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7th Biennial RAMICS International Congress.
The Future of Money: Democracy, Localism and Inclusion
6-9 Nov 2024 Rome (Italy)



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7th Biennial International Congress:
The Future of Money: Democracy, Localism and Inclusion
06–09 November 2024, Rome, Italy

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Leading question:

What is the relationship with national and subnational institutions and in particular on the presence or absence of specific state regulatory references?

Themes & Topics:

- V. Historical: the different economic, social and cultural phases of the history of complementary currencies: History, Transition phases, Civil society, Currency.
- I. Digitalization: Can CCS help bridge the distance between the technological and digital divides: 4th industrial revolution, Digital currencies, Crypto currencies.
- VI. Complementary and Community Currency System: Review and renew: Case studies, concepts, experience reports.

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THE FUTURE OF MONEY IS INTEGRAL:

BROADER LEGAL SANDBOX TO IMPLEMENT AN INTEGRAL CONSTELLATION OF MULTIPLE CURRENCIES—RESPECTING EACH AND ALL STAGES OF EVOLUTIONARY DEVELOPMENT WITHOUT ARBITRARY LIMITATION

Christophe, PLACE¹

Abstract: *By reviewing Bernard Lietaer’s research journey—from complementary Yin and Yang currency diversity and interconnection for monetary polyculture and resiliency to integral money as energy and information dealing with beliefs, behaviours, values, collaborations and following an evolutionary development—I suggest extending it with an integral definition, impact assessment, implementation guidelines, and evolutionary meta-history of money. To allow such integral research and education on Money, policy makers should create a broader legal sandbox to implement an integral constellation of multiple currencies—respecting each and all stages of evolutionary development without arbitrary limitation (e.g. restricted area, limited network, backed issuance, economic growth, etc.).*

Keywords: *evolutionary development, monetary history, monetary reform, currency impact, currency design, multicurrency interoperability, integral approach.*

JEL: *A12 Relation of Economics to Other Disciplines / A20 Economic Education and Teaching of Economics: General / B49 Economic Methodology: Other / E52 Monetary Policy / H43 Project Evaluation; Social Discount Rate.*

Acknowledgment: After my inception or ‘housewarming party’ in the complementary currency movement through its thought leader Bernard Lietaer in 2009, I wrote my master’s dissertation (Place, 2010c) and participated in the first Research Association on Monetary Innovation and Community and Complementary Currency Systems’s conference as a fellow member (Place, 2011). During the New Economics Foundation’s Tesla Conference (Place, 2012), I encountered Christian Arnspurger who later inspired my doctoral thesis supervised by Jem Bendell from 2018 at the Institute for Leadership and Sustainability (Place and Bendell, 2019). As an observer of the European Regional Development Fund’s Community Currency in Action Interreg project in 2013–2015, I collaborated with Leander Bindewald with whom I received a best paper award (Place and Bindewald, 2013a). While this fifteenth crystal anniversary could toll the bells of the completion or ‘farewell party’ on my research journey in this field, I take this opportunity to thank all the people I have met along the way, from near or far... with no regrets or hard feelings!

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1. Introduction

1.1. Epistle to Science and Religion

Repeating the same mistakes and proposing the same solutions? Using the same tool to achieve a different vision? For those with a hammer, all problems are nails!¹ It is human to tolerate human foolishness because we all make mistakes (knowing that this notion is purely relative and subjective), but it is inhumane to accept the human folly of repeating the same mistakes over and over again without even realizing...

Avoiding longing for the way things were before or confusing novelty with progress or even tool with vision, mistrusting read-made solutions, keeping a critical mind at all times, refusing seductive trivialities, abrogating antiquated dogmas or unnecessary taboos, reconsidering the established order, pushing the barriers to break the codes, exploring unknown territories, transforming bad habits, going beyond limiting beliefs, and above all, getting rid of what other people think or say, even if taking the risk of being called a stark raving mad scientist!

This is, at the very least and in my view, the duty of a researcher worthy of the name in the eyes of society, which expects one to take risks, overcome obstacles, and learn from one's mistakes for the continuous improvement of innovative technologies, the common good, the evolution of humanity, and the metamorphosis of consciousness.

And this applies to any artistic or academic discipline, any philosophical school of thought, and each field of science, whether it be formal and natural sciences, or social sciences and humanities, or even 'ideological science' and 'spiritual science'.

Therefore, in this relationship between science and religion as areas of inquiry, I position myself beyond the science–religion opposition, conflict or warfare, claimed by the Non-Overlapping MAgisteria (NOMA)—closely related to the fundamental epistemological fact–value distinction derived from the is–ought problem in moral philosophy—with a view to bringing these two disciplines closer together—thanks to the latest scientific proofs of the existence of God and of the immaterial consciousness independent of the material brain.

This is how I would describe science(s) in this epistle.

And this is what we are going to discuss in this work: dogma, taboo, order, code, belief, habit, tool, vision, solution, innovation, technology, transformation, reconsideration, exploration, change, evolution, metamorphosis, science, philosophy, art, and even consciousness among many other things...

Indeed, while taking care to transparently reference (academic) and rigorously justify (scientific) everything, the integral research (theory) embraced here invites not only the pursuit of multiple methods (methodology)—by combining a demonstrative (deductive) and exploratory (inductive) approach and by fostering disciplinary span over mastery depth (transdisciplinary)—but also an authentic self-reflection by the researcher (epistemology) for the investigation of a multilayered subject matter (ontology) as a complex phenomenon—in this instance a monetary project as a whole (currency, management, leadership)—in the aim and hope of making a contribution to knowledge or a scientific discovery in an aesthetic, creative or innovative manner.

Because such is the attention and intention of academic and scientific research in general terms.



1.2. Synchronous Encounters bringing Complementary Currencies to their Integral Approach

The recent biography of Bernard Lietaer², the pioneer and authority of the complementary currency movement, revealed to us the many encounters and synchronicities that made him evolve as a thought leader to the integral approach school of thought (Krause, 2021a; Krause, 2021b).

The pioneer and authority of the complementary currency movement, B. Lietaer, first spoke of *An Integral View on Money and Financial Crashes* (alias ‘integral money’) (Lietaer, 2005b) and *Economics as an Evolutionary System* with Stefan Brunnhuber (Lietaer and Brunnhuber, 2005a)—after meeting him at the same time as the ‘Einstein of Consciousness’ Ken Wilber³ in 2004 (Lietaer [p.c.] *apud* Krause, 2021a, p. 102–103, 362)—well after introducing the idea of an “integrated economy” back in 1999 (Lietaer, 1999, p. 400 *apud* Krause, 2021a, p. 183).

“‘The Money Crunch: Complementary Currency Solutions’ conference in Boulder, Colorado [location of Ken Wilber’s Integral Institute since 1998], in May 2004, where [Bernard] Lietaer and [Stefan] Brunnhuber met and had a long conversation with Ken Wilber, whose integral philosophy [Bernard] Lietaer valued highly as it shared so much with his own world view. The essay *Economics as an Evolutionary System*, which [Bernard] Lietaer wrote together with Stefan Brunnhuber in 2005 for a Japanese journal, was a result of this encounter.” (Lietaer [p.c.] *apud* Krause, 2021a, p. 102–103).

Considering the stability and viability of monetary systems (alias monetary resiliency and sustainability), B. Lietaer had a providential encounter with Sally Goerner in 2008—at a conference on Local Living Economics when she presented the laws of systemic equilibrium in natural ecosystems as *The New Science of Sustainability* of adaptable living systems (alias ‘law of sustainability’; *i.e.* the physics of complex flow networks) (Goerner *et al.*, 2008). B. Lietaer was looking for a “‘new Adam Smith’ to revolutionize our economics and financial views” (Lietaer [p.c.] *apud* Krause, 2021a, p. 12) and S. Goerner introduced him to Robert E. Ulanowicz: a theoretical ecologist working on Energy Network Analysis (ENA) who became his source of inspiration and collaboration to study the dynamics of continuous monetary circulation and hoarding—as a complex network of flow and stock of water, matter, energy, or information in a vast ‘web of life’ (Lietaer *et al.*, 2008a; Lietaer *et al.*, 2009a; Lietaer *et al.*, 2009b; Lietaer, 2009c; Lietaer *et al.*, 2009d; Lietaer *et al.*, 2010b; Lietaer, 2010d; Lietaer *et al.*, 2012b, p. 65–92 *apud* Krause, 2021a, p. 13, 106, 363). Therefore, we could consider by similarity that money is an energy or information.

During the same period, On the advice of my strategy consulting supervisor at the time, I attended an *ex cathedra* conference of B. Lietaer on *New Complementary Currency* held at the French Ministry of Economy and Finance on 19 November 2008 then rebroadcasted on 19 February 2009—while the fledgling Bitcoin network came into existence on 03 January 2009—as convened by the French School of Heuristics and The Co-Evolution Project—for whom I presented my master’s dissertation results on the subject on 23 June 2010 (Place, 2010c *apud* Place, 2010b *apud* Place, 2010a).

Although I had heard of Ken Wilber’s ‘integral theory’ long before in 2010 by being seduced in a library by his *magnun opus* entitled *Sex, Ecology, Spirituality* (Wilber, 1996/2005; Wilber, 1987/2013; Wilber, 2014), it was the unforeseen discovery during 2012 of the book *Full-Spectrum Economics* (alias ‘integral economics’) of Christian Arnsperger⁴ (2010b) with a

foreword by the latter (Wilber [praef.] *apud* Arnspenger, 2010b)—and his book summary (2010a) following his first article on *Building an Integral Economic Science* (2008)—that allowed me to subsequently justify the practical application of its ‘four quadrants’ to the currency impact assessment from 2015 onwards (Place, 2015a; Place, 2018a; Place and Bendell, 2019; Place *et al.*, 2021b; Place, 2022; Place, In Press).

Table 1. ‘Four quadrants’ in integral theory

	Interior	Exterior
Individual	Subjective (I) Self and consciousness (beliefs).	Objective (IT) Brain and organism (behaviours).
Collective	Inter-subjective (WE) Culture and worldview (values).	Inter-objective (ITS) Social and environment systems (collaborations).

Source: Adapted from Four quadrants (Wilber, 1995) apud Altitudes of Development & Quadrants of Reality (Salzman, 2019).

Indeed, just after meeting my spiritual father B. Lietaer at my first conference (Place, 2011); I met both my doctoral thesis supervisor Jem Bendell⁵, later dubbed ‘Professor Bitcoin’⁶ (BBC, 2014), and thought leader C. Arnspenger during my participation in the New Economics Foundation’s Tesla Conference on energy currency (Place, 2012). Unexpectedly, I found out much later that C. Arnspenger went on to co-author *Money and Sustainability* with B. Lietaer (2012b) the same year that I met him—just as the latter had reviewed his book (2010c).⁷

1.3. Constellation of Multiple Currencies respecting Evolutionary Development

No matter if complementary currencies are part of the legal and customary white market, the unofficial and irregular grey market, or the illegal and atypical black market, most token economic systems—of cryptocurrency/token built on own/existing blockchain—operate nowadays in decentralised autonomous organisations. Their token engineering design is an emerging multidisciplinary field which aims at applied monetary reform through real-life experimentation and testing as *A Route to Commons-Based Democratic Monies* (Barinaga Martín, 2020a)—by using a carrot (eco-friendly behaviour incentive, neighbourhood mutual aid allowance) and stick (universal dividend, social credit). By taking a deeper look *At the Heart of Money: Monetary Systems, the Collective Unconscious, Archetypes and Taboos* (Lietaer, 2011b), it is essential to develop an integrated economy of Yin and Yang dual currency systems (sufficient collaborative currency for internal community exchange with negative interest vs scarce competitive currency for external foreign exchange with positive interest). Such currency design could be supported by an Integral Implementation Guide and Toolkit (IGT).

As predicted in *The Future of Money* (Lietaer, 1999) and detailed in *Economics as an Evolutionary System* (Lietaer and Brunnhuber, 2005a, p. 134), the history of money is an evolutionary development towards more complexity, diversity, and interconnection—to bring more sustainability and resiliency to the monetary, financial, and banking systems (Lietaer *et al.*, 2008a; Lietaer *et al.*, 2012b; Lietaer *et al.*, 2019). Based on this same Integral Theory (Wilber, 2000), I argue that it will culminate with a monetary ecosystem, *The Ecology of Money* (Douthwaite, 2000), or *Monetary Plurality* (Gómez, 2018) of multicurrency interoperability between all complementary currency generations or groups (Blanc, 2011, p. 9; Blanc, 2024, p. 8–9), types (Martignoni, 2012, p. 3, 4, 9), hierarchies or heterarchies (Bindewald *et al.*, 2012, p. 171), communication media (Nishibe, 2018, p. 22, 26)—rather than *The End of Capitalism (As We Knew It)* (Gibson and Graham, 1996), *An Economy without Money* (Servet, 1999), *The End of Money* (Greco, 2009), *The End of Finance* (Amato and Fantacci, 2011), *The End of Alchemy: Money, Banking* (King, 2016), *A World without Money or the State* (Cousin, 2023). Such futuristic story could be told via an Integral Historical Atlas and Compendium (HAC).



As explored in *The Mystery of Money* (Lietaer, 2000) and detailed in *An Integral View on Money and Financial Crashes* (Lietaer, 2005b, p. 2), this monetary evolution is concomitant with the ways and means to study money towards more perspective, transdisciplinarity, and integration. Based on the related Integral Research (Hedlund, 2008; Hedlund, 2010) and as recommended by *Full-Spectrum Economics* (Arnsperger, 2010b *apud* Lietaer, 2010c), I argue that it will result in a multimethodological framework—already widely used unknowingly in the field (Place, Forthcoming)—called Integral Methodological Pluralism (Esbjörn-Hargens, 2006; Esbjörn-Hargens, 2010)—to overcome Mixed Method (Creswell and Plano Clark, 2017; Creswell and Creswell, 2018) or Creative Research (Kara, 2020) approaches thanks to Complex Integral Realism (Esbjörn-Hargens, 2015) as a theoretical paradigm. Such currency impact could be assessed via an Integral Impact Assessment Matrix (IAM).

With a positive/negative impact ratio of 6.1 while targeting 5.26 of the 17 Sustainable Development Goals in average, how come complementary currencies represent only 3.01% of a national monetary mass or local gross domestic product on average (Place, In Press)?

As revealed in *Bernard Lietaer: Life and Work* (Lietaer [p.c.] *apud* Krause, 2021a; Krause, 2021b), the esoteric and exoteric nature of money (DNA code, information replicator, soul mirror, entropic accumulation/negentropic generation) goes far beyond its usual anthropologic and economic functions (means of exchange, unit of account, store of value, liberating power, general equivalent) (Plihon, 2017). This implies multiple domains (sciences, arts, morals or religions)—pursing ‘the big three’ of Plato’s ideals (true, beautiful, good) through three eyes of knowledge or domains of science (eye of flesh/substance or physical/natural sciences of sensation, mind/significance or mental/social sciences of reason, spirit/essence or ideological/spiritual sciences of contemplation) (Wilber, 1983)—to investigate such a complex phenomenon through ‘four quadrants’ and ‘development stages/levels’—with both demonstrative/deductive and exploratory/inductive research approaches. Such academic knowledge could be spread via an Integral Research and Education (IRE).

Board 1. ‘Development stages/levels’ in integral theory

Stage (level)	Description
Post-postmodern (teal).	Kosmo-centric, integral, holistic, evolutionism.
Postmodern (green).	World-centric, environmental, pluralistic, relativism.
Modern (orange).	Ethno-centric, rational, scientific, materialism.
Premodern (amber).	Ego-centric, traditional, magic, mysticism.

Source: Adapted from Spiral Dynamics (Beck and Cowan, 1996); A Theory of Everything (Wilber, 2000); Altitudes of Development & Quadrants of Reality (Salzman, 2019).

The main goal of this article is to present the historical and impact arguments for policy-making to implement a constellation of multiple currencies—respecting each and all stages/levels/altitudes of evolutionary development—in line with the original vision of B. Lietaer as the founding father of the complementary currency movement.

2. Integral Definition of Money

2.1. Information Revolution towards a Knowledge Economy

Although humankind is witnessing a profound paradigm shift for financial reformation⁸ in this digital age (*i.e.* transversal financial innovation for the flow and stock of information), the sectors of the new technology of information and communications (*i.e.* protected transfer of the

flow of wealth with payment platform) and the banking and financial systems (*i.e.* secured account for the stock of wealth with accounting platform) are lobbying to maintain the *status quo* of vertical financial technology as a lucrative intermediary⁹ (Park, 2010).

“Cybersphere as the new money frontier [post industrial society as the knowledge age]: the power structure of every economic system has been designed to control some critical resource. Information, the raw material for creating knowledge, is the next likely candidate for that role.” (Lietaer, 1999, p. 66–67).

Beyond these conventional sectors, operational research¹⁰ and artificial intelligence¹¹ could provide an optimal management of resource and need, or maximal exchange of offer and demand. This would be made possible by the reappropriation of the full technological power of both the information and communications technology sector and the digital financial services and banking industry. Knowing that they are mostly overused to achieve infraluminal transactions in the hedging and speculative markets—to win competitive bets down to the nanosecond in a gigantic insider trading.

For instance, the late emergence of a decentralized internet era where information sharing and storage systems occur without central authorities (*viz.* Web 3.0; *e.g.* governance, decision-making, trade, exchange) has great potential for currency innovation even though ethical and technical challenges remain—particularly in balancing short-term profit motives with long-term societal benefits. Thus, token engineering is an emerging multidisciplinary discipline concerned with the design of the token economy¹² (*alias* token economic systems; *i.e.* infrastructures and mechanisms and rules for trading assets or services using tokens as a unit of exchange and its underlying blockchain technology as a method of accounting) could reshape economies and promote sustainability by not only creating secure and fair decentralized systems (*cf.* Decentralised Autonomous Organisations (DAO) that operate in a decentralised manner); but also enabling participants to co-govern these economic systems (*cf.* cryptotoken is built on an existing blockchain as a non-native token; cryptocurrency uses its own blockchain as a native currency) (Kreitenweist, 2021).

“Money at the core of the time-compacting machine [Money at the root of all possibilities]: the extraordinary convergence of the four megatrends [age wave, information revolution, climate change and biodiversity extinction, monetary instability] [...] [shows that] we are going to have to change as much our consciousness about money over the next 20 years as we have over the past 5'000 years.” — Bernard A. Lietaer (1942–2019), from *The Future of Money* [de: *Das Geld Der Zukunft*] (1999) (Lietaer, 1999, p. 21).

Faced with the convergence of impetus of historical momentum in our contemporary thinking system¹³ and the accumulation of series of identical upheavals in our current value system¹⁴, humanity stands at the dawn of an unprecedented driving force or window of opportunity combining both collapse and breakthrough.

“Everything will change in the industrial age... except horses! Everything will change in the information age... except money!” (Lietaer, 2015).

Board 2. Convergence of impetus of historical momentum

End of industrial civilization in Global North (<i>alias</i> under-developing countries; <i>cp.</i> Central Bank Digital Currency ¹⁵) countered by the onset of information revolution in Global South (<i>alias</i> developing countries; <i>cp.</i> M-Pesa ¹⁶)
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Paradigm shift from premodern, modern, postmodern viewpoints to a post-postmodern integration of all in a planetary civilization of wisdom.

Source: *The Future of Money* (Lietaer, 1999, p. 12–21) and *At the Heart of Money* (Lietaer, 2011b *apud* Lietaer et al., 2021, p. 11) and *What are We really Up Against?* (Lietaer, 2015).



2.2. Integrated Economy of non-neutral Yin and Yang Currencies

As already proposed in *The Future of Money* and *The Mystery of Money* through an ‘integrated economy’ of non-neutral Yin and Yang currencies¹⁷ (Lietaer, 1999, p. 400 *apud* Krause, 2021a, p. 183; Lietaer, 2000, p. 337), each of them have different currency modalities or monetary characteristics for their architectural design¹⁸.

Board 3. Yang and Yin currency or economy

Yang currency or economy	Yin currency or economy
<i>Metallism</i> ¹⁹ of gold standard	<i>Chartalism</i> ²⁰ of fiat law
Subsistence	Care
Equity	Equality
Commodity	Time
Scarcity	Abundance
Accumulation	Circulation
Hoarding	Sharing
Saving	Consumption
Investing	Production
Inflation rate	Inflation-free
Interest-bearing	Interest-free
Interest fee	Demurrage charge
Debt money creation	Debt-free money creation
Continuation	Expiration
Speculation	Abstention
Recuperation	Distribution
Unlimited	Limited
Concentration	Cooperation
Competitive	Collaborative
Global	Local
External foreign exchange	Internal community exchange
Market economy	Gift economy
Pyramidal hierarchy	Circular heterarchy
Centralized issuance (Central Bank Digital Currency)	Decentralized emission (Complementary Currency)
Master-apprentice relationship	Peer-to-peer relationship
Top-down predict-and-control	Bottom-up test-and-perform
Monitoring and evaluation (Impact Assessment Matrix)	Planning and evaluation (Integral Methodological Pluralism)
Short-term objective to reach	Long-term tool for a vision
Past finance bookkeeping	Future debutance accounting
Old credit/loan reimbursement (Vice fund)	New project/program financing (Virtue fund)
Debt cancellation/remittance (Sabbatical/Jubilee cycle)	Grant allowance/subsidy (Sabbatical/Jubilee cycle)

Source: Inspired from *The Future of Money* (Lietaer, 1999, p. 400 *apud* Krause, 2021a, p. 183) and *The Mystery of Money* (Lietaer, 2000, p. 337).

Whereas many Yang currency innovations have been implemented (*e.g.* commodity money, fiat currency), only a few Yin currency innovations have been proposed (*e.g.* mutual credit, time unit)—which limits the potential of the creative economy in a desirable future (Deheinzelin, 2012; Deheinzelin *et al.*, 2019). For this purpose, as an international research and development field and multidisciplinary think and act tank, the complementary currency movement has proposed various Yin currency innovations²¹ (Lietaer and Kennedy, 2004; Lietaer and Brunnhuber, 2005a, p. 127–132; Lietaer *et al.*, 2012a; Bindewald *et al.*, 2015, p. 31–67; Lietaer and Silvestre, 2008b, p. 08–10, 13, 18 *apud* Krause, 2021b, p. 08–10, 13, 18; Lietaer [p.c.] *apud* Lietaer *et al.*, 2021, p. 6).

“In practice, that means complementing the prevailing Yang currency generated by central hierarchical control with Yin currencies created by the people themselves. Among the money innovations that have proven most effective are: mutual credit systems that self-organize to ensure that currency is always available in sufficiency; and demurrage charges that encourage exchanges rather than hoarding.”²² (Lietaer, 2000, p. 309).

The current rules, norms, regulations, and conventions of money creation (*i.e.* for commercial and central banks, financial services, information and communications technology) are in favour of Yang currency and/or monoculture of unicurrency rather than Yin currency and/or polyculture of multicurrency (*i.e.* something Yang/nothing Yin vs everything Yang/Yin).

Could we then create a virtual and virtuous system which would give pride of place to the Yin economy—not subject to the restrictive rules of the Yang economy—by encouraging it through the recognition of counter-giving and by improving the reputation of those who adhere to it and respect their engagement?

“One way to create the integrated economy is to use Yin and Yang currencies as dual complementary currency systems. The integrated economy supports spiritual human development in terms of integration and individuation [...]”²³ (Lietaer, 2000, p. 337).

A monoculture of either Yin or Yang currencies exists in purely matriarchal or patriarchal societies (*viz.* single currency system), whereas a polyculture of both Yin and Yang currencies exists only in matrifocal societies (*viz.* dual currency system).

Board 4. Monoculture and Polyculture of currency

Monoculture of single currency system	Polyculture of multiple currency ecosystem
Death drive	Life drive
Destiny control	Free will
Perfectionism	Imperfectionism
Certainty	Ambiguity
Efficiency	Resilience
Unicity	Diversity
Monopoly	Interconnection
Monolithic	Modular
Universal	Multiversal
Uniform	Multiform
Similitude	Pluralism
Homogeneity	Heterogeneity
Excessive	Balance
Procylical	Countercyclical
Division	Union
Separation	Combination
Exclusive	Inclusive
Reduction	Integration

Source: Inspired from *The Future of Money* (Lietaer, 1999, p. 400 apud Krause, 2021a, p. 183) and *The Mystery of Money* (Lietaer, 2000, p. 337).

Both *feminism*²⁴ and *masculinism*²⁵ could artfully and archly pool their resources and gather their forces to build a matrifocal society in harmony with a patrifocal society (*i.e.* with a more resilient polyculture of both Yin and Yang currencies). This should be done instead of both wearing out all their capabilities: to replace patriarchal with matriarchal society (*i.e.* never or rarely permanently established in human history²⁶); or to maintain patriarchal without matrifocal society (*i.e.* in favour of a more efficient monoculture of either Yin or Yang currencies).

Centralized control of a single currency (*i.e.* monoculture of competitive Yang currency for both internal and external exchange) has been common in all patriarchal societies since about 5'000 years ago starting with the Sumerian and Babylonian (*cp.* Sumerian tablets of interest-bearing debt [sux: *Urra=hubullu*] in 3000 BC) (Graeber, 2011; Aglietta, 2018).

On the contrary, the Golden Ages of an ecosystem of multiple money forms with dual currency systems (*i.e.* polyculture of cooperative Yin and competitive Yang currencies for respectively local community and global foreign exchanges) were occurring in some matrifocal societies (*i.e.* balance of feminine and masculine values)—which became increasingly rare since about

3'000 years ago when the almost unique veneration of the Father God, Divine or Sky gradually obliterated the Mother Goddess, Nature or Earth with its symbolic counterpart (*viz.* abundance, fertility, trust, connection)²⁷ (Lietaer, 1999; Lietaer, 2000, p. 83–85; Lietaer, 2011b *apud* Lietaer *et al.*, 2021, p. 11).

Board 5. Patriarchal and Matrifocal societies

Patrifocal society (monoculture of competitive Yang currency for both internal and external exchange).	<i>Pax Sumerica</i> (2112–1750 BC) by the Neo-Sumerian Empire (2112–2004 BC) and Old Babylonian Empire (1894–1595 BC)—reaching its territorial apogee under Hammurabi (1729–1686 BC) (<i>i.e.</i> 0.19% of the Earth's surface in 1690 BC).
Matrifocal societies (polyculture of cooperative Yin and competitive Yang currencies for respectively local community and global foreign exchanges).	Neolithic monuments for mystery cults of the Great Mother in Wiltshire in England with Stonehenge (<i>ca.</i> 8000–1600 BC) and Avebury Henge (<i>ca.</i> 3000–2400 BC) and Silbury Hill ²⁸ (<i>ca.</i> 2400–2300 BC) correlated with two climate warming events ²⁹ .
	Egyptian Mysteries of Isis ³⁰ and Eleusinian Mysteries ³¹ of Demeter and Persephone of the Minoan civilization ³² (2600–1600 BC) and Ancient Greece (1100 BC–600 AD) correlated with two climate warming events ³³ between the <i>Pax Minoica</i> (1750–1450 BC) by the Aegean Minoan Cretan civilization (3500–1100 BC) of the Aegean Mycenaean Greek civilization (1750–1050 BC)—reaching its territorial apogee under Minos of Knossos (<i>ca.</i> 1450 BC) (<i>i.e.</i> 0.10% of the Earth's surface in 1450 BC)—and the <i>Pax Hellenica</i> (336–323 BC) by the Aegean Egyptian Anatolian Persianate Macedonian Empire (808–168 BC) its territorial apogee under 3.86% (323 BC) under Hellenistic Alexander the Great (356–323 BC) (<i>i.e.</i> 3.86% of the Earth's surface in 323 BC).
	First and second certain queen regnant Sobekneferu (<i>r.</i> 1806–1802 BC) and Hatshepsut (<i>r.</i> 1479–1458 BC) before the <i>Pax Aegyptus</i> or Ramesside period (1292–1069 BC) by the Egyptian Empire (1550–1069 BC)—reaching its territorial apogee under Ramesses I (1351–1294 BC) or Akhenaton (1371–1337 BC) (<i>i.e.</i> 0.74% of the Earth's surface in 1300 BC).
	First and only female Chinese emperor Wu Zetian (<i>r.</i> 690–705) during the 2 nd <i>Pax Sinica</i> or Chinese golden age (618–859) by the Chinese Tang Empire (618–907)—reaching its territorial apogee under Xuanzong of Tang dynasty (685–762) (<i>i.e.</i> 4.01% of the Earth's surface in 715).
	Depiction on statues or paintings of the Blessed Virgin Mary and the Infant Jesus with dark skin (<i>alias</i> Black Madonna [it: <i>Madonna Nera</i>], Black Virgin [fr: <i>Vierge noire</i>], Our Lady of the Night [fr: <i>Notre Dame de la Nuit</i>]; cp. Sabeen Queen of Sheba, Saint Sarah the Black [fr: <i>Sara la noire</i> ; rom: <i>Sara e Kali</i>], Sainte Anne the mother of Mary) during the end of the two last medieval renaissances ³⁴ (11 th –13 th century) correlated with a climate warming event ³⁵ —as most venerated effigies by the medieval wandering minstrel and produced as icons in the Roman Empire or Byzantine Empire (330–1453) (<i>i.e.</i> Mediterranean basin from Central Europe to Middle East passing by Spain, Southern France, Italy, England, Germany, Poland, Caucasus, Egypt, Ethiopia) through the Byzantine art of Early Middle Ages (395–1066) and the Romanesque art (1000–1200) of High Middle Ages (1000–1300) and Gothic art (1200–1600) of Late Middle Ages (1300–1500) in the Greek East and Latin West of Medieval Christendom ³⁶ of both Orthodox and Catholic countries—between the <i>Pax Romana</i> (27 BC–180 AD) by the Roman Empire (27 BC–395 AD)—reaching its territorial apogee under Olympian Trajan of Italica (53–117 AD) (<i>i.e.</i> 3.71% of the Earth's surface in 117 AD)—and the <i>Pax Austriaca</i> or <i>Pax Habsburgica</i> (1452–1648) by the European Holy Roman Empire of Germany (800–1806)—reaching its territorial apogee under Chalcedonian Christian Henry III the Pious (1016–1056) (<i>i.e.</i> 0.74% of the Earth's surface in 1050).

