

Money 2.0

"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has." Margaret Mead

The article is a proposal – in the form of some personal reflections and some what-if scenarios, if you will – for the modernisation of money (of its functions), which includes: the complete digitisation of money – of each trans/national currency –, where each monetary unit is both unique and traceable; the introduction into the economy of a parallel value system of, on the one hand, untransmissible personal credits and, on the other, of exchangeable real credits; the use of said credits for the conditioning (in varying/proportional amounts, and excepting from it certain goods and services) – as a prerequisite – of consumption and, in general, of any kind of transfer of money in exchange for goods, services or financial assets. Under this system, societies and economies will be able to evolve towards more just, stable and lasting organising models (albeit varying from culture to culture), without the need for more – or more complex – laws or without the need to implement (more) aggressive governmental policies for the pre/redistribution of wealth; all those policies that we all know – at least in recent times – proved to be so detrimental to our social peace, harmony, stability and generalised wellbeing.

Preface

This article is about the redesign and modernisation of money, of the functions of money, to be more precise. Not in the sense of making the use of money or transactions easier – we already have electronic money, cryptocurrencies, electronic wallets, mobile electronic payment devices, NFC bank cards –, but to solve most of the problems that today affect and concern, to varying extents, practically all of us: social and economic inequality, inequality of opportunities, corruption, technological disruption, wars, hunger, predatory/crony/destructive/extractive capitalism, increased number of presumed scarcities, artificial monopolies and financial Ponzi schemes, rise of surveillance capitalism, pollution of the environment, unsustainable economic growth and climate change, population aging, exponential growth of population, eroding of the intergenerational contract, tax evasion, drugs and arms trafficking, terrorism and submerged economy, to name but the most socially destructive dysfunctions of money and, in general, of capitalism. In my opinion, a new form of money will be the simplest, safest and most cost-effective way of solving all those problems and others related, instead of promulgating new laws aimed at taxing the rich and/or simply issuing – at a click of a button – new (of the same old) money. If we want to get out of the current self-destructive spiral and evolve, what we need is not more laws, or more specific ones, more competent and less corrupt governments or, above all, more money. What we really need is a new form of money, that is, a new concept of money and of monetary system. We need to start treating money, and the functions thereof, more as a social institution and less as a representation of an economic production value. In a nut shell, the proposal I am making in this publication is centred around the idea that what we need is to democratise, on the one hand, the creation of money, and on the other, the mechanisms that validate the use and exchange of this new created money; focusing predominantly on adding value to earnings/income, instead of assigning numbers to it. We need to first change the money before we change – either by common will or by necessity – everything else in the economy and society that money permeates and condition. The proposal here springs from the concern that the public at large should not expect – the democratic initiative of the citizens vis-à-vis reforming money is long overdue; Bitcoin aside – that the markets solve all, or the most important, security and functionality issues embedded in our daily economic transactions (all, at least, those that involve money). And why should they, if this doesn't increase in any way

their bottom line as profit motivated economic agents? Neither should we expect that governments put in place detailed, complex and up-to-date market regulations, either to stimulate the kind of activities that benefit us all or to correct the social/environmental dysfunctions left behind or put aside by the market; generated mainly by idle capital (uninvested capital during economic crisis) or by misallocated money (or allocated in unproductive and socially toxic activities, despite being profitable) in the economy. Given its utmost importance for us all, our priority should be making the modernisation of money a matter of general concern in the defence of our long-fought human rights and of our most fundamental democratic values. I also argue here that the simple modernisation of money will not be enough to, for example, prevent economic crises, although this isn't by far negligible. The proposed solution is to introduce other measurable values in the monetary system that correct, both the current and the historic dysfunctions of money; the most devastating being the social and environmental ones (in Proposal). The importance of the modernisation of money could be such that humanity will never be the same. Humanity will never have to repeat its past errors, an idea that I support in some arguments that I would like to discuss here. Ideal would be the complete elimination of any type of money, from both the economy and the society, but any future human (social) being who does not need money to manage his needs and to organize his life in society in synergy with nature would have to be – from a moral point of view – substantially superior to the man that he created and to whom he now proudly calls modern and civilized. They will have to first learn how to collaborate, redistribute and, in short, live in harmony with each other, without that abstract reference to money, or to any abstract entity, for that matter. Unfortunately, morality is not part of the human genetic inheritance, each new generation has to work it out and do its best given the social, ideological and technological context in which it exists and evolves. History, Mr Fukuyama, has not reached its end! Each person, group, community or even an entire nation arrives on a given point in time during its development where it has to stop blaming others – or simply bad luck –, face their own conscience and decide what is best for them to solve all their existential problems and evolve, if not to survive. Looking around, I would dare to say that the whole humanity has reached said point. The last economic crisis revealed another one which is much more global and profound, against which it is of little use to create (new) jobs for all: the crisis of conscience. And if we are to agree with Einstein, when he said that "no problem can be solved from the same level of consciousness that created it", anyone could easily conclude that the change of consciousness must precede any other change in the way we socially organise and collectively solve problems. We need to think out of the box and reinvent ourselves; because future, as it stands, is no longer what it used to be.

Sceptics, who are not few, are infatuated with the idea that only a natural disaster (or even anthropogenic, like a nuclear holocaust) of global magnitude will change man's conscience and coerce him into coming together with his own kind. Nothing further from the truth. Modern man has the means and the ability to reinvent himself and metamorphize peacefully without the determinant of an imminent natural cause that comes from without the abstract, nevertheless necessary, social structures he constructs for himself. If we have not succeeded so far, it is because we have neither reached the necessary maturity – both from a scientific and from a technological point of view –, nor have we had the political motivation/awareness to do so. We have been politically very slow – or rather deadlocked – on agreeing, for example, on a convenient and democratic formula able to reconcile both private property and economic power with the common good, including the environment. Taxing is one of them, but until now proved to be highly inefficient, if not counterproductive to both society and the environment. In the previous stages of his evolution, especially during the agrarian revolution and, later, during the industrial one, man already tested his perseverance and ability to overcome the natural order around him, learn to walk and take small evolutionary leaps. Today, having completely revolutionized information processing and communication, we are more prepared than ever to take what will be the greatest evolutionary leap in our history; and save us all the conscious mistakes – especially those that we commit again and again, like

