaken by bearing in mind that the distinctions may be made between "7 plus/minus 2" modalities (following the research of Miller, above). The fact that the number of recognized "asset classes" is variable, seemingly from 4 to 10, is indicative of the cognitive constraint. The issue may be informed by understandings of "span of control" and "spreadthink" (as indicated above). Especially intriguing is the sense in which investment of attention may be constrained by "Dunbar's number".

These constraints may be indicative of ways in which investment of attention is partly undertaken through a limited number of what may be compared to "holding companies" -- each controlling investments of attention in a multiplicity of arenas. Curiously, Dunbar's number is of the same order as that of the number of chemical elements in the periodic table. What degree of variety is commonly distinguished in an attention investment portfolio?

Clues to the cognitive feel of such contrasts might then include:

"7 ?± 2"	Examples of sets of distinctions of potential value
5	*The Book of Five Rings*
6	*Six Frames For Thinking About Information* (2008) by Edward de Bono, distinguishing: purpose (triangle frame), accuracy (circle frame), point of view (square frame), interest (heart frame), value (diamond frame), outcome (slab frame) Six WH-questions, as variously distinguished by *Wikipedia*
7	Many 7-fold typing systems Seven elementary catastrophes and their relation to WH-questions (*Conformality of 7 WH-questions to 7 Elementary Catastrophes*, 2006)
8	asset classes (as variously noted above) *BaGua* Spiral dynamics and 8 waves of existence of Ken Wilber, distinguishing by colour code: beige (archaic-instinctual), purple (magical-animistic), red (power gods), blue (mythic order), orange (scientific achievement), green (sensitive self), yellow (integrative), turquoise (holistic). This pattern notably features in considerations of integral management.
9	enneagram of the Fourth Way of George Gurdjieff, and as a related system of personality typing

Many similar clues of potential relevance are suggested in a separate study (*Examples of Integrated, Multi-set Concept Schemes*, 1984). Of particular interest in relation to this argument is the permanent quality of the investment of attention in the categories distinguished within each such system. Categories are typically a form of "fixed investment" in a period when creative fluidity may be required.

Adapting financial investment strategies in terms of attention: Use of insights into financial investment in 4-10 distinct asset classes could be especially fruitful (beyond the quantitative arguments) -- if the sense of the cognitive feel for the preference for one in relation to others could be adequately articulated (John R. Nofsinger, *Psychology of Investing*, 2013; H. Kent Baker and Victor Ricciardi, *Investor Behavior: the psychology of financial planning and investing*, 2014; William Bernstein, *The Intelligent Asset Allocator*, 2000). It is unclear that this could be achieved to general satisfaction, rather than in the light of particular investor biases (Philip Lawton, *The Psychology of Contrarian Investing*, *Research Affiliates*, December 2013).

The difficulty, with which many have a degree of familiarity in the case of attention, is how to interpret (and balance) the sense of risk, return on investment, and any desired sense of closure (or permanence). This is most obviously relevant in the case of interpersonal relationships or involvement with a group -- with the expectation of some form of commitment (see *The Importance of Committing to Causes*, *GiveWell*, 14 May 2014) .

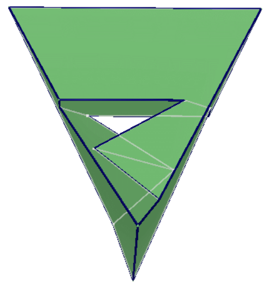
Potentially helpful in this respect would be an adaptation of the work on axes of bias of W. T. Jones (*The Romantic Syndrome: toward a new method in cultural anthropology and the history of ideas*,1961), as summarized separately (*Axes of Bias in Inter-Cultural Dialogue*, 1993) -- especially as an example of other such systems, as reviewed separately (*Systems of Categories Distinguishing Cultural Biases*, 1993). For Jones the axes are:

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

As discussed separately with respect to the set of 7 WH-questtons (where, when, which, why, what, who, and how), these can be experimentally mapped onto polyhedra to provide a greater sense of the coherent context within which decisions are made (*Mapping of WH-questions with question-pairs onto the Szilassi polyhedron*, 2014).