Source: Inspired from *The Future of Money* (Lietaer, 1999), *The Mystery of Money* (Lietaer, 2000, p. 83–85), and *At the Heart of Money* (Lietaer, 2011b *apud* Lietaer *et al.*, 2021, p. 11).

Indeed, when the Great Mother Goddess archetype is repressed, greed and scarcity shadows unveil and express themselves—until destabilizing the Yang and Yin coherence (*cp.* Taoism never separate Yang and Yin polarities but emphasize their complementarity and connection between them) (Lietaer, 2000, p. 89–101).

Table 2. Yang and Yin archetypes and shadows

Gender functions	Jungian archetypes	Repressed shadows
Integrative androgynous function (integration)	Sovereign (king/queen)	Tyrant (Yang shadow) Abdicator (Yin shadow)
Yang masculine function (relating to others)	Warrior	Sadist (Yang shadow) Masochist (Yin shadow)
Yang masculine function (relating to the universe)	Magician (priest, scientist)	Hyperrational (Yang shadow) Indiscriminate (Yin shadow)
Yin feminine function (relating to others)	Lover	Addicted (Yang shadow) Impotent (Yin shadow)
Yin feminine function (relating to the universe)	Great Mother (provider)	Greed (Yang shadow) Scarcity (Yin shadow)

Source: *The Archetypal Human [de: Der archetypische Mensch]* (Lietaer, 2000, p. 89–101).

2.3. Exoteric and Esoteric Nature of Money

Under the unknown pseudonym René de Bartiral, B. Lietaer wrote about money as energy and information (Lietaer [p.c.] *apud* Krause, 2021a; Krause, 2021b).

Board 6. Money as energy or information

Information accumulation through entropy of positive energy or mass—complemented by information generation through negentropy of negative energy or mass (Lietaer, 1980 <i>apud</i> Krause, 2021a, p. 305).
Information field made of plasma/aether with superluminal propagation in a negentropic universe/multiverse beyond the causal plane (Lietaer, 1980 <i>apud</i> Krause, 2021a, p. 306–309).
Physics of consciousness shift in the linear chronological time of Chronos as certain causality of the past—through synchronous opportunities or opportune synchronicities in the non-linear right time of Kairos as ambiguous causality of the future allowing quantum leap (Lietaer and Silvestre, 2008c, p. 47–50 <i>apud</i> Krause, 2021b, p. 47–50).

Beyond the function of money³⁷, the nature of money is just as varied³⁸.

Board 7. Various natures of Money

Doctrinal collective ritual with high frequency and low arousal for normative sedentary household serving as social glue for group bonding: “The frequency and emotional intensity of ritual performances constrains the scale and structure of cultural groups [...] [to solve] problems of cooperation [...] [with] social glue [...] [and] group bonding.” (Whitehouse, 2021).
Symbolic reflection of mundane and divine relationships between humans and with God like an initiatory rite of passage to the afterlife: “[Paleocurrencies as] the memory of given words and significant events; [...] means of dialogue with the spirits that give fertility or death.” (Servet, 2012, p. 331).
Symbolic representation of an archetypal collective consciousness or collective entity/mind/egregore: “For a culture, money is like the DNA [DeoxyriboNucleic Acid] code for a species. It replicates structures and patterns of behavior that remain active across time and space.” (Lietaer, 2000, p. 89–101, 311 <i>apud</i> Krause, 2021a, p. 27).
Entropic matter/energy/information accumulation catalyst from past causes as opposed to a negentropic matter/energy/information generation trigger from future causes (Lietaer, 1980 <i>apud</i> Krause, 2021a, p. 305–309; Lietaer and Silvestre, 2008c, p. 47–50 <i>apud</i> Krause, 2021b, p. 47–50).
Consciousness information replicator of belief structure and behaviour pattern: “Our money is one of the central information replicators that ensure that competition is emphasized in all areas of our society.” (Lietaer and Belgin, 2011a, p. 235 <i>apud</i> Krause, 2021a, p. 15–16).
Secret code giving access to the consciousness of the human species (Lietaer, 2000, p. 311 <i>apud</i> Krause, 2021a, p. 27).
Soul mirror of individual and collective lights and shadows: “Our money is our mirror. It can reflect more than just our shadows. It is a mirror of our soul.” (Lietaer, 2000, p. 333 <i>apud</i> Krause, 2021a, p. 16).
Teleportation portal/warp/doorway/gateway to a new reality from future causes shaped by individual and collective consciousness: “Society influences money and then money influences society. [...] Money is, in itself, a very little understood and questioned feature of life. [...] [Complementary currency] just opens new perspectives on what money could be: like an evidence that it can be different. It’s a really important touchstone. It’s a little bit like these portals in <i>Harry Potter</i> , you’re in touch with and pow! [...] All of a sudden, you have to realise that money is a human-made design and it can be also very different.” (Siegfried [p.c.] <i>apud</i> Place, Forthcoming).
Mythic alchemical substance of transmutation—for gold-making or silver-making like the philosopher’s stone perceived as the Holy Grail: “This is financial alchemy—the creation of extraordinary financial powers that defy reality and common sense.” (King, 2016). “Using the four basic symbols of alchemy as a model to represent increasing levels of risk and reward—from earth to water to air to fire.” (Vallée, 2000). “George Soros is unquestionably one of the most powerful and profitable investors in the world today. Dubbed by <i>Business Week</i> as ‘the Man who Moves Markets,’ [George] Soros made a fortune competing with the British pound and remains active today in the global financial community. [...] <i>The Alchemy of Finance</i> reveals the timeless principles of an investing legend.” (Soros, 1988).

One could say that Money is equivalent to a ‘magical talisman’ since the word ‘talisman’ appropriately means the following.

Board 8. Definition of ‘talisman’

Sacrosanct object bearing signs or symbols and attributed with magical vices or virtues of supernatural power or protection (<i>e.g.</i> metal, stone, skin, hair, parchment, paper, image, letter, photo, <i>etc.</i>)—usually belonging to or coming from a person, entity, or celestial body for which one has devotion or affection (<i>alias</i> amulet, fetish, gris-gris, charm, phylactery, relic).
Positive and creative influence on a person, a group, or a company (<i>viz.</i> talisman of love, courage, faith, intelligence, genius).
Official protection from an authority or investiture (<i>e.g.</i> inviolable dwelling under the control of the authorities, document marked with the imperial seal).
Wonderful thing that opens up fantastic possibilities (<i>e.g.</i> fortune is a talisman that instantly gave everything one could wish for just like in fairy tales, perfect tuning as a magical talisman opening the way to a new world of sound).

Money as we know it seems to act like a consciousness information replicator, soul mirror, and magical talisman.

Board 9. Money as consciousness information replicator, soul mirror, magical talisman

Consciousness information replicator of the past repeating itself as the cause of an old future impossible to overcome.
Soul mirror of our soma from a low-vibrational dimension.
Magical talisman as a ceremonial incantation or ritualistic conjuration from the depths of our soul as if possessed, borrowed, parasitized, or manipulated by any tangible or intangible entities of misleading information, disinformation, or deception.

2.4. Integral Quadrants of Money

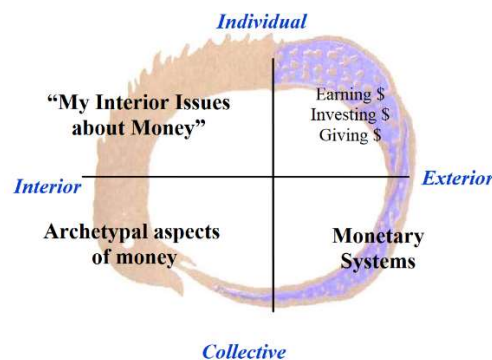
In the words of B. Lietaer, “95% of all research [or] literature about money [...] [resides in] the upper right ‘quadrant’ (individual–exterior) [which] deals with how individuals can earn more money, spend, invest or give their money” (Lietaer, 2005b, p. 2) as a description of the inner behaviour of the economic agents. Not to mention the recent growing literature on *post-neoclassical behavioural economics*³⁹ which is always restricted to the same upper right ‘quadrant’ of empirical *behaviorism*—not taking into account the external context as rightly pointed out by another referral of mine (Servet, 2018 *apud* Vallet, 2018).

Although there is much literature in the lower right ‘quadrant’ (collective–exterior) on the effects and interactions of the monetary and economic systems on social and environmental aspects—through the fields of *monetary economics*, *classical economics*, *social economics*, *environmental economics*, or *ecological economics*⁴⁰—little of it focuses on the systemic causes of the monetary system itself—except perhaps B. Lietaer’s work using *systems theory* on complementary currencies (Lietaer, 1999 *apud* Lietaer, 2005b, p. 2) to later demonstrate their necessity for the stability and viability of monetary systems (Lietaer *et al.*, 2009b).

Whilst some self-help books can be found in the upper left ‘quadrant’ (individual–interior) about our personal and emotional relationships with money—including the excellent personal development and psychological work of Peter Koenig (2003) which offers guidance on how to free oneself from limiting beliefs—too few explore the spiritual or metaphysical or even metapsychical⁴¹ aspects of money as energy or information—apart from the interesting exploration of information accumulation/generation through entropy/negentropy of positive/negative energy or mass⁴² (Lietaer, 1980 *apud* Krause, 2021a, p. 305).

Much scarcer is research and understanding about the lower left ‘quadrant’ (collective–interior) which aims at the interpretation of the collective meaning and definition of money through: mainly its cultural context through political history with the fields of *economic anthropology* or *political economy* in anthropology (Ferguson, 2001 *apud* Lietaer, 2015; Eisenstein, 2007; Ferguson, 2008; Passet, 2010; Eisenstein, 2011; Graeber, 2011; Aglietta, 2018); sometimes its normative discourse with the study of *monetary policy* or *monetary authority* (Bindewald, 2018; Dodd, 2014); rarely its *evolutionary psychology* and *collective psychology*—by elucidating the archetypal dimensions underlying the *Irrational Exuberance* of financial market bubbles and busts⁴³ (Shiller, 2000 *apud* Lietaer, 2000, p. 92 *apud* Lietaer and Belgin, 2005c *apud* Lietaer, 2005b, p. 2–3).

Figure 1. Integral quadrants applied to Money



Source: *Integral Sequence of a Potential Monetary/Financial Crash* (Lietaer, 2005b, p. 3).

¿ Has anyone ever used this ‘integral research’ approach to study money or currencies through the ‘four quadrants’? If so, to what extent and from which perspective?

Figure 2. Literature review on Money according to the ‘four quadrants’

Conscious beliefs [spiritual/religion]			Empiric behaviours [ritual/routine]		
Hoarding out of fear of death <i>Capitalism and the Death Drive</i> (Dostaler and Maris, 2009)	Liberating from mental prison <i>Question your relationship with money for a better life</i> (Koenig, 2003 <i>apud</i> Junod, 2015)	Information (neg)entropy <i>Physics and Metaphysics</i> (Lietaer, 1980 <i>apud</i> Krause, 2021a, p. 305)	Function and mechanism <i>Money, Instructions for Use</i> (Jonon, 2009)	Behavioural incentive <i>Behavioural Economics in Question</i> (Servet, 2018 <i>apud</i> Vallet, 2018)	Ritual for social bonding <i>The Ritual Animal</i> (Whitehouse, 2021)
Nature of power <i>The Social Life of Money</i> (Dodd, 2014)	(Counter-)donation <i>Sacred Economics: Money, Gift, and Society in the Age of Transition</i> (Eisenstein, 2011)	Archetypes and taboos <i>The Mystery of Money</i> (Lietaer, 2000 <i>apud</i> Lietaer, 2011b)	Profit or prosperity <i>The Visual and Material Dimensions of Legitimacy: Accounting and the Search for Socie-ties</i> (Quattrone and Puyou, 2018)	Past finance, future debutance <i>The Dynamic Spiral and the Debutance</i> (Périgaud and Mineo, 2012)	Pluralism and resiliency <i>The Future of Money</i> (Lietaer, 1999 <i>apud</i> Lietaer et al., 2009b <i>apud</i> Lietaer et al., 2012b)
Cultural values [symbol/sign]			Systemic collaborations [cooperation/competition]		

Money seems to deal with beliefs, behaviours, values, and collaborations—according to the primary work and original reference on the mystery of its intrinsic nature. The current monetary system serves as a significant information replicator, reinforcing particular behaviour patterns and deeply embedded values with each currency created and spent. Money plays a pivotal role in shaping our beliefs, social structures, and perceived possibilities, often emphasizing competition over cooperation. Analogous to DeoxyriboNucleic Acid (DNA) in a species, money acts as a code for civilization, perpetuating structures and behaviour patterns across time and space for generations⁴⁴ (Lietaer, 2000, p. 262, 312 *apud* Lietaer and Belgin, 2011a, p. 235 *apud* Krause, 2021a, p. 160–161, 164).

Contrary to the notion of money’s value neutrality, abundant evidence reveals that various types of monetary systems promote distinct values and have shaped social behaviour across history. Money exerts a profound influence on societal structures and values, with different monetary systems fostering markedly different social dynamics. The architecture of our monetary systems directly or indirectly contributes to the promotion of values such as competition, perpetual growth, and the concentration of wealth—which have been instrumental in shaping both positive and negative aspects of modernity⁴⁵ (Lietaer and Belgin, 2005c *apud* Lietaer and Belgin, 2011a, p. 37, 50 *apud* Krause, 2021a, p. 15, 162–163).

Nevertheless, there is still no proper integral definition of money or currency, as an integral object of inquiry, through the optical lenses of the ‘four quadrants’ of the ‘all quadrants, all levels’ model (AQAL). This has never really been proposed or clearly defined in this way, in my view—though already discussed above as an attempt to categorize economic academic disciplines (Lietaer, 2005b; Arnsperger, 2010b *apud* Arnsperger, 2010a), or wealth valuation tools (Brock, 2009 *apud* Brock, 2010 *apud* Brock, 2015).

Table 3. Wealth valuation tools

Wealth type	Speculative	Tradable	Measurable	Rankable	Nameable, acknowledgeable	Possible
System aspect	Probability	Scarcity	Sufficiency	Vitality	Harmony, identity, connectivity	Conceivability, comprehensibility
Value factor	Betting price, extractable wealth	Products, divisible parts, rational numbers, inputs and outputs	Properties, whole units, whole numbers	Performance, ordinal rankings, direct comparison	Relationships, named relationships, nominal rankings	Evolutionary capacity
Criteria	Monetization, profit, return on investment	Quantity, size, volume	Quality, label, certification, audit	Ranking, medal, competition, contest	Recognition, gratitude, like, love	Innovation, improvement, enhancement

Source: *Wealth: A Living Systems Model* (Brock, 2009), *Full System Wealth* (Brock, 2010), and *Wealth: A Living Systems* (Brock, 2015).



2.5. Integral Money

If Money can be considered as an integral object of inquiry (*alias* ‘integral money’), then this object involves, influences or affects, all ‘four quadrants’ of the ‘all quadrants, all levels’ model (AQAL) of ‘integral theory’.

- Behaviours [ritual/routine]: “upper right ‘quadrant’ (individual–exterior) [which] deals with how individuals can earn more money, spend, invest or give their money” (Lietaer, 2005b, p. 2) as a description of the inner behaviour of the economic agents (Whitehouse, 2021).
- Collaborations [cooperation/competition]: lower right ‘quadrant’ (collective–exterior) on the effects and interactions of the monetary and economic systems on social and environmental aspects (Lietaer, 1999 *apud* Lietaer, 2005b, p. 2).
- Beliefs [spiritual/religion]: upper left ‘quadrant’ (individual–interior) about our personal and emotional relationships with money—including the excellent personal development and psychological work to free oneself from limiting beliefs (Koenig, 2003).
- Values [symbol/sign]: lower left ‘quadrant’ (collective–interior) which aims at the interpretation of the collective meaning and definition of money through its cultural context through political history (Bindewald, 2018; Dodd, 2014).

Money as a concept is a ‘discursive institution’ constituted by a system of rules, values, and norms (Bindewald, 2018, p. 66). Furthermore, ‘integral theory’ recognizes: individual mindsets and beliefs, habits and behaviours; and collective worldviews and values, systems and structures⁴⁶ (Marshall, 2012, p. 207).

As a result, Money could be hypothetically defined as follows: a changing rule and an evolutive concept which encourage behaviours [ritual/routine] and collaborations [cooperation/competition] while activating beliefs [spiritual/religion] and values [symbol/sign].

Figure 3. Integral Money approach through the four integral quadrants

Intentional ‘quadrant’ (individual–interior): subjective conscious perception or intentionality.	Behavioural ‘quadrant’ (individual–exterior): objective cerebral processes or behaviour
‘God’ and ‘beliefs’ (spiritual/religion).	‘Sex’ and ‘behaviours’ (ritual/routine).
‘Leadership’ (‘entrepreneurial leadership’ or ‘leader’).	‘Research’ (‘scientific research’ or ‘researcher’).
‘Organisation’ (‘organisational management’ or ‘manager’).	‘Money’ (‘money network’ or ‘moneyer’)
‘Love’ and ‘values’ (symbol/sign).	‘Money’ and ‘collaborations’ (cooperation/competition).
Cultural ‘quadrant’ (collective–interior): inter-subjective culture or value.	Social ‘quadrant’ (collective–exterior): inter-objective society or social systems.

To partially validate this hypothesis, I interviewed some stakeholders of a complementary currency project (*i.e.* Lake District Pound local currency) and look for this definition hypothesis through a deductive approach of coding and theme development (*viz.* rule, concept, behaviour, collaboration, belief, value)⁴⁷ (Place *et al.*, 2021b, p. 42).

3. Integral Implementation Guide and Toolkit

3.1. Currency and Money

¿ What money is? Who creates the money? To whom is it a benefit [la: *cui bono*]? *Where does money come from?* (Ryan-Collins *et al.*, 2011).

Conventional money—‘money as we know it’—is defined by government law and controlled by central and commercial banks. Nevertheless, the level of ambiguity and inconsistency in the monetary policy terminology indicates the need of clarification for both regulators and practitioners, as argued and demonstrated by Leander Bindewald (Bindewald, 2018; Bindewald, 2021; Bindewald, Forthcoming).

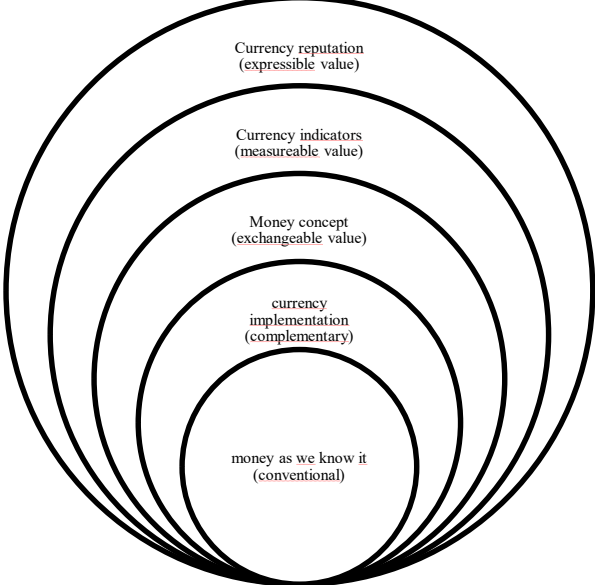
The concept of Money is a discursive institution constituted as a system of rules, values, and norms (Bindewald, 2018, p. 66). Indeed, discourse is at the foundation of *institutionalism* and refers to the rules, norms, and conventions providing the structures and influencing our behaviours (*cp.* beliefs, values, collaborations, behaviours; *cf.* *social constructivism*⁴⁸, *new institutionalism*⁴⁹, *discourse analysis*⁵⁰) (Bindewald, 2018, p. 74).

“[Rules] refer to the explicit and implicit norms, regulations and conventions that constrain actions and interactions within an activity system” (Engeström, 1993, p. 67 *apud* Bindewald, 2018, p. 84).

To integrate both conventional money and complementary currency systems—from the ‘New Wave’ [fr: *Nouvelle Vague*] of currency innovation—a vanguard and coherent definition has been proposed for the theory of monetary economics (Bindewald, 2018, p. 69)—largely inspired by *Wealth: A Living Systems Model* (Brock, 2009; Brock, 2010; Brock, 2015).

- Currency with an uppercase C is the concept of expressible and measurable values and non-monetary currencies are its implementation—respectively reputation and indicator.
- Money with an uppercase M is the concept of exchangeable value and monetary currencies are its implementation—just like currency innovation is its improvement. Among these exchangeable currencies, all what is not conventional money or monetary, banking, and financial innovations for its improvement (*viz.* coins or notes issued by a central bank as legal tender; cheque and electronic money issued by a commercial bank) are considered as complementary and community currency systems (*e.g.* barter market, mutual credit, time bank, local currency, eco-friendly incentive, cryptographic currency, *etc.*).

Figure 4. Expressible reputation, measurable indicators, exchangeable currencies



Source: Adapted from Complete terminological distinction proposed in this thesis (Bindewald, 2018, p. 69) and inspired by *Wealth: A Living Systems* (Brock, 2015).

3.2. Multicurrency Interoperability

Sovereign debt crisis (*i.e.* usually resolved by sovereign default or debt restructuring plan with its threat of austerity) and Quantitative Easing programs (*i.e.* to inject money directly in the economy through the financial market with its risk of hyperinflation) are the common headlines about financial crisis—especially since the wake of the 2007–2008 financial crisis (*alias* 2007–2012 global financial crisis).

The endless recurring and systemic economic, financial, and banking crises worldwide—especially after the collapse of the gold standard⁵¹ from the Bretton Woods Agreement system (1944–1971)—is attested and reflected by a total of 461 banking, currency, and sovereign debt crises “during the period 1970–2017 [...] [with] 151 banking crises⁵², 236 currency crises⁵³, and 74 sovereign crises⁵⁴” (Caprio and Klingebiel, 1999 *apud* Lietaer *et al.*, 2008a, p. 5–7 and Laeven and Valencia, 2018, p. 3)—which are probably due to not only risky investments on speculative bubbles⁵⁵, but also the great monetization of exchanges, the great financialization of the economy, and *The Great Leveraging* through credit (Bordo *et al.*, 2001; Reinhart and Rogoff, 2009 *apud* Taylor, 2012; Klindleberger *et al.*, 2023).

“Money is not a neutral given, but exists because of the way people think about, talk about, and use it. With this perspective, the nature of money does not only influence the instability of our financial system, but limits our capacity to achieve sustainability in all major societal spheres.” (Bindewald, 2018, p. 2).

In the light of such a succession of historic events, these endless recurring and systemic crises appear to be too common and too frequent to be due solely to a lack of appropriate institutional regulations or individual decisions.

Indeed, whether in the context of a nationalized or privatized central bank (Lietaer *et al.*, 2008a; Lietaer *et al.*, 2009b), in our current monetary paradigm: the floating exchange rate fluctuations create the instability of national currencies; the monopolistic conglomerate of restrained central and commercial banks⁵⁶ causes recurring and systemic crises due to a lack of flexibility and adaptability as fundamental flaws—by bringing efficiency at the expense of less diversity of issued currencies (*alias* ‘monoculture’ of national currencies with a tendency towards currency scarcity or shortage) (Lietaer *et al.*, 2012b, p. 151–154 *apud* Krause, 2021a, p. 187–193).

Figure 5. Complementary currencies to solve systemic cause of banking crisis

Approach	Bankers	Taxpayers/ Central Governments	Local Governments	2d Wave	Systemic Cause
DO NOTHING 1929-1932	Disaster	Disaster	Disaster	Disaster	Unaddressed
Conventional Nationalizing Problem Assets	Preferred	Most Expensive (no leverage)	Unaddressed	Delayed	Unaddressed
Nationalizing Banks	Equity Dilution	10x leverage	Unaddressed	Delayed	Unaddressed
Unconventional Nationalizing Money Creation	End of current business model	Long term solution (but inflation?)	Unaddressed	Governments spend money into existence.	Unaddressed
Complementary Currencies	End of money creation monopoly	Long term solution	Long & short term solution	Long & short term solution	Systemic Solution

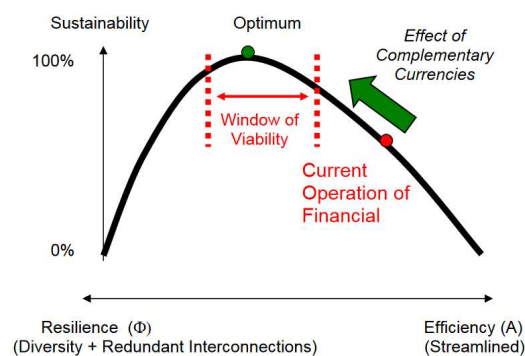
Source: *Options for Managing a Systemic Banking Crisis* (Lietaer *et al.*, 2008a, p. 20).

Consequently, an additional supply of interconnected and diversified currencies (*alias* ‘polyculture’ of complementary currencies with a tendency towards currency abundance or plethora) would increase the robustness and stability of the banking and monetary system⁵⁷—by supplying a variety of monetary systems (*alias* ‘monetary ecosystem’ for structural diversity and interconnectivity) (Lietaer, 2009c; Lietaer *et al.*, 2010b; Lietaer, 2010d). This would bring not only more resiliency⁵⁸, but also more participatory democracy⁵⁹ for the common good—whether currencies are issued by private, public, or civic institutions.

Furthermore, living in total autarky without foreign exchange, like a secluded hermit who has been sent back to the primitive age, is delusional and unrealistic. We need trade globalization (*vs globalism* totalitarianism) with global trade currencies (*alias* ‘Yang currencies’; *i.e.* competitive through scarcity) to export and import specialized products from abroad, but sufficiently and not excessively—that is to say in a healthy balance with local exchange currencies (*alias* ‘Yin currencies’; *i.e.* cooperative through abundance). The enemy is not the conventional money for trade globalization to replace or destroy, “but [its] prevailing imbalance of excess” to balance and complete with complementary currencies for local exchange (*i.e.* currency is a complement, not an alternative) (Lietaer [p.c.] *apud* Krause, 2021b, p. 18–19).

Although considered by some researchers in information theory and ecological complexity to be “terminologically incorrect” and sometimes “mathematically wrong” (Trancón y Widemann and Bogner, 2012), B. Lietaer, S. Goerner, and R. E. Ulanowicz borrowed from the emerging fields of complex system and cybernetics—applied to monetary economics as a self-organized evolving ecosystem⁶⁰—and discovered that: the viability and sustainability of complex systems is governed by the optimal balance⁶¹ (*alias* sufficiency of components) between efficiency opposed to resiliency (*resp.* too little or too much diversity of and interconnectivity between components of a complex system or network of interaction)—to avoid its extreme collapse (*resp.* shortage or plethora of components) through its structural weaknesses (*resp.* scarcity or abundance of components) (Lietaer *et al.*, 2009a; Lietaer *et al.*, 2009d).

Figure 6. Currency diversity and interconnexion for monetary resiliency over efficiency



Source: *The Effect of Diverse Complementary Currencies* (Lietaer *et al.*, 2008a, p. 20).

In my opinion, this optimal balance prevents the extreme concentration or dispersion of monetary systems⁶², by producing enough currencies to get out of the extreme scarcity of interest-bearing debt money, but without falling into the other extreme of abundance—where each collective or individual creates its own currency that is only accepted by itself (*i.e.* well-balanced sufficiency instead of extreme abundance or scarcity).