wars – that push us to our own demise and to that of the planet, our home – our only home, so far. As Edward O. Wilson eloquently puts it: “We have created a Star Wars civilisation with Stone Age emotions, medieval institutions and godlike technology”. If you asked me, this is an unstable and explosive combination waiting to burst somewhere, sometime with unexpected and irreversible consequences for all of us and for the environment. My claim is that the redesign of money is the key element to guarantee a successful exit of mankind from the current intensive and exponential evolutionary process that, for most of us, seems to go uncontrollably off the rails. Since money is information, we will have to start with the establishment of new information processing rules, procedures, protocols and systems. Rules and protocols that apply to all the information we generate that is both socially and economically relevant. Rules that are applied equally and is beneficial to all of us (not only to the jealous and greedy “guardians” of it). The form of money man has been using so far has managed to get the worst out of him and, it is safe to say, it is inexorably pushing him towards his self-destruction. Despite its reputation as a universal economic panacea, in reality money mainly serves today, paradoxically, to solve problems that the same money has been generating and accumulating since its inception and acceptance, both in the economies and in the consciences of its users. Money is the root of all evil, we hear this all the time. This is mainly due to its partially inadequate design and its misallocation in the economy at the expense of basic social/environmental needs or requirements – all those added dysfunctions that money has inherited from those before us that created and used it. All this happens not because money has something in it that makes it inherently evil, but because we use it in a way that makes it so. Today we no longer have any excuse to continue using money in a way that, despite its clear counterproductive effects on society, economy and environment, we keep preaching, implicitly or explicitly, as set in stone. Money, as societies do, need to evolve and adapt to the socio-economical needs of the people that transact with it. I would also say here that to me modernisation has to go far beyond a simple improvement in the use or in the functionality of money within trade, finances and economic policies. The most important function of money needs to fulfil is moralising and integrating communities, along with preserving the environment. But this new money, as I see it, it should only have a temporary and instrumental role, and act as a moral catalyst in a transition process towards societies that don’t need any kind of money, towards a resource-based economy where enlightened men don’t have to measure all that matters to them and put a tag price on it. This may seem utopian now, however, I venture to say that a new money has the potential to radically change our deepest and more entrenched social ties and values. This new social structure with its renewed operating rules will have to accommodate and make the institution of money useful and not vice versa.

More about how I see this new concept of money and why do I think it will be our currency of change (of conscience) can be discovered in the following lines, always keeping in mind that my reflections are only one among a myriad of other perspectives and theories around the social and evolutionary functions of money. If I had to summarise it, the proposed solution gravitates predominantly around, on the one hand, information technologies and, on the other, the social/democratic awareness of the need to implement it. It allows thus itself to skip the need to found its soundness and usefulness in past ideological, political or theoretical predicates. After all, nobody has a PhD in things yet to be invented and tried out! I invite the reader to consider this article as a laboratory for testing new ideas, to which s/he is welcome to make any comments – refuting or supporting them – and be part of an intellectual adventure. Moreover, I will preferably value more any constructive criticism, or any idea that will make me doubt of my own, than the approval or confirmation thereof. Thank you for your cooperation! For commentaries please follow the link: <http://cgalaon.blogspot.com/>

Considering that:

1. Banks owe their *raison d'être* to the fact that there has always been, to a greater or lesser extent, physical money. This, like any physical entity, must always be situated in an exclusive place at a defined moment in time and, like any physical entity that has value and is accepted in exchange for other value/s, needs to be stored in a safe and exclusive/excluding place. What I mean by physical money, it is understood, is all that can be touched and sensed. Cash currently reaches a modest 3% of all money in circulation (that percentage varies slightly in every country; for exact figures, see the Blue Book published annually by the European Central Bank). Recent technological advances in information technologies push us *de facto*, and against those conservative policies for maintaining physical money in the monetary system, towards a gradual and complete digitalisation of money. We must ask ourselves, why are governments and/or money creators not promoting technologies for the elimination of this quantitatively insignificant residue, given all those problems it creates? Why not make all money in circulation digital/electronic, since 97% of it already is? Who has more interest in maintaining that 3%? It goes without saying that the first interested are, of course, the banks and, by and large, the entire financial sector. The goldsmiths of antiquity and the banks of today differ in many ways in terms of their practices and their business models, but they coincide in one fundamental thing that is stubbornly wanted to stay put for as long as possible: both have safe vaults destined both to storing large amounts of money/liquid financial assets available to its customers (except when there is a bank run, it is understood) and to keeping these values away from the temptation to be robbed/stolen. In a nutshell, banks have always existed only because there has always been something tangible of value to treasure (gold, securities, money), this being a *conditio sine qua non* for their existence and for being accepted by the rest of us. In conclusion, even if we still need banking, given our recent technological progress, we don't need banks anymore – now or ever.
2. Since its creation, in all human civilizations, money (and debt, as put by D. Graeber in his book *Debt: The First 5000 Years*) has always stayed at the top of the classification as the human tool that has most contributed to the economic development and to the strengthening and maintaining functional the social fabric. In some cases, due to its importance, it had the opposite effect, destroying the social fabric through bankrupt wars and recurrent economic crises. Cash has been, and continues to be – although today, mostly in the form of electronic money –, the instrument par excellence to carry out commercial agreements and financial transactions with ease; a fit for purpose instrument far superior to the primitive barter systems that it replaced. Its importance for the economy, especially since the last two World Wars, has increased exponentially and made that today we do not conceive life, social and economic, without it. Economies, and unfortunately almost all of the human activities and endeavours, ended up revolving around money. It can be said that money (and, indirectly, the elites that control it) governs the world. However, due to its actual design, money is misused and misallocated. Its regime is neither democratic, nor socially fair, but partisan, exclusive, cold, collected and tyrannical, being the main cause of the social atomisation and conflicts that we today experience. In spite of all this, our perception of money is – and has always been rather positive. We know that with it we can buy almost everything and that everything has a price, or that could have one, which, in theory, is not necessarily wrong. Problems appear in practice when huge amounts of it – if not most of it – is hoarded in the hands of a few who, guided by their natural instinct, do everything possible to tip the balance of power in their favour – the economic and , because it is existentially linked to it, the political – turning those who do not have it, or that can hardly access it, into their slaves (although they rarely consider themselves slaves). Day by day, whether performing a paid activity, studying, risking savings or defaulting on a business credit, we focus all our efforts only on earning money (often sacrificing personal immaterial values that neither have a price tag, nor can they be substituted). This relentless struggle is essentially a subtle form of forced labour that leads to the revival of the feudalism, as neo-feudalism, quite the opposite of what the status quo advocates preach us daily in the media. Money is increasingly distancing us from the feeling or from the ideal of personal and collective well-being, that is, to live in