As with those questions, the biases/preferences above together frame and qualify the investment of attention. They can be understood as patterned by what is known as the Heawood graph (portrayed on the left below). This then offers a framing of the "investment arena" of requisite complexity -- as a container for the complex of processes with which the investment of attention is associated.

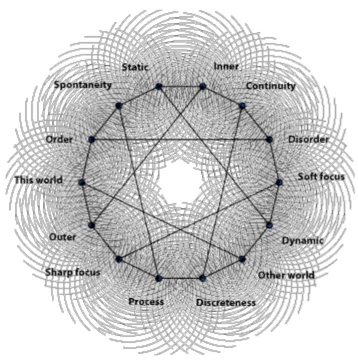
<table>
<tr><th>Heawood graph
(adapted from Wikipedia, adding bias axis labels)</th><th>Rotation of Szilassi polyhedron
(animation reproduced from Wikipedia)</th></tr>
<tr><td>

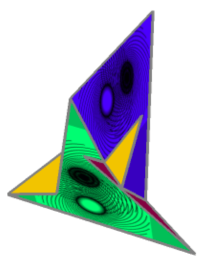

</td><td>

</td></tr>
</table>

The Heawood graph is an undirected graph with 14 vertices (of 7 types) and 21 edges (of 12 types). It is a toroidal graph, namely it can be embedded without crossings onto a torus -- potentially of value in offering coherence of a higher order to the pattern of investment biases/preferences. This contrasts with various efforts to frame the investment decision through two-dimensional "investment diagrams" (typically copyrighted by their authors).

As shown in the animation (on the right above), one embedding of this type places its vertices and edges as the set of vertices and edges of a polyhedron with the topology of a torus: the Szilassi polyhedron. This representation, as previously explored with respect to questions, is an effort to frame the "cognitive container" of attentive decision-making in the moment.

Rather than associating each axis of bias with the central lines of the Heawood graph, the polyhedron offers the possibility of transforming each line into a zone -- one of its 7 hexagonal faces. Rather than bias and preference being defined linearly, the implication is then of an area of uncertainty with respect to each of the 7 styles of preference. Each face is then best understood as variegated in coloration -- although the animation below suggests use of Moiré interference effects. Animation of counteracting spirals was more extensively explored in a previous discussion (*Convergence of 30 Disabling Global Trends*, 2012).

<table>
<tr><th colspan="2">Spirals of opposing direction positioned at ends of each axis of bias
using Moiré interference effects to frame the complexity of investment decision-making (indicative)
(animation prepared using the Stella: Polyhedron Navigator application)</th></tr>
<tr><td>Heawood graph
with spirals added to ends of each of 7 axes
(inadequate for indication of preference variability
requiring greater complexity or animation)</td><td>Rotating Szilassi polyhedron
with suggestive indication of contrasting axial bias
associated with each face
(images added to 4 external faces only)</td></tr>
<tr><td>


</td><td>

</td></tr>
<tr><td colspan="2">Design note: In both cases the Moiré interference effects, framing the investment arena as a zone of relative order, could be made more apparent with design improvements, especially in order to highlight distinctive patterns of preferences. This might be better achieved on the polyhedral surfaces by using variegated patterning.</td></tr>
</table>

The tetrahedron and the Szilassi polyhedron are the only two known polyhedra in which **each face shares an edge with each other face**. Given the inspiration of financial investment, there is a case for contrasting the significance of the pyramidal form (figuring on the one dollar bill and on the reverse of the Great Seal of the United States) with that of the Szilassi polyhedron -- of greater requisite complexity to any framing of the Eye of Providence, as noted in the previous discussion (*Reframing nothing as a vital focus for* *sustainability*, 2014).