I argue that this conceptualization of monetary variety and ecosystem⁶³ for monetary viability and stability⁶⁴—which encourages a ‘monetary ecosystem’ to strive for currency sufficiency (*vs* extreme scarcity or abundance) and brings a plurality of various currencies with their

respective goals, purposes or vision (*alias* currency pluralism)—adds a new layer to the core principles and characteristics of currency innovation and pluralism presented hereinbelow (*cf.* Place, 2015a, p. 4–5).

Board 10. Core principles and characteristics of currency innovation and pluralism

Principle	Characteristic
Continuous improvement (design thinking and innovation).	Appropriate and sufficient tools to reach a shared vision with common objectives (a tool for a vision, currency as a service, future back casting, strategic prospective).
Power decentralization (democracy and sovereignty).	Value co-creation between stakeholders for the reappropriation of sovereign money creation (open code, participative democracy, collaborative governance, constituent citizens).
Common good for all (universality and accessibility).	Unrestrictive criteria without modality limitation for value and collaboration but identification of territory and community (money as commons, common-pool resource, public money).
Pluralism freedom (plurality and interoperability).	Monetary resiliency and economic stability instead of financial efficacy and banking monopoly (diversity and interconnection, sustainability and constellation).
Integrity by incentive (morality and recognition).	Virtuous circle of encouragement and integral money for evolution ensured by certification label of product and quality audit of organization (behaviours, beliefs, values, collaborations).

Whether it is an historical generation of ‘purposeful currency’ (*resp.* Local Exchange Trading Scheme and barter market currency, Time Bank, time-based currency and local currency and regional money, eco-friendly behavioural incentive) (Blanc, 2011); or an evolutionary tree diagram of ‘integrative communication media’ (*viz.* money globalization *vs* language localization, primary/secondary industrialization *vs* tertiary deindustrialization) (Nishibe, 2018); whether it is an heterarchic⁶⁵ network of ‘trophic currency chain’ (*resp.* supranational wolves, national bunnies, local grass, gifts/barter/time sunlight) (Bindewald *et al.*, 2012); or a hierarchic⁶⁶ pyramid of ‘territorial currency’ (*resp.* neighbourhood, municipal, local, regional, provincial, national, supranational) (Gómez, 2016; Gómez, 2019; Théret and Coutrot, 2021); all these monetary reform or complementary currency proposals aspire to a multiplicity or plurality and interconnexion or interoperability of currency innovation or constellation (*alias* nested currency pluralism) since people powered money can play a role in fostering a convivial society (*cf.* Bindewald and Steed, 2013; Arnsperger *et al.*, 2021a *apud* Arnsperger and Jarow, 2022).

With this idea of currency pluralism constellation, each community at a territorial level (*alias* geographical; *e.g.* neighbourhood, local, regional, national, international) (Lietær and Kennedy, 2004; Lietær *et al.*, 2012a; Gómez, 2018) could create its own multiple interconnected currency system according to a generational type (*alias* historical; *e.g.* premodern, modern, postmodern, post-postmodern) (Blanc, 2011; Bindewald *et al.*, 2012; Martignoni, 2012; Nishibe, 2018).

Table 4. Complementary currency generations

Generation	Significant cases	Currency scheme types	Guiding principle	Content overview
Generation 1 (G1)	Local Exchange Trading System (LETS), Barter [es: <i>Trueque</i>], Community Exchange System (CES).	Mostly community.	Reciprocity first; various distance to market.	Inconvertible schemes; quite small openness to external economic activities.
Generation 2 (G2)	Time banks, Accorderie.	Community.	Reciprocity first; various distance to local governments.	Inconvertible schemes with time currencies; frequent partnerships, especially with local governments.
Generation 3 (G3)	Ithaca Hour, Regio Money [de: <i>RegioGeld</i>], Banco Palmas, BerkShares.	Local and complementary.	Market first; generally distant from local governments.	Convertible schemes; local businesses are included; interest of partnerships with local governments.
Generation 4 (G4)	NU Savings Card [nl: <i>NU-Spaarpas</i>], SOLidarity [fr: <i>SOLidaire</i>].	Mostly complementary.	Market first; with links to governments and reciprocity.	Complex schemes oriented toward consumer responsibility or / and economic activities re-orientation and other purposes; partnerships are necessary.

Source: Four Complementary and Community Currency Generations since the 1980s (Blanc, 2011, p. 9).

The concept of ‘complementary currency’ leads to not only multicurrency (*viz.* currency pluralism, monetary pluralism) but also interoperability (*viz.* clearing house, network interconnection) between a free diversity of old or new currency types or kinds (*viz.* currency innovation, monetary innovation).

It is therefore necessary to develop not only different currencies for different purposes⁶⁷ (*alias currency pluralism*), but also multicurrency interoperability (*alias* currency constellation) to allow multiple currencies (*alias* multicurrency systems) to interact within currency networks (*alias* interoperability networks).

3.3. *Carrousel of Power*

According to the carrousel or square of power⁶⁸ (*resp.* debt, bureaucracy, tax, centralization), the financial sector and public governments are bound hand and foot because they are stuck in an inextricable, uncontrollable, and unquenchable navigation control mechanism (*alias* automated pilot)—due to the interest-bearing debt money creation system causing social inequality and environmental degradation (Ferguson, 2001 *apud* Lietaer, 2015; Graeber, 2011; Aglietta, 2018).

Few of these complementary currencies use the levers of the carrousel or square of power to their advantage (*resp.* grant *vs* debt, involvement *vs* bureaucracy, allowance *vs* tax, decentralization *vs* centralization)—unless it can be dismantled (*i.e.* refuse to pay tax in conventional money but in complementary currency).

Figure 7. Carrousel or square of power to use or dismantle

National debt	Tax bureaucracy
Held by the international banking and financial system—since private commercial banks issue fiat currency according to the fractional-reserve banking system ⁶⁹ regulated by the national central bank for money supply and inflation rate control ⁷⁰ .	Extracted for debt repayment public spending—since tax gives value to a currency that has no value.
Maintains the <i>status quo</i> of interest-bearing debt money creation—since it always bailout the bankruptcy of ‘too big to fail’ commercial banks ⁷¹ to favour the efficiency of banking monopolies causing systemic crises rather than the resilience and stability of the entire monetary system for the common good through currency pluralism.	Decides the tax rate for each social class and business sector—since it is not the government that creates the money supply with its restricted sovereign power to print banknotes and mint coins as based money from its national central bank.
Central bank of central banks	Legislative assembly

Source: Adapted from The Cash Nexus (Ferguson, 2001 apud Lietaer, 2015).

3.4. *Governance of Money*

Nevertheless, many other researchers have explored the deep cause of all causes of contemporary monetary, banking, financial, and economic crises.

For some, the current trend of representative democracy—writing the constitution for the benefit of representatives’ sponsors—is the reason behind unemployment essential to economic liberalism⁷² (*i.e.* greater profit or interest-bearing debt repayment through price inflation control by breaking inflation-indexed wage demands with a reserve army of unemployed⁷³; *e.g.* high unemployment rate, low relocalization or reindustrialization, strong economic migration, weak trade union)—finding its roots in the ideas critical of absolute monarchies during the *Age of Enlightenment*⁷⁴ while spreading through the Atlantic Revolutions (1765–1838) or American Revolution (1765–1783) and French Revolution (1789–1799) extended to the whole world afterwards—without the possibility of instituting a Citizens’ Initiative Referendum or a Popular Constituent Process (Chouard and Zaki, 2011; Chouard, 2016; Chouard, 2017; Chouard, 2019b; Chouard, 2019a; Chouard, 2023; Chamayou, 2018; Dupuis-Déri, 2019).



For others, this endemic oligarchy⁷⁵, plutocracy⁷⁶, or kleptocracy⁷⁷—from the establishment⁷⁸ adept of *mammonism*⁷⁹—is even aiming to the imposition of a cashless society and social credit—under the guise of a promise of universal basic income (Haupt, 2023a; Haupt, 2023b; Benhammou, 2016).

According to some, it is the history of counterfeit money printing machine (*alias* Quantitative Easing, Helicopter Money) that ruined nations, to the necessity of war or revolution, and created systemic global crisis—based on the capital-gold standard opposed to the capital-labour standard (Delaisi, 1942; Jovanovic, 2011; Rougeyron, 2013; Jovanovic *et al.*, 2016; Jovanovic, 2017).

Some even saw, in the Apocalypse of Saint John, the fall of the United States dollar (*cp.* dedollarization⁸⁰, end of petrodollar⁸¹), and the destruction of the world's nations (Jovanovic, 2009; Jovanovic, 2014; Zaki, 2011).

Hence the use of the digital and information revolution of information and communications technology to regain control over this loss of power over people by the globalist elite thanks to (Plaquet, 2022): a cashless society (*e.g.* Central Bank Digital Currency⁸²; *cp.* Big Bank⁸³, Bank of International Settlements) through the Dantesque⁸⁴ or Promethean⁸⁵ globalist agenda (*viz.* Agenda 2030 *alias* Sustainable Development Goals, Great Reset) (Scott, 2022; Scott, 2013); and an enhanced human (*alias* *posthuman transhumanism*⁸⁶, *cosmism*⁸⁷) as the convergence of nanotechnology, biotechnology, information technology, and cognitive science (NBIC) technologies (Gaillard, 2024). This being implemented with the support of the most dominant information technology companies (*alias* Big Tech; *viz.* GAFAM Google, Apple, Facebook, Amazon, Microsoft) as well as artificial intelligence⁸⁸ and neurotechnology companies (*viz.* xAI, Neuralink).

Consequently, there can be no prosperity without public sovereign money as a common good and shared resource for general interest; no public sovereign money without democracy; no democracy without a constituent assembly of citizens drawn by lot. This means constituent citizens elected by sortition to write the constitution which will weaken and worry the representatives—with the power to produce and impose a right which is useful and dangerous for the people (*i.e.* to prevent representatives of power from being able to write down the rules of power to their advantage by conflict of interest) (Chouard and Zaki, 2011; Chouard, 2016; Chouard, 2017; Chouard, 2019b; Chouard, 2019a; Chouard, 2023; Courant, 2019).

Therefore, there can be no resiliency without complementary currency; no complementary currency without currency pluralism for different purposes; no pluralism without open, shared, transparent, collaborative, participative, representative democracy or governance⁸⁹ (*cp.* sociocracy or holacracy⁹⁰; *vs* consensus⁹¹, democracy⁹², autocracy⁹³)—customized to the needs of each collective (*e.g.* liberated company, social business, enterprise with purpose, teal organization, intentional community, ecovillage, *etc.*) (Hayem and Briet, 2010; Briet, 2020; Carney and Getz, 2009; Laloux, 2014; Laloux, 2016).

Like a counter-movement⁹⁴ (*alias* counter-culture, counter-proposal, counter-measure, counter-argument), participatory governance or open democracy beyond representative democracy (*e.g.* *holacracy*⁹⁵, *sociocracy*⁹⁶, consensus, consent, two-thirds majority, deliberation, sortition) (Croft *et al.*, 2017; Noubel, 2004; Noubel *et al.*, 2008; Noubel, 2010; Séné, 2017; Briet, 2020) is at the heart of currency innovation for the continuous improvement of the rules of the game

of life and the value co-creation between stakeholders with money as a ‘democratic medium’ (Desan, 2014; Desan, 2021; Desan *et al.*, 2023)—as opposed to conventional fiat money whose monopoly rules are reinforced by the ‘central bank of the central banks’ (*viz.* Bank of International Settlements, *cf.* Central Bank Digital Currency) to preserve the *status quo* of interest-bearing debt money creation for the benefit of a minority global elite served by a majority submissive people.

Beyond the usual forms of governments (*e.g.* democracy, meritocracy⁹⁷, mediocracy⁹⁸, ineptocracy⁹⁹, autocracy¹⁰⁰, oligarchy¹⁰¹, plutocracy¹⁰², kleptocracy¹⁰³, *etc.*; *cp.* democracy government by constituent citizens elected by sortition; *vs* noocracy government by the wise mind/intellect; *vs* neocracy as government by the new/inexperienced officials or upstarts; *vs* necrocracy government by a dead person or deceased former leader), a heterarchy¹⁰⁴ or holarchy¹⁰⁵ born of grassroots movements could select the most appropriate type of governance at the supranational, national, regional, local, or communal level (*alias* holarchic self-organization)—built from the ground up on a voluntary basis or voluntary association without a central, regional, local, or communal hierarchy¹⁰⁶ to avoid coercion and domination (*cf.* *anarchic federalism*; *vs* *authoritarian federalism*, *republican federalism*, *democratic federalism*).

Above all, the question of who controls the sovereign power of money creation is central (*i.e.* endless inflation-free and interest-free money creation in return for community work and wealth creation of unemployed employed by public institutions as employer of last resort; *vs* endless inflationary and interest-bearing debt money creation by private or public central bank through Quantitative Easing injected in usurious credit market and parasitic financial market siphoning off money to the wealthy until causing scarce money in the real economy).

However, there is no integral implementation guidelines of money or currencies worthy of the name by proposing a useful implementation guide or toolkit with reference cases, and a best practice manual for field practitioners. This has never been really explicated (Bindewald *et al.*, 2015)—although already outlined (Lietaer and Hallsmith, 2006b *apud* Lietaer *et al.*, 2006a).

Board 11. Currency implementation steps

Step	Description
Set currency objectives.	Do an assessment of your community where you identify the priorities for matching unmet needs with underutilized resources—this will determine the objective of the complementary currency project you want to implement.
Choose the appropriate currency.	Review the different types of complementary currencies that are available, and choose the type or types that suit your needs best.
Recruit the leadership team.	Build local support for the community currency system, which means finding appropriate leadership and a group of people who can help with the different aspects of the project.
Choose the right mechanisms.	Establish a system for managing transactions in your community, which includes considerations of the support medium, standard of value, store of value, issuing procedures, and cost recovery. This system can take many forms, depending on the local resources available, the scale of the project, the type of participants, and the type of currency you select.
Establish a circulation system.	Every community currency system needs to carefully design the exchange process and circulation system so that the money keeps moving throughout the community, and doesn't accumulate in ways that make people and business discouraged.

Source: Community Currency Guide: Local Economics 101 (Lietaer and Hallsmith, 2006b, p. 2) apud Local Action for Sustainable Economic Renewal (LASER): Guide to Community Development (Lietaer et al., 2006a).



4. Integral Historical Atlas and Compendium

4.1. Historical Growth and Geographical Spread of Complementary Currencies

During the Great Depression (1929–1939), there were only three famous complementary currencies with Wära¹⁰⁷ (1929–1931), Wörgl¹⁰⁸ (1932–1933), and WIR¹⁰⁹ (1934–) in German-speaking countries (Barinaga Martín, 2020b); but roughly 100 stamp scrips¹¹⁰ in the United States of America (Warner, 2010; Gatch, 2012, p. 23; Elvins, 2012).

Just before and after the Great Recession (2007–2009), there were precisely 165 complementary currencies self-reported in 2007 (*resp.* 53.3% in North America/Central America, 27.9% in Europe, 13.9% in Asia/Oceania, 4.3% in South America, 0.6% in Africa; *viz.* 57.6% of Local Currencies, 27.3% of Mutual Exchanges, 6.7% of Barter Markets, 1.8% of Service Credits, 6.6% of others)¹¹¹ (DeMeulenaere *et al.*, 2006, p. 9–11 *apud* DeMeulenaere, 2007, p. 25–27 *apud* DeMeulenaere, 2008, p. 4–6); and between around 599 and 685 published in 2010 (*resp.* 53.4% in Europe, 16.0% in South America, 14.0% in Asia, 13.2% in North America, 3.0% in Oceania, 0.4% in Africa; *viz.* 31.7% of Barter Markets, 28.5% of Mutual Exchanges, 21.0% of Local Currencies, 13.1% of Service Credits, 5.7% of others)¹¹² (Schroeder *et al.*, 2010, p. 216–222 *apud* Schroeder *et al.*, 2011, p. 35, 36).

Again before and after the Great Recession (2007–2009), there were about 2'600 complementary currencies identified in 2007 (*resp.* 51.9% in Europe, 30.8% in Asia, 7.7% in North America, 5.8% in Oceania, 3.8% in the rest of the world)¹¹³ (Lietaer and Kennedy, 2004 *apud* Lietaer and Kennedy, 2008d, p. 83 *apud* Lietaer and Kennedy, 2010a, p. 78 *apud* Lietaer *et al.*, 2012a, p. 75–78); and then exactly 3'418 in 2011 (*resp.* 68.3% in Europe, 16.6% in Asia, 9.8% in North America, 2.7% in South America, 1.7% in Oceania, 0.9% in Africa; *viz.* 46.5% of Mutual Exchanges; 45.7% of Service Credits; 6.5% of Local Currencies; 1.3% of Barter Markets)¹¹⁴ (Seyfang and Longhurst, 2013, p. 69, 72).

Just before and after the 'Great Lockdown' (2020), there were between nearly 78 and 154 complementary currencies published in 2016 (*resp.* 53% in Europe, 24% in North America, 8% in South America, 11% in Asia, 3% in Oceania, 1% in Africa; *viz.* 43.5% of Local Currencies, 16.9% of Mutual Exchanges, 12.3% of Service Credits, 27.3% of others)¹¹⁵ (Moreira Alves and Ferreira dos Santos, 2018, p. 6, 8); and then between approximately 2'082 and 11'801 published in 2022 (*resp.* 34.6% in Europe, 21.4% in North America, 12.5% in South America, 11.3% in Asia, 7.4% in Oceania, 6.2% in Africa, 6.6% in all continents; *viz.* 50.7% of Local Currencies, 21.7% of Mutual Exchanges, 14.8% of Service Credits, 6.4% of Barter Markets, 6.4% of others)¹¹⁶ (Place, In Press).

From hundreds of complementary currencies in the 1930s, this movement increased to half a thousand up to three thousand complementary currencies in the 2000s, to finally reach seven thousand in the 2010s, and almost twelve thousand in the 2020s. With a nearly cubic growth from about a hundred to around ten thousand in almost a century, complementary currencies only doubled every ten years...

After the Bitcoin network came into existence on 03 January 2009 (Nakamoto, 2008), cryptographic currencies using blockchain technology raised up to 66 in 2013, 562 in 2015, 1'335 in 2017, 2'817 in 2019, 6'044 in 2021, to reach 10'397 in 2022¹¹⁷ (Best, 2024).

With a nearly exponential growth from about a hundred to around ten thousand in almost a decade, cryptographic currencies doubled every two years!

We must therefore try to explain why cryptocurrencies, as part of complementary currencies, are the only ones to observe Gordon Moore’s law (*i.e.* number of transistors in an integrated circuit doubles about every two years as an empirical relationship linked to gains from experience in production).

Is it just because they are surfing on the trend of a cashless society through their user-friendly crypto trading platform? Or is it because the vast majority of them fuel the bad habit of enrichment through speculation?

4.2. Integral Evolution of Money

To try to answer these questions, it is important to note the works of: Jérôme Blanc (Blanc, 2011) from a generational development perspective; and Makoto Nishibe from an evolutionary economics perspective (Nishibe, 2012; Nishibe, 2018)—both dealing with the institutional and historical emergence of complementary currencies.

Indeed, there are various geographical purposes and historical generations of complementary currencies (*e.g.* barter market/reciprocal trade, mutual credit/mutual exchange, time bank/service credit, local currency/time-based currency, eco-friendly incentive/other, *etc.*) (Blanc, 2011; Blanc and Fare, 2012; Blanc, 2024).

Table 5. Complementary currency groups’ features

Group	Contents	Origin and some important experiences	Main purported transformations
Group 1	General mutual credit with focus on individuals and sometimes small businesses.	1983: Local Exchange Trading System (LETS) (starting in Canada).	Empowering people and strengthening proximity social cohesion, through reciprocity and socially embedded market exchange.
Group 2	Time-based rewards for individuals providing services, often as mutual credit.	1973: Voluntary Labour Bank (Japan), Time Dollars (in the United States of America), Accorderie (Canada, France).	Empowering people and strengthening proximity social cohesion through time services, often reciprocity-based.
Group 3	Lump-sum based inconvertible local currencies	1991: Ithaca HOUR (United States of America), Trueque (Argentina), Bangla Pesa (Kensa).	Promoting an inclusive popular economy of proximity.
Group 4	Convertible local currencies backed by reserves in national currencies.	1998: Palmas (Brazil), Chiemgauer (Germany), Bristol Pound (United Kingdom), Eusko (France).	Promoting an inclusive popular economy of proximity, and reorienting production, trading and consumption patterns.
Group 5	Reward schemes for virtuous actions.	2000: NU Savings Card [nl: <i>NU-Spaarpas</i>] (Netherlands), SOLidarity [fr: <i>SOLidaire</i>] (France), e-Portemonee (Belgium).	Reorientating consumption patterns and stimulating waste management.
Group 6	Business-to-business mutual credit.	1990: RES (Belgium), Sardex (Italy)	Promoting an economy based on small and medium-sized enterprises that form a community.
Group 7	Cryptocurrencies (as far as they are practically used as currencies).	2009: Bitcoin (BTC), Ethereum (ETH), Tether (USDT).	Promoting transactions outside banks and official currencies and dis-regarding territorial limits.

Source: Community-based alternative currencies (Blanc and Fare, 2022) apud Seven groups of Alternative Currencies: features (Blanc, 2024, p. 8).

Furthermore, *Economics as an Evolutionary System* respects the existence and integration of each premodern, modern, postmodern, post-postmodern perspectives as the basis for monetary modalities (*resp.* community, cryptographic, local, complementary currencies) (Lietaer and Brunnhuber, 2005a).

Table 6. Economic and currency systems evolution

Evolutionary stage	Economic system	Currency system	Organizing framework	Time perception	Human type
Pre-modern	Primitive barter: agrarian societies.	Community-based: no currency, commodity currencies.	Religions—mythologies: local/regional traditions.	Cyclical: here/now priorities.	<i>Homo Ritualis.</i>
Modern	Industrial age: competitive markets.	Paper-based: 'gold standard', Bretton Woods treaty.	National: legal systems. International: treaty systems.	Linear: short-term priorities.	<i>Homo Economicus.</i>
Post-modern	Post-industrial: knowledge society.	Electronic: complementary currency systems.	Global/local complementary systems: multiple organizing frameworks, conscious choice in transactional effects.	Simultaneous: multiple time perceptions, conscious choice in time priorities.	<i>Homo Universalis.</i>

Source: *Evolutionary Economic Systems: Some characteristics of pre-modern, modern and post-modern Economic Systems* (Lietaer and Brunnhuber, 2005a, p. 134).

Yet, there is no genuine integral evolutionary meta-history of money or currency as an integral subject of inquiry, through the reflective prisms of the 'development levels' of the integral 'altitude' spectrum (IAS). This has already been outlined above but never thoroughly proposed, in my opinion (Lietaer and Brunnhuber, 2005a; Lathrop, 2020)—except perhaps in the light of the agricultural, industrial, and informational revolutions (Brock, 2009), or even the historical evolution of economic wealth (Faisandier, 2011; Ryan-Collins *et al.*, 2013).

Table 7. Historical evolution of economic wealth

School of thought	Source of wealth	Argument
Mercantilism (16 th –18 th centuries).	Precious metals.	Foreign trade enriches nations through the surplus money it generates.
Physiocracy (18 th century).	Land.	The only productive activity is agriculture, because only the land is capable of creating goods <i>ex nihilo</i> .
Classical school (18 th –19 th centuries).	Adam Smith (1723–1790).	Labour.
	Thomas Malthus (1766–1834).	Material goods resulting from production.
Marginalism (19 th –20 th centuries).	Scarcity and utility of a good.	A society will be richer the more all its citizens work and the more fully the 'productive power of labour' can develop. "A country [is] rich or poor according to the abundance or scarcity of the material objects with which it is furnished."
Creative economy (?–)	Energy, surface, time.	The value of a good decreases with the quantity of available goods (scarcity value). At the same time, the more a good is considered useful by an individual, the more its value increases (utility value). In this way, the value of a good is determined by the balance between its scarcity and its usefulness to an individual. The price, the added value, would no longer be defined by the market of supply and demand but by a dialogue to create links, trust, and sharing between the stakeholders.

Source: *Adapted from Wealth in Economic Thought* (Faisandier, 2011) and *Energising Money* (Ryan-Collins *et al.*, 2013).

According to renowned and experienced astral traveller Marc Auburn—as described during his many explorations or experiences of high-vibrational worlds in other dimensions (Auburn, 2013; Auburn, 2021)—the future of money will be about the simple exchange of energy or matter and information or knowledge without intermediary between different entities or worlds.

Table 8. Economic evolution and societal revolution

Economies/Revolution/Age	Natural	Agricultural	Industrial	Informational/Electronic/Digital
Time scale	100'000 years	10'000 years	500 years	50 years
System	[Gift] economy of nature, family and tribe	Monarchy, feudalism, empire	Capitalism, Communism, socialism	Self-regulating markets, scalar gift economies
Paradigm (level)	Mythico-magical	Religio-archaic	Scientific	Systems
Functional economic component	Land	Labour, land	Capital, labour, land	Information, capital, labour, land
Organization	Tribes, clans	Cities, nation-states	Governments, corporations	Intelligent organizations, self-regulating social organisms
Lifestyle	Hunter-gatherer, forager	Farming, husbandry	Banking, industry	Peered networks, open knowledge
Description	People operating as part of nature: following seasonal rhythms of food, they can collect or prey, they can kill.	'Domestication' of people and animals for production of food and resources: food surpluses enable increased population and specialization, emergence of ruling classes and strong hierarchies.	Progress in science and manufacturing coupled with interest-based money generated explosive growth of population, technology and resource consumption.	As change accelerates, adaptive organizations thrive more than their industrial-age command-control counterparts: centrally-controlled currencies, commercial markets and hierarchical organizations (such as corporations and governments) approach extinction as more efficient distributed currencies, gift economies and self-organizing networks replace them.

Source: *New Economy, New Wealth* (Brock, 2009).

Taking all this into account, here is my proposal of an integral evolutionary meta-history of money or currency.

Table 9. Evolutionary stages or levels of money or currency

‘Stages’ of development	Age	Lifestyle	Organization	Economic system	Currency system
Post-integral Kosmocentric	Metapsychical	Astral travel, energetic body.	Otherworldly hologram of the whole, holarchy of the previous.	Ethereal realm: matter or energy exchange, information or knowledge sharing	No currency: exchange without intermediary
Post-postmodern Planetcentric	Informational	Peered networks, open knowledge.	Intelligent organizations, self-regulating social organisms.	Knowledge society: self-regulating markets, scalar gift economies.	Digital currency: electronic payment system, complementary currency system.
Postmodern Worldcentric	Environmental	Simple living, happy sobriety.	Participative democracy, collaborative governance.	Postdevelopment: steady-state economy, economic degrowth.	Incentive currency: eco-friendly behaviour currency, local currency.
Modern Sociocentric	Industrial	Banking, industry.	Governments, corporations.	Competitive markets: capitalism, communism, socialism.	Paper-based currency: fiat currency, gold standard
Premodern Ethnocentric	Agricultural	Farming, husbandry.	Cities, nation-states.	Agrarian societies: monarchy, feudalism, empire.	Commodity currency: precious metal, rare commodity.
Pre-traditional Egocentric	Natural	Hunter-gatherer, forager.	Tribes, clans.	Primitive barter: gift economy of nature, family, tribe.	Community-based currency: time, counter-donation.

Source: Adapted from Evolutionary Economic Systems: Some characteristics of pre-modern, modern and post-modern Economic Systems (Lietaer and Brunnhuber, 2005a, p. 134) and inspired by New Economy, New Wealth (Brock, 2009) and Emerging Trends of Developmental Levels of Money (Lathrop, 2020).

5. Integral Impact Assessment Matrix

5.1. Integral Economics

According to C. Arnsperger, this ‘integral theory’—with its ‘all quadrants, all levels’ model (AQAL)—is suitable as a research approach and recommended for the study of economics, including monetary economics (*alias* ‘integral economics’) (Arnsperger, 2010b).

“[N]o economic paradigm except $p = \pi = \text{AQAL}$ will do full justice to this ambitious analysis of economic reality—a reality that contains its own description as a way of possibly transcending itself toward a better, more highly evolved reality. The use of AQAL is our best chance to be able to use a whole spectrum of methodological tools that will gradually push our economies on an evolutionary–developmental path toward higher existential and critical performance.” (Arnsperger, 2010a, p. 18).

“Integral philosophy is an earnest, honest attempt to carefully bridge [...] a confrontation of [...] hermeneutic or spiritual perspectives against systemic or materialist ones [...] [which] keep arguing about whether brain science should take precedence over psychoanalysis or religion [...] [but] without resorting to some new–age ‘mush’ where all distinctions vanish” (Arnsperger, 2010b, p. 5 *apud* Lietaer, 2010c, p. 194).

