ON DEBT, DEATH, AND DARWIN

MONEY AND MORALITY AS BIOLOGICAL PHENOMENA

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ABSTRACT: Central to the operation of the global economic system today is the normative leeway that private banks have to create money *ex nihilo* on the basis of a person's "taking out of a loan" and their making a pledge to "repay" it.[1] However, especially in the aftermath of the 2008 financial crisis, the inflationary concerns emerging out of the COVID-19 pandemic, as well as in view of increasing awareness of the onset of global climate change, questions have been raised as regard to the fairness, the sustainability, and the ecological impact of the current global monetary system. This is given the overarching capacity of financial systems to drive the trajectory of human development as well as to shape the structure of societies and the general way that people live. Starting with a stipulative definition of money as a "social debt-credit relation," this essay carries out a critical analysis pertaining to the meaning of money, money creation, and the use of money, doing so from a biophilosophical perspective, and specifically, from a holistic organicist lens. It examines Aristotle's outline of the properties belonging (putatively) to "sound" money and the enduring debate between Metallism and Chartalism. It unpacks John McMurtry's critique of the value program of the global economy that, as he expresses, is grounded in the "money-code of value" rather than in the "life-code of value." And it examines Nietzsche's critique of Darwin's account of the origin of morality in group / community / social / kin selection, pointing to the liberation of life from rigid conformity to value programs that are based in (largely) arbitrary metaphysical credit-debt tallies. Overall, in light of the contemporary need to address the global ecological crisis, here, I argue for the cultivation of "ecological-" and/or "biological-" wisdom[2] in relation to money, money creation, money systems, and banking, as well as by the average person orienting themselves toward money and using it as a medium of exchange.

[1] See Tobin 1963; Nichols and Gonczy 1994; Grignon 2009; McLeay, Radia, and Thomas 2014; Werner 2014a, 2014b, and 2016; Kumhof and Jakab 2016; Etzrodt 2018; Carney 2019; and Hook 2022.

[2] See Devall and Sessions 1985 and Waddington 1960, respectively.

KEYWORDS: Money as a "Social Debt-Credit Relation"; Metaphysical Credit-Debt Tallies; Aristotle's Account of the Character of "Sound" Money; the "Double Coincidence of Wants" Problem; Metallism; Chartalism; John McMurtry; Value Programs; the Life-Code of Value; the Money-Code of Value; Private Banks Having the "Normative Leeway" to Create Money; Mark Carney; Darwin's Account of the Origin of Morality in Group / Community / Social / Kin Selection and Nietzsche's Critique; the Global Ecological Crisis; Biophilosophy; Holistic Organicism; Biological Wisdom; Ecological Wisdom; Critical Pan-Selectionism.

I. INTRODUCTION: MONEY AS A LARGELY UNQUESTIONED PHENOMENON, YET MONEY BEING A CENTRAL CONCERN OF CONTEMPORARY LIFE

For most citizens of the global North, teaching their children about money, and about saving it, are among their most important of parental responsibilities. Parents desire that their children be savvy about money early on in life, so as to ensure, for example, that they will grow up to make wise financial decisions, that they will be self-sufficient, and that they will achieve economic success later on in their lives. The acts of taking children to the local bank, of having them open up their first savings account, and of depositing whatever has been accumulated in their piggy banks constitute a milestone in their upbringing (of course, today, this has increasingly become a digital operation like most others). Most people consider private banks to be benevolent, secure, riskless holders of wealth. After all, it is a common assumption that it would be risky to hold all of one's life-savings at home, perhaps in one's mattress or freezer, as it would be susceptible to loss via theft or fire. And in the unlikely event that there was a failure of a chartered bank or a run on the bank, most people seem to be confident that governmental deposit insurance programs, for example, the *Federal Deposit Insurance Corporation* (FDIC) in the United States or the *Canadian Deposit Insurance Corporation* (CDIC), will reimburse most, if not all, of their losses.

Given that the average person must work to get money, that they are taxed by revenue agencies, and that they must have it to purchase needed goods and services in support of their lives and those of their loved ones, money is one of the most central concerns of their existence. However, it is clear that the citizens of North America and Europe have reflected little on the question of what money

is, of how money as a medium of exchange has evolved in human culture, of how most of the money supply is chiefly created today (i.e., by private banks on the basis of a person's pledge to take out a loan and to repay it) and of what risks they may be taking by depositing their wealth into an account at a bank. Aside from the increased electronic digitization of money (i.e., over 97% of the money supply now being in electronic form, rather than in physical, paper, or polymer form; and central banks today are emphasizing that digital currency belong to the future of finance), this is somewhat due to the fact that, at least a generation (almost fifty years) has gone by since the average American or Canadian has experienced foundational changes in respect to the basic structure of their monetary systems. Yet, historically, across the world, monetary systems have demonstrated themselves to be relatively temporary. They last for a time, but eventually needing to be reset, updated, overturned, or revolutionized.

Entrenched habits of thought of North Americans and Europeans in relation to banking, and concerning the "tool" that is the Dollar (i.e., the Federal Reserve Note), the Pound, or the Euro have taken hold. But in light of recent developments and events such as economic globalization; the financial collapse of 2008 and the resulting credit crisis and bank bail-outs; the use of "money printing" (or more technically-known as "quantitative easing") on the part of national or central banks to "prop up" insolvent private banks and to "stimulate" the market and even beyond economic downturns; the increasing participation of central banks in the stock market; the rampancy of market speculation and derivatives trading; the occurrence of bail-ins and the erection of bail-in protocols in diverse nations across the world; the move to negative interest rates on the part of the European Union; and the erosion of the American Petrodollar as the world's reserve currency (as nations such as Russia and China continue to negotiate international trade deals that bypass the U.S. dollar and provide alternatives to the Western SWIFT payment system [e.g., given the sanctions placed on Russia in light of its 2022 invasion of Ukraine]), great and rapid change on a global scale seem, very much, to be on the horizon. Just as Heidegger, in *Being and Time* (1927) suggests that Dasein takes for granted the ordinary things that it uses every day and of which we think are familiar, assumes them as a given fact about its own existence, and typically only questions the being of the hammer

when it starts to break down,[3] it would appear that today, these developments require that the nature(s) of the Dollar, the Pound, and/or the Euro, as well as of the current global monetary system, in general, be critically interrogated.

II. WHAT IS MONEY?

The question, "what is money?" is age-old. It has been said that "money has no essence"[4] that could be discovered or unpacked fully, and that different monetary systems have existed at different times and places. However, while recognizing that the character of money changes over time, "always evolves,"[5] and is different in different cultures, communities, and parts of the world, it is possible to advance a coherent, general, and stipulative definition of the character of money. Given that human beings only have a finite time on this planet, in contemporary society, they largely intend money to be a representation of the value of one's work, labor, effort, productivity, and creativity. When one has expended one's physical and/or mental energies by providing goods or useful services to another person, there is a general expectation for the other to recognize this provision and to reciprocate in terms of such energies or of their underlying value at an equivalent or higher level (i.e., at a profit).

Money is basically a common or conventional medium of exchange that represents a *social debt-credit relation*, involving "a promise or obligation that exists between human beings"[6] through time and space. As Ingham suggests, "money is itself a social relation; that is to say, money is 'claim' or 'credit that is constituted by social relations" involving a self-declared "promise to pay" made on the part of a recipient to an issuer, and, as such, for him, "money is itself a social relation of credit and debt denominated in a [currency] of account."[7] Money has two correlative poles in which debt and credit represent an "inseparable" or "indissoluble dyadic unit" that has social, biological, evolutionary, and spatio-

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[3] Heidegger, Martin, *Being and Time*, trans. John Macquarrie and Edward Robinson, New York: Harper San Francisco, 1927 / 1962, pp. 95-107; H67-76.
[4] Graeber, David, *Debt: The First 5,000 Years*, New York: Melville House Publishing, 2011, p. 467.
[5] Carney, Mark, *Values: Building a Better World for All*, Toronto, ON, Canada: Penguin Random House Canada Limited, 2019, p. 117.
[6] Bell, Stephanie. 'The Role of the State and the Hierarchy of Money,' *Cambridge Journal of Economics*, vol. 25, 2001, p. 150.
[7] Ingham, Geoffrey, 'The Nature of Money,' *Economic Sociology*, vol. 5, no. 2, 2004, p. 25.

temporal aspects.[8] On the one hand, it is a contract of debt (i.e., it is a formal "IOU"), namely, a "contract for deferred payment"[9] made in the present, invoking a speculative "faith" that it will be repaid to someone at some future time and place. On the other hand, it is a metaphysical unit of credit that can be used to place a demand on labor, goods, and services from others, within the context of the natural world and its limited resources.

Money is a potential unit of credit for person A and it is reciprocally an issuance of debt to person B. At the same time, as a contract of debt for B it is a potential unit of credit for A. This is the two-sided, "dialectical," or "biconditional" structure of money. To be sure, money is, in some sense, a synthesis of credit and debt, as credit "is the correlative of debt … what A owes to B is A's debt to B and B's credit on A. A is B's debtor and A's creditor."[10] For example, the money that is deposited by A into a bank account becomes a *debt liability* for the bank. Or, investor A purchases shares in company B, hoping to capitalize on its future profits. Corporate managers working under a strict Friedmanite orientation have the duty do most whatever it takes to maximize stockholder value in order to return the investment at a profit. Conversely, the debts B owes to A can be restructured, repackaged, and sold as credits to a third party, C, who can use them to place a demand on D's goods and services. Of course, this conception of money does not recognize the multifariousness of possible life-contexts among the parties referred to.

Pointing to the dialectical unity-in-difference of credit and debt as the two "sides" of money, the speculative philosopher Hegel is said to have asserted that "assets and debts are not two particular, independently subsisting" things. Rather, for Hegel, like other apparent opposites, credit and debt are what they are "only in their relation to one another,"[11] their apparent contradiction being positively overgraspable, and money, in some sense, straddling the opposition between them and synthesizing them together. In further reference to Hegel's dialectic in respect to understanding the character of money, Peebles (2010), who provides an

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[8] Peebles, Gustav, 'The Anthropology of Credit and Debt,' *Annual Review of Anthropology*, vol. 39, October 2010, p. 225, following Marcel Mauss' *The Gift: The Form and Reason for Exchange in Archaic Societies.*

[9] Bell (2001), p. 150, quoting John Maynard Keynes from *A Treatise on Money* (1930).

[10] Bell (2001), p. 151, quoting Alfred Mitchell-Innes' *What is Money?* (1913).

[11] Hegel, Georg Wilhelm Friedrich, *The Encyclopedia Logic*, trans. Theodore Geraets, Henry Silton Harris, and Wal A. Suchting, Indianapolis, IN, USA: Hackett Publishing, 1831 / 1991, section 119Z1, p. 186.

anthropological interpretation of the nature of money, states that credit and debt are "a Hegelian dialectical relation that creates a regulatory dynamic of 'intersubjective spacetime'"[12] that binds the past (e.g., one's history of credit-worthiness or repaying one's debts to others), present (e.g., one's promise today to repay a debt), and future (e.g., one's promise to repay a debt at some later moment and place).

The use of money provides a tangible means of measuring and representing the "value" of goods and services for persons within their life-context. As will be unpacked later in this paper, as an evolutionary emergence, money is a phenomenon may largely be viewed as a function of the Darwinian evolutionary process of group / community / social / kin selection. Specifically, money provides a means of accounting for credits earned and debts owed among persons over time, both within and between communities, societies, and nations. Money facilitates the valuation and exchange of goods and services by human beings in the context of their lives. If money of some form were not used, this accounting would largely remain an abstract metaphysical exercise without a tangible, empirical, or concrete correlate. And the economic life of the community would presumably be burdened by the hypothetical and anthropologically-suspect "double coincidence of wants problem" that was originally outlined by the Ancient Greek Philosopher, Aristotle, and later, by Adam Smith in *The Wealth of Nations*.[13] However, there are profound consequences that may be said to accompany the use of money and the norms of this use by members of a community, how a monetary system of accounting for credits and debts is set up, and what it means both for individuals and the life of the community.

III. THE "DOUBLE COINCIDENCE OF WANTS" PROBLEM AND "THE GOLDSMITH'S TALE" AS HYPOTHETICAL ACCOUNTS OF THE "ORIGIN" OF MONEY IN THE PAST

In the past, diverse items have been used as money. For example, gold and silver bars and coins, iron and copper bars and coins, paper and polymer bills, blips of

[12] Peebles (2010), p. 227, citing Nancy D. Munn's *The Fame of Gawa* (1986).
[13] See Chapter IV, "Of the Origin and Use of Money in Smith, Adam. *The Wealth of Nations*. New York: Bantam Dell / Random House, 1776 / 2003, pp. 33-42.

electronic data, tally-sticks, sea-shells, eagle feathers, shiny stones, axe blades, tulips, dried cod, salt, sugar, leather hides, tobacco, bolts of silk, nails, and even laundry detergent have been employed as media of exchange which substitute for the value of other tangible goods and services in a manner that has facilitated trade among members of a community. Many economics textbooks follow Aristotle's and Adam Smith's own employment of hypothetical histories in suggesting that money must have emerged in human cultures along a specific historical time-frame of linear progress, and that its use solved (for all time) what is known as the "double coincidence of wants problem." The "double coincidence of wants problem" is generally provided by economists to be a logical reason for why money, as a common medium of exchange, must have been invented, namely, to overcome the problems pertaining to so-called "primitive barter."

Outlines of the "double coincidence of wants problem" typically involve a fictional scenario that is generally described as follows. When bartering for goods without a medium of exchange, person A, who wants something from person B (e.g., a camel), most often does not have what B wants (e.g., a bag of beans), and often the items that are wanted by both parties are not of equal value. For example, a camel, providing an enduring source of transportation and sustenance, would probably be seen to be worth more than the average bag of beans, which could be eaten in three days. Trade was allegedly made easier when it was agreed among members of a tribe that some substance (e.g., eagle feathers) would represent a unit of value that could be substituted for other goods, permitting transmissibility to third parties and thereby equalizing exchange. Person A could give up his/her camel in exchange for six of B's eagle feathers and A could exchange three of them, days later, with C for a bag of beans. Using the remaining three eagle feathers, weeks later, A could subsequently hire D, a hefty individual living a few miles away to come and guard his/her sheep for three days. The "double coincidence of wants" problem has been criticized as a accurate explanation of the human problem that was solved by way of the use of money at its origin.[14] Nevertheless, while it indeed represents a "just-so story," it

[14] For example, according to David Graber in *Debt: The First 5,000 Years*, New York: Melville House Publishing, 2011, pp. 37-47, the "double coincidence of wants" problem is an adptationist "just-so story," namely, reductionist abstraction that lacks sufficient relational, social, and situational context and which has little-to-no anthropological evidence to support its veracity, especially in relation to the assumption that "primitive" human tribes, groups, or societies, were organized completely around the activity of bartering.

would seem self-evident that the accepted usage of a common medium of exchange among members of a community is representative of the invention of money.

Although many items could qualify to be used as money, namely, as a means to measure the value of goods and services as well as to keep a tally of credits accrued and debts owing in relation to others, tribes or groups would want to choose practical items to serve as the medium of exchange, for example, something that was portable over long distances. While a monetary system could be set up fairly easily to account for debts and credits accruing among persons within a group or tribe, especially providing that some powerful authority presided over it and enforced this system, it was perhaps more difficult to have an agreed upon medium of exchange among different groups or tribes. From the perspective of the "double coincidence of wants" theory, this could be one of the reasons that "tally sticks" were invented and employed.

