The Bitcoin Experience (part I)
by Geert Lovink and Patrice Riemens

OUR BANKER WHO ART IN CYBERSPACE
SATOSHI BE THY NAME
THY BITCOIN COME
DOLLAR BILLS BE GONE
IN OUR POCKETS, AS IT IS ONLINE
GIVE US THIS DAY OUR CONFIRMED TRANSACTIONS
AND FORGIVE US OUR DOUBLE SPENDING
AS WE ALSO HAVE FORGIVEN TRENDON SHAVERS
AND LEAD US NOT FROM THE BLOCKCHAIN
BUT DELIVER US THE MINED BLOCKS
FOR EVER AND EVER
AMEN

(*Bitcoin Magazine November 2013*)

Bitcoin does not respond to an effective demand, but to an emotional desire. The internet crypto currency expresses a longing for liberation through the mediation of technology. It grows out of a post-apocalyptic will to start all over again, in between financial crises of epic proportions, to put an end to the never-ending recession. This time, so do believers in Bitcoin maintain, the economy will be lead by our tribe of techno-libertarians, and not by the vile, corrupted banksters and politicians in their employ. Amidst the rubble of the collapsing global capitalism, there is nothing left to demand—who would listen anyway? What is your blueprint for the next monetary system? After all, Bitcoin architecture is not a given. Let's be frank: everything is up for grabs, including the premises of the Bitcoin project itself, which is what we intend to do here.

The historical concurrence between Bitcoin and Occupy is no coincidence. The enthusiasm for Bitcoin amongst geeks and IT entrepreneurs stems from the popular disillusionment with the financial system, matched with an equally strong belief in the Internet ideology of nodism and anonymity. In line with the 'anarcho-geek' character of Bitcoin,[1] its 'rugged individualists' community exudes a deep distrust, even hatred of all 'big' institutions, foremost governments (as exemplified by the US government), but also of big business and large financial institutions. All stand accused, and to a large extent for good reasons, to squeeze the 'little guy' out of a living by all possible means.

Geeks and assorted believers in information technology assume that the only solution to overturn this unfair system is to truly implement the distributed, decentralized, 'original' values of the Internet. They reject the Internet of monopolies such as Google, Amazon and Facebook to embrace a romanticized version of it. They call, not for the Internet of the military, the telecommunication giants and their centralized logistics, but for a peer-to-peer assemblage of users who arrange their own monetary rewards. E-commerce was in their eyes its failed, compromised fore-runner since it did not question the nature of the currencies being used.

Bitcoin is driven by the eagerness of a specific, 'tech' elite to achieve social escape velocity so as to bail out from the murky complexity of the world. It should be seen as the umpteenth avatar of the privileged classes wanting to pull out of the grudge of everyday reality and its messy social sphere. Bitcoin is part and parcel of the 'Masters of the Universe' narrative, this time in its 'Geek' declination, and given its appeal, it cannot be considered as some subaltern, folkloric movement. The Bitcoin ideology reflects a profound, and widely shared, distrust in existing organizational formats and practices.

Bitcoin is based on 'distributed trust' instead of 'contract trust'. Governments and banks, among other 'real world' institution, function on basis of contract trust, enshrined and enforced by way of charters, constitutions, laws and regulations etc. Instead Bitcoin believers want a disseminated form of trust, shared and borne by all the individuals involved, not unlike the broadcast – one-to-many – vs. narrowcast – one-to-one, many-to-many – polarity that propelled the Internet revolution of the 1990s. This approach forms the core of Bitcoin's utopian impulse.