“[T]oday’s economics portrays a fantasy world [...] reduced to brain–and–system categories [...] [and] usually denounce[s] interior–oriented work as fantasy.” (Arnsperger, 2010b, p. 9 *apud* Lietaer, 2010c, p. 195).

Following a sharp *Critique of capitalist existence* (2005) translated in a deep *Critical Political Economy* (2007), C. Arnsperger deduced that for economics to be truly scientific, it needs to encompass both existential and critical rationality within the concept of rationality itself. *Integral Economics* should analyze how economic agents experience their deeper existential dimensions within the system and to what extent the system allows them to develop and utilize critical abilities. However, the practical constraints of time and resources hinder the thorough development of an integral perspective—as economists are often tasked with immediate management responsibilities and economic agents are predominantly occupied with immediate,

automatic, and adaptive behaviour—leaving little room for deeper introspection or critical engagement¹¹⁸ (Arnsperger, 2010b, p. 195–203 *apud* Arnsperger, 2010a, p. 17, 21).

In an integral approach to economic knowledge, methodologists analyze economists’ understanding of economic reality using methodologies from zones 2, 4, 6, and 8; while economists analyze their own awareness using methodologies from zones 1, 3, 5, and 7; and both groups examine economic agents’ awareness using methodologies from zones 2, 4, 6, and 8. Methodologists scrutinize the economics profession and individual economists; economists examine themselves and their profession; and they collectively study the economic agents whose interactions shape economic reality¹¹⁹ (Arnsperger, 2010b, p. 233–240 *apud* Arnsperger, 2010a, p. 27–29).

Board 12. Integral methodological families to study economics

Knowledge’s actors paradigm	Methodological family (zone)	Questions
Methodologists	Structuralism (zone 2: outside individual–interior ‘quadrant’)	What level of self-consciousness have today’s economists attained, on average? What level has this or that economist whose work students are instructed to read attained? Are these economists highly evolved spiritually, emotionally, <i>etc.</i> ? What meaning does the economist give to his life and work?
	Ethnomethodology (zone 4: outside collective–interior ‘quadrant’)	What sort of collective culture is the economist part of? What are the implicit worldviews and norms in that culture? What sort of paradigm is the economist adopting, what are the norms of the paradigm, and how do they cohere—or clash—with the norms of the broader culture? What mission does he believe he has in society? How much critical distance does the paradigm allow the economist to adopt with respect to his own assumptions and views?
	Empiricism (zone 6: outside individual–exterior ‘quadrant’)	How is the economist’s brain-and-body complex structured? How do his brain functioning, his drives as a human animal, affect his behavior within his professional environment? What are the economist’s psychophysical reflexes, motivations, <i>etc.</i> ?
	Systems theory (zone 8: outside collective–exterior ‘quadrant’)	What sort of complex social systems is the economist part of? What are the incentives which emerge from a) the overall economic system (capitalism, socialism, <i>etc.</i>), and b) the professional sub-system (paradigm, department, <i>etc.</i>) and shape the economist’s interactions with his fellow economists as well as with non-economists? How does the economics profession function as a system within the broader economic system?
Economists	Phenomenology (zone 1: inside individual–interior ‘quadrant’)	How do I feel about my work? Is my life as an economist meaningful? Do I love the concepts and theories I am using? Am I perhaps attached to ‘my’ brand of economics in an exaggerated way? Do I identify with the work I am doing? Is there a spiritual, or affective/emotional, undertone to what I write and teach?
	Hermeneutics (zone 3: inside collective–interior ‘quadrant’)	What does the society in which I live mean to me? Do I adhere to its norms, do I feel it is a just, fair, moral society? And how do the rules of ‘my’ economic paradigm help me to make sense of, or take a critical distance from, the economy in which I live and its basic norms, rules, and worldviews? Am I a capitalist (or socialist) economist? Does what I do vindicate capitalism (or socialism), even if only by omission?
	Autopoiesis (zone 5: inside individual–exterior ‘quadrant’)	What are my physical and mental states when I do economics? Do I feel driven, are there states of nervous excitement, higher heart rates, anxiety, and so on? How do my brain states reflect certain patterns of behavior that I have with colleagues, students, or other members of the economy?
	Social autopoiesis (zone 7: inside collective–exterior ‘quadrant’)	How does the functioning and dynamics of the economy at large, and of the economics profession in particular, appear to me? When and how do I experience the ‘impact’ of the profession’s constraints, and of the economy’s constraints? What incentives do I necessarily react to?
Agents	Structuralism (zone 2: outside individual–interior ‘quadrant’)	What level of self-consciousness have today’s economic agents attained, on average? Are these agents highly evolved spiritually, emotionally, <i>etc.</i> ? How do the economic agents feel about the meaning of their existence, how do they existentially assess the economic lives they are leading?
	Ethnomethodology (zone 4: outside collective–interior ‘quadrant’)	What sort of collective culture are the economic agents part of? What are the implicit worldviews and norms in that culture? What mission do agents believe they have in society? How much critical distance does the culture allow agents to adopt with respect to the norms and views they have been born into and within which they interact?
	Empiricism (zone 6: outside individual–exterior ‘quadrant’)	How are the agents’ brain-and-body complexes structured? How do their brain functioning, their drives as human animals, affect their behavior within their economic environment? How do they gather and process information? What are the economic agents’ psycho-physical reflexes, motivations, <i>etc.</i> ? (This is, of course, the whole domain of post-neoclassical behavioral and neuroeconomics.)
	Systems theory (zone 8: outside collective–exterior ‘quadrant’)	What sort of complex social systems are the agents part of? What are the incentives which emerge from the overall economic system (capitalism, socialism, <i>etc.</i>) and shape their interactions? What emergent properties does the system of markets, of state planning, <i>etc.</i> , possess? (This is, of course, the whole domain of post-neoclassical complexity economics.)

Source: Adapted from Spelling out Integral Economic Science (Arnsperger, 2010b, p. 233–240 apud Arnsperger, 2010a, p. 27–29).

There is a lack of integral impact assessment of money or currency, as an integral methodology of inquiry, by the investigative means of the ‘eight zones’ of ‘integral methodological pluralism’ (IMP) (*cf. integral, mixed, and creative methods*). This has already been strongly recommended for future research (Arnsperger, 2010b *apud* Arnsperger, 2010a *apud* Lietaer, 2010c)—even if this was partially attempted through progress indicators for currencies (Place, 2015a; Place, 2018a) but never properly done before to my knowledge (Place and Bendell, 2019; Place *et al.*, 2021b).

5.2. Integral Impact Assessment of Money

I am sometimes considered—in the words of some of my peers—as a ‘sustainable development expert’ with twenty years in this domain, a ‘currency impact specialist’ with fifteen years in this field and an ‘integral money connoisseur’ with ten years in this area—making me a sort of authority in the integral impact assessment of complementary currency towards sustainable development (Place and Bindewald, 2015b *apud* Hudon and Michel, 2015, p. 168; Bertschy, 2023, p. 42–43) or even a living integral practitioner¹²⁰ and integral thinker¹²¹ by example (Place, 2021a, p. 37–39; Petz, 2023, p. 9, 151).

Whatever the purpose or reasons¹²² for the deployment of evaluation standards in complementary currency systems impact assessment and improvement (Place, 2012, p. 26–27 *apud* Place *et al.*, 2013b, p. 10 *apud* Place and Bindewald, 2013a, p. 7 *apud* Bindewald and Steed, 2013, p. 18 *apud* Place and Bindewald, 2015b, p. 153 *apud* Place, 2015a, p. 5 *apud* Place, 2018a, p. 75); I took part in what some consider to be the current three reference methodologies in this area—with one best paper award (Place and Bindewald, 2013a)—as only cited (Bindewald and Steed, 2013, p. 18; Hudon and Michel, 2015, p. 168; Ballerini and Bartolomucci, 2018, p. 48, 62, 137–145, 197–200; Sillen, 2017, p. 33 *apud* Sillen *et al.*, 2019; Contreras Ramirez, 2020 *apud* Contreras Ramirez, 2021, p. 29; Bindewald, 2018, p. 98, 103; Petz, 2023, p. 105, 106, 151, 160) or even cited and used on ten currencies¹²³ (Place, 2015a, p. 9–11, 13–21 *apud* Place, 2018a, p. 79–78, 85–88; Mossay, 2018, p. 19–21, 101; Langeder, 2018, p. 3, 25–38, 59, 83–88; Bertschy, 2023, p. 42–43, 61–62, 84–90; Place and Bendell, 2019, p. 6–15 *apud* Place *et al.*, 2021b, p. 36–44; Place, Forthcoming).

As I have been working on the issue of currency impact assessment for more than a decade since 2012, I identified three main methodologies through this expertise—while participating in their promotion or development.

- Theory of Change (ToC) (Place *et al.*, 2013b, p. 11 *apud* Place and Bindewald, 2013a, p. 14–17 *apud* Bindewald and Steed, 2013, p. 19–37 *apud* Place and Bindewald, 2015b, p. 157–162).
- Impact Assessment Matrix (IAM) (Place, 2012, p. 34–35 *apud* Place *et al.*, 2013b, p. 9 *apud* Place and Bindewald, 2013a, p. 12–13 *apud* Place and Bindewald, 2015b, p. 156–159 *apud* Place, 2015a, p. 9–11, 13–21 *apud* Place, 2018a, p. 79–78, 85–88 *apud* Place, 2022, p. 326–327).
- Integral Methodological Pluralism (IMP) (Place and Bendell, 2019, p. 6–15 *apud* Place *et al.*, 2021b, p. 36–44 *apud* Place, 2021a, p. 39–41 *apud* Place, 2022, p. 328–329).

Two of these research works used multiple methodologies and methods for the Impact Assessment Matrix without reference to a ‘multimethod research’ or ‘mixed methods’ research framework (Mossay, 2018; Langeder, 2018)—whereas three others using the Theory of Change and/or Impact Assessment Matrix and/or Integral Methodological Pluralism referred to



‘integral research’ (Bertschy, 2023, p. 42–43; Place, Forthcoming; Place and Bendell, 2019, p. 6–15 *apud* Place *et al.*, 2021b, p. 36–44).

For reasons of methodological accuracy, it is essential for research works using multiple methodologies or methods for currency impact assessment (*resp.* Theory of Change, Impact Assessment Matrix, Integral Methodological Pluralism) to clearly explicate their methodological framework (*resp.* ‘multimethod research’, ‘mixed methods’ research, ‘integral research’)—bearing in mind that the latter includes the first two.

As well summarized in the last master’s dissertation of Mickael Bertschy, these three methodological propositions can be categorized into two groups: one emphasizes on the standardization of flexible and comparative evaluation methods (*resp.* Theory of Change, Impact Assessment Matrix)¹²⁴ (Place and Bindewald, 2013a, p. 7 *apud* Place and Bindewald, 2015b, p. 153 *apud* Hudon and Michel, 2015, p. 168 *apud* Bertschy, 2023, p. 42); while the other advocates for a comprehensive methodology that addresses the complexity of the monetary phenomenon because Money is interdisciplinary by nature (*i.e.* Integral Methodological Pluralism)¹²⁵ (Place *et al.*, 2021b, p. 46–47 *apud* Bertschy, 2023, p. 43).

With reference to C. Arnsperger’s *Full Spectrum Economics* highlighting the importance of multiple methodological approaches to overcome the limitations of a strictly positivist analysis that misses many aspects of reality (*i.e.* Integral Methodological Pluralism)¹²⁶ (Arnsperger, 2010b *apud* Arnsperger, 2010a, p. 18 *apud* Place *et al.*, 2021b, p. 36 *apud* Bertschy, 2023, p. 43), M. Bertschy understood how one methodological framework alone influences the results of currency impact assessment¹²⁷ (Matti and Zhou, 2022, p. 7 *apud* Bertschy, 2023, p. 43–44).

6. Integral Research and Education

6.1. Integral Research

Indeed, ‘integral research’ is an approach to research that explore the multi-faceted and multi-dimensional nature of complex phenomena. This is reflexively situated and informed at all major phases of the research process by Integral Methodological Pluralism (IMP). Its principles systematically integrate data sets, while broadening the methodological structure from the use of at least (Esbjörn-Hargens, 2006; Hochachka, 2008; Hochachka, 2009b; Hochachka, 2009a; Hedlund, 2010, p. 11–12, 23–26).

- One qualitative and one quantitative method.
- One first-, second-, and third-person methodology for the three domains of personal, interpersonal, and practical reality.
- One methodology from each of the six methodological families for: personal experiential and developmental, interpersonal interpretative and ethnomethodological, practical empirical and systems lines of inquiry—by excluding autopoiesis and social autopoiesis due to its limited implementation.
- All eight zones of methodological families, all the levels, all the lines, all the states, all the types, across all major validity claims and all major judgements—at most.

Table 10. Eight methodological families along with mode of investigation, practices or techniques, and a validity claim or consideration

	Interior	Exterior
Individual	Subjective inside ‘zone’ of direct experience (<i>alias phenomenology</i> , ‘zone 1’) with ‘phenomenological–inquiry’ techniques or practices (<i>viz.</i> inside experiential mode of investigation; <i>i.e.</i> focus on meaning made by individual as byproduct of interactions; <i>e.g.</i> phenomenological analysis, thinking aloud protocol, journal writing; <i>cp.</i> Edmund Husserl)—and validity claim or consideration of inside truthfulness.	Objective inside ‘zone’ of self-regulating dynamics in systems (<i>alias social autopoiesis</i> , ‘zone 7’) with ‘social autopoiesical’ techniques or practices (<i>viz.</i> inside systemic mode of investigation; <i>i.e.</i> focus on group interactions and artifacts; <i>e.g.</i> autopoietic social systems analysis; <i>cp.</i> Niklas Luhmann)—and validity claim or consideration of inside functional fit.
	Subjective outside ‘zone’ of recurring patterns of direct experience (<i>alias structuralism</i> , ‘zone 2’) with ‘structural–assessment’ techniques or practices (<i>viz.</i> outside experiential mode of investigation; <i>i.e.</i> focus on understanding self or one other at a time; <i>e.g.</i> cognitive analysis, interview; <i>cp.</i> Jean Piaget)—and validity claim or consideration of outside truthfulness.	Objective outside ‘zone’ of observable whole (<i>alias systems theory</i> , ‘zone 8’) with ‘systems analysis’ techniques or practices (<i>viz.</i> outside systemic mode of investigation; <i>i.e.</i> focus on how individuals or groups interact within systems; <i>e.g.</i> social systems analysis, network analysis, infometrics, citation analysis; <i>cp.</i> Ludwig von Bertalanffy)—and validity claim or consideration of outside functional fit.
Collective	Inter-subjective inside ‘zone’ of understanding between people (<i>alias hermeneutics</i> , ‘zone 3’) with ‘hermeneutical–interpretative’ techniques or practices (<i>viz.</i> inside cultural mode of investigation; <i>i.e.</i> focus on how group makes meaning between members; <i>e.g.</i> hermeneutic analysis, focus group, participant observation; <i>cp.</i> Hans-Georg Gadamer)—and validity claim or consideration of inside justness.	Inter-objective inside ‘zone’ of self-regulating behaviour such as <i>cognitive science</i> or <i>biological phenomenology</i> (<i>alias autopoiesis</i> , ‘zone 5’) with ‘autopoiesical’ techniques or practices (<i>viz.</i> inside behavioural mode of investigation; <i>i.e.</i> focus on individual questions and artifacts and perspectives; <i>e.g.</i> autopoietic analysis; <i>cp.</i> Humberto R. Maturana, Francisco J. Varela)—and validity claim or consideration of inside truth.
	Inter-subjective outside ‘zone’ of recurring patterns of mutual understanding (<i>alias ethnomethodology</i> , ‘zone 4’) with ‘ethnomethodological’ techniques or practices (<i>viz.</i> outside cultural mode of investigation; <i>i.e.</i> focus on understanding interactions within a group from members’ perspective; <i>e.g.</i> structuralist analysis, discourse analysis, domain analysis, detached observation; <i>cp.</i> Claude Lévi-Strauss)—and validity claim or consideration of outside justness.	Inter-objective outside ‘zone’ of observable behaviours such as neurophysiology (<i>alias empiricism</i> , ‘zone 6’) with ‘empirical–observation’ techniques or practices (<i>viz.</i> outside behavioural mode of investigation; <i>i.e.</i> focus on how self or another individual is acting or behaving; <i>e.g.</i> behavioural analysis; information behaviour analysis, behaviourist analysis, log file analysis, eye-tracking observation, questionnaire, survey; <i>cp.</i> Burrhus Frederic Skinner)—and validity claim or consideration of outside truth.

Source: Adapted from *Eight Methodological Families* (Esbjörn-Hargens, 2006, p. 96–97, 102–104; Wilber, 2002 *apud* Snow, 2007, p. 7–8, 16–24; Martin, 2008, p159; Hedlund, 2010, p. 18; Davis and Callihan, 2013, p. 513; Kleineberg, 2016, p. 132, 134, 136–138).

Therefore, if we visualize “‘integral research’ as an increasingly reflexive, rigorous, and emancipatory framework supporting integrated knowledge acquisition and global action” (Hedlund, 2010, p. 19), then we need an alternative general definition (*alias* ‘five-level spectral’ definition) that envelops five levels in an ‘holarchy’ as follows: “‘integral research’ is an approach to research that is reflexively situated and informed at all major phases of the research process by the evolving meta-methodological map and principles of ‘integral methodological pluralism’ [as 1st level] [...] [and uses] at least one qualitative and one quantitative method as well as the systematic integration of data sets [as 2nd level] [...] [and uses at least] first-, second-, and third-person methods [as 3rd level] [...] [and uses at least six] multiple first-, second, and third-person methods [as 4th level]” (Hedlund, 2010, p. 18) “[and includes] all the levels in all eight zones, all the lines, all the states, all the types, across all major validity claims and all major judgments: cognitive, normative, and aesthetic [as 5th level].” (Wilber [p.c.] *apud* Hedlund, 2010, p. 26).

Board 13. Five-level spectral definition of Integral Research

Level	Definition
1.	Reflexively situated and informed at all major phases of the research process by the Integral Methodological Pluralism map and (some of) its principles.
	At least some reflexive disclosure of aspects of the epistemological and methodological conditions of enactment.
	Makes use of qualitative or quantitative methodologies.
2.	Reflexively situated and informed at all major phases of the research process by the Integral Methodological Pluralism map and (some of) its principles.
	Reflexive disclosure of aspects of the epistemological and methodological conditions of enactment.
	Makes use of at least one qualitative and one quantitative methodology.
	Systematically integrates data sets.
3.	Reflexively situated and informed at all major phases of the research process by the Integral Methodological Pluralism map and (some of) its principles.
	Reflexive disclosure of aspects of the epistemological and methodological conditions of enactment.
	Makes use of first-, second-, and third- person methodologies.
	Systematically integrates data sets.
4.	Reflexively situated and informed at all major phases of the research process by the Integral Methodological Pluralism map and (some of) its principles.
	Substantive reflexive disclosure of aspects of the epistemological and methodological conditions of enactment.
	Makes use of multiple first-, second-, and third-person methodologies (zones 1, 2, 3, 4, 6, and 8).
	Systematically integrates data sets.
5.	All eight zones at all levels, all lines, all states, all types, all self-systems; all validity claims, all judgements for an overall ‘Kosmic address’ of any holon.

Source: Adapted from A spectral model of the four levels of Integral Research. IMP—Integral Methodological Pluralism (Wilber [p.c.] apud Hedlund, 2010, p. 10, 26).

Although ‘integral research’ innately encourages an integral substance or content of a research project—with the use of a ‘alternative format’, or ‘art practice’, or even ‘meditative technique’ through the methodological family of phenomenology—it does not explicitly adorn an integral style and form for a research work—with a variety of ‘literature review’, ‘book design’, ‘style of language’, ‘first-, second-, third-person’. Reason why I argue another sixth level for a ‘six-level spectral’ definition of ‘integral research’.

Board 14. Six-level spectral definition of Integral Research in brief

Level	Definition
1.	‘Post-metaphysical’ research or ‘multimethod research’: basic specification from a monodisciplinary to pluridisciplinary approach of at least the epistemology (who), methodology (how), ontology (what), theory (why ₂)—if not also the soteriology (why ₁), axiology (why ₃), praxeology (why ₄).
2.	‘Mixed methods’ research: rudimentary extent to a multidisciplinary approach with at least one qualitative and one quantitative method with systematic data integration.
3.	‘The big three’ or ‘four quadrants’: transparent disclosure of an interdisciplinary approach with at least one for each first-, second-, and third-person methods.
4.	Integral Methodological Pluralism: explicit reference of cross-disciplinary approach with at least six multiple first-, second, and third-person methods among the of eight methodological families or ‘zones’.
5.	‘All quadrants, all levels’ model (AQAL): all-inclusive matrix of a transdisciplinary approach with all eight zones at all levels, all lines, all states, all types, all self-systems; all validity claims, all judgements for an overall ‘Kosmic address’ of any holon through a spectrum of ‘altitude’.
6.	‘Integral style and substance’: ornately reflect the integral substance and content of a research project through an integral style and form for the research work.

Source: Adapted from Five-level spectral definition of Integral Research (Wilber, 2006; Hedlund, 2008, p. 1; Esbjörn-Hargens, 2010, p. 168; Wilber [p.c.] apud Hedlund, 2010, p. 4, 18, 22, 26).

6.2. Integral Education

While direct empirical evidence specifically measuring the acceleration of development through learning about ‘development stages’ and/or ‘integral quadrants’ is limited, various related studies and theories in developmental psychology, transformative learning, and integral

theory suggest that awareness and education about these stages and quadrants can promote faster progression through them (Wilber *et al.*, 2008; Wilber, 2016; Wilber, 2017 *apud* Wilber, 2021).

- Integral education programs teaching about ‘developmental stages’ and ‘integral quadrants’ often report anecdotal evidence that students who understand these stages and quadrants are more motivated to work on their personal development—while suggesting a potential acceleration in moving through stages and quadrants.
- Ken Wilber’s Integral Theory suggests that educational understanding and awareness of these ‘developmental stages’ and ‘integral quadrants’ can help individuals transcend and include previous stages or adjacent quadrants—by moving more quickly and progressing more consciously through the spectrum of consciousness.
- Ken Wilber’s Integral Life Practice advocates that individuals can relate to and move through these ‘developmental stages’ and ‘integral quadrants’ more rapidly—by consciously working on different aspects of life through multiple practices bringing awareness of ‘developmental stages’ and ‘integral quadrants’.
- Robert Kegan’s Constructive-Developmental Theory suggests that awareness of one’s ‘development stage’ can facilitate growth—by recognizing and challenging the limitations of one’s current stage to think in more complex and integrative ways, which can potentially accelerate their developmental process.
- Michael L. Commons and Francis A. Richards’s Self-Directed Learning suggests that adults who are aware of or actively engage with developmental models can experience accelerated development—by learning about higher stages of cognitive and moral development can prompt individuals to strive toward those stages.
- Jack Mezirow’s Transformative Learning Theory supports the idea that critical reflection on one’s beliefs and assumptions can lead to significant shifts in perspective—often facilitated by learning about ‘development stages’.
- Meta-cognition research on thinking about thinking suggests that individuals who are aware of their cognitive processes and place within a developmental model are more likely to engage in activities that promote higher-order thinking and growth—thus potentially accelerating their progress through ‘development stages’.

It is essential to increase the teaching of ‘development stages’ and/or ‘integral quadrants’ to promote faster progression through them. Hence the existence of this work presenting and summarizing these stages and quadrants for an *Integral Education* (Gunlaugson *et al.*, 2010).

7. Conclusion

7.1. From Complementary Currency to Integral Money

After reviewing the research journey of the ‘authoritative guru’ or ‘high priest’ B. Lietaer of the complementary currency movement (*e.g.* multicurrency interoperability) towards an integral approach of money (*e.g.* evolutionary development), we understood that the challenge of far-reaching currency design and impact as well as in-depth monetary reform and history lies not only in the function of currency (*e.g.* complementarity, resiliency), but also in the nature of money (*e.g.* governance, ideology). Therefore, a monetary paradigm shift should take place in terms of both the information technology and collective consciousness—since one cannot exist without the other (Garnier Malet and Garnier Malet, 2007; Guillemant and Morrison, 2016; Petit and Bourret, 2020).



Ultimately, this book *Full-Spectrum Economics* by C. Arnspenger (2010b) was acclaimed by B. Lietaer as being “exceptional”¹²⁸ by “asking what economics or an economist is [...] in a different manner that the rest of the economic literature”; and by “unwrapping veils of hidden assumptions that are taken for granted” in both mainstream *neoclassical economics* and heterodox *post-neoclassical economics*¹²⁹—“each critically assessed with epistemological depth” (Lietaer, 2010c, p. 194) and “with extensive quotations from the literature.” (Arnspenger, 2010a, p. 16).

Thus, integral social sciences could bridge the gap between science and spirituality—by harmonizing rigor with inspiration, intellect with spirit, and explanation with meaning¹³⁰ (Arnspenger [*agnit.*] *apud* Arnspenger, 2010b, p. xxii).

Economics—commonly defined as the study of the production, distribution, and consumption of goods and services—often operates within an implicit worldview shaped by values, practices, needs, and motivations. This worldview, rooted in scientific materialism, asserts that reality is solely what science reveals through objective, empirical, and sensorimotor methods—aligning with assumptions prevalent in other sciences like physics, chemistry, and sociology¹³¹ (Wilber [*praef.*] *apud* Arnspenger, 2010b, p. xvii).

The major problem is that this truncated view of the economic paradigm influences the whole world, dictating its rule of money and its law of profit to every individual, nation, organization, and academic institution or discipline because “economics has become a dominant, if not the main, dimension informing social policy including fields like education and healthcare.” (Lietaer, 2010c, p. 194).

A new hope is at hand as “serious cracks in what used to be certitudes have started to manifest [...] [such as] the crash of 2008, the most massive financial meltdown in history, [...] [or] a dollar crisis, [...] [or any] similar shock [...] [to that of] the fall of the Berlin Wall [...] [which] discredited the entire Marxist[–Leninist] framework overnight” (Lietaer, 2010c, p. 196), while pillorying the communist ideology—just as the Great Recession (2007–2009) followed by the ‘Great Lockdown’ (2020) is likely to do for capitalist ideology.

“The world is currently facing quintuple crisis, socio-economic, political, environmental, personal, and existential/spiritual [...] [which are] rooted in the power relations of [...] the political economy of corporate capitalism [...] [as their] primary generative mechanism.” (Despain, 2022, p. 29–30, 36). Knowing that interest-bearing debt money creation is at the heart of the economic growth engine, we need a to spread “existing alternatives starting emancipation (EASE)” to transform the collective belief that “there is no alternative (TINA) to free-market capitalism [...] [since] capitalism is itself no alternative (CINA) for making a living of for living a life.” (Despain, 2022, p. 37, 41). “Critical realism thus inverts the slogan, ‘There Is No Alternative to capitalism (TINA) to read ‘Capitalism Is No Alternative to a sustainable sociosphere’ (CINA)” (Hartwig, 2015, p. 247). Indeed, ‘There Are Other Alternatives’ (TAOA) instead of ‘There Is No Alternative’ (TINA).

7.2. *The Future of Money is Integral*

What is money (its nature)? What does money do (its functions)? What is the definition, impact, and story of money? Who can tell this story? How to explore and explain? Which theoretical paradigm, which methodological framework, which telescopic and microscopic lenses to use for such an undertaking?

The foregoing is a clear invitation and a robust argumentation in favour of using an ‘integral research’ approach to the study of money or currency (*alias* ‘integral money’)—especially as little research has been done in this vein. The consequences of this research approach involve and encompass several ramifications presented hereinbelow.

- Integral definition of money or currencies with the lens optics of *integral quadrants* through the ‘four quadrants’ of the ‘all quadrants, all levels’ model (AQAL) as an integral object of inquiry—never really proposed or clearly defined in this way in my view and to my knowledge (Lietaer, 2000; Lietaer and Belgin, 2005c *apud* Lietaer and Belgin, 2011a) but already discussed before as an attempt to categorize economic academic disciplines (Lietaer, 2005b; Arnsperger, 2010b *apud* Arnsperger, 2010a) or wealth valuation tools (Brock, 2009 *apud* Brock, 2010 *apud* Brock, 2015).
- Integral implementation guidelines of money or currencies through a useful implementation guide or toolkit with reference cases, and a best practice manual for field practitioners—never really explicated (Bindewald *et al.*, 2015) but already outlined (Lietaer and Hallsmith, 2006b *apud* Lietaer *et al.*, 2006a).
- Integral impact assessment of money or currencies by the investigation means of *integral, mixed and creative methods*¹³² of the ‘eight zones’ of ‘integral methodological pluralism’ (IMP) as an integral methodology of inquiry—already strongly recommended for future research (Arnsperger, 2010b *apud* Arnsperger, 2010a *apud* Lietaer, 2010c) and even attempted through indicators of progress of currencies (Place, 2015a; Place, 2018a) but never properly done before to my knowledge (Place and Bendell, 2019; Place *et al.*, 2021b).
- Integral evolutionary meta-history¹³³ of money or currencies through the prism of *evolutionary development* towards the ‘development levels’ of the integral ‘altitude’ spectrum (IAS) as an integral subject of inquiry—already outlined above (Lietaer and Brunnhuber, 2005a) but never thoroughly proposed in my opinion (Brock, 2009; Lathrop, 2020).