harmony with one another and with the environment. Past and present societies and their values have been adapting to the institution of money to end up turning around it, not only because money is accepted in exchange for almost anything – our physical and intellectual efforts and what nature provides us for free in the form of raw materials – but also because, once our needs and wants are met and our savings start to stack up, our relationship with money changes. Accumulating fortunes is more than a social paradigm. It has metastasised into a culture, a philosophy and a way of life – it is understood, increasingly characteristic of a shrinking class which becomes by the day more powerful, exclusive and excluding. And what is even more dangerous and less visible is that those belonging to this class are seen as social role models, they are the winners and champions of capitalism. We got more and more seduced by the fact that considerable amounts of money help us achieve power, comfort and social recognition. It has become harder and harder to resist this luring temptation. It even makes us believe at times that we can even achieve happiness – well, the surrogates that we find on shelves, or – if one can be so hypocritical – love. However, for most of us, money is in fact a tyrant with smiling face and open arms who claims to want to help us, collect imperceptible commissions and be condescending and flexible with the payments due, but on whose back it can be read in large print: APR 29.9% *; where the asterisk would remit us to all that small print that nobody ever reads. The fine print is ultimately aimed at lawyers and judges. The most worrying thing is that those who own most of the money in circulation, control its creation and the granting of credits have unaccountable control over the rest of us. Money has distanced slowly from being, originally and historically, a means to irreversibly become an end in itself. This would not be a problem if it wasn't because most of us – 99% to be more precise – not only do not have the ability to create money, or to participate in some way in its creation and allocation, but have to put all our personal effort and energy to compete with the despotic 1% to obtain it and change it, almost instantly, for a modest and overrated (again by that same 1%) and “undeserved” wellbeing. Some of the 1% consider themselves so entitled that call the 99% “useless eaters”. Consider only the distinction made in modern politics between the poor with children and the poor without children, or between the deserving and the undeserving poor.

3. Money, this great device of man, spontaneously emerged out of the necessity – anytime in history transactional trust lacked –, as a measuring-device of abstract value determined by the market price aimed at solving the inherent problems of the primitive barter systems and to fulfil a basic commercial and, recently, economic/financial role. Creating a physical container – and agreeing to be accepted in exchange for other values – that represents, preserves and transmits a content, be it material or immaterial – like a thing with intrinsic economic value, goods or services of commerce, an idea or an agreement –, was an intelligent occurrence of the man of antiquity whose spontaneity and pragmatism were only surpassed by its uniqueness. It was this uniqueness, complacently and unanimously accepted, that kept money unchanged in the sway of the political, economic and existential of different societies and epochs to this day. With the benefit of hindsight, it has become clear to us now that it could not have been otherwise, given the state of the art of both finance and of the technologies for the processing of information of those times. However, what is the point today to continue using any physical/material container that represents the value of money in the technological society of today? Did the reader ever consider that if money is deprived of the quality of being physically tangible and – at any stage of the circular flow of economic activity – in the exclusive possession of some person/corporation, all that remains is pure information? Anything – in a broad sense, such as: debt, credit, goods of commerce, profit or savings – that is behind each and every monetary unit we use is fundamentally information. If we consider the state of the art of today's information technologies, we easily conclude that this information can be saved and transmitted in many ways and with much more ease, security and speed than paper money. Without going into political and economic considerations, one will naturally discover that this physical quality of money, however natural and useful it may seem to us today, and that we so easily take for granted as an

indispensable quality, is a mere historical relic that, in the end, has become our biggest socio-evolutionary stumbling block. Eliminating all physical money and making each monetary unit digital, unique and distinguishable from the monetary units of the same kind (despite being digitalised, modern digital currency units stored in bank databases as information lack all the other qualities; and banks and governments don't tell us why exactly is that the case!) is the pending matter of today's technological society.

4. We easily discover if we look more closely that the defining features of each modern monetary unit – be it cash or virtual – that are so familiar to us of being: fungible, durable, portable, cognisable, liquid, anonymous and easily convertible and interchangeable, actually benefit less and less the production and transacting with goods and services. It serves less and less the true value creators of the economy: the good old industrial capitalists. We assist with impotence to the accelerated denaturation of our familiar money, having no other choice but to accept in exchange for the value we add to the economy a mutated money that serves increasingly more the financial sector and the rich multinationals that evade taxes by the billions. Our current money has thus less and less economic qualities. Its greatest qualities are today its quantity and its anonymity of use (we all know that bank records and transaction records aren't at all effective to fight money laundering and tax evasions). And it is not just a matter amounting to one or another economic theory, it is an increasingly visible and unbearable social reality that irreversibly divides and pushes us apart. Anonymous money, be it physical or digital, only serves to generate, on the one hand, an increasingly dominant class of wealthy individuals/corporations, which are increasingly reduced in number, politically influential and powerful and, on the other, a growing number of poor people, which are increasingly poorer, politically irrelevant and dependent on the rich. It shouldn't come as a surprise that the only objective of the rich and powerful will always be to ensure (although they euphemistically call it "lobby") that at all time they are able to surreptitiously impose their criteria and priorities on governments and legislators and uphold their position in society, politics, and economy. It is the greatest and the best concealed inequality and injustice caused on all of us in the history of humankind, all in the name of capital accumulation. "When the rate of return on capital exceeds the rate of growth of production and income, as it did in the 19th century and it seems very likely that it will do so again in the 21st century, capitalism automatically generates arbitrary and unsustainable inequalities. That radically undermine the meritocratic values on which democratic societies are based. " Thomas Piketty in *Capital in the 21st Century* (2014). And if we consider the congenital and structural dysfunctions of capitalism that persist today – that is, unlimited economic growth on a planet with finite resources that supports a human population that grows exponentially, generating unsustainable social and environmental costs – money, as it stands today, not only does not help to solve those pressing problems, but – by being unconditionally poured into the economy with the excuse that we need economic growth to solve, as if that were not enough, other problems also generated by the insurmountable dysfunctions of capitalism – it makes it worse by the day. On the contradictions in the system and on the end of capitalism, David Harvey give us a good account in his book "*Seventeen Contradictions and the End of Capitalism*" (2014). Inspired by the distinction that K. Marx theorised about money's use and exchange value, the author proposes and develops interesting ideas on the current social role of money and on its relation to the socio-economic value attached to it.
5. The qualities of money mentioned above, historically praised by most conventional economists, have not only ceased to be such, but have turned against all the other functions expected from money, essential for the economic stability and for our social welfare, i.e., the function that enhance the production and exchange of goods and services, ensuring economic stability, stimulating investment and savings and providing a socially just pre/redistribution of wealth and of natural resources, processed or not. Another dysfunction of current money is the "necessary" interest that is applied to financial transactions. We consider it so necessary and legitimate that we call it legal interest (of course, because it is, by the rule of law). If we give it a second thought, we easily conclude that interest on money