As Evgeny Morozov puts it: Bitcoin proposes an 'algo' solution for a political problem. It is based on the conviction that "all politics sucks" and always will, and that technical solutions are always 'cleaner' and 'better' than social ones: "replace the messy social with beauty of pure mathematics", as the parole goes.[2] Bitcoin believers hold for true that what really matters is mastering the technology, and that those who master the technology will rule – by right. Hence their approach, and consequently, they themselves, should be in command – instead of, e.g. politicians. However, Morozov's superior Realtheorie might very well turn out into a dead-end street. In terms of strategy it unfortunately boils down to a collection of truisms leading to a 'been there, done that' brand of indifference and cynicism. Morozov's argument is a perfect way to close down a conversation. Stated without much of an understanding of alternative practices, his calls to 'return to politics' proves problematic because it glosses over the moral bankruptcy of Western democratic procedures. Robust technology critique may please 'old media' like liberal newspapers and established publishing houses whose business models are crumbling under the onslaught of the digital, the rise of social media and the emergence of intermediate powerhouses such as Google and Amazon.

But Bitcoin holds the promise to do better than that. Does it?

The sheer size of the speculative finance complex constitutes the macro-economic background against which Bitcoin has emerged. For quite some time now, monetary and fiscal balances have grown out of control, both in terms of quantity, as in terms of the velocity with which they circulate – the former being also a consequence of the latter. In many eyes, the relationship between the financial sphere and the 'real economy' has been lost, to be replaced by a situation where the sheer size of speculative finance dwarfs the actual needs of the everyday, 'brick-and-mortar', products and services-based economy.

However, the major difficulty with Bitcoin is that it does not scale either, but then in the reverse direction. By any count the maximum size of the potential circulation of bitcoins is dwarfed, several times over, not only by the size of the current financial, speculative, balances, which form a recognized problem, but also by the amounts needed to run the 'real economy' itself. The self-imposed, constitutive limitation on the total number of Bitcoins in existence (21 million when all have been mined', i.e. created), and the fact that the unit of account can only be shifted nine decimal places, reduces the usability of Bitcoin to that of a very local currency, not a planetary one. This is only one, but a very practical difficulty with Bitcoin as an alternative to our present global monetary dispensation.

The scarcity of Bitcoin is designed, "it is not a bug but a feature". It is not due to a technical limitation, to be resolved in due time by more powerful computers. This is probably predicated by the retro-futurist desire amongst geeks to return to the dependable quality of gold. The idea being to retain the timeless neutrality of gold without its material disadvantages, abolished by the magic of the digital. Bitcoin is destined to become the virtual gold.

On the other hand, Bitcoin believers want to re-create a friction-less, costs-free payment system between individuals. Thus, Bitcoin can be seen as the revenge of the so-called small guy against the molochs of finance who have crushed daily monetary wheeling-and-dealing under monopolistic intermediation fees and regulations that favour large players. However, this peer-to-peer model is difficult to reconcile with the glorification of gold, which basically denotes a hoarding attitude, and the Bitcoin believers' ingrained fear of inflation.

Bitcoin has also emerged at the peak of the US dollar dominance and its subsequent crisis. One of the many issues on which the Bitcoin community of believers is strangely silent about is the dual role of the US Dollar, a currency they, implicitely or explicitely, accept as the by-default reference. The US Dollar, however, is on one side ordinary fiat money, partaking in all the sins lambasted by Bitcoiners, among others its inflationary tendency so much feared by them, but on the other side it is also the 'imperial' currency of the United States of America, welcomed and used by the entire world, and yet subject to the sole decisions of the US Federal Reserve, taken in near-exclusive consideration of the political and economic interests of the USA. The US Dollar is both the instrument and the executor of the United States' 'structural hegemony'. It is the only currency in the world with such an 'exorbitant privilege'. The standing and position of Bitcoin in such a dispensation are, to say the least, unclear. Suffice to say that a true sovereign currency would never refer itself to the US dollar (or Euro, Yen or Pound for that matter).

So far we have discussed the financial and economic weaknesses. There is a worse to come.