In the end, it essential to have a good balance between the presence and absence of specific supranational, national, or subnational regulatory frameworks to implement an integral constellation of multiple currencies—respecting each and all stages/levels/altitudes of evolutionary development without arbitrary restriction or discretionary limitation (*e.g.* restricted geographical area to a subnational region; limited network to Social and Solidarity Economy organizations; issuance backed by a guarantee fund in conventional money as for discount voucher; received wages for production and spent expenses for consumption to sell and buy goods and services to maintain the economic growth paradigm).

To allow such history and support such impacts through integral research and education, policy makers should not only create a broader legal sandbox for currency to explore ideal models of success (*viz.* continuous improvement; *alias* ‘test, fail, try again’ or ‘retry, rerun, repeat’ or ‘test, fail, learn, grow, repeat’); but also recognize the potential of and incentivize the implementation of comprehensive impact indicators for complementary currency (*viz.* monitoring and evaluation; *alias* impact assessment and improvement).

7.3. Epistle to the Wealthy Elite

Is the die loaded, the game rigged, or the table tilted with the ‘Big Club’ of concentrated power turning our planet into a massive strip mine while leaving us enslaved, poorer, and sicker like shallow, vacuous, and empty vessels—thanks to the corporate owned media and politicians that



nobody seems to notice or even care? How much long before the tolerant become intolerant, the *laissez-faire* become die-hard, the moderate become radical, the lukewarm become fervent—to the point of sedition against tyranny of permissiveness (e.g. ‘I am god’¹³⁴, ‘money is my god’, ‘everyone does what they want’, ‘do what thou wilt’¹³⁵, ‘it is forbidden to forbid’¹³⁶, ‘accepting the unacceptable’; *cp.* God complex¹³⁷, playing God¹³⁸, corporatocracy¹³⁹, *mammonism*¹⁴⁰, *parasitism*¹⁴¹)?

By endlessly repeating ourselves that ‘it takes all kinds to make a world’, ‘there are no foolish jobs, only foolish people’, ‘some people have to do the dirty, one ends up believing it like crazy—to the point of constantly validating this unattainable socio-economic hierarchical ladder on a global scale. At the end of the working day, are we not all modern slaves serving the dominant elite? It is time to wake up from this deprivation of freedom to embrace our respective fulfilling vocation—because having a semblance of existence is worse than death!

Should not every job that no one wants to do be taken in turn? All the jobs that nobody wants should be filled on a rotational basis—and valued using appropriate recognition, accounting, and exchange systems!

As the super-elite of this world (*alias* boss of bosses) has no money problem—to the point where they can grant themselves the sovereign power to create money—they only aspire to more power and control over the populace [la: *vulgum pecus*]. It should be remembered that the knightly ban [la: *bannum*] became the power or authority of the secular lords to command and coerce, order and punish—with an extension into the economic sphere (*i.e.* subjects forced to use common property made available by the lord in return for a fee; e.g. mills, presses, ovens, *etc.*).

To do so, they keep the people in a certain ignorance regarding the pyramid power control system—by making them believe that ‘this is for your good’ and that ‘we cannot do otherwise’ since ‘the selfishness of some makes the prosperity of others’.

“Slavery was never abolished, it was only extended to include all the colors.” — Charles Bukowski (1920–1994).

Beyond accusations of cultural appropriation, victimhood competition, grievance and reparation to neither forgive nor forget, it is important to remember that we are all slaves who dig their own grave by giving sinners a stick to beat them—by slavishly accepting to be subjugated by the power of domination of the sovereignty of money creation left to our persecutors who present themselves as saviours to their victims the point of depending on them for our exchange of values while maintaining like addicts this ‘drama triangle’¹⁴² (Karpman, 2014)—instead of taking 100% of co-responsibility, interdependence, and mutual aid to build our own wealth valuations tools for a vision for value co-creation between stakeholders with benevolence and compassion. Regardless of our social status, we are all addicted to our stage persona by playing a part in the masquerade of life, since both the people and the elite are dependent on their role of victim in discomfort or persecutor in comfort—but all messed-up sinners of blind pride waiting for their saviour to unmask us to stop projecting our sins onto others.

“Workers of the world, unite! You have nothing to lose but your chains!”¹⁴³ — Karl Marx (1818–1883), from *The Communist Manifesto* (1848).

Instead of the people uniting against the tyrannical power of conventional money issued by the elite to alienate them—by using it to the point of validating the system and nurturing the paradigm—citizens should organize for the democratic power of complementary currencies created by the people to emancipate them—by implementing them to the point of transforming the system and declining the paradigm.

Reasons why they support a few small-scale emancipatory projects scattered here and there to give themselves good conscience and look good—without ever extending them to large scales since this could call into question the *status quo* of a minority elite being served by the majority people. The emancipatory solutions exist but the elite is too greedy or spoiled to allow them and the people too lazy or ignorant to implement them. Humanity is heading towards its doom but seems to have richly deserved it—through this the insatiable desire to have what rightfully belongs to others [el: *πλεονεξία, pleonexia*]!

Social incivility rises in the face of economic injustice since tax evasion makes price inflation the only real tax on the richest people¹⁴⁴—while it is not matched by an inflation-indexed wage increase for the poorest people (*i.e.* de-indexation of wages to prices as a source of social tension; *e.g.* Pierre Mauroy stimulus plan of 1981¹⁴⁵ after the first oil crisis of 1973¹⁴⁶)—and impunity is no longer threatened by life imprisonment or the death penalty.

Purposefully hurting the economy with unemployment rise is always a good reminder of the balance of power between employee and employer towards normality (*i.e.* reverse this systematic change of arrogant attitude in the employment market where an employer is supposed to be lucky to have an employee paid a lot to do not too much; *e.g.* prevent inflation-indexed wage increase, massive layoffs cause salary demand revised downwards, reduction in salary costs cascading across the cost balance to increase product margin and company profit).

The gap between the haves and have-nots has only widened in recent decades, to the point of transforming the stable pyramid between servant and master (*alias* server and served)—then still perceived as a useful wealthy elite reinjecting into the system via savings and consumption according to the trickle-down economics¹⁴⁷ or supply-side economics¹⁴⁸ theories (*vs* trickle-up economics¹⁴⁹ or demand-side economics¹⁵⁰; *i.e.* individualistic pursuit of personal enrichment should lead to general well-being; *cf.* personal gain¹⁵¹ of Bernard Mandeville's *The Fable of The Bees: or, Private Vices, Public Benefits* in 1714, 'invisible hand'¹⁵² of Adam Smith's *The Theory of Moral Sentiments* in 1759 and *An Inquiry into the Nature and Causes of the Wealth of Nations* in 1776)—into an unstable tower with a base so wide and a tip so high (*alias* dominated and dominant)—now perceived as a useless parasite capturing profit and power since the takeover of national central banks by international finance through compound interest-rate loans that exponentially increase public debt (*e.g.* Pompidou–Giscard–Rothschild law¹⁵³, Maastricht Treaty on European Union¹⁵⁴; *cf.* Rougeyron, 2013; Benhammou, 2016).

For the problem is not wage inequality *per se*; but inequity and injustice in access to resources and/or means of exchange (*i.e.* caused by mechanisms for diverting income; *e.g.* prohibitive health insurance or education spending, disappearance of high-quality and well-paid jobs for non-graduates, replacement of workers by deindustrialization or delocalization and automation or robotization, stock market rewards redistribution to the benefit of capital and at the expense of labor, self-interest lobbying won by the richest). Indeed, increasing downward redistribution (*e.g.* wealth tax, universal income) will not solve or counterbalance the problem upward redistribution (*e.g.* frozen money invested in funds that only marginally contribute to the real economy, monopolistic situations in which companies take advantage of their rents to charge



higher prices than in a competitive situation, companies playing with international taxation to optimize their tax liabilities) (Angus and Case, 2020).

What will you do when all countries will be immobilized for an indeterminate period of time—without the necessary logistics to meet vital needs of food and water supply as well as money withdrawal and transfer—because of a multi-sector general strike of production and consumption coordinated worldwide—in the tertiary sector of information, secondary sector of industry, and primary sector of agriculture (*cp.* farmers isolated in rural areas are the only ones to have survived all the crises, strikes, and wars)?

The graciously paid forces of law and order are the last bastion protecting the privileged elite against the rage of the impoverished people. It is therefore the duty of these peace officers—as the last firearms holders since the Machiavellian disarmament of the people as the guarantor of a real countervailing power—to take their vocational responsibility for assessing the need for a military stroke of state to avert a popular uprising in a colonised state—to restore the rule of law in the name of the public good to prevent a state of exception or emergency with martial law (Branco, 2021; Branco, 2023).

What are you going to do when new standards for virtuous investment funds in states and companies fall from the sky (*e.g.* inflation-indexed wage, currency pluralism, no influence networks of deep state or secret society, no hidden political agenda for unipolar or multipolar *globalism* or *messianism*)? How are you going to react when current standards for vicious standards for virtuous investment funds in states and companies will no longer rise from underground (*e.g.* liberal libertarian against social nationalism, economic *liberalism* against *protectionism*, representative democracy against totalitarian dictatorship, global governance of progressive *wokeism* against conservative *traditionalism*)?

To preserve this privileged status and prevent the tower from breaking, the intellectual elite must abandon this tyrannical idea of a single world currency viciously imposed on people by force—and return to a *status quo* of complementary currency pluralism at the local, national, and international levels with a host of hierarchical pyramids and/or heterarchical circles of varying sizes virtuously determined piecemeal or *ad hoc* (*i.e.* on a case-by-case basis).

After the springtime of complementary currencies, it is the summertime of monetary plurality—by smoothing the ruling ideology of the elite and by freeing the hierarchical pyramid of domination.

- If the untouchable elite above the pyramid allows the use of complementary currency, they will not feel detached from the deserving real world and disconnected from the divine loving presence—by engaging in useful and meaningful activities with people of authenticity and integrity!
- If the rich class at the top of the pyramid supports the use of complementary currency, they will maintain peace and order among the working class—by allowing them to continue enjoying life!
- If the middle class in the middle of the pyramid commits to the use of complementary currency, they will continue to make a living from their vocation—by enabling them to make their nation prosper!

- If the poor class at the bottom of the pyramid accepts the use of complementary currency, they will not have to serve as slaves to the rich—by fulfilling their dream of building a loving family!
- If the social outcast outside the pyramid seeks to use of complementary currency, they will not need to illegally steal to survive as a mere arms, drugs, sex, organs, humans trafficking intermediary for organized crime—by gradually reintegrating themselves into the society that once excluded them!

By not accepting conventional money, one does not serve the imperious rich parasite or maintain the *status quo* of the hierarchical pyramid of power of money creation by the dominant elite!

Otherwise, how can private corporations or public governments value human life, morals, or ethics over monetary profit to cover debts when ‘money has no smell or borders’ [la: *pecunia non olet*] for the globalist elite who are benefiting from situations detrimental to the people—because universal ‘money accepted everywhere by everyone’ creates the ideal conditions of necessity for perpetual war or crisis since military, energy, or health sectors make profits through war, energy, or health crisis (*cf.* Armed Conflict Location & Event Data Project)?



Endnotes

¹ “If all you have is a hammer, everything looks like a nail.” — Abraham Maslow. “No problem can be solved from the same level of consciousness that created it. [...] Insanity is repeating the same mistakes and expecting different results.” — Albert Einstein. “You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.” — Richard Buckminster Fuller. “When you change the way you look at things, the things you look at change.” — Max Planck.

² Late Prof. Mag. Bernard A. Lietaer (1942–2019) was a Belgian economist and educator, leading monetary reformer and advisor, lauded guru of the complementary currency movement who coined ‘complementary currencies’ in 1997, and member of The Club of Rome since 1987—famous for *The Limits to Growth* (1972)—among other affiliations. Fellow of the World Academy of Arts and Sciences, the World Business Academy, and the European Academy of Sciences and Arts. After attending College of Saint Paul (1955–1961), a gap year in India and Nepal in 1961, and obtaining a bachelor and master of science in electrical engineering from Catholic University of Louvain (1962–1967), he wrote his master of science in business administration’s dissertation on universal currency floating exchanges at Massachusetts Institute of Technology Sloan School of Management (1967–1969). Ranked among the top ten business students by Time Magazine, he was recruited by Citibank for civil/national service (1969–1971), then Cerro de Pasco Mining Corporation (1971–1975)—then aware of Artur Manfred Max Neef’s *Experiences in ‘Barefoot Economics’* (1982) inspired by Ernst Friedrich Schumacher’s *Small Is Beautiful* (1973). Freemason since 1976, he wrote about esoteric Christianity and spiritual metaphysics under the pseudonym René de Bartiral. Guest professor in international finance and trade at Catholic University of Louvain when he devised the Terra Trade Reference Currency (TRC) (1975–1978, 1983–1986), he became head of National Bank of Belgium’s informatics department for the European Currency Unit introduction and president of Belgium’s Electronic Payment System (1978–1983) to meet the president of the Bank for International Settlements—aiming to ‘maintain and not improve the prevailing monetary system’. Thereby, he co-founded GaiaCorp which financed the Global Ecovillage Network—where he met Margrit Kennedy’s *Interest and Inflation Free Money* (1987) influenced by Silvio Gesell’s *The Natural Economic Order* (1916)—and was nicknamed ‘the world’s top currency trader’ (1987–1991) just before the Black Wednesday caused by George Soros. Like a conversation of Saul to Paul, he wrote *The Future of Money* (1999) and *The Mystery of Money* (2000)—integrated economy of non-neutral Yin and Yang currencies—while teacher and research fellow at University of California (1992) and visiting professor in archetypal psychology at Sonoma State University (1992–1998)—prefacing Richard Douthwaite’s *The Ecology of Money* (2000). Funded by the Schweisfurth Foundation (1999–2003) to promote span over depth in the theory and practice as well as implementation and replication of currency pluralism and governance, he co-authored *Regional Currencies* (2004) then *People Money* (2012) and met Peter Koenig and Jacqui Dunne to write *Rethinking Money* (2013). As a visiting scholar at Naropa University co-establishing the Marpa Center for Business and Economics (2003–2006), he co-founded Access Foundation (2003–2019), joined Money Network Alliance (2003–2019), met Stephen M. Belgin to co-author *Of Human Wealth* (2005) then ‘groundbreaking’ *New Money for a New World* (2011), and Gwendolyn Hallsmith for *Local Action for Sustainable Economic Renewal* (2006) then *Creating Wealth* (2011)—and even Stefan Brunnhuber and Ken Wilber that inspired *Economics as an Evolutionary System* (2005). He established Cohedral Investments (2007–2011) and met Sally J. Goerner in 2008 who introduced him to ‘new Adam Smith’ Robert E. Ulanowicz and his ‘law of sustainability’ leading to *Options for Managing a Systemic Bank Crisis* (2009) and *Money and Sustainability* (2012) with Christian Arnsperger. While president of Bancor Foundation (2017–2019), he wrote *Towards a Sustainable World* (2019). I first met him in the infancy of Bitcoin in 2009.

³ Mag. Ken Wilber (1949–) is an American philosopher and psychologist—actually a lettered or erudite self-taught man or autodidact—with an internationally acclaimed influence and renown by being the most translated contemporary American philosopher in the world—and nicknamed the ‘Hegel of Eastern spirituality’ or even the ‘Einstein of Consciousness’ by John White if not the ‘World’s Smartest Man’ on social media. Even though he dropped his college degree in pre-medical at the private Duke University, to enroll a bachelor’s honours degree in biology and chemistry, and thus obtain a graduate scholarship for a master’s honours degree in biophysics and biochemistry at the University of Nebraska–Lincoln. His *magnum opus* is *Sex, Ecology, Spirituality: The Spirit of Evolution* published in 1995—with his ‘all quadrants, all levels’ model (AQAL) as an ‘integral approach’ of the ‘stages’ of human development. It became a first major statement of his ‘integral theory’ before its more popular and accessible version entitled *A Brief History of Everything* in 1996, and the shortest and simplest so-called *A Theory of Everything: An Integral Vision for Business, Politics, Science and Spirituality* in 2000. He founded the Integral Institute (II) as a think-tank in 1998, launched the Integral Spiritual Center (ISC) in 2005, and co-founded Integral Life (IL) as a network community in 2007.

⁴ Prof. Dr. Christian Arnsperger (1966–) is a full professor of sustainability and economic anthropology at the Institute for Geography and Sustainability in the Faculty of Geoscience and Environmental Studies of the University of Lausanne. After obtaining a baccalaureate in economics and social sciences with highest honours at Lycée Rochambeau in 1984, he received a bachelor’s degree in economics from Louis Pasteur University in 1987. He naturally continued with a master’s degree with highest honours in 1989 followed by a doctor of philosophy in economics supervised by the founder of Basic Income Earth Network from Catholic University of Louvain in 1995—hence starting his academic career as a post-doctoral fellow (1995–1997), associate research fellow (1997–2006), and senior research fellow (2006–2014) of the Belgian National Fund for

Scientific Research. Since 2014, he became a full professor at University of Lausanne and known for his integral approach of economics among others or *Full-Spectrum Economics* in 2010—with a foreword by Ken Wilber and book review by Bernard Lietaer who co-authored *Money and Sustainability*.

⁵ Prof. Dr. Jeremy Bendall *alias* Jem Bendell is a full professor of sustainability leadership at the Initiative for Leadership and Sustainability in the Institute of Business, Industry and Leadership of the University of Cumbria. After graduating from University of Cambridge in 1995 with a bachelor of arts with honours degree in geography, he earned a doctor of philosophy in international policy from University of Bristol in 2002—and co-authored a chapter with David F. Murphy. He then became a fellow of the United Nations Research Institute for Social Development (2002–2008), a lecturer at University of Geneva (2006–2008), and an adjunct professor at Griffith Business School since 2007, while being a coordinator of Corporate Social Responsibility Geneva (2006–2008) and a senior strategic advisor of the World Wild Fund for Nature (2006–2007)—to write the viral *Deeper Luxury: Quality and Style When the World Matters* report in 2007, followed by another report co-written by Lifeworth Consulting (2001–2012) that he founded in Geneva. Thanks to that, not only the World Economic Forum appointed him a Young Global Leader (2012–2017); but he also co-founded the Institute for Leadership and Sustainability in October 2012—just after receiving a certificate in global leadership and public policy for the 21st century from the Harvard University in 2014. Collaborating with the co-founder of Community Forge Matthew Slater based in Geneva, he focused on monetary reform and complementary currencies—while participating in most of the biennial international conferences on Complementary and Community Currency Systems like me—since his TEDx Transmedia Talk about *The Money Myth* on 17 October 2011 in Rome in Italy. In 2013, he was dubbed ‘Professor Bitcoin’ in the media for his explanation of the importance of digital currency—when the University of Cumbria became the world’s first public university to accept Bitcoin for the payment of tuition fees of his doctoral student Leander Bindewald at this time. He finally attracted attention on 27 July 2018 thanks to his viral article entitled *Deep Adaptation: A Map for Navigating Climate Tragedy*—that leads him to inspire Extinction Rebellion in October 2018, co-found the Deep Adaptation Forum in March 2019, to sign the Scholars Warning letter in December 2020, and to become a fellow of The Schumacher Institute in 2020. Dubbed ‘the doom seer of climate chaos’, he left his professorship to develop an organic farm school while launching *Breaking Together: A Freedom-Loving Response to Collapse* on 10 July 2023.

⁶ Cf. British Broadcasting Corporation’s *Bitcoin tuition fee payment at Cumbria University* on 21 January 2014 (BBC, 2014): “Cumbria University is to allow some students to pay their tuition fees with the digital currency, Bitcoin. [...] The main lesson of this price is wider than bitcoin. It shows that private currencies are here to stay.”

⁷ C. Arnsperger also co-authored *Monetary Adaptation to Planetary Emergency: Addressing the Monetary Growth Imperative* with J. Bendell (Arnsperger *et al.*, 2021b) during my doctoral thesis.

⁸ “A new generation of digitally-native intermediaries is emerging and with this will come a new economy. New systems to store and exchange value. New ways to think about finance. A system immune for the corrosive effects of monetary debasement, artificial scarcity and over-centralization. A system that is both too small and too distributed to fail. A system where complexity is simultaneously hidden away while being harnessed to create value for its users. In 2004, Facebook was just an idea. Six years later it had over 500 million users. More foreign exchange is now traded every two days than in an entire year in the early 1970s. Citigroup—one of the world’s largest financial institutions—has 200 million etail customers. Apple holds payment details for over 160 million customers. From the dawn of humanity until 2003, human civilisation created approximately 5 exabytes of data. That’s roughly the same amount of information as we have created in the last two days. Throughout history man has had a fundamental desire to trade but there’s always been this constant dynamic tension with the middleman. How much value does he bring? Is he worth the cost? Markets and finance underpin our modern world, but today’s financial services industry is still predicated on exploiting information scarcity and limited access to expensive infrastructure. At the dawn of an age of information abundance, the halcyon days of the financial industry, as we know it, are over. As the banking landscape shuddered in the global financial crisis of 2008, mainstream economists, business leaders, and politicians competed to explain the failures. But it was clear their goal was to preserve the *status quo*. The gatekeepers jealously guarded their position, seeking to remain indispensable. They rejected the economics of information abundance, even as technology systematically laid bare the obsolescence of their business model, built on the premise of scarcity. As the new technologies fall into the hands of every man, the tide of social and economic change is beginning to surge. The 16th century invention of [Johannes] Gutenberg’s printing press was revolutionary. Suddenly, vernacular translations of the Latin Bible were widely distributed. The spiritual smoke screen, which kept congregations dependent on the church, was removed. Seemingly overnight, it unleashed knowledge and power to the people, rendering the traditional role of the high priests and cardinals obsolete. No longer did man need a broker between themselves and God. The late 20th century invention of the microprocessor was equally revolutionary. The incredible democratization of information has created the conditions for a fundamental change in the relationship between mankind, his leaders, and institutions. The cardinals of 20th century finance are just as vulnerable to a New Order. One in which technology enables people to navigate complexity, and engage with the financial world on their own terms. A new generation of digitally native intermediaries is emerging, and with this will come a new economy, new systems to store and exchange value [Facebook Libra, SWIFT Society for Worldwide Interbank Financial Telecommunication]. A system immune to the corrosive effects of monetary debasement, artificial scarcity, and over centralization. A system that is too small, too simple, and too distributed to fail. A system where complexity is simultaneously hidden away, while being harnessed to create value for its users. The global financial crisis of 2008 was just a prelude, a violent tremor heralding two decades of wrenching change [2008–2029]. It marked the beginning of the financial reformation that set to turn the Old Order on its head, and lay the foundations for a new paradigm of user-centric finance, networked, distributed, intelligent [Facebook Libra, SWIFT Society for Worldwide Interbank Financial Telecommunication, Apple Pay, PayPal, Zopa] [Neobank, Revolut, N26, Monese, Bunq, Wise, Vivid Money, Qonto]. Even though many saw it coming, our leaders and institutions didn’t. They were overwhelmed. How long before they realize there is no going back? Change is inevitable!” (Park, 2010).³⁹



⁹ *I.e.* between marketplaces and wholesale and retail financial services; *e.g.* banking, capital management, insurance, trading, credit, risk management, exchanges, payments, securities, balance sheet, information and communication infrastructure, reference data, transaction data, trust identity, *etc.*

¹⁰ *Alias* operations research; *i.e.* development and application of analytical methods, modeling, statistics and optimization techniques to reach optimal or near-optimal solutions to decision-making problems—as an overlapping discipline between management science, mathematical science, industrial engineering; *e.g.* simulation, mathematical optimization, queueing theory, stochastic or random process models, Markov decision processes, econometric methods, data envelopment analysis, ordinal priority approach, neural networks, expert systems, decision analysis, analytic hierarchy process; *resp.* computing and information technologies; financial engineering; manufacturing, service sciences, and supply chain management; policy modeling and public sector work; revenue management; transportation theory; game theory for strategies; integer linear and non-linear programming for binary; dynamic programming in aerospace engineering and economics; information theory used in cryptography or quantum computing; quadratic programming for quadratic equation and function solutions.

¹¹ *I.e.* system that perceives its environment and takes actions that maximize its chance of achieving its goals; *viz.* ability of machines to perform learning and problem-solving tasks thanks to complex algorithm rather than simple equations; *resp.* algorithm as a precise chain of instructions with a well-defined order transformed into a program that can be executed by a computer using a programming language; machine learning as mathematical and statistical approaches enabling computers to learn to perform certain predictive tasks; deep learning as an automatic self-learning to make predictions based on a neural network using previously recorded data.

¹² *I.e.* system of contingency management based on the systematic reinforcement of target behavior; *e.g.* symbols or tokens can be exchanged for other reinforcers; *cf.* operant conditioning, behavioral economics, applied behavior analysis.

¹³ *Resp.* end of the tensions between Eastern and Western Blocs after Cold War (1947–1991) about 50 years ago; end of the battle of ideas over information management following the first industrial revolution (1760–1840) about 250 years ago; end of the control of nature following the modernist Protestant work ethic of Protestant Reformation (1517–1648) and *Age of Enlightenment* (1715–1789) about 500 years ago; end of hyper-rationalism following the philosophical school of Plato of Athens (*ca.* 427–347 BC) and New platonic school or Neoplatonism of Ammonius SACCAS of Alexandria (175–242 AD) about 2'500 years ago; end of patriarchal society with competitive Yang currency following the *Pax Sumerica* (2112–1750 BC) by the Neo-Sumerian Empire (2112–2004 BC) and Old Babylonian Empire (1894–1595 BC) about 5'000 years ago.

¹⁴ *Resp.* reduced economic well-being; devaluation of women's place in society; decline in long-term investment; emergence of collective emotions by repressing the shadow archetypes of greed for hoarding and fear of missing—due to the scarcity of representations of the abundance, fertility, trust and connection of Mother Goddess, Mother Nature or Mother Earth about 3'000 years ago.

¹⁵ *Resp.* Petro coin (₶) *alias* New Digital bolívar pilot launched by the Central Bank of Venezuela from 20 February 2018 to 15 January 2024 before being defined as legal tender backed by the country's oil and mineral reserves on 20 August 2018; DCash (D\$) *alias* Digital Eastern Caribbean dollar pilot launched by the Eastern Caribbean Central Bank on 12 March 2019; Digital Renminbi (e¥) *alias* China's Digital Currency Electronic Payment pilot launched by the People's Bank of China on 14 August 2020; Sand dollar (S\$) *alias* Digital Bahamian dollar pilot launched by the Central Bank of The Bahamas on 20 October 2020; eNaira (e₦) *alias* Electronic Naira pilot launched by the Central Bank of Nigeria on 25 October 2021; Jamaica Digital Exchange (JamDex) *alias* Jamaica's Central Bank Digital Currency pilot launched by the Bank of Jamaica on 11 July 2022; Digital Rupee (e₹) *alias* India's Central Bank Digital Currency pilot launched by the Reserve Bank of India on 01 November 2022; Digital Ruble (e₽) *alias* Russia's Central Bank Digital Currency pilot launched by the Central Bank of the Russian Federation on 15 August 2023; ; Zimbabwe Gold (ZiG) *alias* Zimbabwe's Central Bank Digital Currency tied to gold pilot launched by the Reserve Bank of Zimbabwe on 05 October 2023 before being defined as legal tender backed by gold with one unit for one milligram of gold at 99% fineness on 08 April 2024.

¹⁶ *I.e.* a mobile phone-based money transfer service, payments and micro-financing service with a fee charged for sending and withdrawing money—launched in 2007 by Vodafone and Safaricom as the largest mobile network operator in Kenya before expanding to Tanzania, Mozambique, DRC, Lesotho, Ghana, Egypt, Afghanistan, and South Africa; *resp.* to deposit money into an account stored on their cell phones; to send balances to other users including sellers of goods and services by using Short Messaging Service (SMS) secured by Personal Identification Number (PIN); to redeem deposits for regular money.