exists only because there is still physical money, that is, something that needs to be treasured and "taken care of." It is the demerited – and in many cases, usurious – compensation that corresponds to the ones that have to face the "painful" chore of treasuring, caring and deciding whom to lend the money to. Banks, despite not adding any significant/tangible value to the economy, know better than anyone else what does have value and what does not in any economy. When granting loans, they always demand and "hold their hands" in an escrow or a collateral (like real estate), not at its market value, but at 80% of the value they assess; an assessed value that before the last economic crisis led them, moved by greed, to swell it to between 100% and 120% of the value of that underlying asset. It is said that without banks the economy could not work and that the interest on money is its deserved (?) retribution. We all know, however, that in reality the only thing that banks do is multiply money from nothing, disconnect themselves, and the money they create, more and more from the economy of the tangible things and generate inflation and/or unemployment. We could care little, and with more reason if we believe the money creators when they insist that this is the best way to create employment, if it wasn't because speculation – as it has always done – leads to radical fluctuations both in the value of assets and in the social wellbeing, creates bubbles and causes long economic crises that almost always lead to depression [the current depression only waits to become unequivocally visible once the US contracts non-sustainable external debts as the price of the dollar starts plummeting; see James Rickards' analysis in his book (2014) "The Death of Money: The Coming Collapse of the International Monetary System." The natural question that worries many is what will China do with all those US treasury bonds it holds, and what impact will the US default on debts have on the world economy?]. The qualities of money have been squeezed so much and their weaknesses have been exploited to such extent that money has ceased to effectively serve man as an abstract instrument or reference meant to help him meet his needs, ensure its wellbeing and care for the environment. We assume that the only thing that matters is how much money there is or how much more can be produced and that all of our problems can only be solved with money; that is, more money, which means more debts. The most important thing is, we see now clearly, not the amount of money that exists in circulation but its quality. The money will improve qualitatively only if each monetary unit will contain and transmit, every time it changes hands, all the information related to: its origin/debited account; the identity and solvency of its original/previous holder, and of all successive holders; and if it was assigned or invested in a productive, innovative or socially beneficial activity or good. We know that with each investment, every time money changes hands, money multiplies. Money gains value. But what exactly is the value that that newly created money represents? What was it invested exactly in? And what is its real value when measured against the already existing goods and services? If we are going to keep money anonymous – well its users along with their transactions – it is clear that those who have the ability to create/multiply money – banks and financial entities basically, the big intermediaries – will tell us very little or nothing about that relationship between value and price. And there is no way they're ever going to do it. For them, what counts is the number of monetary units annotated in their name – or in the accounts they create – and the value of the assets of their opaque and "cooked" accounting records. That is only a moral issue, they say, after all, the purpose of business is to do business, isn't it? Making money, that's their big "business", which means their big scam. It draws attention to a fact about virtually all policies of today, and it does not matter the regime or the political colour that helps them generate it. They insist with great ceremony on job creation and on economic growth. For today's politicians, it doesn't matter if that growth comes, more notably after the last economic crisis, from investing more in bricks and mortar – that ended up mainly in the hands of the same banks that created the crisis – and in boosting consumption, anything, less what is in reality productive. However, none of the politicians mention, even indirectly, what is the true cause of a crisis/depression in any economy, since every other abnormality is derived from it: physical and anonymous money. We know very little or nothing about much of the money that is in circulation and, nevertheless, all our attention is focused on the actions

and potential of people who exchange goods and services for money, add value in the economy and pay taxes. There are laws both to combat all undesirable or anti-social/economic human activities or relevant actions, as well as to stimulate those activities that ensure economic growth and job creation – which in return are a guarantee for the re-election of politicians, but very little do we know, if anything, to track each monetary unit by its serial number, for example, if not to digitise all the money and make each unit unique, distinguishable and traceable. Today's governments seem to care little if the origin of money is lawful or not, if it is covered by tangible/real goods and services in the economy (or if it counts as an investment aimed at producing those goods), if it comes from a tax haven, if it is partly destined to "lobbying" or bribing authorities to defend the interests of elites or powerful multinationals that squeeze human resources and plunder those of the planet, or if it was created out of nowhere as debt that, for the most part, will be forcedly paid by the next two or three generations. The only thing that has been done to combat these illegal or even immoral activities has been new conventions and laws – more paper tiger – whose complexity increases in inverse proportion with respect to their applicability and effectiveness. In short, my premise is that all this is possible only because "money has no smell" (Vespasian). The anonymity of money is a kind of "help yourself" and unfortunate weakness – although economists insist that it is the greatest virtue and the fundamental element of the *laissez faire* principle – that is maximized over and over again by banks, corrupt politicians, money launderers, oligarchs, opportunists, speculators and a shrinking, privileged and power-hungry class.

6. It is obvious, then, that what is needed is to give money more quality not to print or electronically generate more units of it. More quality means more publicly available (in, e.g., electronic distributed ledgers) information, that is, more accurate, reliable, safe, comprehensive, transparent and readily available about each currency unit in circulation. Qualities that enable us to make a fair judgment about the relationship of each monetary unit with the real value of things; a value that in reality money represent, not that one that self-appointed experts in finance "cook" in the books of the biggest money creators in our history. We need a system where the left hand knows at all times what the right hand is doing. That is, to know – or to have the ability to easily access it – at all times and in each position within the circular flow of economic activity, all information concerning: the origin and purpose of each monetary unit used in commercial/financial transactions or in the budgetary allocations of the state; the existence or not of another subject/agent entitled to claim it; and, where appropriate, if the parties involved are economically solvent, that is, if they transact by risking or guaranteeing their own savings or assets or if they transact with others people's money, being these other people aware of that or not. At present, all this seems impossible, since money, by design, can be, and it is, separated and isolated from said economic flow in the form of physical money, gaining thus again autonomy as renewed credit (and generating more interest to the banks). Moreover, through successive annotations in the accounts of their debtors, banks grant credits well above the value of their assets (from deposits, basically, although in recent decades the banks began to extend their arms towards other hard assets such as agricultural land in Africa or to aluminium) and create money out of nothing – although to describe this phenomenon they use a polite euphemism: "money multiplier" –, securing it with a modest fractional reserve, which in the Euro Zone is a meagre 1%. Each banknote, currency or electronic monetary unit is like a kind of cash check in which the only thing that remains unchanged is the amount and, speaking of cash, other identification data such as issuing/transaction date, identity of the issuer/parties and the serial number – number currently irrelevant to the economy, although in reality this should be the only thing that would connect it to it through the identification at all times of the transaction and of the parties transacting with it –, being able to be virtually written and deleted once and again, or simply ignore, all the other data that, I have to insist, is actually the most important for the continuity of the aforementioned circular flow and, consequently, for the stability of the economy: the identification, of both the current and the previous

holder of the transacted money, so that it can only be claimed by only one at a given time – that is why from the modernisation of the money the banks will lose their *raison d'être* –, the character of being borrowed or saved, its purpose and the relationship it has with the added value, productivity, creativity, common interest or social utility. The new digital money may contain all this information without losing its ease of use or its liquidity; with the capital difference that its users will have to adapt their transactions to these new characteristics (and to other conditions, see *Proposal*), both qualitative and quantitative, quite the opposite of what it is happening today.