Styles of investment -- of attention: As implied by the examples above from the case of financial investment, the concerns to be distinguished include:

- **Allocation between alternatives of investments of attention:** This refers to the design of the investment portfolio, namely in what types of interesting attractors has attention been invested, and in what proportions. Basically: in what is one invested?
- **Diversification of attention:** Clearly this is a requirement of a risk management technique, namely a "healthy" mix of types of investment to minimize the investment risk. Is there imblance, namely over-investment in some classes of attractors and under-investment in others?
- **Cost averaging of attention investment:** In the financial case, this is an investment strategy whereby an investor purchases fixed investment amounts at predetermined times, regardless of the price of the investment -- as a means of minimizing risk by reducing the difference between the initial investment and the current market value over a long enough timeline. Is an equivalent to be envisaged in the case of attention?
- **Guided by general context:** A "top-down" approach would be inspired by the larger context, including public opinion and fashion, to determine in what mix of attractors to investment attention.
- **Guided by specific cases:** A "bottom-up" approach would be based on assessment of individual attractors, irrespective of the larger context
- **Socially responsibility**: In this case attention is invested according to ethical and other values, avoiding investments which are questionable in that respect.

Attentive reinterpretation of glossaries of financial terms

The above argument suggests that the many glossaries of financial terms could well be mined as a source of metaphor indicative of the nature and possibilities of the investment of attention. Much of that terminology can otherwise be perceived as alienating, especially given its very particular focus on profit, to the exclusion of other understandings of benefit and yield, especially when the intention is purportedly "disinterested".

Potentially interesting is the presentation of those terms in a semantic map or mind map, preferably interactive (as with some presentations of periodic tables), and open to multiple interpretations. A distinction might be made between the conventional interpretation (with its extended use as a metaphor offering insight into investment in intangibles) and a more fundamental general interpretation of both from a cognitive perspective.

Of interest is the design of a systematic "mining procedure" to highlight potential equivalents of potential relevance to the investment of attention.

Glossaries: It is appropriate to note that some of the glossaries, many online (and typically copyrighted), contain thousands of terms. They include:

- *Financial Times Lexicon*
- *Investopedia*
- *Reuters Financial Glossary*
- *Campbell R. Harvey's Hypertextual Finance Glossary*
- *Yahoo Personal Finance Glossary*
- *NASDAQ Glossary of Stock Market Terms and Definitions*
- *Harriman Intelligence Finance Glossary*
- *InvestorWords*
- *Glossary of key financial terms* ***
- *Financial Glossary* of moneycontrol.com
- *Financial Glossary* of BBC
- *Financial Glossary* of MoneyGlossary.com
- *Glossary of Financial Terms* of the Nonprofit Finance Fund
- http://www.businessballs.com/finance.htm
- http://www.moneychimp.com/glossary/

Examples of terms potentially offering particular insight with respect to investment of attention: In addition to those noted above, these might include:

- capital asset
- capital gain/loss
- capital appreciation/depreciation
- dividends
- index
- margin account
- prospectus
- yield
- controlling investment
- re-investment
- incorporation
- share classes
- capital
- incorporation
- venture capital
- bankruptcy
- buy back
- junk bonds
- depreciation
- act of God
- accounting
- balance sheet
- credit
- acquisition
- derivative
- maturity
- blue chip

Individual reframing of global investment of attention

The theme of a current issue of the *New Scienti*st is the implication for society of ceasing to believe in God (*World without God: what if* *everyone stopped believing tomorrow?*, 3 May 2014). Curiously the issue includes an article presenting the case for an alternative to the "dark matter" in whose existence most physicists have long "believed" -- despite the lack of any evidence (Mordehai Milgrom, *It's time to give up on dark matter*, 6 May 2014; *"Dark matter" doubters not silenced yet*, *World Science*, 2 August 2007; Mordehai Milgrom, *Does Dark Matter Really Exist?*, *Scientific American*, August 2002).

Unfortunately the lead article by Graham Lawton (*Losing Our Religion*) might be usefully caricatured as "bad science meets bad theology" -- consistent with methodological inadequacies previously highlighted (*Knowledge Processes Neglected by Science: insights from the crisis of science and belief*, 2012). That impression is reinforced by the different ways the Milgrom piece is questionably reframed: *Dark Destroyer: killing 27 percent of the Universe* (on the contents page) and *Forget Dark Matter: embrace my MOND theory instead* (online title). Is science now to be recognized as a belief system analogous to religion?