While within a family or a close friendship, in which the survival and well-being of one's kin are closely aligned, goods may be shared or held in common, we can imagine that "tally sticks" were used in medieval times as a means to represent debt-credit relationships not only among individuals within communities, but also among individuals of diverse groups, and among distinct tribes. When one tribe experienced a period of want or need, for example, a famine, a drought, or a war, any surplus goods or assistance given to it by another tribe would be symbolically represented as "debt" by cutting out notches on ivory, stone, or bone slabs, bamboo or wood blocks or sticks, thereby providing a tangible record of what one party owed to another. Different sized notches could

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Furthermore, emphasis on resolving the "double coincidence of wants" problem assumes that the development of the use of money, rather than engaging in strict barter, is representative of linear "progress" without creating larger problems of its own. Moreover, the notion that the "double coincidence of wants problems" successfully explains the "singular" evolutionary "origin" of money having emerged at some specific time and place in the past is a notion that is fraught with abstraction (e.g., see Michel Foucault's neo-Nietzschean critique of the notion of "origin" [*Ursprung*] in "Nietzsche, Genealogy, History" in *The Foucault Reader*, ed. Paul Rabinow, New York: Pantheon Books, 1971 / 1984, 76-100). Nevertheless, the "double coincidence of wants problem" remains an interesting thought-experiment to consider, since it may be said to offer a plausible explanatory "crane" so to speak that is to be "preferred," rather than a "skyhook" (see Daniel Dennett's *Darwin's Dangerous Idea*, New York: Simon & Schuster, 1995, pp. 73-80) and which is commensurate with mainstream evolutionary biology.

represent different sized debts as a mathematical expression of said debts. Sometimes tally sticks were split down the middle and the debt would only be honored when the respective leaders of the distinct groups or tribes or the contractors put the two pieces back together. The sticks were essentially a contract for repayment at some time in the future, and the notches had to match up exactly, much like a key in a lock or two puzzle pieces, in order to prevent forgery. The separated sticks were a representation of the fact that a debt was owed for past exchange or assistance. However, since debts are most always to be repaid at some point in the future, one can imagine that some individuals or tribes would want to take the goods of other individuals or tribes in exchange for a promise to pay in the present, and then renege on the deal. War would ensue and attempts to forge or tamper with the notches on the stick would be most presumably be enforced by the threat of violence or the death of the debtor at the hands of the creditor. In some contexts, tally sticks could be used in trade with third parties, wherein party A traded their credit with party B (i.e., B's debt liability to A) to C for tangible goods or services.[15]

Another questionable "just-so" story that has been employed in explaining the origin of modern monetary systems in the past is "The Goldsmith's Tale,"[16] which, on one version, goes as follows. Prior to modern times, the "banks" that existed were merely well-protected depositories of gold and silver. Such "banks" were instrumental in reducing the risk of theft from having to carry these metals around in the marketplace. The goldsmiths issued paper receipts for the gold and silver that was deposited, and the receipts eventually came to symbolize / represent / substitute for / stand in for the gold and silver held in the vault. Soon people just traded the receipts, notes, or cheques in the context of exchange, rather than the actual gold and silver. This facilitated trade because it is so inconvenient to carry around heavy bulky metals (e.g. in lump, bar, or coin form). As well, the receipts would also prevent people from clipping or shaving gold or silver coins in their possession that were stamped with a value by the state

[15] Later in this paper (i.e., in section VIII), I shall return to the types of reflections made in the above section when discussing money as a function of the evolutionary process of Darwinian group / community / social / kin selection.

[16] See Grignon, Paul, "Money as Debt (Part 1)" Documentary, 2009, for an animated retelling of "The Goldsmith's Tale," 3:50-10:03, https://www.youtube.com/watch?v=4AC6RSau7r8.

(although the state designed ridges on coins to help to protect against this). However, the proto-bankers realized that they could profit by issuing more receipts, notes, or cheques than they had gold and silver, because it was so rare that people would come in to take their gold and silver out of the depository. But after it was realized that the bankers were using the gold and silver to purchase goods in support of their own lives and only had a fraction of the amount of gold and silver as compared to the amount that was represented on the receipts, notes, or cheques issued, the game was up and a bank run ensued. And because there was not enough gold or silver to cover all the receipts / notes / cheques, only some of the people were be able to take back possession of their own wealth, a great economic crisis transpired. While the crisis is said to have led to the demise of some of the bankers, it is also suggested that in enough cases they survived by negotiating with depositors in order to keep the scheme going. Depositors would not crash the system if in exchange, they received a cut of the proceeds (in the form of depositors gaining interest on their deposits). Furthermore, since the scheme is said to have served to expand trade in a positive and substantial way, state-sanctioned central banks were also created in order to backstop against potential bank runs, injecting money into banks when needed. Obviously, the receipts in the story are supposed to be the precursor to paper money. Hence, paper money emerged, but according to the parable, it was originally backed by gold and silver.

IV. ARISTOTLE AND THE CHARACTERISTICS OF "SOUND" MONEY: METALLISM VERSUS CHARTALISM

The great twentieth century economist Joseph Schumpeter once suggested that the ancient Greek philosopher, Aristotle's (384-322 BCE) theory of money "is the basis of the bulk of all analytic work in the field of money,"[17] even though it has often been challenged. In the *Politics* (Book I, Chapters 8-10) and the *Nichomachean Ethics* (Book V, Chapter 5), Aristotle discusses the nature of money and he emphasizes the use of a common intermediary of exchange, and largely opposes straight barter, which he suggested was practiced by "barbarous nations."[18] It is

[17] Schumpeter, Joseph. *History of Economic Analysis*. New York: Oxford University Press, 1954 / 1994, p. 63.
[18] Aristotle, *Politics*, Book I, Chapter 5, in *The Basic Works of Aristotle*, ed. Richard McKeon, New York: The Modern Library, 1941 / 2001, 1257a25, p. 1138.

obvious here that Aristotle's elitist and potentially racist comment here differentiating various nations involves the suggestion that the use of money offers a more "sophisticated" and/or "civilized" means of exchange than straight barter, and that it represents a degree of rational "progress" away from one-to-one barter. Yet one may take substantive issue with it, in that the common intermediary of exchange may be far removed from the tangible goods or useful services traded, as well as from the need for personal interactions in the context of trade.

For Aristotle, money makes it "possible for us to get what we want"[19] and to do so with some certainty, rather than to be obstructed, for example, by the "double coincidence of wants" problem that was mentioned in the previous section of this paper. While almost any substance could be selected for employment as the intermediary of exchange, those of "Metallist" ilk, namely, those who think that precious metals such as gold and silver are the best, most "sound" substances to be used as money, generally cite (even to this day) Aristotle's philosophizing in these sections in order to provide arguments for their claims. Specifically, "Metallists" refer to Aristotle as having identified the five qualities that constitute "sound" money. These have been referred to as: (1) portability; (2) intrinsic value; (3) divisibility; (4) fungibility; and (5) a stable store of value over time. Gold and silver coins or bars are viewed by Metallists as exemplifying all of these criteria to varying degrees. On the whole, Metallists argue that, while not perfect, gold and silver coins or bars meet these requirements in far better fashion than any other substance. The position of Metallists stands in opposition to that of "Chartalists" (Latin, *Charta*, meaning "token" or "ticket"), who believe that any item or symbolic token of value, provided that is agreed upon by society's members or the trading parties to serve as a medium of exchange, is decreed by tribal authorities (as in the meaning of the term "fiat money"), and/or is enforced by the state, can operate as the common monetary unit.

In relation to the contention between "Metallism" and "Chartalism," which still rages in contemporary times, for instance, in the wake of Nixon's suspension of the gold standard underpinning the American dollar in 1971 and the

[19] Aristotle, *Nichomachean Ethics*, Book V, Chapter 5, in *The Basic Works of Aristotle*, ed. Richard McKeon, New York: The Modern Library, 1941 / 2001, 1133b13, p. 1011.

controversies this move has created in its wake, several points can be articulated. First, a scholarly examination of Aristotle's texts reveals there really is no "smoking gun" that allows us to conclude absolutely that he believed that gold and silver are the best, most "sound" sources of money. While Aristotle does mention these substances, as will be shown, there is no passage in his existing corpus where he makes this case directly, and he even criticizes the excessive accumulation of gold, or the medium of exchange, as being inconsistent with living the good or virtuous life. Second, in contrast to the characterization of some Metallists, Aristotle did not formally set out a list of qualities that he thought directly constituted "sound money." Rather, he refers to these various characteristics in passing. So, at best, these are *prima facie* criteria of what constitutes "sound money" and hence, the Metallist position is really to be characterized as a form of neo-Aristotelianism in relation to the philosophical issue of the nature of money.

Third, it is sometimes difficult to decipher what Metallists, in general, tend to mean by the notion of "sound money."[20] Presumably, this expression refers to: (a) what is most practical, (b) what is most sustainable and just for all market participants / stakeholders, or (c) what is most ethical to be used as the common medium of trade in a group, tribe, or society. Here, I shall assume that all of the above are interconnected parts of the meaning of this "soundness." Given that the selection of the common medium of exchange has tremendous ramifications for the members of any society, (a) the term "practicality" can be said to refer to the extent of the monetary unit's propensity to facilitate trade (e.g., to make exchange easy) among persons in the context of daily life; (b) the notion of "justice" can be suggested to refer to the extent of the monetary unit's propensity to ensure fairness in economic life, as including the upholding of positive rights and freedoms for the members of the community; (c) and the term "ethical" refers to the monetary unit's propensity for people employing it to be able to fulfill their moral obligations and responsibilities toward one another (e.g., being honest with one another), both within and outside of the community, as well as toward other organisms and the natural world as a whole.

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[20] von Mises, Ludwig, *The Theory of Money and Credit*, trans. Harold E. Batson, New Haven, CT, USA: Yale University Press, 1912 / 1959, pp. 413-415.

Fourth, the apparent "Aristotelian" categories of: (2) intrinsic value, (3) divisibility, and (5) a stable source of value over time, listed above, which are cited by Metallists as being the criteria of "sound money," involve far more complexity than may be understood on first sight. And several of these criteria are interrelated with others. In the process of unpacking this fourth point, let me provide some of the relevant quotes from Aristotle's *Politics* and the *Nichomachean Ethics* and an analysis of them. In relation to: (1) portability and (2) intrinsic value, Aristotle gets us to imagine the following scenario occurring in the past:

> when the inhabitants of one country became more dependent on those of another, and they imported what they needed, and exported what they had too much of, money necessarily came into use. For the various necessaries of life *are not easily carried about* (i.e., portable), and hence men agreed to employ in their dealings with each other something which was *intrinsically useful and easily applicable to the purposes of life* (i.e., having "intrinsic value"), for example, iron, silver, and the like.[21]

It is only practical for the purposes of carrying out financial transactions that the medium of exchange be (1) portable. Given that human beings must sometimes travel long distances, that they are creatures of relatively small physique, and that they have finite energies and limited strength, the medium of exchange should obviously be portable by most anyone who would seek to use it. While a barrel of oil or a tree trunk is not easily portable on one's person, a silver coin can easily fit into one's pocket and is well suited for small transactions. That said, although silver has traditionally been said to come out of the ground at about an eleven-to-one ratio as compared with gold, today it is even less valued. As such, when it comes to larger transactions one might have to carry around a backpack full of bulky silver coins. Given that a gold coin is valued much more highly in dollar terms, the silver-to-gold ratio today being about eighty-to-one, gold would be easier to carry on one's person, which makes it more ideal for a large transaction, but, of course, it is harder to divide up, as in the criterion of (3) "divisibility," as will be analyzed below. Paper dollar bills, weighing less, in a wallet would be more portable than either of these options with respect to transactions of small to medium value. A Bitcoin, namely, a non-spatial, weightless unit of "virtual" crypto-currency that could be contained on a microchip in a small computer thumb drive, is also ideally portable. That said,

[21] Aristotle, *Politics*, Book I, Chapter 5, ed. McKeon, 1257a, 1138, my additions and emphasis.

as a medium of exchange, Bitcoins depend on functioning computer electronics that provide internet access which may or may not be easily portable.

The notion that the medium of exchange ought to have: (2) "intrinsic value" is perhaps the most controversial and puzzling of all of the criteria of "sound money" that are held to be attributable to Aristotle. First off, from the quotation above, one can see that Aristotle does not emphasize "having intrinsic value" in the Kantian or modern sense. Rather, from the McKeon translation of the text (as quoted above), Aristotle says "intrinsically useful and easily applicable to the purposes of life, for example, iron, silver, and the like." Another translation cites that the medium of exchange should itself be "one of the useful things that could be used flexibly to suit the needs of life, such as iron and silver."[22] So, here, in contrast to the Kantian or modern notion of "intrinsic value," Aristotle is really saying something like "highly and enduringly indispensable in terms of the actualization of human potential," which seemingly implies an enduring "instrumental value" for, or "utility" in respect to, the biological and intellectual aspects of human life.

In contemporary philosophy, the Kantian concept of "intrinsic value" has been attacked as being an "obscure black box" concept without any meaning. As contemporary ethicist, Mary Anne Warren suggests, in the context of moral philosophy, "inherent value is defined almost negative terms … (it) appears as a mysterious non-natural property which we must take on faith."[23] She continues, "if inherent value is based on some natural property, then why not try to identify that property and explain its moral significance, without appealing to inherent value? And if it is not based on any natural property, then why should we believe in it?"[24] Similarly, post-metaphysical philosophers criticize the appeal to "intrinsic worth" in argumentation as being an unfalsifiable residue of essentialist thinking. It is philosophically problematic to consider an item like a gold bar to have "intrinsic worth" in the same sense as a human person, who, as Kant stipulates, ought to be respected as an end in him- or herself rather than as a means only. In contrast to such detractors from the notion of "intrinsic worth,"

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[22] Aristotle, *Politics*, trans. Carnes Lord, Chicago, IL: University of Chicago Press, 1984, p. 47.
[23] Warren, Mary Anne, 'A Critique of Regan's Animal Rights Theory,' in *Food Ethics*, ed. Paul Pojman, Boston, MA, USA: Wadsworth, 2012, p. 40.
[24] *Ibid.*

the real basis of this notion issues from the living organism being intrinsically purposive (i.e., self-creative [***autopoietic***]), whereas inanimate objects and machines are extrinsically purposive [***allopoietic***] only.[25] That is to say, in contrast to so-called "inanimate" entities and machines, living organisms persist in the face of entropy by way of intrinsically purposive homeostatic, chronobiological, and autopoietic processes. It is this intrinsic purposiveness that can be said to be the basis for the notion that living organisms have intrinsic value, rather than mere instrumental value. While gold of high purity does distinguish itself by not rusting or tarnishing easily and it is not a very reactive chemical element, these criteria are only analogous to the idea that living organisms persist in the face of entropy by way of homeostatic, chronobiological, and autopoietic processes, and as such, have intrinsic value that ought to be respected. Hence, in reference to the alleged Aristotelian criteria of what constitutes "sound money," it would be best to refer to "high and enduring utility and/or indispensability to human life," either biologically or intellectually, rather than to "intrinsic value" (e.g., as in contemporary Metallist arguments concerning the so-called "intrinsic value" of gold).