7. The elimination of all physical money, of that modest 3% that still remains today, will make the existence of banks redundant and, once cash disappears, of any financial entity. And since there will be nothing that needs to be stored and stack up, the interest on money can also no longer be justified. Instead, a percentage may be applied to loans in order to stimulate savings and investments, but as a premium and as part of the profits generated, which in any case will be made effective only when those profits are being made effective and not before that, thus closing the large door of (the legal) speculation of today. What this could mean to savers and investors, read below in *Proposal*. Considering the current state of the information and communication technologies, the modernisation of money is not only feasible, but also – given the economic crisis in which we are immersed – necessary. If money is information, the obvious solution will be to create a database and to implement exclusive servers to store that information (as the current internet servers) and the infrastructure to access and effectively and safely use it. Likewise, new programs, exclusive protocols and a security layer will be needed for the processing of that information – understanding by processing all the actions that allow the collection, recording, conservation, elaboration, conversion, modification, blocking and cancellation of data. Another fundamental element for the functionality and stability of the system will be the secure identification at all times of the movements of each monetary unit, by its serial number, and of those who carry out such transactions. At the same time, in order to protect user's privacy, all records of creation, access, modification and transfer of data must be stored securely and indelibly, allowing the persons concerned to access them securely and hold a copy of all personal information when using money. I would mention here, however, that I do not pretend to be the first or the only one to detect and advocate for the elimination of physical money and of (central) banks, far from it. For years, authors such as Benjamin J. Cohen (2001, "Electronic Money: new day or false dawn?", *Review of International Political Economy*, Vol. 8, No. 2, pp. 197–225), and even the former governor of the Central Bank of the United Kingdom, Mervyn King, predicted that both cash and banks have their days counted. Other authors (such as Joel Kurtzman, 1993, and his megabyte money in "The Death of Money", New York: Simon & Schuster) even predicted the elimination of any kind of money. Relevant is also the book: "Modernizing Money: Why Our Monetary System is Broken and How it Can be Fixed" by Andrew Jackson and Ben Dyson, London 2012, or the various publications (in English), including articles, by Dave GW Birch: <http://www.dgwbirch.com>. There was even a state initiative in Singapore (the Singapore's Electronic Legal Tender Project) to digitise all money, but that project did not have the expected results; see Van Hove "Making electronic money legal tender: pros & cons", which he wrote for "Economic for the Future", University of Cambridge, September 17–19, 2002). I will develop this point in detail in the second part of the article (in *Proposal*), where I will discuss the inconveniences and obstacles that occur to me about the digitalisation of money and the solutions that I propose and that vary with respect to those of the mentioned authors.
8. Solving the problems related to online security, considering those we already experience today, together with the costs of this new system – not to mention the natural opposition of those who have a strong interest in maintaining the *status quo*, the invisible ruling classes –, are, to my understanding, the biggest challenges of the proposed modernisation of money and of the system that supports its use, i.e., for creation, payments, clearance and cancellation. Nevertheless, if the 99% realize that the elimination of all physical money, along

with the digitalisation of all money in the described form, will solve most of the problems that concern us today. Also that, after all, these changes boil down to a technological problem, not to a political one, therefore it is measurable and controllable, and that the cost of implementing the switch to traceable electronic money pales against the cost that the 99% already pays for the courtesy of using cash – consider only corruption and the € 50.000 million (equivalent to 6.3% of the total) that it costs the EU each year in maintenance costs and infrastructure for transacting with the € 790.000 million cash supply that is in circulation, according to the European Payments Council –, then it will understand that such change is necessary and that we should join all our efforts to overcome all these technological challenges and channel all the social consensus needed for the implementation of a system in line with the current state of IT that benefits us all. We need a system that provides a stable economy and a fair society, being in the same time environmentally sustainable. And all this can be only achieved if we democratise both the information (all relevant social and economic information we generate) and the creation of money. Although I have no training in communication and information technologies, I have searched for updated information on the subject and I have concluded with some reflections that could serve as a starting point for the discussions aimed at solving, at least on paper, all the problems that occur to me now and that I would discuss with interest with all those experts (or not) in the field and with anyone who has an informed opinion.

9. Obviously – if all cash is eliminated, money is digitised and, on this basis, banks are made redundant (removed) – something else must replace them, something that performs all the economic and financial functions that money has, where the functions of creating and extinguishing/cancelling it will be the most important. Again, we need (better, democratic) banking, not banks. I will return with details about the need to eliminate money in certain economic circumstances – and by that I do not mean the automatic writing off of money that currently occurs when any debt is cleared –, and how to proceed with the cancellation of money in order to ensure economic stability. Another bank, entity or institution with the functions of the banks and financial institutions of today, be it public or private, to which imposing the condition of holding 100% as reserves to be able to operate – as in some Islamic states today, will not improve much the economy and, sooner or later, we will be back to square one. As for nationalising banks or returning to gold standard, they are measures that on the long run will worsen the already damaged economic and social conditions for stability (considered a fact in mainstream economics), without mentioning the environment. That something, as I pointed out in the previous lines, will be in any case a system that fully incorporates all the new developments in IT (including AI), that is: a single national/regional unique database (integrated in an international system, which could be, admittedly, very tricky, but not impossible); servers (including the required redundant servers); secure electronic access devices and a system for the processing of information; apart from new principles for the creation, identification and allocation of money and, as I said, for the cancellation of money. It is true that much of today's commercial/financial transactions are already carried out electronically online, but in the end the amounts used in transactions invariably end up in the (digital) books of some bank and without the possibility of distinguishing each monetary unit from another – be it digital or physical –, so that the network is only a small part of the system, fulfilling a modest and transitory function of a conduit for the transmission of information. Being the only ones that process and account for that information, banks have the prerogative of creating money out of nowhere with absolute arbitrariness and aside, it is understood, of any checks and balances on behalf of the true value creators in the economy. Apart from the fact that they do not add any tangible and defined/consistent value to the economy, they generate, more often than not, more damages than benefits, something in which we all agree, even reluctantly, bank themselves – at least since the last economic crisis. It is hard to know where the arrogance of all these financiers ends, given their economic weight across the globe and across time, and where their moral blackmail to all of us begins. By all accounts, banks – especially after the economic (and