Ponzi Schemes and Messianic Religions

One of the main critiques addressed at Bitcoin is that it is shares its design with a Ponzi scheme. Just as in the Ponzi scheme, the pyramid set-up of Bitcoin turns early players into winners, at the expense of gullible latecomers. This is not accidental but deliberate: Bitcoin is a typically geek-meritocratic project. Bitcoin's believers' usual retort to people accusing Bitcoin of being a Ponzi scheme is that these critics do not understand what Bitcoin really is, nor for that matter, know what a Ponzi scheme entails. Yet Bitcoin exhibit so many resemblances to a classic Ponzi scheme that the 'Duck test' allegory comes to mind.[3]

Bitcoin also displays all the signs of being a religion. A religion with a core of true believers, absolutely convinced both of the superiority of Bitcoin as a payment system, but also of its unavoidable and speedy adoption worldwide, regardless of cultural and political differences. Despite of the limited options Bitcoin offers as a financial instrument (basically only peer-to-peer transactions), Bitcoin believers are convinced that it will actually take over the monetary/financial system as a whole. Their argument, however, mostly hinges on inevitability, the hallmark of a messianic religion. On top of that comes the Bitcoin believers consider their currency to be so much more than a financial vehicle: a whole new, brilliant ‘way of life’ (including t-shirts, ATMs, apps, gambling sites and glossy magazines).

Open Contradictions

In order to get a better understanding of Bitcoin we need a theory of open contradictions. What, for instance, represents a payment system that is not meant to be used for payments?

“Hoarders give Bitcoin value.” The Bitcoin literature is replete with such conflicting statements and theories—all brought forward with the same enthusiasm. When Bitcoin increases in value, the incentive to spend them is simply not there, only losers sell. Such contradictions are ostensibly not a problem for the Bitcoin community: with bitcoins everything should, and therefore is, possible. Yes, you can have the cake and eat it (and own the bakery in the process). This is especially manifest in Bitcoin’s ‘theory of value’. Whereas Bitcoin is predicated to function optimally as a peer-to-peer medium of exchange, and this preferably within a closed Bitcoin economic circuit, Bitcoiners are encouraged to hoard their funds. After all, the scarcity of bitcoins, whose supply is ultimately limited to 21 million units (20.999.999,9769 to be precise), will automatically push up their value over time.

This deflationary Bitcoin model not only gives the creeps to any mainstream economist or politician, but it is also essentially adverse to transactions—Bitcoin’s principal raison d’etre—as every spending amounts to a distress sale. Bitcoin is here probably victim of its origins, the culture of rugged individualism, coupled with the anarcho-capitalist axioma that “greed is good”. This, however, does not make for a sound economic system, based on social exchange. The mining principle, Bitcoin’s foundation myth and principal motor, points to a dark past, not a common future—the necessary condition for a currency used by billions of human being. You do not design a currency for yourself. This is a basic premise of economic exchange. Slaves do not need Bitcoin. Life is subordinated to the economy.

Code is not only law but code is life.

The original sin of fiat money is inflation, the original sin of Bitcoin is the hoarders vs. spenders contradiction. Out of this comes our social and political critique of Bitcoin.

The modalities of Bitcoin—as agreed by Bitcoin believers themselves—makes it uniquely convenient as a peer-to-peer payment system – and for all practical purposes, exclusively so. Hence the emphasis on transactions between individual persons, unhampered by despicable middle entities, such as banks, and unhindered by even more despicable actors such as governments with their bevy of regulations and… taxes.

As conceptualized by its true believers, Bitcoin is the money of the Multitudes. Yet, the problem is that Bitcoiners are not part of the Multitudes—and most probably do not want to be associated with them. From the perspective of social movements that fight for global justice, solidarity and the redistribution of wealth, the hoarding principle is simply unacceptable. The 'mining' procedure with it 'first movers' logic will have to replaced by an independent body that issues the coins and sets its exchange value in comparison to neighboring currencies. This doesn't necessarily have to be done by a nation state or even an established international governing body. Our critique should not culminate into some 'reformist' policy that stamps out the anarchist roots of the project. But we have to make clear to our brothers and sisters: there is simply no way to legitimize the sick start-up logic that solely benefits founders and early investors while leaving ordinary users, and all those who build up the venture, empty handed, just because they came in a little later. Bitcoin and its offspring need to go back to the drawing board and come up with an alternative to the mining principle (and one that is less electricity consuming).