What can be said to have "high and enduring utility and/or indispensability in terms of the biological and intellectual purposes of human life"? In responding to this question, the use of money is, and has been, a phenomenon that has existed across diverse cultures. While cultural differences have emerged largely as a result of the need to adapt to the distinct environments in which various peoples have lived and evolved, human beings also have commonly held needs, for example, food, water, and shelter, etc…. that are basic to their uniform biological makeup. As opposed to cultural moral relativism, it would suffice to say that we know enough, factually and objectively-speaking, about what contributes to human well-being and flourishing and what does not, to know what one ought not to do to others, as well as to know what specific items are indispensable to human life and which are not practical. For instance, although one may not know completely all of the ins and outs of how the physiologies of

[25] For example, see the distinction made by Daniel Nicholson between living entities and non-living entities / machines in Nicholson, Daniel, 'Organisms ≠ Machines,' *Studies in History and Philosophy of Biological and Biomedical Sciences*, vol. 44, 2013, pp. 669-678.

living organisms "work," I know very well that throwing battery acid in someone else's face thwarts his/her well-being and ability to flourish, to know that I should not do it. While being an enduring medium of exchange over time is itself something indispensable to the purposes of human life, employing a medium of exchange that derives value from being indispensable to purposes of human life that lie beyond its usefulness in trade would, to some degree, ensure that if a community suddenly lost confidence in the value of the substance which it employed to measure the value of the goods and services to be traded. Or if the members of a tribe changed its mind about what substance it would use as money, then individuals who had received it in exchange for goods would still have in their possession something useful to the purposes of human life. And other people would be interested in acquiring the item. The item in question would still have value for others, and therefore, individuals could still trade the former medium of exchange for other items. But, if this loss of confidence in a medium of exchange occurred and the individual now held a substance that was useless to others (e.g., a piece of paper or polymer or an electronic "blip" with nothing further backing their value), then they would have their purchasing power destroyed and/or they would lose their wealth. In this sense, that the substance to be used as a medium of exchange is to be objectively indispensable to the purposes of human life, and have value as a result of this fact, ensures a degree of justice in the social debt-credit relationship that is the exchange, amid changing social and political circumstances, as well as change in relation to one's belongingness to group, community, tribe, or national membership. At the same time, we can also imagine that people would most likely hoard a medium of exchange that was valuable due to its indispensability (e.g., silver coins), if they suddenly realized that their community or society was moving to adopt a form of money that was not useful to the purposes of human life (e.g., paper bills or electronic blips without any further backing by a tangible object of value). On this note, Aristotle recognizes the conventional character of money, namely, that it "exists not by nature but by law (*nomos*) and it is in our power to change it and make it useless,"[26] meaning that the medium of trade in any community or nation is subject to change and he is aware of the ramifications of a "currency reset" in

[26] Aristotle, *Nichomachean Ethics*, Book V, Chapter 5, ed. McKeon, 1133a30-33, p. 1011.

terms of a people's wealth.

Aristotle does use the example of "silver, iron, and the like" to highlight items that are useful to the fulfillment of human purposes. Silver is today one of the most useful commodities of all after oil, the latter having operated as a partial backing for the American dollar under the Petrodollar arrangement since 1973. Silver is among the most reflective of the metals, it resists oxidation and corrosion, it is the most electrically conductive of all elements, and it is used in solar panels, jewelry, instruments of all sorts, electronics (e.g., computers and cell phones), photography, biology (e.g. silver stains), medicine (e.g., increasing the effectiveness of anti-biotics as well as having anti-bacterial and anti-fungal properties that are useful for wound dressings and medical equipment), and other industrial applications. In fact, the etymological root of the word "silver" in Old English is *seolfor*, meaning "money," the ancient Greek word *árgos*, means "shining" or "bright," and the French word, *argent* derives from the Latin *argentum*, also meaning "white money." Today, gold is admittedly not as useful an industrial metal as compared with silver, but it is among the most malleable of all metals. It has uses in electronics and dentistry, and many would probably agree that it is more aesthetically preferable to other metals in jewelry. Gold and silver have been used as money for well over five thousand years. That said, one might argue that hoarding gold and silver coins in a safe for years at a time is not something that is economically productive in terms of creating new goods and services, that they do not gain any profitable interest for their holders, and that one cannot eat gold and silver coins. However, the unbacked paper dollars, steel coins, and electronic blips of currency that we employ today as money have little utility in comparison with either gold and silver besides their function as media of exchange. Bitcoin's "high and enduring indispensability" is said to come exclusively from its usefulness as a greatly private, online, peer-to-peer means of exchange that is independent from third parties, national monetary systems, and state regulations. Other than this, Bitcoins, as a means of exchange, have nothing further to report in terms of their utility: they are intangible, they cannot be eaten, and they do not have medical, electronic, or industrial usefulness. Again, Bitcoins are useless in terms of human purposes in the context of their lives without access to a functioning computer or other electronic device with internet access, or when there is a power outage, unless one points to the notion that

crypto-currencies that employ the data-crunching capacities of our computers in "mining" as a means to carry out the useful mathematical or scientific projects of the programmers responsible for it. That said, we might have a differing view of crypto-currencies here in terms of their indispensability to the purposes of human life if the power of our computers mining them were collectively and transparently helping to find a cure for cancer, above and beyond ensuring the legitimacy of transactions on the block-chain.

Chartalists, in opposition to Metallists, can be said to bypass the requirement that the substance selected to be the medium of exchange be (2) indispensable to the purposes of human life. For them, it is acceptable for the medium of exchange to have symbolic value only. For Chartalists, so long as the substance, token, or symbol that is selected as money (i.e., as "legal tender") is recognized as money, whether this be by members of a community and/or by state decree (i.e., as in "fiat" money) then it may be viewed as "sound money." And the recognition of the item as money may be based faith in authorities, the reputability or virtue of persons to repay their debts, by the enforcement of the Hobbesian sovereign, and/or even perhaps by the threat of force of an armed military.

Of course, Metallism and Chartalism need not be mutually exclusive, since a metal, as in Metallism, may be selected by authorities as the money of a nation, as in Chartalism. For instance, pre-1968 Canadian coins, except nickels and pennies, contained 80% silver and were stamped with images of the Queen / King of England as well as the Canada's Coat of Arms, in order to "authorize" them as an officially sanctioned medium of exchange. Pre-1971 American coinage contained 90% and 40% silver respectively, and featured stamps of prominent U.S. Presidents and the Great Seal / Coat of Arms. Furthermore, even Aristotle suggests that the unit of exchange be a conventional "representative of demand" that is "fixed by agreement"[27] in addition to all of the other criteria. Today, there are neo-Metallists and neo-Chartalists with more mitigated positions. That said, Chartalists ought to see that if confidence erodes in the use of a medium of exchange that only has symbolic or conventional value and is unbacked by any useful substance, if a revolution or *coup d'état* occurred, or if the community suddenly changed its mind about the substance to be accepted, then those

[27] Aristotle, *Nichomachean Ethics*, Book V, Chapter 5, ed. McKeon, 1133a30 and 1133b21, pp. 1011 and 1012.

holding it may completely lose their wealth. Chartalists also need to recognize that today's central banks (e.g., the Bank of Canada; the Federal Reserve), which have a great deal of control the money supply and are responsible for creating physical units of currency through minting and coining, as well as much electronic currency, are independent entities. They are not simply agencies of democratically-elected state or federal governments. And as over 97% of the currency in circulation in nations such as Canada and the United States is electronic in nature, much of it being created in indefinite amounts by private banks, most of the money we use today is not only intangible, but useless, in terms of human purposes beyond economic transactions.

In relation to the third criterion of what constitutes "sound money," namely, (3) divisibility, Aristotle can be said to have emphasized that the medium of exchange both be: (a) physically divisible to assist the measurement of the value of the goods and services that may potentially be exchanged; and (b) mathematically divisible as a measure of the value of said goods and services. The substance to be used as money needs to be divisible if it is to be "a unit, fixed by agreement … that allows us to render all things commensurate, since the value of all things is ***measured*** by money."[28] The fact that money, as an intermediary of exchange, is to be a ***quantitative measure*** of the value of the goods and services in question, means that the substance employed as money must be divisible so as to enable comparison. Aristotle says that with the invention of coinage, the indispensability to human purposes belonging to the substance selected (e.g., gold, silver) as the medium of exchange, which gives it value, was "at first measured simply by size and weight,"[29] pointing to the notion that larger and smaller sizes and masses of the substance represented larger and smaller valuations of the goods and services to be exchanged. A bigger chunk of gold can be deemed to be worth more than a smaller one half the size, and it can be exchanged for a more valuable good or service than the smaller piece. Physical divisibility also means that the substance to be used as the medium of exchange be materially divisible into smaller units without those units losing their value or being destroyed. An eagle feather, a sheep, or a tulip are not physically divisible

[28] *Ibid.*, 1133b16-17, p. 1011, my emphasis.
[29] Aristotle, *Politics*, Book I, Chapter 9, ed. McKeon, 1257a39-49, p. 1138.

into parts without destroying the underlying whole that they are. The parts would not be exactly symmetrical and would not hold equal worth. In contrast, with much effort, a piece of silver can be melted down and forged into two equal sized units, and their value would not be destroyed. Aristotle continues, "but in the process of time they (e.g., the state; the authorities) put a stamp upon it, to save the trouble of weighing and to mark the value."[30] The stamp indicated the mathematically divisible values of the monetary units in measuring and comparing the economic worth and pricing of various goods and services, which might or might not be in line with size and weight of the metal out of which it was made. Aristotle suggests that "all things that are exchanged must be somehow comparable … it is for this end that money has been introduced, and it becomes in a sense an intermediate."[31] And he provides the following example: "let A be a house, B ten minae, C a bed. A is half of B, if the house is worth five minae or equal to them; the bed, C, is a tenth of B; it is plain then, how many beds are equal to a house, viz. five."[32] Here, mathematical divisibility of the medium of exchange assures, for example, that the 10 minae can be broken up into two equal sets of five minae each, and that a house can be bought for one set, in addition to five beds being exchanged for the other set. Mathematical divisibility also enables change to be given in exchange for goods and services, thus ensuring exactitude in terms of the proportional equality of the values of the items traded. In this way, by enabling a measure of proportional equality in the bargain, divisibility is a means to ensuring fairness in the social debt-credit relationship that is the exchange—that the goods and services traded are of equal or near equal value. Gold and silver pieces can be both physically and mathematically divisible (with some effort required, mind you). For instance, today, some types of gold and silver bars and coins make physical divisibility easy, enabling a person to break apart a 50 gram bar into fifty 1 gram bars, just as if they were squares of a chocolate bar. That said, gold and silver coins can be clipped to various points (i.e., the clippings being melted down by the vandal), yet still retain their exchange value if they are stamped by authorities with a strict monetary value. Paper or polymer bills can be ripped into several pieces and there are laws erected

[30] Aristotle, *Politics*, Book I, Chapter 9, ed. McKeon, 1257a40-41, p. 1138, my addition.
[31] Aristotle, *Nichomachean Ethics*, Book V, Chapter 5, ed. McKeon, 1133a18-20, p. 1011.
[32] *Ibid.*, 1133b23-26, p. 1012.

surrounding the circulation of the portions of such bills. Such money, with its merely conventional or symbolic character, is not very useful to the purposes of human life. Also, the mathematical divisibility of the units into diverse values is quite arbitrary. We might ask: why exactly is one piece of paper of equal size as another worth ten dollars and the other fifty? Electronic blips are not physically divisible but are all mathematically divisible (e.g., a ten dollar bill is subdivisible into, and exchangeable for, two five dollar bills), but not indefinitely so, pennies being the smallest unit (that said, Canada did away with the penny in its currency in 2012). Bitcoin is not a tangible item. Rather it is a virtual blip of crypto-currency. It is not physically divisible, but it is almost indefinitely mathematical divisible into tenths, hundreths, thousandths, tens of thousandths (unlike other currencies) etc… of a full Bitcoin, which makes it quite useful.

Relating to (3) divisibility is the criterion of (4) fungibility, which means that each of the units ought to have uniform value, namely, commensurability with, and substitutability for, one another. A 1994 one Troy ounce Maple Leaf Silver coin is worth the same as a 2014 Maple Leaf Silver coin; they have the same weight in silver as well as the value of $5 stamped onto them. Or a 2013 dollar bill is worth the same today as a 2005 dollar bill. Of course, one might suggest that the 2005 dollar bill has had its purchasing power diminished due to inflation over time when compared with the 2013 dollar bill. But the two bills still have the same value today. In contrast, eagle feathers, shiny stones, sea shells, dogs, and chickens are all different, coming in different shapes, sizes, colors, and conditions, and thus they are not exactly substitutable in terms of their value. They are not fungible as each unit is distinct. One would not want to trade a large eagle feather for a small one, or a healthy chicken for an unhealthy one, or allow these items to count for an equivalent value in an exchange for another item. Economic justice would dictate that we exchange items of the same value, and thus fungibility as a criterion of a "sound" medium of exchange enables fairness in terms of trade.

The last of Aristotle's five criteria of "sound money" is that the substance selected as a medium of exchange be: (5) a stable store of value over time. Being a stable store of value over time involves at least four things. First, the item to be used as money be: (a) physically durable, meaning that it is fairly resistant to decay, rust, or disintegration, in the process of its circulation, thereby able to

preserve its usefulness for the purposes of human life and/or its value over time. For instance, silver is a metal that must be heated up to almost 1000 degrees Celsius before it melts. As such, under most ordinary circumstances, a silver coin is solid and will endure physically, as long as it is laced with another metal, such as copper or nickel, to prevent brittleness. Silver bullion coins of 99.99% purity would not do well in circulation as compared with a coin alloyed with copper and of 80% or 90% purity. Gold is a more malleable metal, but again, it does not tarnish easily. Today, paper and polymer bills are subjected to extreme stress testing (e.g., acid testing, washer resistance testing) to make sure that they are reasonably durable before being released out into the economy and circulated. But they can be burned, damaged by water or chemicals, or with enough force, ripped up, and/or cut up with a knife or scissors. They may be removed from circulation if they become damaged or defaced. Bitcoins or other blips of electronic currency are not tangible and are not subject to decay, rust, or disintegration, although the computers upon which their use as a medium of exchange is dependent can malfunction, "crash," and can become obsolete fairly quickly, needing to be replaced every few years. And we have heard of people searching through waste dumps to try to find hard drives with millions of dollars worth of bitcoins stored on them. An apple or an orange would not be durable as media of exchange, because they go soft and brown, losing their nutritional value, turning to mush, and spoiling quickly after having become ripe, and/or are simply gone after they are eaten. And chickens die. Justice in relation to the social debt-credit relationship that is at the root of the exchange, demands the durability of the medium of trade, as one could easily lose one's wealth if the medium of exchange were to be too susceptible to physical destruction or alteration.