social) crisis that began in 2008, seem haven't learned anything, nor do they seem to have forgotten anything, well, or almost anything. We will have to remind them, then, that this flagrant deception has prevailed and has been accepted to this day only because, somehow, we have come to assume that the economy cannot function without them, that they are "too big/important to fail". They are the only ones of confidence to store our (physical) money and generate more, mostly electronic, of it – on their custody and applying to it a "legal" and "legitimate" interest – in the form of credits for all the investments/consumption that our economies require. My theory is quite the opposite, the economy, and therefore society, not only can function without banks, but it will do better without them. I would stress here that the abolition of banks will be incidental and will be just one among other consequences of the modernisation of money proposed here, not a condition to make modernisation possible.

10. It is said that a chain is as strong as its weakest link, a rule that, by extension, can be applied to any system composed of functionally interdependent parts. Secure identification of users at any network access point, such as electronic terminals, PCs and any other physical electronic device enabled to connect, transmit and receive data, is the weakest link in the network, making it insecure and unstable. The Internet is great for many things, like helping people stay in touch, spreading vital information and easing the burden of everyday tasks, like shopping, banking or paying bills. However – and forgetting for a moment about how annoying ads and spam are to anyone of us –, the price to pay for these amenities are the risks to which these users are inadvertently exposed during the connection and unintentionally transfer a significant amount of personal information that can be, and is often, used to commit fraud or to simply be sold to third parties without users' consent. These risks increase depending on the place (home, office or public place) and the means used (the personal or public computer or any other mobile device, wired or wirelessly to a network). SSL (Secure Sockets Layer) and TLS (Transport Layer Security) protocols for the security of online transactions didn't last long before the hackers found their weaknesses to exploit them. What worries most, however, is not the criminal intentions and whims of those hackers – who managed to skip the protocols and decrypt secure cookies that are used to connect to emails and online bank accounts – or the effectiveness of the law to bring them before it and penalise them. What worries most is the fact that all of us are increasingly dependent on a network whose functionality and reliability – when it comes to storing and sending private data, including identity data – depend indefinitely on improvements in the security of communication protocols, data storage and network access devices. And to make everything worse, the most important of the security improvements on the web come from the private sector, which by nature only cares about profits, and our security by its nature does not always bring profits, on the contrary, it is mostly an expense. Considering all these problems, the end users – and legitimate owners of the information that exclusively concerns them – have no control over their information or, even if they had any and know how to use it, it is very limited and deprived of limited or prohibitively expensive legal mechanisms to protect it. Worst of all is that the network and digital content users do not get in all countries or always effective legal protection anytime their rights are violated. Consider only the fact that most of the private information that each of us dumps daily on the Internet is stored on servers located mostly outside the country of residence (USA having in its territory the largest number of these servers in the world). This leaves the user with very little, if any, legal protection in their country of residence, not to mention their limited control over who has access to that private information and for what purposes. Whether or not we like politics or like watching the news, it is impossible, however, not to have heard about the Snowden matter regarding the (national security of?) US, which started in 2013 and continues to surprise us to this day; raising serious questions about where the power of governments to guarantee our security ends and about what justifies all the encroachments on our individual privacy rights.
11. The only fact that we have to continually update the antivirus software and to be aware of the latest and most efficient methods to prevent online frauds – as part of a relentless fight for security against the actions of some digital users that, regardless of the relative goodness

or evil of their intentions, operate from a comfortable anonymity, both of their identity and of their whereabouts —, it is enough to accept with resignation that we will always be one step behind the hackers and that the network will never be safe enough for the average Joe, for me and you. However, it is not what governments tell us. They insist that everything is under control. And if something finally happens, it is only due to the imprudence or the ignorance of those affected. You should have installed and/or updated your antivirus software, man! But what about everything that has to do with the security of electronic communications where the user carries no weight? Only in the SEPA zone (Single Euro Payments Area) fraudulent credit card transactions show annual losses of approximately one billion euros, according to a report from the European Commission (SEC / 2008/0511, final). On the Internet one can do almost everything, monopolising the net huge amounts of private information of its users on a daily basis, with an irresistible tendency to end up containing everything: our identity, our memories, our properties and/or rights over them, the record of our daily activities and of our transactions, our medical and social security records, our money (whatever that may will be, and if it will survive the 21st century as it is today) and, in short, our lives. Who are those who at all times store, modify, block, cancel, access, use and transfer the use of that information? Difficult to answer, and much more difficult since when the network has become so large, complex and insecure that it began to shoot itself in the foot. It is not necessary to be neither computer savvy nor any rocket scientist to learn — even assisted by illustrative and detailed videos on YouTube — how to fraudulently access secure websites, clone credit cards or steal private information for committing frauds. And if one does not want to leave any trace, all of this — some sites claim — can be done through a public network or with a laptop or mobile of last generation — which, in order to hide one's identity, can be acquired on the black market — through a public network. Hackers do it now even with your own PC (see "botnet": <http://en.wikipedia.org/wiki/Botnet>) and without you ever being the victim ever aware of it. These losses are not negligible and, given their magnitude and current development, require an immediate solution. But how can we tackle this conundrum if we only have a network for everything, even, of course, for commercial/financial transactions? Or even worse, will we ever be able to retrieve all our private information available online that has been sold to third parties and God knows where it is stored now and what is it used for? In my opinion, the weak links in the network are: (i) public access to the characters, language and lexicon of protocols, programs and applications compatible with the network; (ii) public access to the libraries, whatever the programming language, containing the commands used to create these protocols and computer programs that are then shared by all computers and other electronic devices to communicate on the network; (iii) possibility of gaining physical access to the internal parts of the hardware of the electronic devices used to connect — wired or wirelessly — to the Internet and manipulate said devices to commit fraud or to reverse engineer them and build emulators, physical or virtual, able to function as the original without leaving any detectable traces of access to its interior and of manipulation; (iv) the interface between analogue and digital and between access devices (peripherals such as keyboard, mouse and screen) at different levels and layers of computer communication are the same for both the user and for the computer programmer, so that, having the necessary knowledge — which is also entirely public —, the same person and from the same terminal can be at the same time either a network user or a computer coder, without the system being able to distinguish between one or the other or to detect their illicit/illegal intentions. All these vulnerabilities of the Internet have facilitated the emergence of anonymous "schools" or online social media forums that continually form creative and unbeatable hackers. The most talented of these hackers end up, ironically, being the same ones that advise governments against cybercrime and online piracy attacks that they once created and supported. That is, they are paid with taxpayers' money to put out a fire that they themselves set. It could not have been worse!