In the spirit of the *New Scientist* question, however, it is appropriate to explore the implications for society of ceasing to believe in the global financial system -- and especially in the "dark matter" of trillions of public debt, for which no credible concrete proof is available from parties who could be accredited as disinterested. The justification for such an exploration is partly reinforced by belief in the market as God (Harvey Cox, *The Market as God: living in the new dispensation*, *The Atlantic Monthly*, 1 March 1999; Nick Anderson, *The Market Is God*, 7 June 2013; Cathy Lynn Grossman, *Baylor Religion Survey reveals many see God steering economy*, *USA Today*, 20 September 2011; Daniel M. Warner, *An Essay on the Market as God: law, spirituality, and the eco-crisis*, 2002; John H. Armstrong, *The Market as God*, 20 April 2010).

In the light of the much-publicized scientific argument of Richard Dawkins (*The God Delusion*, 2006), is it then appropriate to refocus his argument -- with that of the *New Scientist* -- and ask "*what if everyone stopped believing in the market tomorrow*"? Is the market also a "delusion"? Is a more generic understanding of "atheism" then required -- to include science itself? Is there the possibility of a strange form of conceptual Ponzi scheme in operation -- through which meaning is systematically sucked into unquestionable frameworks, whose further growth is thereby ensured?

The preceding argument highlights the manner in which the global financial system can be considered -- by the individual -- as engendered by the investment of personal attention. The individual has been persuaded to invest in its reality -- as might be argued from the perspective of social constructionism (Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: a treatise in the sociology of knowledge*, 1967; Paul Watzlawick, *The Invented Reality: how do we know what we believe we know?* 1984). To the extent that money is itself symbolic of confidence, this too can be understood as a particular investment of attention in which the individual is "invited" to engage (Peter Koenig, *30 Lies About Money: liberating your life, liberating your money*, 2003).

This framing then offers a way of comprehending "global" as being the degree of integrative comprehension that is meaningful to the individual -- effectively engendering globality, as can be variously explored (*Psychosocial Implication of Without Within: enjoying going solar for oneself*, 2013). The conventional physical nature of globality, so frequently emphasized, obscures its integrative, experiential and generative characteristics (*Future Generation through Global Conversation: in quest of collective well-being through conversation in the present moment*, 1997). From this perspective, the experience of global and local are entangled to a degree that merits continuing reflection -- especially in the light of the subtle insights offered by mathematics.

In these circumstances, individuals are as a free to perceive themselves, like the financiers of Wall Street, as Masters of the Universe (Kevin Roose, *Masters of the Universe in the age of self-doubt*, *Fortune*, 20 February 2014; Suzanne McGee, *Chasing Goldman Sachs: how the Masters of the Universe melted Wall Street down*, 2011). This corresponds curiously to the degree of closure (however premature) in the appreciation of astrophysicists regarding their comprehension of the tangible Universe and in that of theologians with respect to the intangible Universe. Appropriately the term has been exploited imaginatively by a media-gaming franchise: *Masters of the Universe*. This frames an opportunity for everyone, as separately argued (*Being the Universe: a Metaphoric Frontier*, 1999).

Understood in this way, various conceptual entities which are increasingly oppressive and disempowering (experienced as externalities), can be radically "reappropriated" by the individual as personal investments of attention -- from which the individual is potentially free to disinvest. It could of course be argued that the disinterest in practice of the majority of the population in these entities is itself an indication of the absence of their investment in them -- exemplified by the so-called democratic deficit, apathy and "disconnect".

These entities might include, for example:

- **Financial market**: To what extent does this "exist" as a reality, other than in terms of the attention accorded to it? Rather than an external reality, is it not more fruitful for the individual to recognize its metaphorical nature implying an implicit reality through which attention of various kinds is mediated? As an elusive entity -- beyond the control and regulatory capacity of governments -- a case can be made for its function in defining and trading value in the subtlest terms (*Human Values as Strange Attractors: coevolution of classes of governance principles*, 1993). Is the individual then free to be understood as the elusive controller of the global financial market. How does an individual then speculate on such a market?
- **Stock exchange**: Especially fruitful are the dynamics of a so-called stock exchange, usefully understood as mirroring an internal dynamic through which values are defined and "traded" -- through disinvesting and reinvesting attention. Does the individual operate a variety of stock exchanges which financial instruments and commodities are traded, as might be associated with a "values exchange" (*Human Values "Stock Market": investing in "shares" in a "value market" of fundamental principles*, 2006)
- Vatican bank -- indulgences (*Global Market in Indulgences: extending the carbon trading model to other value-based challenges*, 2007)
- **Banking institutions**: Is it fruitful for the individual to recognize how financial institutions (such as the World Bank, IMF, or central banks) mirror personal psychological processes, most notably whereby "interest rates" are set and "loans" are made with a degree of conditionality?
- **International community and Al-Qaida**: Given the quality of concrete evidence for the existence of the "international