Second, in order to be a stable source of value over time, the item selected ought to be: (b) in continual demand due to its "enduring indispensability to the purposes of human life," returning to criterion (2) above. This ensures that it will most always be worth something to someone and/or it is not subject to wild fluctuations in terms of its value. Third, being a stable store of value would require the item to be: (c) in continual demand because of its rarity or finite supply. Being rare or in finite supply means that the item is not easily obtainable or producible or that central or private banks can create indefinite quantities of it "at will" or "out of thin air." Being rare or in tight supply ensures that people are more apt to

value it and/or to desire it, because for most people in society, a great degree of work, labor, or effort needs to be carried out in order to acquire it (e.g., in order that a person be able to pay their taxes). A great abundance or an infinite supply of something will most often lead to people taking the item for granted, as everyone owns it and no-one needs it. For example, precious metals, are considered to be "precious" in part because there is not a great abundance of gold and silver on the planet, and it takes tremendous expenditures of oil, gas, labor, and other resources in order to dig these metals out of the ground. If melted into cubes, it is estimated that all the gold in the world would fit neatly inside five Olympic-sized swimming pools, whereas approximately one billion ounces of silver are mined globally per year. Other commodities like oil and wheat are also in short supply, the former having a non-renewable supply in nature, the latter needing the labor of the farmer, fuel, seeds, and fertilizer, to generate. As for Bitcoin, it is indicated that only 21 million Bitcoins will be able to be mined over the next thirty-five years, and most of these have already been mined. So, it would seem that a feature of cryptocurrencies is rareness, but in reality, a virtually endless supply of "forked" and new brands of cryptocurrency can be created. Paper and polymer dollar bills can be created by central bank printing presses in a virtually unlimited supply, and electronic Dollars may be created by way of a simple keyboard stroke. However, the purchasing power of each of the bills in existence is relative to the money supply. Each new bill being produced and released into circulation can be said to "steal" value from those already in existence, as is the meaning of *inflation*. The United States dollar has lost over ninety-eight percent of its purchasing power since its inception in 1913. The terms "deflation" and "inflation" as well as "hyper-deflation" and "hyper-inflation" generally refer to swings in terms of the purchasing power of the medium of exchange, resulting in a less-than-stable store of value over time. In opposition to Chartalists who suggest that a great deal of inflation would be created as a result of a period of high mine production of precious metals were they to be used as the monetary substance, one might argue that central banks could be tasked with the virtuous regulation of the number of newly minted gold and/or silver coins, introducing only as many as is warranted in relation to the growth of the economy in a given time frame, thereby avoiding the extremes of excess and deficiency in so doing.

Fourth, for an item to be a stable store of value over time requires that it be universally or widely accepted among members of a community as a medium of exchange over a long period of time. Gold and silver have a long track-record of being used as media of exchange, having been selected by various cultures to take on this function across diverse cultures for over five thousand years. Aristotle concludes that while sound "money is not always worth the same" at all times, its value "tends to be steadier (than goods)."[33] Being a relatively stable source of value is another component of fairness in exchange, as it allows reasonable equality in terms of the social debt-credit relationship that is the bargain over time. If one received ten dollars five years ago in exchange for providing an hour of labor for another person, and found the bill years later in the pocket of one's old pair of jeans in the attic, one would want to be able to exchange it for a similar amount of goods that one could have had in the past, thus ensuring that the value of one's past work did not go to waste. However, of course, inflation may have reduced the purchasing power of this piece of money substantially, as in the intervening time, more paper bills have been printed up by the issuing authority, or more gold or silver has been dug out of the ground and added to the money supply.

All in all, Metallists allege that Aristotle has provided us with five interconnected criteria that constitute a fully "sound" medium of exchange. Again, these are: (1) portability; (2) enduring indispensability in respect to the purposes of human life; (3) divisibility; (4) fungibility; and (5) a stable source of value over time (i.e., involving a reference to the medium's physical durability, its being continually in demand, and its rarity). A sixth criterion, (6) the (near) "universal acceptability"[34] or "fixity of agreement" among members of a tribe, community, or nation in relation to the particular substance(s) to be used as money might satisfy some Chartalists, and might ideally introduce some degree of democratic consensus in respect to what item or items are to be employed as media of exchange. As has been shown, several of these concepts are much more complex than might be interpreted on first sight. Not only do these criteria point to the attributes of money that ensure that money-forms are practical in terms of

[33] Aristotle, Nichomachean Ethics, Book V, Chapter 5, ed. McKeon, 1133b14, p. 1011.
[34] Greenspan, Alan, "Gold and Economic Freedom," in Rand, Ayn, *Capitalism: The Unknown Ideal*, New York: New American Library, p. 140 (electronic version).

their acceptability and wide, daily use, but as has been alluded to in the present section of this essay, they also address concerns with respect to justice in economic exchanges. Again, while silver and gold coins tend to match up best with these five criteria, as Metallists claim, Aristotle provides no direct statement in his writings suggesting that they are the best substances to be employed as media of exchange. Later in the *Politics*, he even provides a criticism of amassing gold rather than the goods and services that are useful to the household and to the purposes of life. That said, Aristotle did not largely consider the possibilities of a bi- or pluri-metallic standard, or of the prospect of the citizenry of a nation employing either multiple forms of money or a basket of commodities as money at any one time.

V. ARISTOTLE, MONEY, VIRTUE, AND LIVING THE GOOD LIFE: A TALE OF EXCESS, DEFICIENCY, AND THE GOLDEN MEAN

Moving from Aristotelian reflections on the criteria of sound money to a consideration of the sound orientation toward money and its use, an important point that Aristotle makes about money is that when we use it to transact with one another, we should not forget about the value of the tangible goods, services, and labor that are being exchanged. For him, true wealth involves ownership of tangible goods, services, and labor that are enduringly indispensable to the purposes of human life, and this is not simply equatable with the excessive accumulation of the medium of exchange, i.e., construed as symbolic units of potential credit. In the *Politics*, Aristotle makes the case that living the good or virtuous life is inconsistent with the unlimited pursuit of wealth-getting of the "artificial" sort that is possible with the use of money, in contrast to the pursuit of wealth of the "natural" sort—involving the acquisition of tangible and useful goods, services, items, and resources that are useful to the household.

Aristotle says that living the virtuous and/or good life is inconsistent with the accumulation of mere money to the maximal degree, namely, in a manner that is decoupled from life and from the necessities of the household. Rather, a virtuous golden mean between the accumulation of the medium of exchange and the accumulation of the goods and services that maintain and enhance life is to be cultivated. Even the accumulation of forms of "sound" money cannot be seen as an all-sufficient condition for human life (i.e., given that no medium of exchange is absolutely perfect when it comes to matching up with all of the

criteria of "sound" money), nor for the expansion of a human being's life-range. And, for Aristotle, we must realize the limits of the accumulation of the medium of exchange in terms of fulfilling the purposes of human life. He states that

> when the use of coin had once been discovered, out of the barter of necessary articles arose the other art of wealth-getting, namely retail trade; which was at first probably a simple matter, but because more complicated as soon as men learned by experience whence and by what exchanges the greatest profit might be made. Originating in the use of coin, the art of getting wealth is generally thought to be chiefly concerned with it, and to be the art that produces riches and wealth; having to consider how they may be accumulated. Indeed, riches are assumed by many to be only a quantity of coin, because the arts of getting wealth and retail trade are concerned with coin. Others maintain that coined money is a mere sham, a thing not natural, but conventional only, because, if the users substitute another commodity for it, it is worthless, and because it is not useful as a means to any of the necessities of life, and, indeed, he who is rich in coin may often be in want of necessary food. But how can that be wealth of which a man may have a great abundance and yet perish with hunger, like Midas in the fable, whose insatiable prayer turned everything that was set before him into gold?
>
> Hence men seek after a better notion of riches and of the art of getting wealth than the mere acquisition of coin, and they are right. For natural riches and the natural art of wealth-getting are a different thing; in their true form they are part of the management of a household whereas retail trade is the art of producing wealth, not in every way, but by exchange. And it is thought to be concerned with coin; for coin is the unit of exchange and the measure or limit of it. And there is no bound to the riches that spring from this art of wealth-getting … of the spurious kind [i.e., in which accumulation of a hoard of coins without limit is the end]. … But the art of wealth-getting which consists in household management [e.g., being concerned with the provision of nutritious food], on the other hand, has a limit; the unlimited acquisition of wealth is not its business. …
>
> Hence, some persons are led to believe that getting wealth is the object of household management, and the whole idea of their lives is that they ought either to increase their money without limit, or at any rate not to lose it. The origin of this disposition in men is that they are intent upon living only, and not upon living well; and, as their desires are unlimited, they also desire that the means of gratifying them should be without limit. …
>
> So there are two sorts of wealth getting, as I have said; one is a part of household management, the other is retail trade: the former necessary and honorable, while that which consists in exchange … is unnatural… The most hated sort … is ***usury***, which makes a gain out of money itself, and not from the natural object of it. For

> money was intended to be used in exchange, but not to increase at interest. And this term interest, which means the birth of money from money … of all modes of wealth getting this is the most unnatural.[35]

In reading the passage above, one may be reminded of the well-known Ininiwok (Cree) proverb, "when the last tree is cut down, the last fish eaten, and the last stream poisoned, you will realize that you cannot eat money." Here, Aristotle is claiming that real wealth does not involve the accumulation of the medium of exchange (e.g., coin) without limit; rather it involves the successful management of the household, including the acquisition of those goods and services that serve to promote, maintain, and enhance human life, but also, maintaining some savings in the medium of exchange for the potential of acquiring diverse goods and services to meet the future exigencies of life and/or unforeseeable situations. Human beings can neither subsist on any one commodity, nor on coin alone. Rather, for the household to be managed successfully and for human beings to be well and to flourish, there is need to acquire diverse goods: water, nutritious food, shelter, clothing, a heat source, etc… some of which can be acquired by one's own labor in gathering and processing nature's resources, and some through trade with others, given that human beings have limited skills, resources, and finite capacities to produce everything they need for themselves.

While possessing a moderate amount of the common medium of exchange facilitates the latter, helping us to get what we need from other members of the community, and to do so with some certainty, for Aristotle, it is important to distinguish between excess and deficiency and to act according to the "Golden Mean" if we are to live the virtuous life. From an Aristotelian perspective, injustices among members of a society may occur when a person who is given over to hedonism produces nothing for themselves, yet due to the indefinite amount of money they have accumulated (or for example, "created out of thin air" by way of private and central banks), are able to place a continual unlimited demand on the goods and labor of others. Aristotle's main thesis is that the unlimited pursuit of the medium of exchange threatens to decouple money from life, a theme that has been prevalent, in contemporary times, in the works of

[35] Aristotle, *Politics*, Book I, Chapter 9, ed. McKeon, 1257b1-1258b8, pp. 1138-1141, my additions based on Aristotle's own statements.

Canadian political philosopher, John McMurtry.

VI. JOHN MCMURTRY'S DISTINCTION BETWEEN THE "LIFE-CODE" OF VALUE AND THE "MONEY-CODE" OF VALUE

In books such as *Unequal Freedoms* (1998)[36] and *Value Wars* (2002),[37] and elsewhere, the late Canadian philosopher, John McMurtry (1939-2021) has presented a profound criticism of the assumed money-centered values that underpin the functioning of the present global economic system. For him, the current global economy comprises a largely unquestioned value program that both represents and espouses money-oriented values that it consistently inculcates into human beings. Furthermore, the values of the global economy reduce life to the stature of being in service to money. In contrast, McMurtry emphasizes the need to adopt life-centered values, in which money is a tool that is in service to life, one that helps life to acquire its own means, that widens its range, that promotes the well-being of living beings, and that enhances both the civil commons and the wider biosphere.

In making his case, first, McMurtry demonstrates how the global economic system is a value-program. In so doing, McMurtry contrasts the concept of a *value-system* with what he calls a *value-program*. For him, a value-system is "an overall structure of thinking … that connects together goods that are affirmed and bads that are repudiated."[38] A value-system is representative of the legitimate set of values by which individuals and societies select and accept some actions, behaviors, and norms to be moral, or ethically "desirable," and others are rejected as immoral, or ethically "undesirable," thus founding their way of life (e.g., one can adopt "family" values, become a vegetarian, become an environmentalist, make "lifestyle" choices, embrace the values of a particular religious denomination, etc…). These values can be selected freely and adopted by individuals, and they can be placed into question (i.e., criticized using logic and argumentation), and they may change in response to the exigencies of life. However, on the contrary, for McMurtry, a value program is a set of implemented

[36] McMurtry, John, *Unequal Freedoms: The Global Market as an Ethical System*, Toronto, ON, Canada: Garamond Press, 1998

[37] McMurtry, John, *Value Wars: The Global Market Versus the Life Economy*, London, UK: Pluto Press, 2002.

[38] McMurtry, *Unequal Freedoms*, p. 7.

values, structures, and standards by which individuals, societies, and cultures direct themselves. The notion of a value program contrasts with a value system, in that while the latter is open to critical questioning, reflection, change, the former is totalizing, closed to revision or critical examination, and rules out all thought outside of it. In other words, a value-program is fixed and final, while a value-system is ongoing and open to revision in response to the exigencies of life. For McMurtry, in general, reasoning, logic, and critical argumentation cannot be applied against it with much effect. It is merely assumed as the given way that the world is set up without much potentiality for change. The critical challenging of a value program, regardless of the legitimacy of the grounds, are met with outright dismissal, sanctions, or the exertion of power to quell them, despite the notion that, as McMurtry points out elsewhere, the whole history of "humanity's learning" is a "history of variations on this theme [i.e., of critical thinking and inquiry]."[39]

According to McMurtry, in the global free market system that exists today, there are few, if any, protective barriers to trade. Multinational corporations are free to buy or sell, do business, employ labor, extract resources, and move capital and profits across national boundaries, with little in the way of taxes, tariffs, and regulations demanded by national governments. In the global economy, multinational corporations are able to "buy and sell across markets without having to contribute proportionately to the immense costs of infrastructures, protection, and public services in any one country."[40] For example, multinational corporations are able to "set up shop" in developing host countries, gain access to its resources, obtain land, displace its people, and use up its labor force, in order to produce, export, and sell products to consumers in developed countries. Cheap labor lowers costs in the production of goods, thereby increasing a corporation's profits. By producing for the multinational corporation rather than for themselves, the labor force of a host developing country is in many cases taken away from producing needed goods and services for its own community. For McMurtry, it is because there are few, if any, protective barriers to trade, in the global economy, multinational corporations have little obligation or responsibility

[39] McMurtry, John, 'The History of Inquiry and Social Reproduction: Educating for Critical Thought,' *Interchange*, vol. 19, no. 1, March 1988), p. 31.
[40] McMurtry, *Unequal Freedoms*, p. 116.

to contribute to the communities that host them. Once they have used up local resources and/or cannot continue to produce goods without the expenditure of serious costs, they may "close-up shop," taking their accumulated capital out of that country, never to return. And, since there are generally fewer environmental standards in impoverished countries, multinational corporations are subject to fewer environmental regulations and restrictions in producing their goods. At the same time, multinational corporations outsource labor away from their home nations. Workers in the corporation's home nation simply cannot compete with the low-cost labor that is available in developing nations. The home nation stands to become less self-sufficient in producing its own goods, and becomes dependent on other countries for its subsistence.

McMurtry argues that our participation in the global marketplace can be construed as an adherence to a monstrous value program (of which we remain largely unconscious or unaware, and which goes largely unexamined). The value-program of the marketplace can be summed up by the normative claim that "the pursuit of personal maximal income is natural, rational, and required for society to work."[41] That is to say, the value program of the global economy is centered around economic self-maximization, to the point of placing money ahead of life. Basically, in McMurtry's characterization, it involves liquidating life for the sake of accumulating ever-increasing quantities of money, a point that is parallel to Aristotle's characterization of the vice that is inherent in taking the accumulation of the medium of exchange to excess, yet taking this to a global scale. In the global economy, money places a demand on life, rather than being in service to life or being used to enhance the civil commons and/or the biosphere. As McMurtry writes, "money-capital is not real capital, but demand on real capital with no bounds, … every form of human, natural and social capital [being] sacrificed to the growth of money-capital—concentrated in the possession of about 2 per cent of the population who invariably have more than the bottom 90 per cent"[42] collectively. He continues, "clean water, … a sustainable mantle of topsoil, the phytoplankton base of marine life, the biodiverse habitats of species reproduction, the biosphere itself—are all strata of life-capital," namely, the

[41] *Ibid.*, p. 61.