12. From the beginning, the network has been public and global and the users of the network have been adapting to it, to its protocols and security problems, in order to communicate and carry out commercial/financial transactions. Always with a certain degree of fallibility and without providing a definitive online security solution, improvements and adaptations have been implemented almost exclusively as a result of the demand of the private sector, individuals and companies that regularly use the network and have a high interest in preventing the loss of money and of business opportunities. Governments seem to worry and do little for the security of their citizens' private data, on the contrary, they either remain silent or declare themselves helpless. I suspect that their silence or resignation on the ineffectiveness of the Internet security favours them more than a fully secure Internet, since every time the private information of its citizens has been improperly used — for us not being able to know who, when and for what purposes our private information has been accessed and used —, governments can always say that it could have been anyone — unless some authority, agency or official inside, of course. It is enough to consider the Assange, Manning and Snowden matters to get an idea about the importance of our private digital information and about the role of governments in securing the processing of data/information that favours their citizens. Modern societies are in the midst of a process of increasing digitalisation of much of the private information, both the information that all of us perceive and capture from the physical world — the analogue or material world — with the use of electronic devices and the information that originates in our inner world, our thoughts and ideas that end up transformed into bytes. However, digitalisation is, after all, only a means for the conservation and transfer (also known as optimisation) of information from one analogue end to another, both located in the physical and perceptible world where the usefulness of the data materialises and offers us the possibility of accessing it, in synchrony or asynchrony. But these new technologies have made us both too complacent and confident. We tend more and more to convert everything into bytes, without thinking too much about its importance for our lives both now and in the future. At the same time, we lazily assume that this is normal, since everyone does it, and that we will keep forever at our disposal and in the same form or way of accessing it. The risk that this entails — the loss or destruction of the information regarding the identity of individuals, their health and social security records, their assets and their money — is difficult to foresee, much less imagining what will happen after the misuse or fraudulent use of all that information, in case they have any idea when this actually happened. In those cases, I am sure that fiction will always exceed reality. The next challenge of the information technologies is, from my point of view, to ensure that people have the power to keep private as a guarantee in analogue format, WORM (Write Once Read Many), all the information that concerns them. Also, that people have the power to access easily and safely all their private information in order to update it at all times and use it as a guarantee or insurance against any failure, improper use by third parties (including security forces and state secret agencies) or obsolescence of the programs computer or applications that are used to convert and process information in digital format, both that is transmitted online and that is stored on magnetic, flash or optical media on servers and is therefore exposed to a multitude of contingencies. One of the technologies that best competes today to meet all these characteristics is the holographic memory, which is much more durable, fast, reliable and reduced in volume (a terabyte of data, or more than 200 of 4.5 gigabyte movies — which can include in analogue format text, images, videos, etc. — in a lithium niobite glass or photopolymer the size of a lump of sugar) than all other data storage technologies. In addition, it has the great advantage that it is analogue, it can last hundreds of years and can be recovered safely and autonomously at any later time. I will return with details in Proposal.

13. The most immediate utility that the Internet gives us is instant and optimal communication and information exchange. It has become a much deeper phenomenon than a simple paradigm change or social convenience, since it affects most of human activities and institutions that maintain societies functional. 90% of companies already use the network to carry out most of

their transactions/operations and only 30% of the documents generated, invoices, contracts, etc., end up printed on paper. The number of public administrations that use the network, both to manage transactions and to communicate with its taxpayers, and the amount of administrative procedures/paperwork that can be performed only online increases exponentially (in Sweden almost all administrative procedures can be performed only online, and without having to print anything on paper, during or at the end of the paperwork/transactions). It is clear that, especially in the industrialised countries with a high penetration rate of the information and communication technologies and infrastructures, both the public and the private sector are moving towards a paperless administration and a paperless economy/financial sector, despite the persistence of mentioned structural security problems. The biggest concern remains – despite the increasingly complex security measures implemented to date – the authentication of users at the network points of access and the increasing sophistication of the online frauds that, in almost all the cases, are advanced in time and complexity than the measures effectively taken to combat them. Equally important are the storage and the access to identifying data and, in general, to all private data or information. The Achilles heel of the new information and network technologies is that the users have to adapt to them and not vice versa, in a market where the new technologies always go to the highest bidder to the detriment, more often than not, of the security of all users who are the legitimate owners of the information that concerns them exclusively. If the private companies that create the majority of these technologies are not interested in certain security aspects of our private information, for not providing them profits – to them or to their customers – or for not generating them significant losses, the online security is an issue that will remain unresolved and those affected will have to bear with it and expect from their governments a secure, practical, homogeneous and lasting solution. What is needed is technologies designed from scratch that adapt to the needs of all citizens, where the security of their private information is the starting point and the reason for their existence, and not market patches applied to existing security protocols and applications that only satisfy a small part of those affected (which in the end are only the ones that pay for the security, of course). Those who devised the Internet could not – nor should they – have foreseen the use of the Internet and the security problems that its use would further generate. Much of the information that is exchanged on the Internet and that, in order to preserve the trust – fundamental for any online transaction –, requires the authentication and location of the users, is processed (and stored) by private companies, many of them banks (again the banks!), which use security measures, devices and protocols that have also been tailor-made by private companies. These companies, by definition, are driven by potential profits and not by altruistic or patriotic feelings to solve the security problems of all citizens who use the network. The electronic devices and software that these companies create meet the demands of their customers and, many times, are designed to require after-market services and to generate them more profits, not to mention the issue of technological obsolescence of these products, be it intrinsic and intentional – for the same purpose of ensuring more profits – or extrinsic and ensuing. Any electronic payment system or device will be as successful as the level of trust that people vest in it. Confidence, in turn, will be satisfactorily achieved when the implementation of the payment system has reached a critical mass, i.e., that it is the most used among other alternatives available on the market and that people prefer it for its reliability, competitive price and ease of use. With all these payment and clearance systems coming from the private sector, which by its nature competes for profit, the result will necessarily be one of the following two: market fragmentation without reaching a critical mass or monopoly of the winner. Neither of these two alternatives will meet the security requirements mentioned and the network users will be the last ones to be considered. What is needed are new protocols, both for networks and servers within the territory of each country, and for the communication and instant exchange of information between countries and with the "vulgar" network, if I may, the www. At the same time, security in the processing of private data should be declared a matter of public interest, if not a fundamental

constitutional right, and with more reason if such data also includes the (new) money. Likewise, the active participation of the citizens must be allowed to lay the foundations, through different democratic channels, of a system that offers them the best guarantees for the processing of the information that concerns them. They are, after all, the rightful owners of all that information and not the ones holding the property rights on the technologies for processing it. I will return to this issue in the second part of the article (in Proposal).