On the other hand, true Bitcoiners are remarkably reticent, not to say loath, to talk in terms of more than one (or a very few) person(s) businesses, and surely so of enterprises at the corporation level. Quite aside from the infatuation with hoarding (discussed before), Bitcoin functions mostly in the sphere of small/micro payments (and in that sense the opponent of speculative finance tools, developed by the same quant class). In an 'ecology' consisting of just a minority of the world's population (our guess: the largely white, largely male, North American 'anarcho-geek' sphere and a few outliers on the rest of the planet). This appears to be also implied by both the limited number of bitcoins: 21 m at the most, which, when fractioned by

9 positions behind the zero, gives a maximum of 220 bn units of micropayment (say, the equivalent of 1¢ US) at a very conservative valuation of bitcoin at US$ 100 per unit. Going by the 1 Dollar – 100 cents division of currency, this results in a total maximum amount of 2.2bn 'Bitcoin Dollars', or a somewhat diminutive economy by all means … please do the math yourself.

In Bitcoin circles the grudge is stark against taxes ('imposition is thievery'), but also against fees and commissions banks levy on all possible transactions, and which, due to ultra-low interest rates, appear to have become their main source of income, in the payment system at least. A result of this sentiment is the invisibility of intermediates, a general weakness of cyberculture that tends to black out its own infrastructure and takes it for granted as 'a second nature'. Bitcoiners believe their currency is the unique answer to this mess, especially at the level of micro-payments. This is true in a technical sense—all virtual currencies have the potential to enable friction- and fees-free transactions—but the volatility of Bitcoin makes this assumption very problematic, especially for… micro-payments.

Simple maths shows that Bitcoin, in its current form, does not scale to the extent of making even a relatively modest economic/ financial system possible. It is therefore condemned to remain a niche, something Bitcoin believers are fairly desingenuous in denying, given the essentially elitist disposition of their anarcho-geek community ('meritocratic' would be their description).

Besides being a niche, Bitcoin shows also all the characteristics of an ongoing experiment, and that's it major plus. Apart from their technological development, innovation, and creativity aspect, alternative crypto- and virtual currencies are at this stage essentially a social experiment, just like LETs were before—and still are. They reflect a desire for autonomy and 'sovereignty in one's own circle' (a Dutch religious-cultural classic, btw), and doing away with the messy complexity of the larger world—and its larger institutions.

Complementary currencies largely focus on the local, which, depending on the prevailing circumstances can substantially vary in size: the WIR bank in Switzerland, for instance, functions at the national scale [5]; in other countries, specific local currencies have not transcended the level of a middle-sized town or province. Yet, complementary currencies, by virtue of being local, are inclusive. Alternative crypto- and virtual currencies, on the other hand, can function at a much larger, possibly global, geographical scale. But since the number of participants in the system is just as severely constrained with them also, they are, ipso facto, exclusive.

Bitcoin believers remain obsessed with inflation. Fear of inflation is typically a middle class syndrome. Price rises and monetary devaluation have a different impact depending on societal/economic classes. The poor suffer at 'ground level' as price increases affect their consumption, and they must see how to make up day-to-day with their (low) earnings. But they do not hold wealth. The rich, and especially the super-rich, do hold (a lot of) wealth, but that is usually in the form of tangible assets or ownership deeds (shares, stakes in enterprises etc.), monetary balances being secondary to them. It's the middle classes whose holdings (often in the form of savings, e.g. towards their pension) are the most at risk. This has been seen in past inflationary and hyper-inflationary bouts, when the nest eggs of the middle classes were wiped out, resulting in a trans-generational trauma. The middle class character of Bitcoin is well demonstrated by this obsessive fear of inflation – and their embrace of hoarding of a currency that supposedly 'only can accrue in value'.