[42] McMurtry, John, "Myths of the Global Market," *New Internationalist*, June 1st, 2007 (my addition), https://newint.org/columns/essays/2007/06/01/essay/

"wealth of the human and ecological life that reproduces and grows." But in the global economy, these are considered to be worthless externalities to the system and/or otherwise in service to the function of the accumulation of money / "money-wealth creation." As McMurtry describes, "money grows by consuming human and natural resources as part of its feeding cycle … the 'life-capital' of society [being] eroded as private [money] capital accumulates." The money-focused value program of the global economy proceeds in predatory fashion on the life system and on the well-being of life, cumulatively "despoil[ing] and destroy[ing] human and ecological life"[43] even to the point of the destabilization of the entire global climate. And then once global catastrophe becomes thoroughly inevitable, the global economy will step in further to fund global geo-engineering "solutions" that render the remainder of the life system subservient to its demands.

For McMurtry, most of us are largely complicit with, or in service to, the money-based (rather than life-based) value-program of the global economy in our everyday lives, and all thought outside of it is immediately excluded. We tend not to interpret the global economy as a value system that can be challenged but rather simply the unchangeable reality within which we must live. Even if one does ask questions or raise an issue as regards to its ideological nature, it is, in general, forbidden to challenge the values espoused by the global marketplace. As indicated by McMurtry, defenders of the system oppose anything that challenges the existing economic system. It is implied that we must let the accumulation of money and the "invisible hand" of competition, supply, and demand rule our lives without critical examination, interrogation, or operation against it. As evidence for his claims, McMurtry points to some of the money-code mantras that we commonly hear today (e.g., "we must compete … there is no alternative (TINA) to the new economic realities"; "there will be casualties, but we must stay the course"; "our company will have to *restructure* to compete in the global marketplace"; "I agree with your idealism, but it is totally unrealistic to think that people could do anything to change the global economic system"; "this is simply the way it is and must be. Adapt or perish"; or "there will emerge only one winner in this industry"). Rather than allowing for any critical

[43] *Ibid.* (my additions).

questioning of the way the system is, such mantras have the purpose of shutting down creative proposals to change the global economic system so that it incorporates more life-oriented values within its purview. McMurtry characterizes that it is held that "one must never interfere with (the market's) production or its prices on moral, political, or any other grounds,"[44] even though, for him, the current course will further social injustice and environmental degradation on a global scale.

Second, McMurtry distinguishes what he calls the "Life-Code of Value" from the "Money-Code of Value." What McMurtry calls the "Civil Commons," or alternatively, the "public life world," is the "bearer of the "Life-Code of Value" or "the life-ground." What McMurtry means by the term "Civil Commons" is "society's organized and community-funded capacity of universally accessible resources to provide for the life preservation and growth of a society's members and their environmental life-host, … [namely] what people ensure together as a society to protect and further life, as distinct from money aggregates."[45] This may include public infrastructure (e.g., roads, sewers, police, fire-fighting, hospitals), public education, public transportation, public parks and recreation, public emergency response, public health care, public water treatment facilities, affordable housing, public insurance, and access to clean air, food, and water. The civil commons, or alternatively, the public life-world is, for McMurtry, the bearer of the life-code of value.

For McMurtry, in the global economy, without much, if any, public scrutiny or regulation, money places a demand on life and it is imperative that we recognize that "money is a socially-constructed unit of demand on society's labor, resources, and goods."[46] He emphasizes the advancement of values that are consistent with that which truly enables life to flourish. The maximization of the monetary "bottom line" (e.g., a country's GDP) is not a good indicator of the overall well-being of human beings, of non-human beings, or of the biosphere, many important factors like access to clean water, health, education, social well-being, being omitted. In fact, he argues, operating in the interests of the money-code of value systematically degrades what he calls the "life-ground," namely,

[44] McMurtry, *Unequal Freedoms*, p. 58.
[45] *Ibid.*, p. 24.
[46] *Ibid.*, p. 350.

those factors which we all commonly require in order to live and flourish. The life-ground is "the connection of life to life's requirements as a felt bond of being that crosses boundaries of membranes, classes, people, and even species."[47] Values that are both in concert with, and advance the life-ground are those which contribute to what McMurtry calls the "Life-Code" of value, which stand in sharp opposition to values based solely in the "money-code" (e.g., those which affirm the accumulation of money / monetary profit at the expense of life). He thinks we need to redirect the way that money is used, such that it is in service to life, rather than placing a demand on life by its use. To this end, for him, individuals ought to empower themselves through a recognition that they are members of the public life-world / the civil commons that ultimately decides what will happen and what will not. Individuals might engage in authentically fair trade, make consumer decisions (e.g., buy locally), invest in ventures that promote, enhance, or at least do not damage life (e.g., ethical stocks), and use their political power to make sure that governments use tax money not to support the erosion of the life by money interests.

For McMurtry, banks and financial institutions must be regulated so that they are made to loan money in ways that place less of a demand on life (e.g., lower, non-compound interest rate loans) and at lower risk, recognizing their own interdependence with borrowers and with the public / the civil commons, instead of stretching greed to the point of the collapse of entire societies / life. Furthermore, businesses can act in contradiction to the "Friedmanite" orientation in which it is believed that business corporations exist solely for the sake of making money for stockholders, and nothing else. According to McMurtry, corporations ought to invest in strengthening the civil commons, in reducing the pollution they create, in taking environmental responsibility for the products that they produce, and in enhancing the health of the biosphere as a whole. At the very least, for him, corporations should be made to meet their public responsibilities. They ought to pay their (proportionally) fair share for the public infrastructure (and its maintenance) that they require in order to operate, wherever they operate: roads, sewers, the education system, health care, police, fire, environmental protection, etc.... Lastly, McMurtry warns against rampant

[47] *Ibid.*, p. 23.

market speculation and derivatives trading, in which wealth may be attained without any commodity, good, or service even being produced, and in which money is made in increasing amounts without reference to life.

In short, McMurtry shows clearly that in the global economic system today, there has not only been a profound forgetting of life and of life-oriented values, but also an operation against life in favor of the pursuit of money, the (unbacked) medium of exchange, which is similar to Aristotle's warning in Ancient times. In the value program of the global marketplace, for him, human and non-human life and well-being are largely considered externalities to the pursuit of increasing amounts of money. McMurtry's reflections can be extended so as to apply not only to the norms belonging to the market (that comprises the superstructure of this global system), but explicitly (and more deeply than his own analysis goes) to the financial infrastructure that underpins it, including to the topics that this paper is considering: i.e., the proper character of money and banking as well as the process by which money is created (by private banks) within this global economic system. McMurtry's emphasis on the "life-code" of value, which recognizes the intrinsic value of life and the value of that which supports life, also serves as an entry-way for considering the importance of bringing a holistic organicist, biophilosophical lens to the examination of such phenomena. This is not only to help ensure socio-economic justice, financial fairness, and civilizational sustainability, but especially for the sake of cultivating ecological- and/or biological-wisdom, in relation to money, money creation, and the use of money in a time of global environmental crisis.

VII. A CRITIQUE OF THE NORMATIVE LEEWAY THAT PRIVATE BANKS HAVE TO CREATE MONEY, AND THE NEED TO CULTIVATE ECOLOGICAL- AND/OR BIOLOGICAL- WISDOM

One striking contemporary reality underpinning the global economy involves the process of money creation. Pointing to the McMurtryan claim that most people are concerned with the task of acquiring money as a central facet of their existence, yet live unquestioningly under the value program of the global economy, awareness of how money is created today is still not widespread. This is due not only to a lack of transparency in relation to the process of money creation on the parts of private and central banks, but also to a lack of critical

financial education on the subject.

The fact is that, today, private banks have the lion's share of responsibility for creating money. The money that they create is considered "legal tender" whereas it would be considered counterfeit for the average person to create their own monetary units with which to place a demand on the resources of others in their basement. Whether bestowed with this ability by governments or having assumed it, private banks have the normative leeway,[48] or, in other words, the nearly exclusive power—a tremendous power— in society, to be able to create money *ex nihilo* on the basis of a "borrower's" promise to pay a loan. When it comes to the process of "loan-granting" in the financial system today the "borrower" is most often not "borrowing" anything in the ordinary sense of the term, as when a neighbor comes to one's door to ask to borrow our pressure washer so that they can wash their vehicle. Today, private banks need not lend money that is already in existence and that belongs to them, or even that which is drawn from the reserves of deposits by their clients into their bank accounts. In other words, they do not necessarily have to "loan what they own," while a person "paying back" a loan typically must spend many days working to do so or they must sell something tangible that they own. Rather, after the bank decides that the client is trustworthy enough and has the realistic means to pay the amount of the "loan," with interest, over time, the money that is "lent" to them is simply created *ex nihilo* by the agreement. It is newly created money. Basically, the sum of the "loan" is

[48] In explanation of the term "normative leeway," norms are rules or expectations for behavior as set out by institutions, organizations, and societies. While persons who are employed in the professions (e.g. physicians, nurses, pharmacists, bio-engineers, biomedical researchers, lawyers, professors, psychiatrists, counselors, teachers, chartered accountants, financial advisors, journalists, etc…) are generally expected to follow established societal norms, they are, at the same time, given a degree of what may be called "normative leeway" by society—the granting of certain exceptions to professionals from some specific norms, so that they are able to carry out their critical functions. For example, doctors and nurses can give their patients physical exams and needles, something that the average person on the street is not allowed by society to do (as they would be charged with assault under the criminal code). Also, in an emergency ward where a patient comes into the hospital alone and with a traumatic injury, lying unconscious on a gurney, physicians can perform surgery without their consent. It would probably be considered assault if the average person on the street did this. Professional associations representing the professions are most always lobbying society to be able to expand the range of services that their members are able to perform. So, it should be remarked here that while the attribution of a degree of normative leeway by society to various occupations is nothing new. In relation to banking, bankers have the normative leeway to create money. It should be noted, however, that the ability to create money on the basis of a borrower's promise to pay the amount of a loan is a tremendous power, that at the very least, ought to come with great responsibility.

just typed into the computer, without even the slightest work or effort beyond the click of a mouse, and entered as a deposit into the client's account. The client is credited with the amount, which means that the bank has a liability for this amount, but at the same time, the amount belongs to the bank's reserves, because the client's account is with the bank. Even though the bank does not, in advance, own the money or loan to the client anything that it owns, or provide anything of value than a typing of the sum of the loan into the account of the client, the bank still reaps the profit of the interest that the person pays on the money that is newly created and deposited in their account in the context of "taking out a loan." In clarifying this seemingly arcane and arbitrary process of money creation by private banks, Werner (2014b) states,

> banks can individually create credit and money out of nothing, and they do this when they extend credit. When a loan is granted by a bank, it purchases the loan contract (legally considered a promissory note issued by the borrower), which is reflected by an increase in its assets by the amount of the loan. The borrower "receives" the "money" when the bank credits the borrower's account at the bank with the amount of the loan.[49]

And direct from the lion's mouth, the high profile former Canadian and British central bank chief, Mark Carney puts it as follows in his book *Values: Building a Better World for All* (2019),

> in the modern financial system, the private financial sector creates most of the money in circulation …. The principal way banks create money is by making a loan. When the bank decides a borrower is creditworthy (that they are likely to pay the loan back) it credits their deposit account for the amount of the loan and new money enters circulation. In making that lending decision, the bank relies on a degree of trust, which after all is the meaning of the Latin *credere*, the root of our word for credit.[50]

In general, today, there is no legally required threshold that private banks must hold in reserve to be able to make a loan of any particular sum. While there

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[49] Werner, Richard A., 'How Do Banks Create Money, and Why Can Other Firms Not Do The Same?: An Explanation for the Coexistence of Lending and Deposit-Taking,' *International Review of Financial Analysis*, vol. 36, 2014b, pp. 69-70.

[50] Carney, Mark, *Values: Building a Better World for All*, Toronto, ON, Canada: Penguin Random House Canada Limited, 2019, pp. 69-70 of the electronic version of the book. In relation to the process of money creation by private banks, also see Tobin 1963; Nichols and Gonczy 1994; McLeay, Radia, and Thomas 2014; Werner 2014a and 2016; Kumhof and Jakab 2016; Etzrodt 2018; and Hook 2022.

may be various limits as to how much money can be prudently created in this manner by banks at any one time (e.g., based on the deposits and assets held in or by the bank and the expected withdrawals of clients; the monetary policy and the interest rates set by central banks; and/or bank reserve levels they hold with central banks), the fact is that calculations of the risks involved are largely business decisions made by bank executives and employees that are not subject to much, if any, government oversight or regulation.[51] Given these realities, Carney (2019) suggests that private banks must be "run well" if they are not to fail, and central banks can "step in" if there are concerns about their solvency.[52] Some 97%+ of the money that is in circulation in nations like Canada, the United States, and the United Kingdom issues in this manner from private banks, a fact that also clarifies the low ratios of physical money in the form of paper bills and coins (that central banks are responsible for issuing) to the money that exists in the form of numeric, electronic blips on a computer screen. Only 3-4% or less of the money supply in such nations is currently in physical or tangible form (and which is the responsibility of central banks to create), and today, neither form of money in these is generally backed by any tangible item or items that is/are of direct or explicit value to life, to biological well-being, or to life's purposes.

In response to those who do not feel secure or confident in relation to the seemingly trepidatious state-of-affairs pertaining to their hard-earned wealth that comes with the increasing digitization of money, Carney states that "the backstop of the current system of private electronic money is that users can always shift their holdings into cash."[53] But Carney does not mention the fact that capital controls of many different forms have been erected by private banks to limit this,

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[51] While Andrew Hook, in 'Examining Modern Money Creation: An Institution-Centered Explanation and Visualization of the 'Credit Theory' of Money and Some Reflections on Its Significance,' *Journal of Economic Education*, vol. 53, no. 3, asserts that "it is (private) banks that are the prime creators of money within the economy" he characterizes the relationship between private and central banks as one of "coordination and cooperation" (p. 219), namely, of the nature of a "public-private deal" (p. 226).

[52] Carney, *Values*, p. 70. Carney further states that commercial banks are "disciplined by competition, constrained by prudential regulation (that is, overseen by central banks) and limited by decisions of households and companies that can reduce the stock of money (by, for example, repaying their existing debts). Monetary policy is the ultimate limit on money creation because, by changing interest rates, it directly influences the price of money and other financial assets and therefore the demand for the money created by the private sector."

[53] *Ibid.*, p. 123.

generally doing so under the guise of being in the client's security interest. For instance, there is typically a limit on how much physical cash (i.e., four or five [or so] hundred dollars) one can take out of one's account at any one time at one's local ATM, and there is a limit on the amounts that one can e-transfer to another account at any one time (e.g., of three thousand dollars per day and twenty thousand per month). Additional "financial security measures" under the guise of preventing the funding of terrorism prevent larger transactions and cross-border exchanges occurring without scrutiny. Private banks have also limited the numbers of branches that are open to visit at any time and the hours in which they are open. Such capital controls are preventative of bank runs, which could lead to a bank's insolvency, whereas the possibility of a bank run operates as a check on banks operating with impunity. And with the complete digitization of money in a society, the prospect of a bank run operating as a check on bank power evaporates. It should be remembered that the digitization of money comes with a risk of widespread electricity blackouts and internet outages. Recently, Canada found this out the hard way when Rogers, an internet provider whose critical infrastructure was responsible for most electronic banking and business transactions in the country, had a two-day outage, and only those with physical cash could transact during that time. And parts of Europe may find this out as well in the near future when energy shortages occur as a result of their dependency on Russian energy and Russia's continuing war on Ukraine. It would suffice to say that the global financial system's dependency on electricity and on internet places wealth at some risk. Such outages could be used as an excuse by the executives of insolvent banks to hide the reasons for the sudden disappearance of the wealth of depositors.