¹⁷ *The Future of Money: On the destructive effect of the existing monetary system and the development of complementary currencies* [de: *Das Geld Der Zukunft: Über die destruktive Wirkung des existierenden Geldsystems und die Entwicklung von Komplementärwährungen*] published in 1999 and translated in 18 languages (Lietaer, 1999). *The Mystery of Money: Emotional significance and mode of action of a taboo* [de: *Mysterium Geld: Emotionale Bedeutung und Wirkungsweise eines Tabus*] published in 2000 (Lietaer, 2000). “[Bernard] Lietaer was of the opinion that money is not an emotionally neutral medium of exchange, but that it's associated with values and fears that are unconsciously activated each time it's used.” (Lietaer [p.c.] *apud* Krause, 2021a, p. 90). “According to [Bernard] Lietaer, Western and Eastern thinking differ substantially, in that Eastern philosophy posits an explicit nothingness as the origin of all things, whereas in Western philosophy there is always a God, a Logos, or a monad at the dawn of all being. Lietaer repeatedly addressed this apparent contradiction and began as early as the 1970s to investigate possible correlations between Taoism and the archetypal psychology of Carl Gustav Jung [cf. David Rosen's *The Tao of Jung: The Way of Integrity* in 1997]. [...] In the Taoist concept of Yin and Yang, polar opposite forces are understood to work together in their complementary interaction. [...] In *I Ching*, the Chinese Book of Changes, for example, *Yin* and *Yang* are associated with the pairs of opposites: weak and strong, unequal and equal, and feminine and masculine, [...]

passive and active, receiving and giving, etc.. In this context, the Tao is the eternal principle of action or creation, which is understood as the origin of that great emptiness from which both unity and any duality, Yin and Yang, emerge [...] which in themselves are neither positive nor negative.” (Lietaer, 1999, p. 128 *apud* Krause, 2021a, p. 209–210). “As for analogies to psychology, [Bernard] Lietaer explained how the sovereign, self-controlled human being is free because he has accepted his shadows and integrated the archetype. [...] [I]t becomes clear which approach he used to imagine an active, goal-oriented design of the monetary system.” (Lietaer, 2000, p. 89 *apud* Krause, 2021a, p. 212). “His research and elaborations in this field also influenced his theories of the monetary system, as [Bernard Lietaer] combined C. G. [Carl Gustav] Jung’s ideas with the archetype of the mother, to which he attributed the dark sides of greed and scarcity. With regard to the monetary system, he began to speak of masculine and feminine aspects, which he classified as conventional and complementary currencies.” (Lietaer [p.c.] *apud* Krause, 2021a, p. 83–84). “Referring to the archetypes that C. G. [Carl Gustav] Jung named as such, [Bernard] Lietaer first gave a simplified representation of the four essential archetypes, each with its two associated shadows: the ruler, with the tyrant and the weakling; the lover, with its tendencies for addiction or impotence; the magician who can be hyperrational or arbitrarily inclined; finally the warrior, who can appear as a sadist or masochist. Lietaer also understood the shadow aspects as qualities of Yin and Yang. To these four archetypes he added that of the Great Mother, to whom he had assigned the shadow aspects of greed and fear of scarcity. The five archetypes selected by Lietaer—the ‘archetypal five’—together stand for the ‘archetypal human being’. Cultural development takes place against a backdrop of the effect of these archetypes and their shadows. Significantly, the archetype of the Great Mother has mostly been suppressed during the past 5000 years, To make the five archetypes understandable for our present time, Lietaer adapted the traditional designations into those that more closely correspond to today’s understanding. Thus he wrote of the archetypes integration (formerly ‘ruler’), partnership (formerly ‘lover’), nourishment and preservation (formerly ‘Great Mother’), knowledge and teachings (formerly ‘magician’), and protection (formerly ‘warrior’).” (Lietaer, 2000, p. 34, 89, 94, 145, 310 *apud* Krause, 2021a, p. 215–216). “Our current monetary and economic system, embedded in our patriarchal culture, can be depicted as a predominant Yang system.” (Lietaer and Bindewald, 2011a *apud* Krause, 2021a, p. 211). “In the case of a Yang currency, money creation is based on a hierarchy, which encourages hoarding of this currency and generally creates and increasingly intensifies competition between the parties involved. As previously states, the conventional national currencies are Yang currencies because they all have these characteristics. For this reason, the competitive economy that drives them is called the ‘Yang economy’. It is typically the only form of economy recognized by conventional economists. With a Yin currency, on the other hand, money creation is based on equality. This restricts the hoarding of money and promotes cooperation between the parties involved. Properly planned complementary currencies activate a cooperative ‘Yin economy’.” (Lietaer, 2000, p. 250 *apud* Krause, 2021a, p. 212). “For example, [Bernard] Lietaer described the Terra as a ‘weak Yang currency’, in the sense of Taoist medicine, ‘to dampen the surplus in an excessive Yang constellation by activating Yin. The Terra is intended to dampen the Yang, while local currencies activate the Yin.” (Lietaer, 2003, p. 67 *apud* Krause, 2021a, p. 213). “Applied to the economic system, this would mean that the separation of ‘yang’ (monetary and physical capital) and ‘yin’ capital (social and natural capital) can be overcome, which would give direct access to the concept of corresponding economic cycles and forms of currency. For the latter, [Bernard] Lietaer described the ‘currency system in 2020: a four-speed gearbox’—namely the interplay of the global reference currency, three basic multinational currencies, some national currencies, and local complementary currencies.” (Lietaer, 1999, p. 405–406, 424 *apud* Krause, 2021a, p. 183). “Integrated economy: an economic system that has found a balance between the Yin and Yang economic cycles, thus creating and increasing social and financial capital. The integrated economy is considered indispensable if a society is to be guided by the principle of sustainability. One way to create the integrated economy is to use Yin and Yang currencies as dual complementary currency systems. The integrated economy supports spiritual human development in terms of integration and individuation in a way that a pure Yang economy cannot achieve (Chapter 9).” (Lietaer, 2000, p. 359). “In the integral [integrated] economy, I use holistic systems analysis as a key method. The ‘whole systems approach’ takes the context wider than conventional economics; all important external effects are included as far as possible. In our case these are the effects of different monetary systems on human interaction, the development of society and ecosystems.” (Lietaer, 2003, p. 55 *apud* Krause, 2021a, p. 213). “Many attempts to reform money failed in the past because they wanted to attack or radically change the existing monetary system... The availability of information technologies, necessary for the implementation of a new monetary system, is so advanced that a democratization of monetary innovations has become a reality.” (Lietaer, 2003, p. 33 *apud* Krause, 2021a, p. 18). “Our current story is marked by a long history that represses the feminine and supports the manifestation of the shadows that results from such a repression. I have written an entire book (*The Mystery of Money*) about the evidence of why the monopoly of a Yang currency is a manifestation of the repression of the Great Mother. All patriarchal societies over the past 5000 years of patriarchy have invariably imposed a monopoly of a centralizing currency. Our current conventional money still reflects that bias. In contrast, all matrifocal societies (societies that honor the feminine values) always had a dual currency system: a scarce Yang currency for long distance trade with foreigners, and a Yin currency available in sufficiency to trade within your local community. The following figure summarizes what I mean with the Yin-Yang polarity and balance, and these two coherences are directly applicable also to the different types of currencies. Conventional money is an extreme Yang construct, as every feature of it is Yang. In contrast well designed complementary currencies are more of a Yin nature. I show in several of my books how different kinds of currency shape very different societies, and how the imbalance towards Yang energy explains a lot of the problems we are struggling with now including, undervaluation of all Yin functions in society (compare the incomes of our investment bankers with those of our nurses and the teachers of our children), environmental damage, starvation in the middle of abundance. If we have an honoring of the Great Mother archetype, that shadow process disappears. By re-awakening the Great Mother, re-honoring the Great Mother, we will automatically let go of the monopoly of a conventional currency. You can read more about this in *Of Human Wealth* (Lietaer and Belgin, 2005c) that’s coming out this spring. Understanding that the activation of Yin currencies (Smile Cards, Friendly Favors, Time Dollars, etc.) is only half of the story. It is nevertheless⁴¹



an important piece needing to be integrated in an optimal new Mythos. Activating the Yin is more easily understood in the circles we are dealing with. It's very fashionable to talk about all the social purpose complementary currencies, but it is a lot less popular in these same circles to want to deal with the Yang currencies. They just see the Yang energy, manifesting lately in phenomena like globalization, as a threat. This said, if global trade were to suddenly stop or collapse, we would all be in deep trouble—at least a third of humanity would die quickly. It is not realistic to think that we can solve everything with either yin or local currencies. Autarchy is just not going to happen now, except at a very primitive level. Just make an inventory of what you use, wear, consume daily, and ask how much of it is—or even could be—locally produced. In short, I see Yang not as the enemy, but the prevailing imbalance of excess Yang is the enemy. We need to understand what a Health balance of Yin and Yang currencies looks like and how they mutually support each other: Seeing Yang currencies as the enemy is polarizing and counter-productive. We need a mythos that helps us getting into a new balance, that encourages us to honor both Yin and Yang energies, including Yin and Yang currencies. Whenever there is an excess Yang, the solution is to calm the Yang and activate the Yin.” (Lietaer and Silvestre, 2008b, p. 17–19 *apud* Krause, 2021b, p. 17–19). “We can consciously design the energy content of our money system. Our current monetary design—a monopoly of a centrally issued currency with a positive interest rate—is in fact an extraction device for resources to be channeled from the based to the top. This is consistent with the patriarchal value system (central control and exploitation). Patriarchy goes back some 5000 years, and this type of currency is inherently connected to this value system. All patriarchies have imposed a monopoly of this type of currency. Such a currency system is extreme Yang, and because of the monopoly almost nobody can escape its influence, and anything that comes in touch with that will be hugely impacted by it. We are still using today the latest version of such a system. And we need to shift that. The first thing we need to become aware of the energy content of different monetary systems and create a diversity of currencies with different energy content. Do you see now what I mean when I say that the monetary system is just one application of a larger process? This is the scale of energy systems we need to create to make the shift while reducing the suffering that it could generate by providing energetic support systems for as many as possible—whether it is in the subtle domains (earth energies), or in the material domain (money systems). Humans have indeed created money systems in order to more effectively exchange material energy amongst each other, In the long run, Jean-Luc Picard of Star Trek utopia fame may prove right when he claims that ‘Money does not exist in the twenty-fourth century. The accumulation of wealth is no longer the driving force; we work to better ourselves and humanity.’ However, today we still need some crutches before walking in such a radically new way. I am convinced that during the ongoing transition of the early twenty-first century, the activation of complementary and sustainability compatible currencies offer valuable additions to our social toolkit. Once we have gotten used to live in a balanced Yin-Yang way, we may be able to throw away the dual currency crutches.” (Lietaer and Silvestre, 2008c, p. 46–47 *apud* Krause, 2021b, p. 46–47). “My friend Stan Grof says that the mad houses are filled with people who have gotten stuck in such a way during a spiritual crisis or awakening. There are two ways of seeing what is happening to consciousness at death. One is to believe that you continue as an individual and the other is to believe that you dissolve in the Whole. For Eastern folks, heaven is being dissolved back into the Whole. In the West, folks hope to move on as individuals. This bring us right back to the polarities of Yin and Yang. The Yang side is always looking for certainty, distinction and separation. The Yin side is totally comfortable with ambiguity. I actually believe that both conceptions are true. We both dissolve and we continue. You know the sayings: ‘When you come to a bi-furcation, take it’; or ‘the opposite of a truth is another truth’. And that’s something that we have a lot of trouble with, particularly as well-trained Westerners.” (Lietaer and Silvestre, 2008c, p. 50 *apud* Krause, 2021b, p. 50). “I have written many papers and fifteen books so far, most of them in English, and I believe it is probably the book *At the Heart of Monnaie* [fr: *Au Cœur de la Monnaie*] (2011) (Lietaer, 2011b), written in French, which is my most important contribution. Unfortunately, it is among the very few that is not in English. It deals with the collective emotions towards currencies across times. It deals with the history of different types of money and different ways of organizing society. And one of the things that I found out is that all patriarchal societies have imposed the kind of currency that we have now, *i.e.* a monopoly with interest. Interest was invented in Sumer at the beginning of patriarchy and the centralized control of the money system: a monopoly managed by the elite. Matrifocal societies, societies based on feminine values and women, have not done that. They have always created multiple forms of currencies, like I have been recommending: creating an ecosystem of money. The three best examples I have found enough data about is Central Europe-Middle East, dynastic Egypt for several thousand years, and the Tang dynasty, the only dynasty that had a feminine Emperor in China (Lietaer, 1999). In these three cases, every time we had two different types of currencies: we had currency like the one we have now, to trade with people at a distance, and a second type of more localized, community currency system in parallel. I think that is going to be valid fifty years from now, everything else I have written will be out of date in maximum ten years.” (Lietaer, 1999; Lietaer, 2011b *apud* Lietaer *et al.*, 2021, p. 11). “As early as the 19th century, British economic historian Arnold Toynbee identified two main causes for societal collapse: 1) an excessive concentration of wealth; and 2) an elite that refused to adapt to changing circumstances. More recent explanations of economic instability include: the dangers of monopolistic dominance; Thomas Piketty’s concern about increasingly concentrated and entrenched inequality; and [John Maynard] Keynes observation of the importance of robust, cross-scale circulation of money. Lietaer specifically showed how elites used money as an instrument of hierarchical abuse and extraction via a system he called, the ‘Square of Power’ [*cf.* Ferguson, 2001, p. 284–305]. Coordinated through parliament, tax authorities, central banks, and national debt, this system used the tax contribution of citizens to fund Empire and accelerate elite wealthy by subsidizing select corporations and industries.” (Goerner [p.c.] *apud* Krause, 2021a, p. 14–15). “This ‘Square of Power’ [*alias* ‘Carrousel of Power’], as Lietaer called it, is established through the coordination of parliaments, tax authorities, national debt and central banks, with the participation of citizens in the form of regular tax contributions. Optimized by Great Britain in the 18th century, it enabled

industrialization and the birth of a global empire. [...] Whatever governments accept as a means of payment for taxes automatically gives immense power to those who produce or control that particular means. [...] When governments demand tax payments in a specific medium of exchange, they automatically increase its scarcity. As a result, this medium acquires more value. An independent government can thus choose the payment instrument to which it wants to attach value. It can thus determine the type of effort its citizens must make or the behavior they must adopt to obtain these instruments.” (Lietaer *et al.*, 2012b, p. 219, 223 *apud* Krause, 2021a, p. 151–152). “My intellectual debt to the theoretical work of Douglass North and others on the relationship between institutions and economics will by now be obvious to students of economics [*cf.* Douglass C. North’s *Institutions, Institutional Change, and Economic Performance* in 1990]. The basic institutional framework I have in mind may be thought of as a square. To put it simply, the exigencies of war finance had led by the eighteenth century to the evolution of an optimal combination of four institutions. First, [...] there was a professional tax-gathering bureaucracy. Salaried officials proved to be better at revenue raising than local property owners or private tax ‘farmers’, who tended to retain a larger proportion of tax revenue for themselves. Second, parliamentary institutions in which taxpayers were granted a measure of political representation tended to enhance the amount of revenue a state could raise, in that taxation could be ‘traded’ for other legislation and the entire budgetary process legitimated. Third, a system of national debt allowed a state to anticipate tax revenues in the event of a sudden increase in expenditure, such as that caused by a war. The benefit of borrowing was that it allowed the costs of wars to be spread over time, thus ‘smoothing’ the necessary taxation. Finally, a central bank was required not only to manage debt issuance but also to exact seigniorage from the issuance of paper money, which the bank monopolized. Though each of these four institutions had deep historical roots, it was in Britain after the Glorious Revolution that their potential in combination was realized – though it should be made clear at once that Hanoverian reality fell some way short of the ideal type I have just described. The Excise, Parliament, the National Debt and the Bank of England nevertheless formed a kind of institutional ‘square of power’ which was superior to any alternative arrangement –notably the French system of privatized tax collection based on sales of office and tax ‘farming’, minimal representation in the form of the parliaments, a fragmented and expensive system of borrowing and no central monetary authority. It was not just its revenue-raising property that made the British ‘square’ superior to rival systems. It was also the more or less unintended side-effects it had on the private sector of the economy. To speak in general terms, the need for an efficient tax-gathering bureaucracy implied a need for a system of formal education, to ensure an adequate supply of civil servants who were both literate and numerate. Secondly, the existence of a parliament almost certainly enhanced the quality of legislation in the sphere of private property rights. Thirdly, the development of a sophisticated system of government borrowing through a funded national debt encouraged financial innovation in the private sector. Far from ‘crowding out’ private investment, high levels of government bond issuance widened and deepened the capital market, creating new opportunities for the issuance and trading of corporate bonds and equities, especially in peacetime when the state no longer needed to borrow. Finally, a central bank with a monopoly over note-issue and the government’s current account was also capable of developing functions—such as manager of the exchange rate or lender of last resort—which tended to stabilize the credit system as a whole by reducing the risk of financial crises or banking panics. In these ways, institutions that initially existed to serve the state by financing war also fostered the development of the economy as a whole. Better secondary and higher education, the rule of law (especially with respect to property), the expansion of financial markets and the stabilization of the credit system: these were vital institutional preconditions for the industrial revolution.” (Ferguson, 2001, p. 284–305 *apud* Lietaer *et al.*, 2012b, p. 219). “Money is not value-neutral, but has a profound effect on the kind of society in which we live. Interest-bearing national currencies were the hidden engines that drove our civilization in and through the industrial revolution. Different monetary systems promote significantly different values and have influenced social behavior in a unique way throughout history. Both the best and the worst of what modernity has produced can be traced directly or indirectly to the architecture of our money and the values it promotes, including: competition, the need for constant growth, and relentless concentration of wealth. By designing money intelligently, we can also induce different behaviors and expect different social outcomes. [...] Every dollar created and spent reinforces—reproduces—the values that are deeply embedded in the basic construction of our monetary systems. Money shapes our beliefs and social structures and teaches us what is possible and what is not. This explains why, despite best intentions and completely different personal values or perspectives, and regardless of gender, race, or socio-cultural prejudices and affiliations, most of us still behave as the Yang shadow axis of money acquisition suggests. One expression of this is the emphasis on competition rather than cooperation. Without this, Western civilization would look and act very differently. Our money is one of the central information replicators that ensure that competition is emphasized in all areas of our society.” (Lietaer and Belgin, 2011a, p. 50, 235 *apud* Krause, 2021a, p. 15–16). “For a culture, money is like the DNA [DeoxyriboNucleic Acid] code for a species. It replicates structures and patterns of behavior that remain active across time and space.” (Lietaer, 2000, p. 311 *apud* Krause, 2021a, p. 27). “Our money is our mirror. It can reflect more than just our shadows. It is a mirror of our soul.” (Lietaer, 2000, p. 333 *apud* Krause, 2021a, p. 16). “If [Jean] Gebser is right, we are on the verge of a fundamental shift in awareness. In terms of dimensions, the shift from modernist to integrative values can only be compared with the shift to reason in classical Greece. However, the current change will be much faster. Greek rationalism took centuries to establish itself in other regions of the Mediterranean. We had to wait for the Renaissance and the Enlightenment so that these ideas could also be reflected in everyday life. Current opinion polls, on the other hand, show that the current development of integrative values can already be compared with a tidal wave.” (Lietaer, 2000, p. 30 *apud* Krause, 2021a, p. 16–17). “To explain the concept of consciousness and its significance in human life, [Jean] Gebser named six structures of consciousness: archaic, magical, mythical, rational, mental and arational-integral. In his own enumeration, Lietaer omitted ‘mental’ and used the term ‘integrative’ instead of ‘arational-integral’. Gebser argued that within the framework of inner development, humans do not progress from one structure of consciousness to the next higher one, rather they cumulatively add another structure to the first one. In this way consciousness expands as it extends over ever wider structures.” (Lietaer, 2000, p. 272 *apud* Krause, 2021a, p. 217).



¹⁸ E.g. money authority/power, money creation/destruction, money issuance/withdrawal, money circulation/accumulation, money distribution/recuperation, money expiration/continuation, etc..

¹⁹ I.e. value of a unit of currency depends on the quantity of precious metal it contains or for which it may be exchanged; cf. gold standard as a monetary system in which the standard economic unit of account is based on a fixed quantity of gold.

²⁰ I.e. money is a creature of law rather than a commodity—since a state can create pure paper money and make it exchangeable by recognizing it as legal tender which is accepted at the public pay offices.

²¹ E.g. Stamp Scrip, Air Miles, Meal Ticket, Smile Card, Friendly Favor, Saber Currency, Wellness Token, Natural Savings, Local Exchange Trading System, Ithaca Hours, Time Dollars, Time Bank, Spice Time Credits, Club de Trueque, Tauscherung Talente, International Reciprocal Trade Association, National Association of Trade Exchange, WIR Bank, Fureai Kippu, Eco-Money, Banco Palmas, SOL, Monnaie Léman, Eusko, Chiemgauer Regiogeld, Bristol Pound, Brixton Pound, Totnes Pound, BerkShares, SolarCoin, Bitcoin, Terra Trade Reference Currency, etc..

²² “I believe that Sustainable Abundance can only happen with a sustainable money system as a precondition. In practice, that means complementing the prevailing Yang currency generated by central hierarchical control with Yin currencies created by the people themselves. Among the money innovations that have proven most effective are: mutual credit systems that self-organize to ensure that currency is always available in sufficiency; and demurrage charges that encourage exchanges rather than hoarding. [...] This is what worked in the few historical precedents available where an Integrated Economy seems to have been implemented. But, as we saw in these case studies, money is not the only domain where changes are going to be needed. An even more ambitious aim is to facilitate the integration of the Yin archetypes which have been repressed for thousands of years, and which are now needed to make the next evolutionary step of our species. Hopeful signs have been detected that such integration may be on its way in the form of the surprising emergence of a Cultural Creative subculture. [de: *Ein nachhaltiger Wohlstand benötigt als Voraussetzung ein nachhaltiges Währungssystem. Praktisch bedeutet dies, daß die vorherrschende Yang-Währung, die von einer zentralen, hierarchisch gegliederten Kontrolle geschaffen wird, durch Yin-Währungen ergänzt wird, die die Menschen selbst initiieren. Zu den Währungsinnovationen, die sich als besonders effektive erwiesen, gehören: selbstorganisierte wechselseitige Kreditsysteme, die sicherstellen, daß immer ausreichend Geld in Umlauf ist; Liegegelder, die das Horten verhindern und den Austausch fördern.*]” — Bernard A. Lietaer (1942–2019), from *The Mystery of Money: Emotional significance and mode of action of a taboo* [de: *Mysterium Geld: Emotionale Bedeutung und Wirkungsweise eines Tabus*] [The Mystery of Money: Beyond Greed and Scarcity] (2000) (Lietaer, 2000, p. 309).

²³ “Integrated economy: an economic system that has found a balance between the Yin and Yang economic cycles, thus creating and increasing social and financial capital. The integrated economy is considered indispensable if a society is to be guided by the principle of sustainability. One way to create the integrated economy is to use Yin and Yang currencies as dual complementary currency systems. The integrated economy supports spiritual human development in terms of integration and individuation in a way that a pure Yang economy cannot achieve (Chapter 9). [de: *Integrierte Wirtschaft: ein Wirtschaftssystem, das ein Gleichgewicht zwischen den Yin- und Yang-Wirtschaftskreisläufen gefunden hat und so soziales und finanzielles Kapital schafft und vermehrt. Die integrierte Wirtschaft gilt als unverzichtbar, wenn eine Gesellschaft sich am Prinzip der Nachhaltigkeit orientieren will. Eine Möglichkeit zur Schaffung der integrierten Wirtschaft ist die Verwendung von Yin- und Yang-Währungen als duale Komplementärwährungssysteme. Die integrierte Wirtschaft unterstützt die spirituelle menschliche Entwicklung in Hinblick auf Integration und Individuation in einer Art und Weise, die eine reine Yang-Wirtschaft nicht erreichen kann (Kapitel 9).*]” — Bernard A. Lietaer (1942–2019), from *The Mystery of Money: Emotional significance and mode of action of a taboo* [de: *Mysterium Geld: Emotionale Bedeutung und Wirkungsweise eines Tabus*] [The Mystery of Money: Beyond Greed and Scarcity] (2000) (Lietaer, 2000, p. 337).

²⁴ I.e. a range of socio-political movements and ideologies that aim to define and establish the political, economic, personal, and social equality of the sexes—by campaigning for women’s rights and fighting against gender stereotypes and improving educational, professional, and interpersonal opportunities and outcomes for women since societies prioritize the male point of view and that women are treated unjustly in these societies; e.g. right to vote, run for public office, work, earn equal pay, own property, receive education, enter contracts, have equal rights within marriage, maternity leave, access to contraception or legal abortions and social integration, protection of women and girls from sexual assault or sexual harassment and domestic violence.

²⁵ Alias masculism; i.e. ideologies and socio-political movements that seek to eliminate sexism against men, equalize their rights with women, and increase adherence to or promotion of attributes regarded as typical of males; cf. men’s movement, men’s rights movement, fathers’ rights groups, antifeminism, red pill movement.

²⁶ E.g. Iroquois Confederacy of Native Americans, Hopi tribe of Arizona, Umoja Uaso village in Kenya, Khasi people in India, Kayan people in Myanmar, Mosuo people in China, Minangkabau people in Indonesia; cp. mythological female warrior of Amazon and Valkyrie.

²⁷ “I have written many papers and fifteen books so far, most of them in English, and I believe it is probably the book *At the Heart of Monnaie* [fr: *Au Cœur de la Monnaie*] (2011) (Lietaer, 2011b), written in French, which is my most important contribution. Unfortunately, it is among the very few that is not in English. It deals with the collective emotions towards currencies across times. It deals with the history of different types of money and different ways of organizing society. And one of the things that I found out is that all patriarchal societies have imposed the kind of currency that we have now, i.e. a monopoly with interest. Interest was invented in Sumer at the beginning of patriarchy and the centralized control of the money system: a monopoly managed by the elite. Matrifocal societies, societies based on feminine values and women, have not done that. They have always created multiple forms of currencies, like I have been recommending: creating an ecosystem of money. The three best examples I have found enough data about is Central Europe-Middle East, dynastic Egypt for several thousand years, and

the Tang dynasty, the only dynasty that had a feminine Emperor in China (Lietaer, 1999). In these three cases, every time we had two different types of currencies: we had currency like the one we have now, to trade with people at a distance, and a second type of more localized, community currency system in parallel. I think that is going to be valid fifty years from now, everything else I have written will be out of date in maximum ten years.” (Lietaer, 1999; Lietaer, 2011b *apud* Lietaer *et al.*, 2021, p. 11). “Exceptions: Pockets of Historical Survival of the Great Mother cults: The Indo-European invaders came by land; therefore, some pockets of old Great Goddess worship remained intact for thousands of years longer on islands where the invaders did not arrive *en masse* [all together] until much later (e.g. Malta, Crete, the British Islands). For instance, the largest prehistoric monument in the world, Silbury Hill, a giant earth mound in Wiltshire, England, has four times the volume of the Great Pyramid of Gizeh. It has now convincingly been linked to the Great Mother cult, proving the power of her cult at the time it was built (ca. 2240–2050 BC). In Crete, the Goddess cult was flourishing in the Minoan civilizations as late as 1500–1200 BC. Even on mainland Greece, the most important initiatic tradition, the Eleusinian mysteries, was all about feminine fertility (i.e. the mythologies of Demeter and Persephone) and remained active until the 4th century AD. Egypt similarly kept its vital Isis cult—where the Savior is the feminine—intact until at least the 2nd century AD. Very important will also prove the emergence of the Black Madonna cults which spread like wildfire from the 10th to the 13th century all over Christian Europe, sometimes to the embarrassment of Rome. [de: *Ausnahmen: Historische Nischen des Kultes um die Groß Mutter: Die indogermanischen Invasoren kamen über den Landweg, daher blieben auf den Inseln einige Nischen erhalten, in denen sich die alte Verehrung der Großen Göttin einige tausend Jahre länger hielt. Auf Malta, Kreta und den Britischen Inseln trafen die Invasoren in großer Zahl erst sehr viel später ein. Das riesige prähistorische Monument Silbury Hill, ein gigantischer Erdhügel in Wiltshire in England, hat ein Volumen, das viermal so groß ist wie das der Cheopspyramide in Gizeh. Der Hügel konnte mittlerweile eindeutig dem Kult der Großen Mutter zugeordnet werden, was die Macht dieser Religion zur Bauzeit (ca. 2240–2050 v.Chr.) deutlich macht. Auf Kreta blühte der Göttinnenkult in den mykenischen und minoischen Kulturen noch in der Zeit von 1500 bis 1200 v.Chr.. «In der kretischen Kunst wurde die erschreckender Distanz zwischen dem Menschen und dem Transzendenten ignoriert... Hier and nur hier (im Gegensatz zu Ägypten und dem Nahen Osten) wurde das menschliche Gebot nach Zeitlosigkeit mißachtet und statt dessen die Gnade des Lebens in einer noch nie dagewesenen Vollendung anerkannt.» Die meisten Gelehrten sind sich darüber einig: «Anhand der überwiegend weiblichen Figuren mit ihren nackten Brüsten, ausdrucksstarken Gesichtern und exquisiter Kleidung können wir mit Sicherheit sagen, daß Frauen in der kretischen Kultur Macht und Prestige besaßen.» Selbst auf dem griechischen Festland drehte sich bei dem wichtigsten Initiationsritus, den Eleusinischen Mysterien, alles um die weibliche Fruchtbarkeit (d.h. die Sage von Demeter und Persephone) und blieb bis ins 4. Jahrhundert n.Chr. lebendig. Auch in Ägypten hielt sich der Isiskult — bei dem die Erlöserin weiblich ist — bis ins 2. Jahrhundert n.Chr.. Schließlich kam auch noch der Kult um die Schwarze Madonna auf, der sich zwischen dem 10. Und 13. Jahrhundert im ganzen christlichen Europa zur großen Verlegenheit Roms mit enormer Geschwindigkeit verbreitete.]]” (Lietaer, 2000, p. 83–85).*

²⁸ I.e. tallest prehistoric human-made mound in Europe and one of the largest in the world—similar in volume to contemporary Egyptian pyramids.