The do-it-yourself aspect of Bitcoin is part of the free labour movement. This time it is free as in 'free of fees'. In keeping with its supposedly 'friction-less' character, Bitcoin is hailed as a uniquely community-managed adventure, based on the DYI activity of its members. Only, given the increasingly complex aspect of Bitcoin's principal occupation, mining, now restricted to a limited number of (terabyte-)powerful entities, it is unclear in what this activity of the many is precisely made of (unless one considers hoarding as work). And in consonance with the nature of anarcho-capitalism, very little is clear either of what the community exactly consists of – or whether it is a real community at all.

In so far DYI is equivalent to free labour, it is hard to fathom how exactly this works in a set up that is geared towards and based on (economic) transactions on one side, while on the other is so greatly concerned with value and possession on the other. Given Bitcoiners' absolute detestation of fees and other transaction costs charged by 'the system', it is interesting to note that Bitcoin, which is supposed to do away with these institutional charges and banking fees, actually does provides for them on (very) small transactions (but not on large ones, itself a none too egalitarian feature), and also that its theoreticians asserts that when mining will terminate (in 2040, with 21 million bitcoins in circulation) the system will maintain itself … through fees.

Simply put, for us, Bitcoin is a temporary future, a complimentary, and not an alternative currency. The difference between alternative and complimentary currencies, though blurred by operating both outside the economic and financial mainstream, is essential. They vary greatly in concept, aims, and modus operandi – and outcomes. Both forms of 'voluntary' currencies also display radically different politics. Bitcoin as an alternative currency wants to displace, and replace, the current monetary arrangements. Therefore it is also does not want to be limited in scope and reach, whether geographically or economically. But that makes also it main weakness, in the absence of an 'authority' that both (somehow) guarantees it while at the same time compels its use by legal means. Bitcoiners, however, will argue that this constitutes precisely its main strength – a valid argument within its – small – world, a totally preposterous one at the – real – world scale. Others in the Bitcoin community want recognition and certification by the 'system'—yet another example of the 'open contradiction'.

Complementary currencies, as their name indicate, have more modest yet long-term ambitions. They are local (as opposed to national, or even global, as Bitcoin, and some other virtual currencies assert to be), and unless entirely used within a 'closed' community, something that limits their scope even further, complementary currencies are pegged to the 'real existing' money of account in their (national) sphere of circulation, which they do not intend to replace entirely (for one, many complementary currency schemes provide for 'hybrid' payments, part 'local', part 'real' money).

Whereas complementary currencies have at the very least the political aim to foster the local economy, and usually, given their adopting constituencies, more than that (think fair trade, eco-friendly, small-scale, not-for-profit, etc.), Bitcoin has no such aim at all, or rather, for all practical purposes, serves the anarcho-capitalist agenda of individual achievement and wealth accumulation in a 'rugged individualist', meritocratic and competitive environment.

Lately Bitcoin has reached some sort of cruising speed (however bumpy)—and this not only in the minds of its believers – new problems are popping up in its relationship with 'the real world'. The powers that be, and more specifically their financial/monetary arms, want to regulate the new kid on the block. A part of the Bitcoin 'community' has decided it wants that too, spurred both by a desire for wider recognition and acceptance, but also because Bitcoin's reputation, already shaky at the best of times, has now been further tarnished by a number of massive, high-exposure scams. Regulation under a central, external authority is, of course, entirely at variance with Bitcoin's central tenets, and besides being yet another blatant example of 'open contradiction', such moves have now split the community and the Bitcoin Foundation. And it obviously needs little argument to declare that a regulated Bitcoin degrades into nothing more than yet another new, ueber-hip and flashy financial vehicle – which is anyway how it is looked at by the 'financial sector'.