Cryptocurrencies have been heralded as an alternative check on private bank power, in that by way of their use they "get rid of the middle-man" (i.e., the banks) as "gate-keepers" to one's wealth and in exchange. However, cryptocurrencies generally require miners and the great consumption of electricity in their operation, not to mention that they are typically "purchased" using national or fiat currencies, and so they represent a superstructure that extends out of the infrastructure of the existing monetary system. Carney believes that private cryptocurrencies will fail as a genuine way to attain "sound" money and banking, but he thinks that solutions (such as central bank digital money) will emerge like

a phoenix out of the crucible of their failing. A return to the backing of money with precious metals (which Carney also repudiates) has also been mentioned as a check on bank power in that this imposes limits on money creation and provides a tangible, preventing them from being able to operate with impunity. But it should be noted that their acquisition via mining activities is typically accompanied by a great negative ecological impact.

The fact that private banks have the normative leeway to create money *ex nihilo* whereas other business, institutions, and persons do not have this overarching power can be seen as a fundamental inequality or unfairness in society. In fact, historically, in the United States, there have been several formal proposals made to reform banking and/or to strip private banks of their nearly exclusive power to do so. For example, in the context of the Great Depression, from 1933-1935, Henry Simons, Lauchlin Currie, Irving Fisher, James Angell, and other economists set out various plans for banking reforms (e.g., such that private banks would be required to back new loans 100% with reserves). What is known as "the Chicago Plan" proposed "the outright abolition of deposit banking on the fractional reserve principle."[54] Thinking along these critical lines also followed in the aftermath of the 2008 global financial crisis, laying much blame for it due to the excesses of power that private banks exercised, going well beyond their existing means in the context of providing loans. Such contemporary thinking has been geared toward the task of preventing the next, even bigger, financial crisis, yet proposals of this sort have not been officially implemented in any major way.

Another important point to note is that the selection by private banks of credit-worthy clients for loans is nearly exclusively based on the criteria of whether they will be able to pay the sum of the loan (with interest) to the bank in timely fashion. In other words, decisions as to who receives newly created money in the form of "loans" are nearly exclusively based in the bank's calculations of the certainty that they will profit from the client, regardless of their overall character, the nature of their projects, their business plans, and/or in what they plan on purchasing with the loan money. There is little to no consideration of

[54] Demeulemeester, Samuel, "The 100% Money Proposal and Its Implications for Banking: the Currie-Fisher Approach Versus the Chicago Plan Approach," *European Journal of the History of Economic Thought*, vol. 25, no. 2, 2018, p. 377, quoting Henry Simons, "Banking and Currency Reform" (1933).

factors such as the social or ecological impact of their intentions with the loan money. A businessperson who intends on building a new ski resort that encroaches upon the habitats of wild animals and/or whose projects involve the mass burning of fossil fuels is just as likely (or even more likely) to be successful in qualifying for a loan as the student who needs to pay for their university tuition, the average person seeking a mortgage to be able to purchase a small home for their family to live in, an individual who needs to pay their health care bills, or someone who wishes to start up an environmental conservancy preserve in a local ecologically-sensitive area. Again, all that generally matters for the bank is the person's ability to pay the sum of the loan with interest in timely fashion and to ensure that there is a high probability of making a substantial profit. So, as Demeulemeester (2018) points out, it is often life-blind "*private* interests that largely determine decisions over new destinations for credit … credit creation (being) dictated purely by the profit and risk calculations of banks."[55] Yet, in the global economy, in many respects, such "loans" are responsible for funding the future trajectory of societal and/or civilizational development. They shape the structure of society and the quality of individual lives. For instance, under the existing money creation rubric, loans for those of lower classes and for the marginalized tend to cost them more in the form of being charged higher rates of interest, contributing to an intergenerational vicious cycle of impoverishment. Similarly, private banks tend to charge more in the way of monthly service fees to clients with account balances lower than certain established thresholds (e.g., three- or four-thousand dollars). Governments generally require loans in order to fund programs such as health, social services, and daycare. And money-creating "loans" made by private banks also contribute to the determination of whether or not human activity will exacerbate global ecological problems such as climate change.

To be fair, Carney (2019), for example, recognizes the great stakes that are in play in the process of money creation by private banks providing "loans." Carney considers such issues and makes the recommendation to include additional criteria (e.g., social benefit and ecological impact) in the context of private banks selecting who should qualify for loans, but, of course, the real hows of such a

[55] *Ibid.*, p. 224-225.

proposal have yet to be thought through comprehensively and implemented. Carney calls for

> a fundamental reordering of the financial system so that all aspects of finance—investments, loans, derivatives, insurance products, whole markets—systematically take the impact of their actions on the race to net zero. The objective is a financial system in which climate change is as much a determinant of value as creditworthiness, interest rates or technology, where the impact of an activity on climate change is a new vector, a new determinant, of value.[56]

Identifying "trust" and "confidence" as key to the well-functioning of financial institutions, Carney emphasizes the importance of private and central banks in climate action, while downplaying the potential role of existing cryptocurrencies therein. He stresses the urgent need for the financial sector to become more responsible in relation to climate change and to help fund and "fuel" the "revolution" in technological innovation that will be necessary for "the transition to (an ecologically-) sustainable economy" and to achieve the goal of a society-wide "net zero" in terms of carbon dioxide and other greenhouse gas emissions.[57] To this end, Carney has championed the global *Net-Zero Banking Alliance* that is affiliated with the wider *Glasgow Financial Alliance* for Net-Zero. These organizations endeavor to help with financing the climate pledges of nations in relation to the reduction of carbon emissions to net zero by 2050, to facilitate the phasing out of fossil fuels, to work with industries in order to find ways to lower their climate impacts, and as Carney says, to support private banks to "bring[] their deep expertise and strong balance sheets to drive solutions for the sustainable economy."[58] Carney asserts that "the most promising approach to solving climate change involves engineering, political and financial technologies,"[59] that companies and assets "will be increasingly be viewed through the lens of the climate transition"[60] that is to come, and that the financial sector will factor climate and "climate-related risks" into "lending decisions."[61]

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[56] Carney, *Values*, p. 347.
[57] Carney, *Values*, pp. 317; 327.
[58] See Bickis, Ian, "Big Six (Canadian) Banks Join Mark Carney-Led Net-Zero Banking Alliance," *BNN Bloomberg*, October 15th, 2021: https://www.bnnbloomberg.ca/big-six-banks-join-mark-carney-led-net-zero-banking-alliance-1.1666894.
[59] Carney, *Values*, p. 487.
[60] Carney, *Values*, p. 487.
[61] Carney, *Values*, p. 544.

Yet, such proposals already assume that heightened technological and business innovation are the keys to solving the climate change crisis is, and, as such, Carney's stance on the role of banking therein can be criticized from a Deep Ecological perspective.[62]

From the perspective of Deep Ecology, and as highlighted by the traditional "I=PAT equation,"[63] technology has been a main contributor to the onset of the global ecological crisis that we face today, even though technological progress is most often assumed by persons positively as something to be valued that is implicit to the advancement of humanity. For Deep Ecologists, the prospect of technological- and market-based solutions to the global ecological crisis is representative of "Shallow Ecology," and not "Deep Ecology."[64] For them,

> technological society not only alienates humans from the rest of Nature but also alienates humans from themselves and from each other. It necessarily promotes destructive values and goals which often destroy the whole basis for stable viable human communities interacting with the natural world. The technological worldview has as its ultimate vision the total conquest and domination of Nature.[65]

In coming to concrete solutions for the global environmental crisis over the long term (and sometimes citing Heidegger's seminal critique of modern technology[66]), Deep Ecologists call for a far deeper form of critical reflection, one that calls into critical question the technological society and the whole way of life that is assumed under the rubric of the global economy. After all, from the perspective of Deep Ecology, the global ecological crisis is not going to be solved by way of building, mass producing, and marketing electric motor vehicles (or any other type of motor vehicle) and adding them to the road, not to mention the need to construct a vast infrastructure of power stations across the landscape that

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[62] See Devall, Bill, and Sessions, George, *Deep Ecology: Living as if Nature Mattered.* Salt Lake City, UT, USA: Gibbs Smith, 1985.

[63] The assertion that: I (Environmental Impact) = P (Population) x A (Affluence) x T (Technology) was originally formulated and articulated by Paul Ehrlich, John Holdren, and Barry Commoner in the early 1970s (see Chertow, Marian R., "The I=PAT Equation and Its Variants," *Journal of Industrial Ecology*, vol. 4, no. 4, 2008, pp. 13-29).

[64] See Devall and Sessions, *Deep Ecology*, p. 65.

[65] Devall and Sessions, *Deep Ecology*, p. 48.

[66] See Devall and Sessions, *Deep Ecology*, pp. 98-100 as well as Heidegger, Martin, 'The Question Concerning Technology,' in *Martin Heidegger: Basic Writings*, trans. and ed. David Farrell Krell, New York: HarperCollins Publishers, 1954 / 1993, pp. 307-342.

is needed to power them. Instead, Deep Ecologists call for the reflective cultivation of deep "ecological wisdom" (*ecosophia*)[67] that, for example, can orient us toward the embracing of new, more holistic, alternative ways of life that are "off of the grid," and/or less dependent on the current global economic system. Deep Ecology emphasizes ecologically-wise, capital-'S' "Self-Realization"[68] in which our life-goals reflect the fact of our interconnectedness with, and dependency on, the natural world around us and of which we are a compositional part, rather than ecologically-ignorant, lower-case-'s' "self-realization" in which our life-goals are based in egoistic self-maximization to the neglect of the natural world that sustains us. Deep Ecology further calls for learning about ecological sustainability from the ways of life of Indigenous cultures and peoples as well as for "ecological resisting"[69] in representing the interests of non-human Nature, but that may obstruct what might be termed by authorities in human societies as "essential economic infrastructure."

While surely Deep Ecologists would admire Carney's enlightened suggestion that private banking can help to support and fuel so-called "green" initiatives, they would undoubtedly criticize Carney's proposals for being steeped in an anthropocentric humanistic ideological orientation and as only involving a mild "reforming" of the current system from within it that perpetuates the global ecological crisis. They may ask the question of whether, in the technological future that Carney envisions, private banks will fund the massive amount of money that it would undoubtedly take to carry out geo-engineering experiments and projects, such as stratospheric injections on a planetary scale putatively in order to shield the earth from a portion of the sun's radiation. Or they might ask: will they fund other mechanistic switch-flipping and technological lever-pulling projects rather than to promote the adoption lifestyles that reduce the emission of greenhouse gases? Or, will they fund artificial intelligence research and controversial transhumanist enhancement projects in order to produce beings that truly had the capacity to solve the ecological crisis? In contrast, Deep Ecologists believe that a biocentric revolution is needed in order to fully end the ecocidal activities that are currently contributing to its exacerbation. Against

[67] See Devall and Sessions, *Deep Ecology*, p. 74.
[68] See Devall and Sessions, *Deep Ecology*, pp. 66-67; 74-76.
[69] See Devall and Sessions, *Deep Ecology*, pp. 193-206.

Carney's proposals, Deep Ecologists may question whether private bankers, who have traditionally funded all of the industries that have contributed to the global ecological crisis, should suddenly be represented as the wise Philosopher-Kings who will be authorized as responsible for deciding the ways in which humanity will navigate the global ecological crisis going forward. Certainly, from a critical Deep Ecological perspective, the onset of the global ecological crisis should not offer to private bankers the opportunity to increase their already-overarching power as "gate-keepers" to money created via "loans" even further to the point of their having an even greater selective stranglehold over society and its various members. Or, it might be asked whether private banks, in selecting who qualifies for a (life-giving) "loan" and in deciding who does not, can be construed as engaging in a stealthy form of eugenics. After all, traditionally, private and central banks in Canada (which are phenomena of Western European origins) have undoubtedly helped to support the institutions of colonialism and genocide of Indigenous peoples. From a Deep Ecological orientation, Carney does not seem to acknowledge the contemporary need to critically scrutinize the level of power that banks and bankers currently have in terms of having the normative leeway to create money. He seems to emphasize the maximization of this power under the guise of a more enlightened wielding of it. Banks would gain great power over human and non-human life on this planet if widespread geo-engineering initiatives, which would require tremendous amounts of capital to fund, were to be funded and embarked upon. Finally, in conjunction with the biocentric values that they espouse, Deep Ecologists may point to the need to liberate life from the shackles of metaphysical credit-debt tallies upon which banks and bankers have their gazes focused, especially in light of the analysis above, which points to the fact that money creation process, in our day and age, is fraught with great arbitrariness and paternalistic "gate-keeping."

Coinciding with McMurtry's emphasis on the "life-code of value" in abstraction from the "money-code of value" as well as Deep Ecology's notion of "ecological wisdom" (*ecosophia*), a wider, related term, namely, "biological wisdom," was coined by the father of epigenetics, Conrad Hal Waddington (1905-1975) in his book entitled *The Ethical Animal* (1960). According to Waddington, "biological wisdom" entails seeing phenomena, beliefs, and actions "in the light

of their bearing on general evolution"[70] and an overall assessment of the health and well-being of the environment. Waddington suggests that humanity has become superdominant on the planet through its scientific and technical advances such that it has "conquered non-human nature." But, in light of his emphasis on biological wisdom, he says that "it is surely clear that we have not yet discovered the best way of using that conquest."[71] Instead, for Waddington, humanity should focus on "tasks of ethical value" including "perhaps the most important" of all—"the conquest of the conquest of nature."[72] Overall, the cultivation of "biological wisdom" can be said to involve: (1) the gaining of an understanding of the evolutionary and ecological impacts of our assumptions about the natural world and of our activities, not only on ourselves, but on fellow human beings, on future generations, and on the evolutionary trajectories of other organisms; (2) a critical reflection on these impacts; (3) a selection from among alternative hypothetical courses of action that may better promote the general good and well-being of the biosphere; and (4) the habitual engagement in such reflection and selection in order to guide ourselves in terms of ethical *praxis*.

Here, one may consider the impact of the banker's exercise of the normative leeway that they have to create money to selectively fuel science, technology, business, industry, and education, potentially promoting the further conquest of the natural world by a superdominant humanity, thereby shaping the past and future evolution of human and non-human life. With reference to the cultivation of "biological wisdom," the banker's exercising of the normative leeway that they have to create money *ex nihilo* on the basis of an assessment of a person's ability to pay a "loan" (with interest) over time is explicitly a biological phenomenon with wide impacts. In today's global economy, as access to money is typically a determinant of whether or not human projects, purchases, operations, and activities may go ahead, the selective funding by private banks today, of individuals, businesses, and institutions is an exercise of selective agency in the biological sense. As such, money and money creation can be viewed as biological phenomena and throughly analyzed through a biophilosophical lens.

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[70] Waddington, Conrad Hal, *The Ethical Animal*, New York: Atheneum, 1960, p. 204.
[71] *Ibid.*, p. 345.
[72] *Ibid.*, p. 344.