²⁹ Resp. boreal (8500–6900 BC); older Peron correlated with an additional ‘cosmic ray’ event in 5410 BC (7000–3000 BC).

³⁰ Alias Greco-Roman mysteries; i.e. secret initiation rituals or religious initiation rites performed in the cult of the Egyptian goddess Isis in the Greco-Roman world (300 BC–200 AD)—issued from the Osiris myth of ancient Egyptian mythology about god Osiris’s murder by his brother Set who usurps his throne before Osiris’s wife Isis restores her husband’s body to allow him to posthumously conceive their son Horus as the god of the sky whose right eye was considered to be the Sun and his left the Moon.

³¹ Alias Eleusinian Mysteries [el: *Ἐλευσίνια Μυστήρια*, *Eleusínia Mystéria*]; i.e. as the most famous of the secret religious rites and old agrarian mystery cults of Ancient Greece (1100 BC–600 AD) based at the Panhellenic Sanctuary of Eleusis representing the myth of the abduction of Persephone from her mother Demeter by the king of the underworld Hades in a descent-search-ascent cycle.

³² I.e. between Knossos on the island of Crete and Akrotiri on the island of Santorini within the Cycladic culture of the Bronze Age.

³³ Resp. Bronze Age optimum correlated with the apex of Minoan civilization with an additional ‘cosmic ray’ event in 660 BC and after the Minoan volcanic eruption of Santorini or Thera in 1600 BC causing a ‘volcanic winter’ (1500–900 BC); Roman warm period (250 BC–400 AD).

³⁴ I.e. significant cultural renewal and intellectual revitalization across medieval Western Europe with strong philosophical and scientific roots including social, political and economic transformations—with an increase of literature, writing, visual arts, architecture, music, jurisprudence, liturgical reforms, and scriptural studies; resp. Carolingian Renaissance (8th–9th century), Ottonian Renaissance (10th century), Renaissance of the Twelfth Century (12th century); vs Italian Renaissance (15th century), Scientific Revolution (17th century).

³⁵ I.e. medieval warm period correlated with medieval renaissances in Europe with additional ‘solar storm’ events in 774 AD and 993 AD (900–1300 AD).

³⁶ I.e. medieval and renaissance notion of the Christian world as a polity with the Christian clergy wielding political authority; cf. Christian theocracy, Christian values, Christian doctrine.

³⁷ Viz. means of exchange, unit of account, reserve of value, legal tender, universal equivalent, common good, tool for a vision, evolving concept, changing rule, non-neutral value, etc..

³⁸ Viz. doctrinal collective ritual, social glue, initiatory rite of passage, divine symbol, archetypal egregore, energy accumulator/generator, consciousness information replicator, encrypted consciousness access code, soul mirror, new reality teleportation portal, alchemical wealth transmutation artefact, magical talisman, etc..



³⁹ *I.e.* study of the effects of psychological, cognitive, emotional, cultural and social factors on the decisions of individuals, institutions, markets and institutions as a variation or confirmation of the theories of *classical economics* by integrating some insights from psychology, neuroscience and microeconomics; *cf.* bounded rationality; public choice.

⁴⁰ *Alias* bioeconomics, ecological economics, ecol-econ, eco-economics, ecolonomy; *i.e.* a transdisciplinary and interdisciplinary field of academic research addressing the both intertemporally and spatially interdependence and coevolution of human economies and natural ecosystems—by treating the economy as a subsystem of Earth's larger ecosystem and by emphasizing the preservation of natural capital; *cp.* biophysical economics or thermoeconomics as the study of economic systems applying the laws of thermodynamics; *vs* environmental economics as the mainstream economic analysis of the environment; *cf.* Nicholas Georgescu-Roegen's *The Entropy Law and the Economic Process* in 1971.

⁴¹ *Alias* metapsychic, metapsychology, beyond psychology, beyond the study of the soul [el: *μετα-ψυχή-λογία*, *meta-psukhē-logia*]; *i.e.* part of philosophy that deals with existence and knowledge—relating to the study of the human mind or soul; *viz.* psychical research relating to phenomena outside the range of orthodox psychology with the study of the unconscious and the interpersonal aspects of psychology; *vs* conscious and the intrapersonal aspects of psychology; *e.g.* mediumship, channelling, alien abduction syndrome, past life regression, recovered-memory therapy, *etc.*

⁴² “It has only been possible to measure information in ‘bits’ since the late 1940s. This shows that it is imperative to use energy to obtain information. Conversely, we need to use information to collect and domesticate energy. [...] We even managed, thanks to a sensible selection of constants and units, to express information in thermodynamic units and to link these directly with entropy. A concrete example: Reading this page involves several elements: the text printed on paper, a light source (sun or electric lamp), the eye and the brain. In order for the brain to collect information, the light source must divert from the black characters in the text and thereby modulate the light beam. Then the eye had to pick up this ray. The lamp and the eye consumed energy and increased entropy. So we can express the energy costs involved in gaining this brain information: the wattage of the lamp and eye movement versus the roughly 2'400 bits of information on a printed page. However, the brain is also able to generate information, *i.e.* to increase the negentropy (equivalent to decreasing entropy). Note that information is the logarithm of the probability. Therefore, the ‘joint’ between matter and psyche is always expressed by an obvious modification of the probabilities. [...] The fourth level is then the one on which the generated negentropy ‘accumulates’ and from which the entropy of the universe is extracted. It is clear that we cannot think of these concepts of accumulation in a physical form, but we have to use the existing vocabulary.” (Lietaer, 1980 *apud* Krause, 2021a, p. 305).

⁴³ “The financial markets are now driven by an irrational exuberance.” — Alan Greenspan (1926–), Chairman of the United States Federal Reserve (*r.* 1986–2006), from a speech (05 December 1996) (Lietaer, 2000, p. 92). “This quote was used later as title of a recent book : Shiller, Robert J. *Irrational Exuberance* (Shiller, 2000) which provides ample statistical evidence of irrational financial behavior today and in the past.” (Lietaer, 2000, p. 92). “Alan Greenspan famously complained already in the 1990s about the ‘irrational exuberance’ of the financial markets.” (Lietaer, 2005b, p. 2–3).

⁴⁴ “Our monetary system now functions as a key information replicator, a vital linchpin that drives particular and consistent behavior patterns. Every dollar created and spent reinforces—replicates—the values that are deeply embedded in the basic design of our currency systems. Money shapes out beliefs and social structures and tell us what is and is not possible. This explains how, with the best intentions, even with totally different personal values or perspectives, regardless of gender, race or socio-cultural biases and affiliations, most of us behave in a manner consistent with the Yang shadow axis to obtain money. One expression of this is the emphasis on competition over cooperation. Without it, Western civilization would look and act very differently. Our money is one of the key information replicators that ensures that competition is emphasized throughout society. [...] Money is to civilization as the DNA [DeoxyriboNucleic Acid] code is to a species. It replicates structures and behavior patterns that remain active across time and space for generations.” (Lietaer, 2000, p. 262, 312 *apud* Lietaer and Belgin, 2011a, p. 235 *apud* Krause, 2021a, p. 160–161, 164).

⁴⁵ “We now know that attempts to understand money and other complex socioeconomic phenomena through a mechanistic, value-neutral lens are inherently misguided. The countless instances of ‘irrational exuberance’ and the boom-and-bust manias that have plagued our economies for centuries contradict the very idea of economic man. Likewise, money’s supposed value neutrality is challenged by ample evidence showing that different kinds of money systems promote distinctly different values and have uniquely influenced social behavior throughout history. [...] Money is not value-neutral, but has a profound effect on the kind of society in which we live. Interest-bearing national currencies were the hidden engines that drove our civilization in and through the industrial revolution. Different monetary systems promote significantly different values and have influenced social behavior in a unique way throughout history. Both the best and the worst of what modernity has produced can be traced directly or indirectly to the architecture of our money and the values it promotes, including: competition, the need for constant growth, and relentless concentration of wealth. By designing money intelligently, we can also induce different behaviors and expect different social outcomes.” (Lietaer and Belgin, 2005c *apud* Lietaer and Belgin, 2011a, p. 37, 50 *apud* Krause, 2021a, p. 15, 162–163).

⁴⁶ “[...] Mind and concepts, with reasons (understood as a combination of cognitive beliefs and conative desires) acting as causes, as causally efficacious on the natural and social world through human intentional agency. The structures [...] influence the concept, reasons, beliefs and desires that people hold and thus lead to specific manifest behaviours.” (Marshall, 2012, p. 207).

⁴⁷ Thematic analysis of 6 selective codes identified in 77 out of 2'193 quotations—extracted from 7 qualitative data collections conducted among 240 stakeholders of the Lake District Pound from August to December 2018 and 2019—to test this definition hypothesis of Integral Money that influences all ‘four quadrants’ (Place *et al.*, 2021b, p. 42).

⁴⁸ *I.e.* not only knowledge is constructed through social interaction according to *social constructionism*; but also human development is socially situated thanks to these interactions with others according to *social constructivism*.

⁴⁹ *I.e.* study of institutions that focuses on the constraining and enabling effects of formal and informal rules on the behavior of individuals and groups; *cf. sociological institutionalism, rational choice institutionalism, historical institutionalism, new institutional economics, constructivist institutionalism, and discursive institutionalism* on how ideas and discourses affect institutional stability and change, or even *A Grammar of Institutions* by Sue E. S. Crawford and Elinor Ostrom presenting a common syntax of institutions as enduring regularities of human action in situations structured by rules, norms, and shared strategies, as well as by the physical world (Ostrom and Crawford, 1995).

⁵⁰ *Alias* discourse studies; *i.e.* analysis of written, vocal, or sign language use, or any significant semiotic event; *cf. critical discourse analysis* as an interdisciplinary approach to the study of discourse that views language as a form of social and linguistic practices by investigating how societal power relations are established and reinforced through language use and by highlighting issues of power asymmetries, manipulation, exploitation, and structural inequities in domains such as education, media, and politics.

⁵¹ *I.e.* Bretton Woods Agreement system (1944–1971) of fully negotiated monetary order to govern monetary relations among independent states by requiring countries to guarantee convertibility of their currencies into USD to within 1% if fixed parity rates with the dollar convertible to gold bullion for foreign governments and central banks at USD 35 per troy ounce of fine gold—according to the gold standard as a monetary system in which the standard economic unit of account is based on a fixed quantity of gold.

⁵² *Alias* bank run, run on the bank; *i.e.* many clients withdraw their money from a bank because they believe the bank may fail in the near future—until becoming a self-fulfilling prophecy as more people withdraw cash, the likelihood of default increases, triggering further withdrawals.

⁵³ *I.e.* the value of foreign denominated debt will rise drastically relative to the declining value of the home currency—by doubting on whether a country’s central bank has sufficient foreign exchange reserves to maintain the country’s fixed exchange rate.

⁵⁴ *Alias* sovereign debt crisis; *i.e.* a state is unable to repay or refinance its government debt or to bail out over-indebted banks under their national supervision.

⁵⁵ *Alias* economic bubble, financial bubble; *i.e.* a period when current asset prices greatly exceed their intrinsic valuation; *e.g.* overly optimistic projections about the scale and sustainability of growth during the 2000 March 10 Dot-com bubble; belief that intrinsic valuation is no longer relevant when making an investment during the 1637 February Tulip mania [nl: *tulpenmanie*].

⁵⁶ *I.e.* through mergers and acquisitions to eradicate the competition and concentrate the power by lending their interest-bearing debt money to states, companies and individuals.

⁵⁷ *I.e.* by offering alternative issuers and means of payment in the event of a sudden shortage of bank debt, a banking crisis or bankruptcy which could result in a global financial and economic crisis.

⁵⁸ *I.e.* through complementary arrangements and spontaneous adjustments in the self-organized complexity of an open system with expanding entropy; *alias* disorder and arbitrariness, randomness and irrationality.

⁵⁹ *I.e.* by integrating all stakeholders in the decision-making process of the modalities of monetary creation.

⁶⁰ *I.e.* ecology based economics, *alias bionomics*, *e.g.* monetary system as an ecological system, *alias* ‘monetary ecosystem’.

⁶¹ *I.e.* mixed state of these two structural variables, *alias* ‘time frame of viability’.

⁶² *Resp.* too little or too much diversity and interconnectivity of currencies causing their collapse; *e.g.* high failure rate of commercial banks or complementary currencies.

⁶³ *Alias* monetary diversity and interconnectivity.

⁶⁴ *Alias* monetary resiliency and sustainability.

⁶⁵ *I.e.* a system of organization where the elements of the organization are unranked or where they possess the potential to be ranked a number of different ways.

⁶⁶ *I.e.* a group of persons or things organized into successive ranks or grades with each level subordinate to the one above and having an absolute top and bottom.

⁶⁷ *I.e.* purposeful or intentional currencies; *e.g. territorial currency, community currency; resp.* geographical and sectoral distinction of the function of the *general equivalent* of money.

⁶⁸ “As early as the 19th century, British economic historian Arnold Toynbee identified two main causes for societal collapse: 1) an excessive concentration of wealth; and 2) an elite that refused to adapt to changing circumstances. More recent explanations of economic instability include: the dangers of monopolistic dominance; Thomas Piketty’s concern about increasingly concentrated and entrenched inequality; and [John Maynard] Keynes observation of the importance of robust, cross-scale circulation of money. Lietaer specifically showed how elites used money as an instrument of hierarchical abuse and extraction via a system he called, the ‘Square of Power’ [*cf.* Ferguson, 2001, p. 284–305]. Coordinated through parliament, tax authorities, central banks, and national debt, this system used the tax contribution of citizens to fund Empire and accelerate elite wealthy by subsidizing select corporations and industries.” (Goerner [p.c.] *apud* Krause, 2021a, p. 14–15). “This ‘Square of Power’ [*alias* ‘Carrousel of Power’], as Lietaer called it, is established through the coordination of parliaments, tax authorities, national debt and central banks, with the participation of citizens in the form of regular tax contributions. Optimized by Great Britain in the 18th century, it enabled industrialization and the birth of a global empire. [...] Whatever governments accept as a means of payment for taxes automatically gives immense power to those who produce or control that particular means. [...] When governments demand tax payments in a specific medium of exchange, they automatically increase its scarcity. As a result, this medium acquires more value. An independent government can thus choose the payment instrument to which it wants to attach value. It can thus determine the type of effort its citizens must make or the behavior they must adopt”



to obtain these instruments.” (Lietaer *et al.*, 2012b, p. 219, 223 *apud* Krause, 2021a, p. 151–152). “My intellectual debt to the theoretical work of Douglass North and others on the relationship between institutions and economics will by now be obvious to students of economics [*cf.* Douglass C. North’s *Institutions, Institutional Change, and Economic Performance* in 1990]. The basic institutional framework I have in mind may be thought of as a square. To put it simply, the exigencies of war finance had led by the eighteenth century to the evolution of an optimal combination of four institutions. First, [...] there was a professional tax-gathering bureaucracy. Salaried officials proved to be better at revenue raising than local property owners or private tax ‘farmers’, who tended to retain a larger proportion of tax revenue for themselves. Second, parliamentary institutions in which taxpayers were granted a measure of political representation tended to enhance the amount of revenue a state could raise, in that taxation could be ‘traded’ for other legislation and the entire budgetary process legitimated. Third, a system of national debt allowed a state to anticipate tax revenues in the event of a sudden increase in expenditure, such as that caused by a war. The benefit of borrowing was that it allowed the costs of wars to be spread over time, thus ‘smoothing’ the necessary taxation. Finally, a central bank was required not only to manage debt issuance but also to exact seigniorage from the issuance of paper money, which the bank monopolized. Though each of these four institutions had deep historical roots, it was in Britain after the Glorious Revolution that their potential in combination was realized – though it should be made clear at once that Hanoverian reality fell some way short of the ideal type I have just described. The Excise, Parliament, the National Debt and the Bank of England nevertheless formed a kind of institutional ‘square of power’ which was superior to any alternative arrangement – notably the French system of privatized tax collection based on sales of office and tax ‘farming’, minimal representation in the form of the parliaments, a fragmented and expensive system of borrowing and no central monetary authority. It was not just its revenue-raising property that made the British ‘square’ superior to rival systems. It was also the more or less unintended side-effects it had on the private sector of the economy. To speak in general terms, the need for an efficient tax-gathering bureaucracy implied a need for a system of formal education, to ensure an adequate supply of civil servants who were both literate and numerate. Secondly, the existence of a parliament almost certainly enhanced the quality of legislation in the sphere of private property rights. Thirdly, the development of a sophisticated system of government borrowing through a funded national debt encouraged financial innovation in the private sector. Far from ‘crowding out’ private investment, high levels of government bond issuance widened and deepened the capital market, creating new opportunities for the issuance and trading of corporate bonds and equities, especially in peacetime when the state no longer needed to borrow. Finally, a central bank with a monopoly over note-issue and the government’s current account was also capable of developing functions—such as manager of the exchange rate or lender of last resort—which tended to stabilize the credit system as a whole by reducing the risk of financial crises or banking panics. In these ways, institutions that initially existed to serve the state by financing war also fostered the development of the economy as a whole. Better secondary and higher education, the rule of law (especially with respect to property), the expansion of financial markets and the stabilization of the credit system: these were vital institutional preconditions for the industrial revolution.” (Ferguson, 2001, p. 284–305 *apud* Lietaer *et al.*, 2012b, p. 219).

⁶⁹ *I.e.* commercial banks that take deposits from the public are required to hold a proportion of their deposit liabilities in liquid assets as a reserve and are at liberty to lend the remainder to borrowers since commercial bank reserves are held as cash in the commercial bank or as balances in the commercial bank’s account at the central bank—which determine a minimum amount of reserve requirement to ensure bank solvency to meet withdrawal demand as well as a capital adequacy ratio to regulate credit issuance and inflation rate by pursuing an interest-rate target to control money supply.

⁷⁰ *I.e.* fractional-reserve banking permits to grow money supply beyond the amount of the underlying base money originally created by the central bank thanks to credit issuance from commercial bank—so central banks usually pursue an interest-rate target to control money supply via credit issuance and inflation rate.

⁷¹ *Alias* ‘too connected to fail’; *i.e.* systematically important financial institutions whose failure might trigger a financial crisis.

⁷² *I.e.* market economy based on individualism and private property in the means of production; *vs* feudalism or feudal system of holding of land in exchange for service or labour; mercantilism or nationalist economic policy to maximize the exports and minimize the imports for an economy by accumulating monetary reserves by a positive balance of trade of finished goods; *cf.* Adam SMITH’s *The Theory of Moral Sentiments* in 1759 and *An Inquiry into the Nature and Causes of the Wealth of Nations* in 1776.

⁷³ *Alias* reserve army of labour, industrial reserve army, relative surplus population; *i.e.* unemployed and underemployed in capitalist society; *cp.* structural unemployment or skills gap due to technological changes making workers’ skills obsolete and causing migration or re-training; frictional unemployment or search unemployment due to gaps in employment when transferring or leaving a job for another; cyclical unemployment or deficient-demand unemployment when not enough aggregate demand to provide jobs for everyone liked to buy business cycle ups and downs ; *cf.* Friedrich Engels’s *The Condition of the Working Class in England* in 1845; Karl Marx’s *Capital: A Critique of Political Economy* [de: *Das Kapital. Kritik der politischen Ökonomie*] (vol. 1, chap. 25) in 1867–1894.

⁷⁴ *Alias* Age of Reason; *i.e.* intellectual and philosophical movement that dominated the world of ideas in Europe during the 17th to 18th centuries; incl. value of human happiness, pursuit of knowledge obtained by means of reason, evidence of the senses, ideals; *e.g.* liberty, progress, toleration, fraternity, constitutional government, separation of church and state.

⁷⁵ *Alias* few ruler [el: *ὀλιγος, oligos; ἄρχω, arkho*]; *i.e.* rule by few as power rests with a small number of people; *e.g.* nobility, fame, wealth, education, corporate, religious, political, military control.

⁷⁶ *Alias* wealth power [el: *πλοῦτος, ploutos; κράτος, kratos*]; *i.e.* society that is ruled or controlled by people of great wealth or income.

⁷⁷ *Alias* stealer power [el: κλέπτω, κλέπτω; κράτος, krátos]; *i.e.* corrupt government leaders using political power to expropriate the wealth of the people and land they govern—by embezzling or misappropriating government funds at the expense of the wider population.

⁷⁸ *Alias* establishment [ru: олигарх, oligarch; интеллигенция, intelligentsia; номенклатура, nomenklatura; аппаратчик, apparatchik]; *e.g.* globalist oligarchy without borders, sociable elite without culture, aristocracy without nobility, bourgeoisie without scruples, *etc.*.

⁷⁹ *Alias* money [he: ממון, mammon] as the personification of one of the seven princes of Hell; *i.e.* devotion to the worship of money with immoderate greed, the service of wealth, the pursuit of material wealth, the spirit of worldliness.

⁸⁰ *I.e.* countries reducing reliance on the United States dollar (USD) as a reserve currency, medium of exchange or as a unit of account.

⁸¹ *Alias* petrocurrency; *resp.* United States dollars paid to trade surplus of oil-producing nations through petrodollar recycling; domestic currencies of oil-producing nations which tend to rise in value against other currencies when the price of oil rises and fall when it falls; pricing of oil in United States dollars used as a unit of account to price oil in the international market.

⁸² *Resp.* Petro coin (₶) *alias* New Digital bolívar pilot launched by the Central Bank of Venezuela from 20 February 2018 to 15 January 2024 before being defined as legal tender backed by the country's oil and mineral reserves on 20 August 2018; DCash (D\$) *alias* Digital Eastern Caribbean dollar pilot launched by the Eastern Caribbean Central Bank on 12 March 2019; Digital Renminbi (e¥) *alias* China's Digital Currency Electronic Payment pilot launched by the People's Bank of China on 14 August 2020; Sand dollar (S\$) *alias* Digital Bahamian dollar pilot launched by the Central Bank of The Bahamas on 20 October 2020; eNaira (e₦) *alias* Electronic Naira pilot launched by the Central Bank of Nigeria on 25 October 2021; Jamaica Digital Exchange (JamDex) *alias* Jamaica's Central Bank Digital Currency pilot launched by the Bank of Jamaica on 11 July 2022; Digital Rupee (e₹) *alias* India's Central Bank Digital Currency pilot launched by the Reserve Bank of India on 01 November 2022; Digital Ruble (e₽) *alias* Russia's Central Bank Digital Currency pilot launched by the Central Bank of the Russian Federation on 15 August 2023; ; Zimbabwe Gold (ZiG) *alias* Zimbabwe's Central Bank Digital Currency tied to gold pilot launched by the Reserve Bank of Zimbabwe on 05 October 2023 before being defined as legal tender backed by gold with one unit for one milligram of gold at 99% fineness on 08 April 2024.

⁸³ *Alias* Big Four; *i.e.* colloquial name given to the four main central banks internationally; *viz.* Bank of England as the central bank of the United Kingdom, Federal Reserve System as the central bank of the United States of America, European Central Bank as the central bank of the European Union and Eurozone, Bank of Japan [ja: 日本銀行, Nippon Ginkō] as the central bank of Japan.

⁸⁴ *Alias* Dantean; *resp.* style characterized by a formal, elevated tone, and somber focus; grandiose in horror, terrifying as hell; *cf.* Dante Alighieri's *Divine Comedy* [it: *Divina Commedia*] (Alighieri, 1308–1321).

⁸⁵ *Resp.* pertaining to Prometheus as a demigod in Greek mythology who created mortals from clay and gave them fire and for which he was punished by Zeus; daringly original and boldly inventive or creative; of enormous size or extraordinary strength; rebelling against a larger order and defying traditional moral categories as a persecuted but dauntless Romantic literary hero.

⁸⁶ *I.e.* transhuman ideology and movement which seeks to develop and make available technologies that eliminate aging, enable immortality and greatly enhance human intellectual, physical, and psychological capacities.

⁸⁷ *I.e.* ideal aspirations of mankind as a result of a transfiguration of the Cosmos in which man must be the principal actor; *vs* means of social transformation or spiritual development of the personality; *e.g.* thirst for immortality.

⁸⁸ *I.e.* system that perceives its environment and takes actions that maximize its chance of achieving its goals; *viz.* ability of machines to perform learning and problem-solving tasks thanks to complex algorithm rather than simple equations; *resp.* algorithm as a precise chain of instructions with a well-defined order transformed into a program that can be executed by a computer using a programming language; machine learning as mathematical and statistical approaches enabling computers to learn to perform certain predictive tasks; deep learning as an automatic self-learning to make predictions based on a neural network using previously recorded data.

⁸⁹ *I.e.* decision making and representative and non-candidate election by consensus, consent, or two-third of majority.

⁹⁰ *I.e.* based on consent without consensus, unity without unanimity, discussion and active listening, circle organization, double-linking, elections by consent.

⁹¹ *I.e.* inclusive, participatory, cooperative, egalitarian, solution-oriented, preservation of *status quo*, rewards the least accommodating, group think, time-consuming.

⁹² *I.e.* inflexibility, costly, tyranny of the majority.

⁹³ *I.e.* top-down predict-and-control, inflexible to change, misses important perspectives and information, ill-equipped to complex environment.

⁹⁴ *Cf.* John Croft and Vivienne Elanta's Dragon Dreaming, Jean-François Noubel's Collective Intelligence Research Institute, Arthur Brock and Eric Harris-Braun's MetaCurrency Project, Olivier Pastor and Laurent van Ditzhuyzen and Lydia Pizzoglio's Université du Nous, Christophe Cesetti and Sybille Saint-Giron's Valiant Activators of Wealth, Bertrand Séné's Citizens' Convention for Democracy and Money, Nicolas Briet's Democracy Laboratory; *cp.* French Economic and Social and Environmental Council, European Union Economic and Social Committee, United Nations Economic and Social Council.

⁹⁵ *I.e.* method of decentralized management and organizational governance—claiming to distribute authority and decision-making through a holarchy of self-organizing teams rather than being vested in a management hierarchy.

⁹⁶ *I.e.* theory of governance that seeks to create psychologically safe environments and productive organizations—by drawing on the use of consent, rather than majority voting, in discussion and decision-making by people who have a shared goal or work process.



⁹⁷ *I.e.* economic goods or political power are vested in individual people based on ability and talent—rather than wealth or social class.

⁹⁸ *I.e.* a social hierarchy in which the mediocre prevails.

⁹⁹ *I.e.* a system of government where the least capable to lead are elected by the least capable of producing—and where the members of society least likely to sustain themselves or succeed are rewarded with goods and services paid for by the confiscated wealth of a diminishing number of producers.

¹⁰⁰ *I.e.* government by one person.

¹⁰¹ *Alias* few ruler [el: ὀλίγος, *olígos*; ἄρχω, *arkho*]; *i.e.* rule by few as power rests with a small number of people; *e.g.* nobility, fame, wealth, education, corporate, religious, political, military control.

¹⁰² *Alias* wealth power [el: πλοῦτος, *plóutos*; κράτος, *krátos*]; *i.e.* society that is ruled or controlled by people of great wealth or income.

¹⁰³ *Alias* stealer power [el: κλέπτω, *kléptō*; κράτος, *krátos*]; *i.e.* corrupt government leaders using political power to expropriate the wealth of the people and land they govern—by embezzling or misappropriating government funds at the expense of the wider population.

¹⁰⁴ *I.e.* a system of organization where the elements of the organization are unranked or where they possess the potential to be ranked a number of different ways.

¹⁰⁵ *I.e.* a connection between holons—where a holon is both a part and a whole.

¹⁰⁶ *I.e.* a group of persons or things organized into successive ranks or grades with each level subordinate to the one above and having an absolute top and bottom.

¹⁰⁷ Helmut Rödiger and Hans Timm—as members of the Physiocratic League and followers of Silvio Gesell’s ‘free economy’ [de: *Freiwirtschaft*]—founded the Wära circulation agency in Erfurt in Germany in October 1929—almost coinciding with the Great Crash of Black Tuesday on 29 October 1929 in the stock market of Wall Street and the Great Depression (1929–1939) that followed. In 1931, over 1’000 businesses from all over the German Reich were members of the agency—with Wära exchange stations opened in several cities such as Deggendorf and Schwanenkirchen. However, the finance ministry of the Reich forbade the Wära experiment on 30 October 1931 after 24 months only.