Rather soon money will be split in two: the morally bankrupted official ones and the informal (local) ones. The need for p2p payments will only increase. By now, the banking system as we know it has become largely dysfunctional for ordinary monetary transactions between small and medium size economic actors. Low interest rates and other factors 'force' banks to levy hefty fees and commissions, while on the other hand, ubiquitous electronic networks hold the promise of next to transaction costs-free transfers of money (and more).

It is unavoidable therefore, that ordinary payments will drop out of the cumbersome and expensive banking system and that various other platforms will come in its place. This evolution has already started, e.g. on the mobile phone front (think Mpesa etc.). P2P transactions, whereby the exchange is entirely in the hands of participants, with no middle instance in between, are the endpoint of this trend.

Bitcoin pretends to be the ultimate solution within this fast-paced transformation of the monetary sphere. We have argued that this contention is very questionable on many practical and social grounds. In the tradition of software forking (creating similar but different clones) there is an inevitability of forking: Bitcoin after Bitcoin (which will pursue in part II). The other direction would be to go 'meta' and create an exchange for all the different crypto-currencies (see Ethereum[4]). Regardless, our thesis is that one or the other might entail a return to the nature of trust, contract vs. distributed trust, on a 'working scale'.

Let's not fool ourselves (and others): Bitcoin is in fact an accounting system. It has a ledger if though it is a distributed one. If you cut off mining and the blockchain from Bitcoin (as we propose), the problem that remains is called trust. The blockchain—the distributed verification algorithm that vouches for the validity of bitcoins transfers, guaranteeing that no bitcoin is spend twice—is the nearest approximation of the Divine in the Bitcoin religion (and, we found out to our dismay, in next to all other future, planned crypto-currencies we have come across [6]). It is also the most important of the general weaknesses in the Bitcoin model, since it assumes the permanency of powerful, always online computers/server farms/cloud services that supposedly no one pays for, and of the whole, complex and fragile infrastructure that sustains them.

It is also the mainstay of Bitcoin's inflexible faith in algorithms and machines above the—always fallible, and crookedly inclined—human being, another reminder of its solidly 'Anglo' origins. Other systems may want to do away with the blockchain as implementer of 'designed trust'.[7] The problem then is where to position that trust – which is the imperative constituent of any monetary system. This brings us back to the scalability issue, which basically says that as the number of participants in a system grows, the need for an impartial, 'enforced authority' (which however needs to be voluntarily accepted) increases, to the point of becoming mandatory.

Needless to add that Bitcoiners forcefully reject this argument, in their absolute belief of the ('rugged') individual and the distributed. Since the argument itself is grounded on values/beliefs, no conclusive elucidation can be arrived in the matter – beyond pointing out to the irrefutable smallness of the factual Bitcoin constituency, both actual and ideal.

Farewell, Winkelvoss Bros. The future of Bitcoin is bright but will come after Bitcoin. The advance of small scale digital (crypto)currencies that operate within a specific social setting (be it local or translocal), either labeled alternative or complementary, is definitely unstoppable. However, as we have seen before, the trickiest part, in terms of adoption and economic effectiveness, is their relation with the 'real existing' money (termed as €, £, $, whatever…), and in this, complementary currencies are much more flexible than alternative ones. Bitcoin wants to belong to the latter category, and is moreover prone to rather robust speculative stints – up and down – in its relationship with 'real' money.

However, technological advances to which the current banking system is ill-prepared, especially at the 'retail' level (never mind the not improbable collapse of the financial/monetary system as we know it), makes that non-banking, and possibly non-centrally regulated, electronic payment systems will win the day, especially in the realm of transactions by or between individuals. Banks want to get rid of individual customers, they are a nuisance, with their puppet house payments. Profit margins remain too low in the consumer sector, despite the rise in fees. When and how this will all 'flip' remains a matter of speculation and depends on a lot of factors, including political ones.