VIII. MONEY AND MORALITY AS CO-EMERGENT BIOLOGICAL PHENOMENA?: NIETZSCHE'S CRITIQUE OF THE DARWINIAN ACCOUNT OF MORALITY IN GROUP / COMMUNITY / SOCIAL / KIN SELECTION

As was asserted earlier in this paper, money is a "social debt-credit relation." But given that that much of what is social is explainable by its biological underpinnings, it can also be insightfully interpreted and analyzed as a biological phenomenon. According to Daniel Dennett, Darwin's notion of "natural selection," which, for him, is basically the greatest idea that anyone has ever had, can be characterized as "universal acid," namely, "it eats through just about every traditional concept, and leaves in its wake a revolutionized world-view, with most of the old landmarks still recognizable, but transformed in fundamental ways."[73] For Dennett, it forces us to reconsider just about every aspect of human existence (e.g., the natures of language, logic, knowledge, truth, mind, consciousness, self, morality, metaphysics, culture, society, economics, politics, religion, and artwork) in profound ways. We can certainly add the topics of money and banking to this list, which are here considered from a biophilosophical lens, and more specifically from a holistic organicist orientation.[74]

As Darwinian evolutionary theory tells us, human beings are finite organisms who must procure resources that are in great scarcity from the environment in order to survive. In this respect, sometimes they require help from others in order to meet the exigencies of living. And when one receives aid from others in one's time of need, there is typically an expectation that the favor be returned or reciprocated when others are in need. Otherwise, the prospects for survival and/or the life-range of the person who spent their finite energies and used their resources to assist the other may be severely diminished or compromised altogether. From an evolutionary perspective, the phenomenon of the use of money as a medium of exchange that accounts for credits earned and debts owed among persons both within the context of tribes and communities and between

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[73] Dennett, Daniel, *Darwin's Dangerous Idea: Evolution and the Meanings of Life*, New York: Simon & Schuster, 1995, p. 63.

[74] Others have certainly analyzed money with use of concepts from biology / the life sciences. For example, see: Lietaer, Bernard, Robert E. Ulanowicz, Sally J. Goerner, and Nadia McLaren, "Is Our Monetary Structure a Systemic Cause For Financial Instability?: Evidence and Remedies From Nature," *Journal of Futures Studies*, vol. 14, no. 3, March 2010, pp. 89-108.

tribes or communities, can largely, but not reducibly, be interpreted as a function of group / community / social / kin selection. It should be noted that evolutionary biologists, philosophers of biology, and sociobiologists have analyzed the emergence of phenomena such as morality and religion largely as functions of group / community / social / kin selection.[75]

Darwinian group / community / social / kin selection involves the notion that natural selection not only acts on individuals or operates on the level of the individual organism, but it also acts on groups, tribes, or communities as they compete with other groups, tribes, or communities as well as on individuals within groups, tribes, or communities as they interact and compete with other members of their groups, tribes, or communities. Group / community / social / kin selection is one among several sub-processes of natural selection alongside Darwinian artificial selection, sexual selection, Baldwinian organic selection (through which the organism exerts its own selective agency in relation to its behaviors and activities), and many other forms of selection, which all belong under the umbrella of the total process that is natural selection, as each of these sub-forms of selection contribute to the determination of which organisms are selected for, and which are eliminated, in the struggle for existence.

As regards to the evolutionary process of group / community / social / kin selection, when it comes to the struggle for existence, there is "power in numbers." Larger communities of human beings, in which the members operate gregariously, can generally face problems and dangers together more effectively than individuals and smaller groups, in that they can pool their talents, their resources, and their skills to do so, whereas individuals and small groups of people tend to be stretched to their limits in the struggle for survival far more quickly. Cohesive, cooperative groups are more apt to be successful in warding off threats, acquiring resources, hunting, gathering, warfare, transforming their environments, confronting environmental challenges, and attaining peaceful, cooperative, social living. As such, being a member of a cohesive, cooperative group, to some extent, insulates one, to great extent, against the raw struggle for existence that takes place in wild nature. For example, when a predator or enemy

[75] See especially chapter 16: "On the Origin of Morality" of Dennett's *Darwin's Dangerous Idea* (pp. 453-493) and chapter 7: "The Invention of Team Spirit" of his *Breaking the Spell: Religion as a Natural Phenomenon*, New York: Penguin Books, 2006 (pp. 175-199).

threatens an individual or a small group of people, members of cohesive, cooperative groups can call in other members of the tribe or community, even members of adjacent, or allied tribes or communities, for assistance to help drive them out. Or when there is a famine or drought, others, drawing from their own energies and stocks of provisions, can be called upon for assistance. Or when there is a fire, flood, tornado, or human-caused accident in one's locale, others can be called upon to respond in mitigating the emergency. Without this assistance, the chances of the individual or small group surviving, no matter how strong, smart, or self-sufficient they are, are surely lessened. On the contrary, those individuals who engage positively in pro-social behavior and who are secure in their status as members of cohesive, cooperative groups will tend to have an increased prospect of survival, of meeting the exigencies of life, of attaining to higher levels of well-being and material sufficiency, as well as having heightened chances of reproductive success.

In describing the evolutionary phenomenon of group / community / social / kin selection, Darwin asserts that in the evolutionary past, "those communities, which included the greatest number of the most sympathetic [rather than selfish] members, would flourish best and rear the greatest number of offspring."[76] In evolutionary biology, the inclusion of the survival advantages that come not only with the adaptive prowess and dominance of the individual over its environment, but which come from being a member of a cooperative group or tribe in solidarity with others, and to maintain this status, is called "inclusive fitness." However, again, group / community / social / kin selection also encompasses selection by individuals within the tribe in relation to others, and social stratification. Individuals who are deemed by others within the group to have deviated substantially from the community's norms, standards, and common life-meanings that provide the "glue" that renders it cohesive, or those who have engaged in theft of another's resources, may have sanctions placed upon them or they may be excommunicated and banished (usually into the wild where they will have to face the demands of surviving in the natural environment alone and will likely perish). Those who have been granted assistance from others (e.g., food,

[76] Darwin, Charles, *Descent of Man and Selection in Relation to Sex*, Amherst, NY, USA: Prometheus Books, 1871 / 1998, p. 110.

resources, warding off predators and enemies, hunting, gathering) in times of want, but who do not reciprocate in times of plenty when others require assistance, will meet a similar fate.

Because the stakes involved may take on life and death significance, some degree of accurate accounting for the credits and debts accrued by members within a community and between distinct communities is essential not only to the "building of hierarchy and dominance" both within, and among them, but also to "group solidarity."[77] Groups whose members are not galvanized together by some adequate degree of capacity to account for credits accrued and debts owed will tend to be less successful in holding themselves together and the individuals making them up will typically have reduced chances of survival, such that the phenomenon of accounting of credits and debts has undoubtedly been selected for over eons of evolutionary time. As Darwin suggests, "no tribe could hold together if murder, robbery, treachery, etc…, were common."[78] Rather, for Darwin, the expression of moral instincts through pro-social behavior, the adherence to the norms, values, and moral standards of the group, and the further "advancement in the standard of morality" on the part of the members is what breeds solidarity among groups that fosters a general increase in the inclusive fitness of each member, heightened material well-being, and greater chances of being successful in reproducing themselves. As contemporary evolutionary psychologist, Dennis Krebs (2011) puts it,

> the biological function of morality [from a Darwinian standpoint] is to help people maximize their gains [i.e., in terms of survival value and reproductive success] from cooperative social relations by inducing members of their groups—including themselves—to behave in mutually beneficial ways and to resist the temptation to advance their interests in ways that jeopardize the welfare of others and the social orders of their groups.[79]

In turn, according to Darwin, the degree to which the members of groups and communities cohere together through cooperative and pro-social behavior tended to reverberate in relation to the group or community being able to outcompete other groups or communities. As Darwin writes, in comparison with

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[77] See Peebles (following Mauss), 'The Anthropology of Credit and Debt,' p. 226.

[78] Darwin, *Descent of Man*, p. 120.

[79] Krebs, Dennis L., *The Origins of Morality: An Evolutionary Account*, New York: Oxford University Press, 2011, p. 3.

other groups or tribes, a greater degree of internal cohesiveness of a group or tribe,

> will certainly give an immense advantage of one tribe over another. … A tribe including many members who, from possessing in a high degree the spirit of patriotism, fidelity, obedience, courage, and sympathy, were always ready to aid one another, and to sacrifice themselves for the common good, would be victorious over most other tribes; and this would be natural selection. At all times throughout the world, tribes have supplanted other tribes; and as morality is one important element in their success, the standard of morality and the number of well-endowed men will thus everywhere tend to rise and increase.[80]

One can imagine that groups would also tend to carry out (metaphysical) accountings of the credits and debts accrued by other groups as a whole and of members of other groups, deeming them allies or foes on this basis.

From the vantage point of Darwinian evolutionary biology, both morality (e.g., engaging in pro-social behavior, accounting for good deeds over bad deeds in relation to others, as well as taking responsibility for one's actions in this regard) and money (as a chief tool of account for the adequate tallying of credits accrued and debts owed, and the value of the goods and services exchanged among individuals within a tribe and among communities) and can be said to have emerged largely, but not reductively, along a common evolutionary track, i.e., in community / social / group / kin selection. In this regard, from the Darwinian outlook, morality and money would seem to have co-emerged in the evolutionary past as two interrelated facets of the process of community / social / group / kin selection. Of course, detractors from the rosy, Darwinian, picture (which is steeped in Utilitarian understandings of morality), such as Friedrich Nietzsche (1844-1900), have critically lambasted accounts of morality and systems of morality that have their foundation in the evolutionary phenomenon of group / community / social / kin selection in which there is rigid adherence to (largely abstract and arbitrary) credit-debt tallies. One of Nietzsche's central points in *Genealogy of Morality* (1887) is to expose the nihilism that underlies moral systems that are based in such credit-debt tallies, and instead, to liberate and to affirm life beyond adherence to such life-negating values and value programs.

Nietzsche was one of the first philosophers to recognize the decisiveness of

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[80] Darwin, *Descent of Man*, p. 137.

Darwin's account of evolution and its colossal implications for our understanding of most every aspect of human existence, yet to confront it critically. Hans Jonas reminds us that

> Nietzsche's … attempt to overcome (nihilism) are demonstrably connected with the impact of Darwinism. The will to power seemed the only alternative left if the original essence of man had evaporated in the transitoriness and whimsicality of the evolutionary process. This is to say, not that Darwinism is the progenitor of existentialism, but that it conforms and contributes to all the other mental factors out of whose total setting existentialism logically grew.[81]

Nietzsche was critical of the Darwinian emphasis on "mere survival" in the struggle for existence and on reproductive success, which he felt, diminished the sense of life as being animated by the will-to-power. For Nietzsche, the will-to-power had primacy over survival and reproductive success, not vice-versa.[82] And, in *Genealogy of Morality*, Nietzsche argued that the Darwinian account of the evolution of morality via community / social / group / kin selection, involving members of tribes tallying the credits earned and debts owed by others, and ethical systems having their foundation in an emphasis on pro-social behaviors comprised a history of psychological egoism, "slave morality," cruelty, and at worse, nihilism. For Nietzsche, whatever Darwin was describing in his evolutionary account of the origin of morality in *Descent of Man* was not the beginning of a genuine morality. Rather, it pointed to what Nietzsche called "slave morality."

Nietzsche criticizes the "English psychologists" and "historians of morality"[83] by which he means figures such as Darwin, T. H. Huxley, and Herbert Spencer, whose accounts of the origin of morality were based in community / social / group / kin selection. Nietzsche's critique was directly centers on the Darwinian

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[81] Jonas, Hans, *The Phenomenon of Life: Toward a Philosophical Biology*, Evanston, IL, USA: Northwestern University Press, 1966 / 2001, p. 47.

[82] For Nietzsche, a chief error of Darwinism was that it "places … 'adaptation' (rather than will-to-power) in the foreground, that is to say, an activity of the second rank, a mere reactivity; indeed, life itself has been defined as more and more efficient inner adaptation to external conditions (Herbert Spencer). (Here) the essence of life, *its will to power*, is ignored; one overlooks the essential priority of the spontaneous, aggressive, expansive, form-giving forces that give new interpretations and directions, although 'adaptation' follows only after this; the dominant role of the highest functionaries within the organism itself in which the will to life appears active and form-giving is denied" (*Basic Writings of Nietzsche*, trans. and ed. Walter Kaufmann, New York: The Modern Library, 1877 / 2000, p. 514).

[83] Nietzsche, *Basic Writings*, pp. 460 and 461.

theses of his former friend Paul Rée (1849-1901), who had provided a generally orthodox analysis and defense of the Darwinian view in *The Origin of Moral Sentiments* (1877).[84] Of course, Paul Rée, a former friend of Nietzsche had allegedly "obstructed" Nietzsche from "romantic success" with Lou Salomé in the infamous love triangle, an event which had devastated him. After having originally written a highly favorable review of Rée's book, one central theme in *Genealogy of Morality* is the attempt to demolish its generally orthodox Darwinian theses about the evolutionary "origin of morality." In the preface to *Genealogy of Morality*, Nietzsche writes of Rée's book that

> perhaps I have never read anything to which I would have said to myself No, proposition by proposition, conclusion by conclusion, to the extent that I did to this book: yet quite without ill-humor or impatience.[85]

Pointing to the connection between the notion of money as a "social debt-credit relation" and morality, Nietzsche suggests that moralities derived in more primeval times as a function of group / community / social / kin selection, which involve making promises (as in making promises to repay others for benefits given today) that inculcate guilt and threaten punishment, that have their origin in "the contractual relationship between credit and debtor," and which "point back to the fundamental forms of buying, selling, barter, trade, and traffic,"[86] are representative not only of psychological egoism and/or what he calls "slave / herd morality," but moreover, of nihilism. For him, ethical systems that have their basis in the abstract counting of debts and credits among members of the group and that serve only to maximize their prospects of survival, their material well-being, and their probability of attaining to reproductive success, are not only representative of "psychological egoism" and "slave morality," but are nihilistic in nature. This is because there are purely selfish motives behind the so-called "pro-social," "moral," or "credit-worthy" conduct: that of heightened chances of survival, the increased prospects of attaining to material well-being and of successfully reproducing oneself.[87]

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[84] See Rée's *The Origin of the Moral Sentiments* in *Paul Rée: Basic Writings*, trans. and ed. Robin Small, Chicago, IL, USA: University of Illinois Press, 2003, pp. 85-174.

[85] Nietzsche, *Basic Writings*, p. 454.

[86] *Ibid.*, p. 499.

[87] According to Nietzsche, "the production of offspring is not altruistic. The individual animal follows only its desire, of which it often perishes. The organism's sacrifice to one's own offspring is sacrifice for what is

Nietzsche goes on to characterize the conflict that would have likely transpired between indebted individuals who did not reciprocate, their debtors, and their communities in relation to the metaphysical credit-debt tallies belonging to the phenomenon of group / community / social / kin selection. Given that group cohesion and cooperation enabled great survival advantages to accrue to each member of the community, for Nietzsche, each member's having to be engaged in pro-social behavior, having to return favors, and having to adhere to the values of the community, etc… would have basically amounted to a Hobbesian social contract that buttressed it from the war of all against all. This is because of the serious life and death stakes for debtors and for the community which had expended their energies and resources for the sake of the non-reciprocating individual(s). In the context of life in a group or community, if I scratch your back when it matters but I do not perceive that you have scratched mine reciprocally when I am in need then the situation is deemed to be unjust and there is need to punish the one who does not reciprocate. In Nietzsche's account, debtors and the wider community would typically react with great vengeance in responding to those individuals who breached "the contract," who did not reciprocate, and/or who otherwise rejected the community's norms. Such individuals would have been excommunicated and banished from the group. On the basis of largely arbitrary bean-counting, they would have been left to the likely death sentence of having to struggle in the wilderness on their own. Of course, one can surmise that the members of the community that supplied resources to individuals would eventually have been proactive in erecting additional norms and conditions onto their provision of assistance, such as the requirement of having "collateral" and/or to repay the loan in the future with "interest." A tremendous sense of guilt and fear of excommunication and banishment would have been inculcated in recipients by way of continuous reinforcement in order to prevent non-compliance and non-repayment. Nietzsche states that in respect to primeval times,

> when we contemplate these contractual relationships … it was here that promises

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closest, to one's own production, etc., this is certainly not altruism" (posthumous fragment from 1879-1880, see Small, Robin, *Nietzsche and Rée: A Star Friendship*, Oxford, UK: Oxford University Press, 2005, p. 177, citing Nietzsche, Friedrich, *Kritische Studienausgabe*, *Sämtliche Briefe*, vol. ix, 1(110), eds. Giorio Colli and Mazzino Montinari, Berlin, Germany: de Gruyter, 1980, p. 29).