¹⁰⁸ The ‘Miracle of Wörgl’ in Tyrol in Austria during the Great Depression (1929–1939) started 31 July 1932 with the issuing of a local currency known as ‘certified compensation bills’, ‘stamp scrip’ as a substitute of legal tender, or ‘free money’ [de: *Freigeld*] unit—according to the application of the monetary theories for ‘free economy’ [de: *Freiwirtschaft*] alongside ‘free land’ [de: *Freiland*] and ‘free trade’ [de: *Freihandel*] of the economist Silvio Gesell by the town’s then-mayor Michael Unterguggenberger and published in 1890 by the Hungarian-Austrian economist Theodor Hertzka in his novel *Freiland - A Social Anticipation* [de: *Freiland - ein soziales Zukunftsbild*]. The Wörgl experiment resulted in a growth in employment and meant that local government projects could all be completed (*e.g.* new houses, a reservoir, a ski jump, a bridge). Despite attracting great interest at the time (incl. French Prime Minister Edouard Daladier, economist Irving Fisher), it was terminated by Austria’s central bank [de: *Oesterreichische Nationalbank*] on 01 September 1933 after 13 months only.

¹⁰⁹ Swiss Economic Circle [de: *Wirtschaftsring-Genossenschaft*] founded in 1934 in Basel in Switzerland with 16 members by businessmen Werner Zimmermann and Paul Enz—with a banking licence granted in 1936—as a result of currency shortages and global financial instability during the Great Depression (1929–1939) and influenced by German Georgist economist Silvio Gesell (1862–1930)—who proposed a system of stamped money in order to accelerate monetary circulation and to free money from interest thanks to demurrage until 1948—before shifting to monetary interest in 1952. The currency code of WIR franc is CHW as designated by ISO 4217. “In December 2010, WIR Bank had a dynamic turnover of 1’613 million Swiss francs, equivalent to 0.26% of the 608’830 million Swiss francs nominal Gross Domestic Product at current prices, in a network of about 60’703 small and medium-sized enterprises, with a static balance of client credits of 624 million Swiss francs, equivalent to 0.08% of the 754’354 million Swiss francs of global money supply or monetary aggregate M3, and a velocity of circulation of 2.584, which is the turnover divided by the balance.” (Place *et al.*, 2018b, p. 87). “It offers additional sources of credit and liquidity at times of tight traditional bank credit, reserve credit with countercyclical effects to the overall monetary supply for macroeconomic stability, and bonds between local companies to preserve the society’s economic fabric.” (Kalinowski, 2011, p. 2 *apud* Place *et al.*, 2018b, p. 87).

¹¹⁰ *I.e.* around 100 Transaction-based or time-based stamp scrips were issued in the United States of America (1931–1935) during the Great Depression (1929–1939) (Warner, 2010; Gatch, 2012; Elvins, 2012). “Two types of innovative self-liquidating community currencies emerged. Transactions stamp scrip addressed the cash shortage problem. Each time the scrip was used a special stamp, purchased from the issuer of the scrip, had to be affixed to the scrip certificate. When the scrip had changed hands a sufficient number of times, there would be enough money raised from the sale of stamps to redeem the scrip at par. For example, a one-dollar certificate requiring fifty transactions would pay for itself if each stamp was sold at two cents. Time-based stamp scrip, by contrast, required that a stamp be affixed to the scrip certificate every week (or fortnight, or month), regardless as to whether it had been used (or how many times it had been used) in the interim. There was also a hybrid version that combined the two: a stamp had to be affixed for each transaction, but if the scrip were not used by a the specified date, a stamp had to be stuck on to maintain its validity.” (Warner, 2010, p. 30–31). “Between 1931 and 1935 hundreds of experiments in local currency or ‘scrip’ flourished in the United States as attempts to grapple with various aspects of the economic crisis.” (Gatch, 2012, p. 23). “Cities and towns across the United States attempted to encourage consumption and alleviate unemployment by issuing their own forms of money. Communities as diverse as Chicago, Atlanta, Detroit, and tiny Hawarden, Iowa turned to scrip as a solution to the crisis. In some cases scrip was initiated by municipal governments or city councils,

while in others private citizens, merchants' associations, or the unemployed themselves formed cooperatives to put new types of money into action. There was no single pattern to the use of alternative currency in America: stamp scrip, barter scrip, auction scrip, and tax anticipation warrants were all put into circulation in different parts of the country." (Elvins, 2012).

¹¹¹ *Resp.* 12 then 83 then 85 in North America; 9 then 36 then 46 in Europe; 10 then 20 then 23 in Asia/Pacific; 5 then 7 then 7 in South America; 3 then 3 then 3 in Central America; 1 then 1 then 1 in Africa; *viz.* 0 then 62 then 58 Liberty Dollar [Local Currencies]; 16 then 16 then 20 Local Exchange Trading System [Mutual Exchanges]; 0 then 17 then 18 of Mutual Credit System [Mutual Exchanges]; 6 then 11 then 12 of Voucher Currency System [Local Currencies]; 5 then 6 then 8 of HOURS system [Local Currencies]; 1 then 7 then 7 of Community Barter System [Barter Markets]; 2 then 7 then 7 of REGIO System [Local Currencies]; 0 then 0 then 4 of Commercial Exchange System [Barter Markets]; 0 then 0 then 4 of Local Employment Trading System [Mutual Exchanges]; 0 then 6 then 4 of Fiat Currency System [Local Currencies]; 1 then 3 then 3 of Community Way [Local Currencies]; 3 then 3 then 3 of Consumer Commerce Circuit [Local Currencies]; 2 then 0 then 3 of Mutual Credit Hybrid [Mutual Exchanges]; 0 then 0 then 3 of Time Bank System [Service Credits]; 1 then 0 then 0 of Marketplace Currency [Barter Markets]; 1 then 0 then 0 of Traditional/Cultural System [Local Currencies]; 1 then 0 then 0 of Valuable Local Currency [Local Currencies]; 0 then 11 then 11 of others [others]—out of 40 then 150 then 165 in total in 2005 then 2006 then 2007 (DeMeulenaere *et al.*, 2006, p. 9–11 *apud* DeMeulenaere, 2007, p. 25–27 *apud* DeMeulenaere, 2008, p. 4–6).

¹¹² *Resp.* 320 in Europe (136 in Germany, 80 in Great Britain and 1 in Northern Ireland, 26 in France, 17 in Austria, 15 in the Netherlands, 14 in Italy, 12 in Switzerland, 4 in Hungary, 3 in Spain, 3 in Sweden, 2 in Belgium, 2 in Czechia, 2 in Norway, 1 in Finland, 1 in Ireland, 1 in Slovakia); 96 in South America (76 in Argentina, 18 in Brazil, 1 in Peru, 1 in Uruguay); 84 in Asia (61 in Japan, 6 in China, 6 in Korea, 5 in Thailand, 3 in Indonesia, 2 in Hong Kong, 1 in Taiwan); 79 in North America (61 in the United States of America, 13 in Canada, 2 in El Salvador, 2 in Mexico, 1 in Honduras.); 18 in Oceania (8 in Australia, 8 in New Zealand, 2 in Papua New Guinea); 2 in Africa (1 in Senegal, 1 in South Africa)—out of 599 in total on 27 December 2010; *viz.* 154 of Local Exchange Trading System [Mutual Exchanges]; 82 of Tauschringe [Barter Markets]; 73 of Trueque [Barter Markets]; 68 of Time Bank [Service Credits]; 41 of Regiogelder [Local Currencies]; 37 of Système d'Échange Local [Mutual Exchanges]; 32 of HOURS [Local Currencies]; 31 Barter Systems [Barter Markets]; 28 of Seniorengenossenschaft [Barter Markets]; 21 of WIR Bank [Local Currencies]; 19 of Scrip Currency [Local Currencies]; 16 of Banche del Tempo [Service Credits]; 13 of WAT [others]; 10 of Wära [Local Currencies]; 7 of Eco-Money [others]; 6 of Bancos del Tiempo [Service Credits]; 5 of Free money [Local Currencies]; 5 of Fureai Kippu [others]; 5 of Labour note [Local Currencies]; 4 of Constant [others]; 3 of Banco Palmas [Local Currencies]; 3 of Bia Kud Chum [Local Currencies]; 3 of Earth day money [others]; 3 of Hansatsu [others]; 3 of Q-project [others]; 3 of Talentum [Mutual Exchanges]; 3 of Tauschzentralen [Barter Markets]; 2 of Green Dollars [Local Currencies]; 2 of Tianguis Tlaloc [Local Currencies]; 1 of Double Triangle Scheme [Local Currencies]; 1 Friendly Favors [others]; 1 Jardin d'Échange Universel [Mutual Exchanges]—out of 685 in total on 27 December 2010 (Schroeder *et al.*, 2010, p. 216–222 *apud* Schroeder *et al.*, 2011, p. 35, 36)

¹¹³ *Resp.* approximately 1'350 in Europe (350 in France, 300 in Germany, 270 in the United Kingdom, 230 in Italy, 130 in other European countries, 100 in Netherlands, 70 in Austria and Switzerland); 800 in Asia (Japan); 200 in North America (United States of America and Canada); 150 in Oceania (Australia and New Zealand); 100 in the rest of world—out of 2'600 in total in 2007 (Lietaer and Kennedy, 2004 *apud* Lietaer and Kennedy, 2008d, p. 83 *apud* Lietaer and Kennedy, 2010a, p. 78 *apud* Lietaer *et al.*, 2012a, p. 75–78).

¹¹⁴ *Resp.* 68.3% in Europe (54.1% of Mutual Exchanges, 44.4% of Service Credits, 1.5% of Local Currencies); 16.6% in Asia (68.7% of Service Credits, 23.4% of Local Currencies, 27.9% of Mutual Exchanges); 9.8% in North America (79.3% of Service Credits, 77.7% of Mutual Exchanges, 4.5% of Local Currencies, 4.5% of Barter Markets); 2.7% in South America (64.5% of Local Currencies, 35.5% of Barter Markets); 1.7% in Australia and New Zealand (57.9% of Mutual Exchanges, 42.1% of Service Credits); 0.9% in Africa (100.0% of Mutual Exchanges); *viz.* 46.5% of Mutual Exchanges [1'746]; 45.7% of Service Credits [1'716]; 6.5% of Local Currencies [242]; 1.3% of Barter Markets [47]—out of 3'418 [3'752] in total in 2011 (Seyfang and Longhurst, 2013, p. 69, 72).

¹¹⁵ *Resp.* 53% in Europe, 24% in North America, 8% in South America, 11% in Asia, 3% in Oceania, 1% in Africa—out of 78 scientific papers published between 2009 and 2016; *viz.* 16 plus 10 of Local Exchange Trading Systems [Mutual Exchanges]; 12 plus 7 of Time Banks [Service Credits]; 32 plus 19 of Local currencies [Local Currencies]; 13 plus 3 of Municipal/Regional currencies [Local Currencies]; 2 plus 2 of Digital global currencies [others]; 2 plus 2 of Others [others]; 15 plus 15 of Non-applicable [others]; 2 plus 2 of All [others]—out of 94 of single and multiple typology of cases plus 60 of single case study published between 2009 and 2016 (Moreira Alves and Ferreira dos Santos, 2018, p. 6, 8).

¹¹⁶ *I.e.* 80 existing currency systems studied by each research article on average (sum: 11'801, min: 1, max: 2'082); *resp.* 89 in Europe; 55 in North America; 32 in South America; 29 in Asia; 19 in Oceania; 16 in Africa; 17 in all continents—out of 257 in total in 2022; *viz.* 116 of asset-based currency [Local Currencies]; 84 of mutual credit [Mutual Exchanges]; 58 of time credit [Service Credits]; 35 of time-based currency [Local Currencies]; 25 of barter [Barter Markets]; 22 of bank currency or WIR equivalent [Local Currencies]; 19 of cryptographic currency [Local Currencies]; 8 of retirement currency [others]; 5 of multiservice currency [others]; 4 of energy currency [others]; 3 of eco-friendly currency [others]; 3 of fiat currency [Local Currencies]; 3 of integrated currency [others]; 2 of commodity currency [Local Currencies]; 1 of art money [others]; 1 of dividend bonus voucher [Local Currencies]; 1 of knowledge currency [others]; 1 of peer-to-peer currency [Mutual Exchanges]—out of 391 in total in 2022 (Place, In Press).

¹¹⁷ *Resp.* 66 in 2013; 506 in 2014; 562 in 2015; 644 in 2016; 1'335 in 2017; 1'658 on March 2018; 2'817 on November 2019; 4'501 on February 2021; 6'044 on July 2021; 5'840 on August 2021; 6'826 on October 2021; 7'557 on November 2021; 9'929 on January 2022; 10'397 on February 2022; 9'310 on November 2022; 8'685 on February 2023; 9'321 on August 2023; 8'866 on December 2023; 9'024 on January 2024—for the *Number of cryptocurrencies worldwide from 2013 to January 2024* (Best, 2024).

¹¹⁸ “[T]o be truly scientific, economics had to make room, within the notion of rationality, for existential as well as critical rationality. Integral Economics hence must aim to understand: The economic system’s existential performance: how do agents experience their deeper existential dimensions within the system? The economic system’s critical performance: to what extent does the system allow the agents within it to develop, and act upon, critical abilities? [...] [T]he time and resources available to really develop an integral perspective decrease: The methodologist can devote all her time and resources to studying and understanding the AQAL model. One of the economist’s main tasks (besides pure comprehension) is to contribute to immediate macro- and micro-management of economic units, so she has to attempt to be impersonally objective. As to the economic agents themselves, they simply do not have the time or energy—so the argument goes—to do much else apart from immediate, automatic, and adaptive behavior.” (Arnsperger, 2010b, p. 195–203 *apud* Arnsperger, 2010a, p. 17, 21).

¹¹⁹ “[I]n a genuinely Integral approach to economic knowledge, the economic methodologists will analyze the economists’ awareness of economic reality (including the reality of the economics profession) using methodologies from zones 2, 4, 6, and 8; the economists will analyze their own awareness of economic reality (including the reality of the economics profession) using methodologies from zones 1, 3, 5, and 7, and they will analyze the economic agents’ awareness of economic reality using methodologies from zones 2, 4, 6, and 8. [...] The economic methodologist studies the economics profession, as well as individual economists [...]. The economist studies himself, as well as the profession in which he lives day in and day out [...]. The economist studies the whole set of economic agents whose interactions produce, maintain, and change the economic reality whose structure he seeks to understand.” (Arnsperger, 2010b, p. 233–240 *apud* Arnsperger, 2010a, p. 27–29).

¹²⁰ “Hence, I began a long and profound journey of personal development and search for well-being as an ecological then spiritual ‘Cultural Creative’ of ‘Integral Culture’ (Ray and Anderson, 2000). [...] This cosmopolitan personal enrichment [...] and this interdisciplinary background ranging from the formal and natural sciences to the social and paranormal sciences have provided the ideal groundwork for becoming an Integral practitioner (Bhaskar *et al.*, 2015).” (Place, 2021a, p. 38).

¹²¹ “The field of community economics is diverse, and several people excited me about its possibilities; Leander Bindewald, who saved me from a university without a library; Jem Bendell, who inspired me to seek the research direction of rural community currencies; and Christophe Place—who persuaded me by example that I was not the only living integral thinker in the field and that the more eclectic (philosophical) approach was worthy.” (Petz, 2023, p. 9). “It is a mistake to think about integralists, by merely looking at their work in the academy—where it is found (Esbjörn-Hargens and Forman, 2008)—or to search out integral scientists only based on peer-reviewed publications. The inhabitants of the ivory towers of academia share much with the yogi on retreat in an ashram or the off-grid yurt of a neo-nomad regarding developmental thinking and content production. To deeply follow an integral philosopher’s approach into their orchard of thoughts, we must live experientially in varied ways (see Place *et al.*, 2021b for his use of meditation and fasting).” (Petz, 2023, p. 151).

¹²² *Resp.* internal viability (improving project implementations in regard to operational, structural and organizational aspects); internal efficiency (improving uptake by users and reduce overheads and transaction costs); external viability (attracting funders and support and widen the recognition); external credibility (proving impact and efficiency to international organizations and the public sector).

¹²³ *Resp.* *Monnaie Léman* in Greater Geneva in France and Switzerland with the *integral quadrants* and *sustainability pillars* categorization of the ‘impact assessment matrix’ (IAM) (Place, 2015a *apud* Place, 2018a; Bertschy, 2023); *Le Val’heureux* in Liège, *Troeven* in Turnhout, *L’Accorderie* in Mons, *RES* in Belgium with the *sustainability pillars* categorization of the ‘impact assessment matrix’ (IAM) (Mossay, 2018); *Le Florain* in Nancy, *Le Cairn* in Grenoble, *La Gonette* in Lyon in France, *GEM Going the Extra Mile Project* in South Africa with the *integral quadrants* and *sustainability pillars* categorization of the ‘impact assessment matrix’ (Langeder, 2018); *Lake District Pound* in England in United Kingdom with the *integral quadrants* and *sustainability pillars* categorization of the ‘impact assessment matrix’ (IAM) (Place, Forthcoming).

¹²⁴ “These proposals can be divided into two groups, focusing respectively on the standardization of evaluation methods and the use of a methodology capable of encompassing the multiple dimensions of this highly complex subject. [...] This breakdown of the monetary phenomenon into various indicators can also be seen in the second group of proposals, which advocates the application of an integral method of analysis using mixed methods with the aim of fully understanding the subject under study. [fr: *Ces propositions peuvent être divisées en deux groupes se focalisant respectivement sur l’uniformisation des méthodes d’évaluation ainsi que sur l’utilisation d’une méthodologie capable d’englober les multiples dimensions de cette thématique caractérisée par une complexité notable. [...] Cette décomposition du phénomène monétaire en divers indicateurs s’observe également au sein de la deuxième frange des propositions qui défend l’application d’une méthode d’analyse intégrale mobilisant des méthodes mixtes avec l’intention de cerner pleinement l’objet étudié.*]” (Bertschy, 2023, p. 42–43). “Therefore, we encourage the development of a standardized assessment tool that has to be ‘balanced, coherent and comparable across different currency models on one hand, and sufficiently flexible to mirror the specificities of the initiative on the other hand’ (Place and Bindewald, 2013a, p. 7 *apud* Place and Bindewald, 2015b, p. 153).” (Hudon and Michel, 2015, p. 168 *apud* Bertschy, 2023, p. 42).

¹²⁵ “Because Money is interdisciplinary by nature, the impact assessment and improvement of a currency needs to be holistic—meaning beyond macro/micro-economics—on the form and substance (method and theory) or on the style and content (format and findings). Therefore, using an integrative methodological framework—called Integral Methodological Pluralism—becomes a matter of course as the impact of a currency is plural; neither purely empirical, nor exclusively economical [...].” (Place *et al.*, 2021b, p. 46–47 *apud* Bertschy, 2023, p. 43).

¹²⁶ “The use of AQAL is our best chance to be able to use a whole spectrum of methodological tools that will gradually push our economies on an evolutionary-developmental path toward higher existential and critical performance.” (Arnsperger, 2010b *apud* Arnsperger, 2010a, p. 18 *apud* Place *et al.*, 2021b, p. 36 *apud* Bertschy, 2023, p. 43).

¹²⁷ “It is therefore clear that the multiplication of methodological lenses should make it possible to observe the full range of impacts associated with [Local Complementary Currencies] LCCs, and more broadly with the economy, and thus to get away from the limitations induced by a strictly positivist analysis that neglects many facets of reality [...] Limited to an analysis of quantitative indicators, this last example of a study illustrates in depth the influence of methodological choices on the nature of the results obtained, as put forward in this section focusing on the evaluation of the impact of [Local Complementary Currency] LLC projects. [fr: *On comprend ainsi que la multiplication des lentilles méthodologiques doit permettre d’observer la globalité des impacts associés aux [Monnaies Locales Complémentaires] MLC, et plus largement à l’économie, et ainsi de s’extraire de la limitation induite par une analyse strictement positiviste qui néglige de nombreuses facettes de la réalité. [...] Limitée à une analyse sur des indicateurs quantitatifs, ce dernier exemple d’étude illustre profondément l’influence des choix méthodologiques sur la nature des résultats obtenus tel qu’avancé dans cette partie focalisée sur l’évaluation de l’impact des projets de [Monnaie Locale Complémentaire] MLC.*]” (Matti and Zhou, 2022, p. 7 *apud* Bertschy, 2023, p. 43–44).

¹²⁸ “Finally, a bona fide economist who takes his epistemology seriously! I have been looking for someone like this for a long time.” (Lietaer, 2010c, p. 194).

¹²⁹ *E.g.* game theory, complexity, institutionalism, neuroeconomics.

¹³⁰ “[W]e are walking together toward a social science freed of the crippling divides between rigor and inspiration, between intellect and spirit, between explanation and meaning, between science and spirituality.” (Arnsperger [*agnit.*] *apud* Arnsperger, 2010b, p. xxii).

¹³¹ “Economics is basically defined as ‘the social science that studies the production, distribution, and consumption of goods and services.’ What is not included in that definition is ‘from a specific and often implicit worldview.’ That is, the typical economist has a particular view of the world, a view that includes values, practices, needs, and motivations, among other parameters. Central to the most common Western view is the assumption of what has been called scientific materialism, the idea that what is fundamentally real is that, and only that, which is revealed by the methods of science—objective, empirical, sensorimotor. These are the same assumptions that have proven so valuable in the other sciences, from physics to chemistry to sociology.” (Wilber [*praef.*] *apud* Arnsperger, 2010b, p. xvii).

¹³² *Resp.* ‘integral research’ approach, ‘mixed methods’ research, and ‘creative research’ methods.

¹³³ *Viz.* the history of history of writing; *i.e.* a sub-discipline of historiography which is the study of the methods of historians in developing history as an academic discipline—and any body of historical work on a particular subject; *cf.* Hayden White’s *Metahistory: The Historical Imagination in Nineteenth-century Europe* in 1973.

¹³⁴ *Cf.* Hindu mantra ‘I am He/That’ [*soham or sohum, श्री ह्रीं* in Sanskrit]. “¹⁴[...] I am that I am [...] I am hath sent me unto you.” — Moses the Prophet (*ca.* 1391–1271 BC), from *Old Testament: Book of Exodus (cap. 3, lin. 14)*.

¹³⁵ “Do what thou wilt shall be the whole of the Law.” — Edward Alexander *alias* Alester Crowley (1875–1947), from *The Book of the Law* [la: *Liber AL vel Legis*] (1909).

¹³⁶ *Alias* ‘it is forbidden to forbid!’ [fr: *il est interdit d’interdire !*]; *i.e.* a French aphorism first used on a Radio Television Luxembourg [fr. RTL *Radio Télévision Luxembourg*] broadcast by Jean YANNE in the form of a mocking joke—which later became one of the slogans of the French Protests of 1968 *alias* May 1968.

¹³⁷ *I.e.* unshakable belief characterized by consistently inflated feelings of personal ability, privilege, or infallibility; *e.g.* dogmatic personal opinions as unquestionably correct; no regard for the conventions and demands of society but request special consideration or privileges.

¹³⁸ *Alias* God-like actions; *i.e.* assuming powers of decision, intervention, or control metaphorically reserved to God; *e.g.* euthanasia, abortion, biotechnology, synthetic biology, *in vitro* fertilization.

¹³⁹ *Alias* corporocracy; *i.e.* economic, political and judicial system controlled by business corporations or corporate interests through lobbying; *e.g.* private commercial bank bailouts, golden parachute, free trade agreements, World Bank, International Monetary Fund, *etc.*

¹⁴⁰ *Alias* money [he: *מַמּוֹן, mammon*] as the personification of one of the seven princes of Hell; *i.e.* devotion to the worship of money with immoderate greed, the service of wealth, the pursuit of material wealth, the spirit of worldliness.

¹⁴¹ *I.e.* a close relationship between the parasite who lives on the host by causing it some harm—and adapted structurally to this way of life.

¹⁴² *I.e.* victim–persecutor–rescuer drama triangle of destructive human interaction occurring among people in conflict as a social model proposed by the transactional analysis of Stephen B. Karpman (Karpman, 2014)—with the roles of players of the blameless victim rebelling in front of the right persecutor or torturer and subjected to the good saviour or rescuer that create separation, anxiety, blame and guilt by becoming judge, juror and torturer in turn without being able to cauterize the open wound; *vs* creator–challenger–supporter compassion triangle of constructive human interaction by taking responsibility with self-kindness as a vulnerable victim or creator and receiving the apology with respect of common humanity from the powerful persecutor or challenger thanks to the recognition and solidarity from the empathetic saviour or supporter using active listening and mindfulness to create oneness, aliveness, authenticity and sympathy.

¹⁴³ “The Communists disdain to conceal their views and aims. They openly declare that their ends can be attained only by the forcible overthrow of all existing social conditions. Let the ruling classes tremble at a Communistic revolution. The proletarians have nothing to lose but their chains. They have a world to win. Proletarians of all countries, unite! [de: *Proletarier aller Länder, vereinigt Euch!*]” — Karl Marx (1818–1883), from *The Communist Manifesto* [de: *Das Kommunistische Manifest*] (1848).



¹⁴⁴ *Resp.* High-Net-Worth Individual (HNWI) holding financial investible assets (stocks and bonds excluding primary residence) exceeding USD 1 million; Very-High-Net-Worth Individual (VHNWI) exceeding USD 5 million; Ultra-High-Net-Worth Individual (UHNWI) exceeding USD 30 million; Billionaires exceeding USD 1 billion.

¹⁴⁵ *I.e.* demand-driven stimulus plan [fr: *plan de relance*] introduced by Prime Minister Pierre Mauroy in 1981—shortly after François Mitterrand’s victory in the 1981 French presidential election while France is mired in stagflation like other developed countries since first oil crisis of 1973—with a truly rigorous wage policy taken up by Jacques Delors and defined by the National Council of French Employers [fr: *Conseil National du Patronat Français*]: eliminate or limit as far as possible the indexation of wages to inflation, individualize salaries according to individual merit, link wage trends to internal company parameters such as profit-sharing or incentives.

¹⁴⁶ *I.e.* members of the Organization of Arab Petroleum Exporting Countries (OAPEC) proclaimed an oil embargo to target at nations that had supported Israel during the Fourth Arab–Israeli War (1973); *viz.* Canada, Japan, the Netherlands, the United Kingdom, and the United States of America.

¹⁴⁷ *I.e.* the State must allow the wealthiest people to become richer so that they can reinject the income they earn into the economic system through savings or consumption—it would hypothetically contribute to increasing economic activity and employment in the rest of society to a greater extent than if the income thus invested had been deducted and redistributed via taxes and social security contributions.

¹⁴⁸ *I.e.* economic growth could be most effectively fostered by lowering taxes, decreasing regulation, and allowing free trade—since consumers will benefit from greater supplies of goods and services at lower prices, and employment will increase.

¹⁴⁹ *Alias* bubble-up economics; *i.e.* final demand among a broad population can stimulate national income in an economy—as policies that directly benefit lower income individuals will boost the income of society as a whole.

¹⁵⁰ *I.e.* economic growth and full employment are most effectively created by high demand for products and services—because high consumer spending leads to business expansion and resulting in greater employment opportunities creating a multiplier effect that further stimulates aggregate demand leading to greater economic growth.

¹⁵¹ *I.e.* a bee community that thrives until the bees decide to live by honesty and virtue but abandon their desire for personal gain so the economy of their hive collapses and they go on to live simple and virtuous lives in a hollow tree—therefore private vices create social benefits.

¹⁵² *I.e.* metaphor that describes an incentive to retain a trader’s capital which has the effect of increasing the national capital stock and strengthening military power in the public interest which the trader did not originally intend to encourage—which implies unintended greater social impacts brought about by individuals acting in their own self-interests (*cp.* Smith, 1759; Smith, 1776).

¹⁵³ *Alias* Pompidou–Giscard–Rothschild law [fr: *loi Pompidou–Giscard–Rothschild*]; *i.e.* act № 73-3 of 03 January 1973 on the Bank of France [fr: *loi n° 73-7 du 3 janvier 1973 sur la Banque de France*] authorizing the French State to borrow from the Bank of France through monetary financing—as opposed to the act of 02 December 1945 on the nationalization of the Bank of France and the major banks and the organization of credit [fr: *loi du 2 décembre 1945 relative à la nationalisation de la Banque de France et des grandes banques et à l’organisation du crédit*].

¹⁵⁴ *I.e.* foundation treaty of the European Union (EU) signed on 07 February 1992 in Maastricht in the Netherlands prohibiting the financing of European Union Member States by their national central banks—but only through the European Central Bank.

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