What is less speculative, however, is that the currency/ies that will emerge will not be denominated Bitcoin, at least not in its current representation. Bitcoin, however, and that might be its greatest and undeniable merit, has very much accelerated the thinking about this evolution, has spawned a multitudes of parallel solutions, and has, both on the social as well as on the technical plane, by trial and error, cleared a lot of ground for others in this process.

Why can we communicate on a global level, but not pay? We can communicate on a global level, though it is less frictionless than is often thought (try Central Tanzania). The higher the degree of 'development', the smoother communications are. The same applies to money transfers, which, in Western Europe at last, are almost friction-free and largely costless. In this context the problem resides much more with the banking system, wavering on the verge of collapse due to its extreme (and excessive) financialisation, than with the existing payment infrastructure itself, which, if run like an utility, and its costs born out of public funds, could be largely seamless and free of charge.

Since this is not the case, and most probably will not be in any conceivable future, all kinds of new, mostly net-born formats will continue to arise, Bitcoin being just one of the first and most visible. Or as one of its promoters says: "Bitcoin only represents the first wave of game-changing technological innovations to come", adding for good measure that "the technology behind (B)itcoin cannot be legislated away". Nor that of many more formats.

Large-scale use of mobile money in parts of Africa provide an interesting 'Lehrstück', one that is not easily transferable to other parts of the world where the banking system has a tight grip on the economy. What mobile money does have in common with Bitcoin is the larger techno-historical movement from communication to payment. Because Bitcoin is 100% internet-based it does not see itself as an extension of the world od commercial telecom providers. Mobile money does. Such anthropological comparisons can be productive and reveal implicit cultural values hidden in the shiny interfaces and self-evident processual knowledge.

Bitcoin does not scale as an anarcho-capitalist experiment, and was perhaps never meant to. Perhaps this wasn't even desirable in the first place and claims need to be downsized accordingly. If Bitcoin was 'merely' going to be a (built-in) payment protocol, for instance inside HTML, it would be a bold undertaken. A first step would be to strip off its libertarian mining ritual and blockchain religion—and see what's left. Right now, crypto currencies are the avant-garde of our age. In line with the Zeitgeist the avant-garde this time is neither progressive nor artistic but technical and entrepreneurial, willingly or not fuelling the growing social inequality. No esthetics please, we're strictly conceptual. And if everything fails, Bitcoin can always retrospectively go into history as an artwork, a true social sculpture (courtesy to Duchamps, Beuys and Jaromil).

(*to be continued in part II*)

—

[1] Ippolita, In the Facebook Aquarium, Institute of Network Cultures, Amsterdam, 2015.

[2] Geek suprematism, run by an 'algocracy', http://philosophicaldisquisitions.blogspot.nl/2014/01/rule-by-algorithm-big-data-and-threat.html.

[3] "If it looks like a duck, swims like a duck, and quacks like a duck, then it probably is a duck." More on http://en.wikipedia.org/wiki/Duck_test"http://en.wikipedia.org/wiki/Duck_test.

[4] See: https://en.wikipedia.org/wiki/Ethereum.

[5] Official site: http://www.wir.ch/ (in German, French or Italian only) Wikipedia entry in English (but disputed): https://en.wikipedia.org/wiki/WIR_Bank.

[6] See Eduard de Jong's presentation at the March 2014 MoneyLab conference http://networkcultures.org/moneylab/2014/03/23/edward-de-jong-towards-an-open-e-currency-system/ and his article on the INC site "One Chain to Rule Them all" http://networkcultures.org/moneylab/2014/12/16/one-chain-to-rule-them-all/.

[7] Caroline Nevejan, Presence and the Design of Trust, PhD dissertation University of Amsterdam, 2007. URL: http://nevejan.org/presence/.