> were made; it was here that *a memory* [i.e., a metaphysical stamp on one's mind] had to be made for those who promised … to inspire trust in his promise to repay, to provide a guarantee of the seriousness and sanctity of his promise, to impress repayment as a duty, an obligation upon his conscience, the debtor made a contract with the creditor and pledged that if he should fail to repay he would substitute something else that he "possessed" (as collateral), something that he had control over; for example, his body, his wife, his freedom, or even his life ….[88]

Nietzsche continues,

> still retaining the criteria of prehistory … the community, too, stands to its members in that same vital basic relation, that of the creditor to his debtors. One lives in a community, one enjoys the advantages of a communality … one dwells protected, cared for, in peace and trustfulness, without fear of certain injuries and hostile acts to which the man outside … is exposed, … since one has bound and pledged oneself to the community. *What will happen if this pledge is broken?* The community, the disappointed creditor, will get what repayment it can, one may depend on that. … the lawbreaker is above all a "breaker," a breaker of his contract and his word with the whole in respect to all the benefits and comforts of communal life of which he has hitherto had a share. The lawbreaker is a debtor who has not merely failed to make good the advantages and advance payments bestowed upon him but has actually attacked his creditor: therefore, he is not only deprived henceforth of all these advantages and benefits, as is fair—he is also reminded what these benefits are really worth. The wrath of the disappointed creditor, the community throws him back again into the savage and outlaw state [of nature] against which he has hitherto been protected.[89]

Nietzsche takes a critical view of debtors and other members of the tribe or group exercising their *selective agencies* (as in each organism being an appendage of natural selection) in heavy-handed, collective fashion in the forms of punishing, sanctioning, excommunicating, ostracizing, banishing, or potentially putting to death those who would not or who could not repay their debts. In this regard, Nietzsche especially repudiates "slave moralities" that may emphasize altruism, sympathy, the "helping hand," forgiveness, and cooperation, but which are internally contradictory, in that, for instance, their own principles stem from the selfish motive of heightening the prospects of survivability, material well-being, and reproductive success—namely, the benefits that accrue as a result of

[88] Nietzsche, *Basic Writings*, p. 500, my addition.
[89] Nietzsche, *Basic Writings*, p. 507, my addition.

belonging to a cohesive, cooperative group or tribe. Equally contradictory is the emphasis on the rights of debtors and the community to exact cruel revenge against those individuals who broke the promissory covenant and/or those who rejected the values of the herd and instead created their own values.

From a Nietzschean standpoint, if this primeval "witches' brew" of socio-cultural emergences (involving debt, guilt, the "weigh scales" of justice, pettiness, vengeance, and death) that allegedly belongs to humanity's evolutionary past, is held, supposedly, to representative of the origin of the phenomenon that we know as "morality," then it is not a genuinely life-affirming morality, but rather an ethic of life-negation and of nihilism.[90] And, from a Nietzschean perspective, contemporary moral systems that have their basis in Darwinian group / community / social / kin selection, in which there is a strict keeping of metaphysical credit-debt tallies among the members of the group, are to be deconstructed, all the while recognizing that they are themselves a function of the will-to-power. For the capacity to actively forget the perceived debts, the snubs, and the non-reciprocations of others and/or to be able to move on beyond them is a key to an individual being able to affirm life. Often, the selective perceptions of another's non-reciprocation that one may allow to fester in one's head are wrong, flawed, or incomplete. Plus, those who enter into social relationships by way of excessive giving, under the guise of charity and kindness, who constantly tallying up the "bean count" in their heads and then expect a profitable return from others, are not engaging in authentic morality. Rather, from a Nietschean perspective, they are embracing psychological egoism and nihilism. For him, it is important to create and to pursue values beyond a "bean-counting" expression of the will-to-power. Such is the general direction that Nietzsche conveys in *Genealogy of Morality* and elsewhere, toward the liberation of the living from the rigidity and life-negating character of the rigid metaphysical credit-debt tallies that belong to the "slave morality."

In respect to the evolutionary interpretation that the phenomenon of money emerged as a function of group / community / social / kin selection, it is

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[90] Nietzsche implicates organized religion in this "witches' brew," religion also being analyzed by sociobiologists such as E. O. Wilson and philosophers of biology, such as Daniel Dennett in the context of Darwinian group / community / social / kin selection. The Nietzschean themes of death, credit, debt, and religion were also taken up later by Jacques Derrida in works such as *The Gift of Death* (1992).

important to be cognizant the level of abstraction that is present in this Darwinian / adaptationist account, when relating the realities of our own time to those of pre-history. For instance, in positing a single evolutionary "origin" for the phenomena considered, there is a neglect of the differences among peoples and cultures in the evolutionary past. Also, there is the very questionable assumption of a linear progress in evolution toward some lofty "eschatological" end, all of which are critiqued by Nietzsche and Foucault.[91] Furthermore, as highlighted by Nietzsche, Darwin's account of the origin of morality in group / community / social / kin selection is not a description of genuine morality, and Nietzsche is arguably correct there is need to overcome the nihilism and pettiness that belongs to rigid adherence to metaphysical credit-debt tallies that underpin the phenomena of "slave" morality (as he calls it) and money-centered values.

It should be noted that the contemporary situation in which money is created by private banks on the basis of a client's promise to pay off a "loan" is, today, greatly different from the scenario belonging to the typical description of group / community / social / kin selection. Private banks today undoubtedly retain some of the sanctioning power when it comes to those who do not repay their debts (e.g., through selective and potentially sanctioning mechanisms such as credit score assessments, in that they are able to prevent individuals who are delinquent in paying off their prior loans from further purchases, and, of course, they have the power to limit individuals in terms of being able to access all of their hard-earned money by way, for example, of capital controls). But whether this is on par with complete excommunication and banishment from the tribe, as in group / community / social / kin selection is doubtful. Moreover, as has been alluded to above, in contemporary times, the amount of money that is "loaned" to the client may simply be created *ex nihilo* at the time of the client's promissory agreement to "pay back a loan." In other words, private banks today do not necessarily "loan what they own," which is the case in the group / community / social / kin selection through which members of cohesive, cooperative groups call in the help and resource of other members in times of need. The energies, tangible resources, skills of persons or societies are not provided by private banks to those who require assistance as in the general adaptationist, "just-so" story that

[91] See, for instance, Foucault's paper, "Nietzsche, Genealogy, History" (1971).

underpins the Darwinian process of group / community / social / kin selection of (alleged) primeval times. In other words, private banks typically create the money that is deposited into the person's account with the bank through "the loan" process *ex nihilo*. It may be asked whether it is wise for private banks today to have the normative leeway to create money in this manner rather than to have to "loan what they own."

CONCLUSION: FOSTERING THE CULTIVATION OF ECOLOGICAL- AND/OR BIOLOGICAL-WISDOM IN RELATION TO MONEY, MONEY CREATION, AND THE USE OF MONEY

The preceding analysis has characterized the evolving phenomena that we call money as a "social debt-credit relationship." Above all, this paper has argued that money is a biological phenomenon and that, in light of the global ecological and health crises that we currently face today, there is great need for the cultivation of "biological" and/or "ecological wisdom" that will help to shape the monetary system and the norms by which money is created and used, going forward into the future. In other publications, I have endeavored to set out an open-ended, multi-perspectival, holistic organicist, evolutionary-environmental ethic that is called "Critical Pan-Selectionism," which calls for critical reflection on our selective agency as "loci of valuative-selective-appropriative activity." It holds that organisms live *in* the natural world, they are compositional parts of it, and they are interconnected with it, yet they are not equatable with nature construed as the sum total of emergent entities. Like other organisms, human beings are appendages of natural selection. Their behavioral selections and selective activities contribute to the eliminations and preservations of other organisms belonging to the total process that is natural selection. As such, one's behavioral selections and selective activities may severely affect the life-prospects and life-trajectories of others. For instance, university instructors grading exams are selectively evaluating the work of their students which affects their life prospects. Physicians doing triage and/or deciding which of their patients will be the recipient of a scarce organ for transplant expressing their selectively agency in the biological sense and contributing to the determination of their future well-being. And commercial bankers selectively issuing loans and mortgages to certain "valued" clients, but not to others who are less credit-worthy, are also impacting greatly on the life prospects of the stakeholders. Organisms cannot rid themselves

completely of their selective agency or live in such a fashion so as to make no impact at all on members of the wider community of life. That said, Critical Pan-Selection involves the notion that human beings can engage in critical reflection on the exercise of their own selective agencies so as to cultivate biological- and/or ecological wisdom and engage in practical action (*praxis*) that mitigates their impact on the well-being and life-prospects of others. And it is through this sort of reflection that one's selective agency can be affirmed. Such critical reflection reveals that great responsibility falls not only on those entities that create money, but on those who use it—the average global citizen. One may ask about the impacts of one's consumer purchases and projects on one's fellow living organisms and on the wider ecology. After all, by exercising our selective agency in making consumer decisions (e.g., simply choosing the product that we desire incurs on us the lowest expense), we may be contributing, in less-than-ecologically-wise fashion, to the perpetuation of industries of mass production, of high fossil fuel usage, of air and water pollution, of waste production, and of negative environmental impact, to the detriment of local producers of lower impact as well as of the well-being of human and non-human stakeholders and of the civil commons in general.

Rather than planetary life being shaped by money and by money interests, life should shape money such that money is employed in a manner that is authentically in service to life. Money, which today itself stands in for nothing that is tangible or valuable to life (although it may be used in service specifically to the client's life in that money provides them the ability to command goods and services from others), is simply created *ex nihilo* at the time of the loan process. Failures of monetary systems, which are largely due to the unwise decision-making of the financial elite, should not have to entail the complete destruction of the wealth and livelihoods of all individuals living and operating under their rubric. To this end, it would seem prudent that there be a high level of backing of the means of exchange (i.e., of money) by items or services that are highly useful to life and life's purposes. Moreover, to a great extent, the value and meaning of money should reflect the true wealth that belongs to McMurtryan "life-capital," namely, organismic and ecological well-being and its conservation and enhancement. In other words, money ought not merely be created in a manner that involves its user placing a demand on life, or in a fashion that merely supports highly profitable resource-extracting development, technologies and

biotechnologies, economic "growth" and/or business ventures, as in egoistic small-'s' self-realization. Rather, the value of money and the process by which money is created should be linked to the preservation and enhancement of the global "civil commons" and of our environmental life-host, as in Deep Ecological capital-'S' Self-Realization. As Deep Ecology reminds us, we should not get into the habit of suggesting to ourselves that the only set of solutions to the global ecological crisis is rapid technological innovation that requires urgent funding, as Carney seemingly suggests. Instead, according to its more biocentric and ecologically-wise orientation, to great extent, the solution to the global ecological crisis revolves around what we do not do, what we do not produce or develop, and instead, in what we preserve.

In light of the analysis above and the concerns that it raises, it may further be stressed that additional regulatory oversight be implemented on financial institutions in relation to fractional reserve thresholds, so as to heighten their accountability. Greater democratic oversight of, and transparency in relation to, the process by which money is created and the rates of interest that may be charged on "loans" as well as reform in relation to who is given the normative leeway to create it, and for what purpose, ought to be undertaken. And less digitization and greater diversity in terms of the form of the means of exchange may contribute to the security and sustainability of a life-code-oriented financial system.[92] All of this is not to imply that the process of money-creation ought to be fully under the control of a dogmatic, paternalistic, biocentric bureaucracy. Rather, the intention of this paper has to help initiate the process of critical

[92] One criticism of these general "holistic organicist" proposals might be the notion that environmentalism in general, not to mention the more biocentric monetary systems that have been proposed in this paper, are not representative of what is authentically moral but rather are expressions of psychological egoism and/or nihilism of the sort that Nietzsche was so critical of and sought to overcome. A premise of this criticism would be that the biocentric ideology represents a kind of Darwinian group / community / social / kin selection writ large that extends to the entire community of life on the planet, but which is motivated by selfishness that is no different from the anthropocentrism that it critiques. This is presumably because its goal is to ensure the global ecological conditions for the replication of the "selfish genes" of present generations of humans and organisms long into the future (see Richard Dawkins' books *The Selfish Gene* [1976] and *The Extended Phenotype* [1982], in which genes are deemed "selfish" in that they "treat" their phenotypes as throwaway replication vehicles for the purpose of their replication). In response to this criticism, it may be said that one may be genuinely concerned for the well-being and future of planetary life without having any interest in replicating one's own "selfish genes" or those of others who may share one's genetic code. Thus, it may be concluded that the argument behind this criticism constitutes a *non-sequitur*.

reflection in relation to money, its use, and money-creation with the aim of liberating ourselves from the grip of the "money-code of value," as McMurtry calls it. With the onset of the global ecological crisis it is hoped that the money-systems of the foreseeable future can be a part of the (deep) solution by being much more reflective of McMurtry's "life-code of value" rather than being a core part of the problem (as they are today).

Today, the power of governments across the world to provide life-enhancing services (e.g., public health care, social security, and low-cost daycare) to their citizens and to act in the face of climate change is being strangled by the incurrence of national debts largely "owed" to private, foreign banks. In Canada, this was largely due to the undoing, in the 1970s, of the Bank of Canada's mandate to be able to provide to its Federal government low-interest and/or loans that are (temporarily) interest-free. Influenced by the American economist, Milton Friedman, the rationale for this move, at that time, was an alleged need to fight high inflation rates. However, a life-oriented proposal, which would further enhance Canada's national sovereignty, would be to restore the Bank of Canada to its original mandate. Carney, in his book, *Values*, which precursors his intended entry into Canadian Federal politics, does not consider this proposal to be a viable one. As has been alluded to above, in it, Carney only calls for a (mild) reforming of the banking system (e.g., in light of the global ecological crisis) that only perpetuates the basic power-structure that exists today. Even though this paper has presented a critique of Carney's outlook, Carney having indicated that he will run for political office in Canada in the near future, it should be stated that Carney's proposals to "green the banking system" can still be said to be far more enlightened than those belonging to fully "money-code-oriented" Conservative opposition in Canada.

Last, but certainly not least, the "life-code"-oriented financial systems of the foreseeable future should be geared toward the pursuit of socio-economic justice in relation to the marginalized, and especially Indigenous peoples who have been subject to colonialism, eugenics, and genocide that has been directly promoted by the financial institutions of the past and present. Yet Indigenous cultures provide and represent rich insight into "the hows" of ecologically sustainable human living. In moving toward the biocentric money-systems of the future, there is need to shed the shadowy, top-down, imposing, paternalistic, and

alienating expression of the great selective agencies of foreign colonial powers that commercial and central banks represent today. Instead, in the money-systems of the future, which hopefully will be respectful of the intrinsic value of human and non-human life as well as the well-being of the planetary conditions that support it rather than wantonly and systematically contributing to their destruction, there is great need for the inclusion of Indigenous peoples and cultures and a thorough engagement with them in ongoing and welcoming dialogue as we contemplate the wisest ways forward.

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