community" or "Al-Qaida", to what extent can they be considered the carefully cultivated product of the collective imagination, as argued separately (*Cultivating Global Strategic Fantasies of Choice: learnings from Islamic Al-Qaida and the Republican Tea Party movement*, 2010)?

Framed in this way, what meaning is to be associated by the individual with public debt and the "trillions of dollars" said to be circulating globally under the control of elusive parties? The question is especially pertinent in a period in which there are indications of another major financial crash (Henry Blodget, *Don't Be Surprised If This Is The Start Of A Stock Market Crash*, *Business Insider*, 10 April 2014; David Zeiler, *Black Monday Stock Market Crash Returns to Haunt 2014*, *Money Morning*, 15 April 2014; Daniell Chamber, *Warren Buffet Joins Economists Warning of Major Stock Market Crash in 2014*, 21 March 2014). Are these precursor indicators of a more generic disaster, as might be argued (*Emerging Memetic Singularity in the Global Knowledge Society*, 2009)?

Much more intriguing however is the sense in which **the individual is effectively a nexus of investment of attention in what the financial community might choose to frame as a vast network of "holding companies"**. By this is meant that through deliberate investment of attention, whether conscious or unconscious, the individual is a majority shareholder (with a "controlling interest") in a wide variety of conceptual entities: dictionaries, religions, media empires, disciplines, military bases. This includes the military industrial complex, the international community, the network of terrorist organizations, organized crime, information surveillance systems, and the like.

In these terms, everyone is free to perceive themselves in archetypal and functional terms as a Warren Buffet, a George Soros, a Koch brother, or a Russian oligarch. Those such as Barack Obama, the Pope, the Dala Lama, or Vladimir Putin, are then to be understood cognitively as "puppets", "employees" or *dramatis personae*. The metaphor of an "evil vampire squid" was famously used to frame the Goldman Sachs empire (Matt Taibbi, *The Great American Bubble Machine*. *Rolling Stone: Politics*, 9 July 2009; Lee Banfield, *The Most Famous Investment Banking Metaphor Ever Posted*, *Finance Business English*, 23 January 2014). However every individual, through the attention invested, is now free to recognize their own intimate controlling involvement in the global enterprises in which "Goldman Sachs" is held to be influential.

Self-financing as key to health and wealth: The argument highlights the the manner in which wealth and and well-being are intimately related to confidence engendered by cognitive reappropriation of the tokens with which they can be associated. As a form of global integrative awareness, the integrity of this cognition can be explored as "wholth" (*Wholth as Sustaining Dynamic of Health and Wealth: cognitive dynamics sustaining the meta-pattern that connects*, 2013).

As an imaginative process of engagement with externalities, this renders comprehensible the possibility of being both "unimaginably wealthy" ("beyond one's wildest dreams") and unimaginably impoverished (consistent with the most profound depression). The interplay between these extremes is variously expressed, cultivated and transcended -- most notably through humour.

In a sense one is free to "issue one's own currency" as attention, to care for its circulation, as suggested from a variety of perspectives (*Circulation of the Light: essential metaphor of global sustainability?* 2010; *Primary Global Reserve Currency: the Con? Cognitive implications of a prefix for sustainable confidelity*, 2011; *Enabling Moral Currency Circulation: reframing a stimulus package to avert moral bankruptcy*, 2010).

At one extreme, the process may be framed from the perspective and rituals of a hermit or an intentional community, as argued by Duane Elgin, *Voluntary Simplicity: a way of life that is outwardly simple, inwardly rich*, 2010). The inner wealth may be expressed aesthetically or through appropriating the complexity articulated by physics (*Being a Poem in the Making: engendering a multiverse through musing*, 2012).

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