14. In summary, I argued that the existence of physical money is at the base of many systemic problems and dysfunctions that, in order to be solved, we need to eliminate all cash, which will mean that banks will become redundant. Also, that money, physical or digital, is nothing more than information and that because money is anonymous and unidentifiable, banks can irresponsibly create it from without the real economy, the economy of tangible goods and services. Finally, that the information representing both money and transacting with money is exchanged through a network that is insecure and indulges fraud and losses, both material and immaterial. However, although the elimination of cash and the identification of each monetary unit would solve many of the current social problems, not allowing them to occur (action in a negative or limiting sense), it would remain unresolved, however, other equally important predicaments that have more to do with the attitude and speculative behaviour of some of the economic agents that use the same money used for productive activities: the economic crises. Here, the new money will have to fulfil a much more difficult and, until now, improper function: that of making desirable things happen, to incentivise or enhance them, in order to have a stable economy. The monetary system that I propose will have the virtuality of functioning both ways, as a deterrent or limiting factor and as an incentive or enhancing factor. It is worth remembering that, savings, investment and, above all, speculation are decisive fundamental factors or variables in any economy of today, if we want to prevent, reduce or stop economic crises from happening. Regarding speculation and making a quick "buck", history reveals a universal and uncomfortable truth about the morality of man when money reigns in: few individuals have managed to demonstrate the virtue of resisting the temptation of easy money. And those who indeed did it, only did so after reaching a level of spirituality which seems unattainable to most of us. This generalised human weakness is only overcome by the naturalness with which, once money is achieved without costing one much effort, one convinces oneself and others that they deserve it, that this easy money is now in good hands and that The Eye of Providence was well aware that they needed it or that they are more suitable for it than any other competing on the acquisition of money, ignoring – at least for a moment – that their profits are in fact other people's spent savings, investments or personal efforts. Undoubtedly, money and morality are very badly at odds; money's abstract nature, however useful to accountants, tax advisors, governments and households, leaves very little fertile margin for any altruistic or solidary feeling to germinate, and history is a very eloquent proof of that. And if we broaden the spectrum and consider capitalism too, where money plays a central role, it turns out that capitalism is not a self-sufficient system, contrary to what many prefer to believe. It relies entirely on other systems, such as the environment, the community or the family. If these systems weaken, capitalism suffers too. It turns out that money, like the Treasury, is all of us. Everything we do or stop doing, and has social/economic relevance, makes money possible. In the end, it was this human weakness towards easy money that triggered the 2008 economic crisis. There are people, like any of us, behind the "too big to fail" financial entities that saw the opportunity to make loads of money in a very short period of time, thus giving in to that humanly irresistible temptation. I don't want to justify them, nobody can, I just want to point out that they did it because they could; all they had to do was to take advantage of the poor design of the monetary system and of the value allocation system articulated through such money that exists today. Banks justified their actions in the same time on the presumption that, after all, even in the worst case scenario, they – and not all the rest of the economic agents – are the only ones that play the most important role in the economy and governments will eventually have no choice but

to rescue them, with taxpayer's money, of course. The irony is that they were not only rescued with other people's money – mostly with pension funds and with the efforts and the taxes to be paid in future by workers and investors – but they are the only ones that can create again new money out of nothing and indebt us all more. Reducing, or even eliminating, the speculation opportunities facilitated by our actual monetary system is key to preventing or, to the very least, reducing the temporal, spatial and material magnitude of the economic crises in future. To prevent/avoid crises, it will therefore be necessary to close the old ways used to create more "bad" money, both the money that banks create and those obtained through speculation. This money, we all know, does not add any value to the economy, on the contrary, it creates inflation. The same goes for all that money that when needed is not invested in productive/creative/useful activities. In other words, money created from nothing and speculation detract (sucks up) value from all the money in circulation the comes from any activity in the real economy, the economy of tangible things, making each monetary unit less worthy. Several theories have tried to explain these economic problems, especially since World War II, and offer solutions: Keynesianism, liberalism, protectionism, socialism, neo-liberalism and other "isms" or economic policies and theories (such as nudge theory or the theory of stimuli), but to date none has helped much in preventing or easing economic crises and, in any case, they offer no solution at all to the problem of unlimited economic growth on a finite planet. Being in the midst of an economic, social and political crisis, and more in need than ever of a new monetary system and a renewed viable social and economic model, it is now of little use the warnings that Hyman Minsky offered us (more than three decades ago in 1986): "Creating money is easy. The hard part is its acceptance." In the same vein, George EP Box (1987) noted that: "All economic models are wrong, but some of them are useful." After each crisis or bad economic out-turn, losses must be assumed, social and personal values must be destroyed or cut off, one or some of the variables of these systems and models must be revalued, modified, suppressed, renewed, reintroduced, and start all over again. It has been theorised and commonly accepted that the behaviour and motivations of the economic agents – not to mention other determining factors that further complicate these models, such as social conflicts, overthrow of governments or natural disasters – are sometimes so irrational and unpredictable that they don't fit any model, so the business of predicting economic crises is as unlikely as forecasting the weather. The fundamental problem of modern economies is not, as some economists like to believe, that some agents risk more than most based on more accurate and timely information or whose intuition works better than others, but that the current monetary system does not distinguish between money resulting from speculation from money resulting from a productive/creative/useful activity. The problem is, in a nutshell, that it is possible (many consider it even legitimate) to speculate or don't invest (when investments are most needed). We all do it and it has always been that way since the first goldsmiths developed into commercial/financial agents. Here it is worth remembering the American economist Hyman Minsky and his theory about financial fragility intrinsic to the normal progress of the economy to better understand financial crises and their aggregate economic impact (http://es.wikipedia.org/wiki/Hyman_Minsky). I do not propose to outlaw, as the Catholic Church did in the Middle Ages, speculation or the interest on money, which is also a form of speculation, will be politically, economically, legally and technologically impossible, or so much time/money consuming that it is not even worth trying it. My proposal is to condition consumption through well-defined, democratically institutionalised social merits (see Proposal), based on the premise that the producers of goods and services, both those goods coming from the market and those declared socially useful or in the interest of the public, are the only ones entitled to condition through said merits the access to personal consumption. Consumers, producers and value adding economic agents democratically converge in deciding who deserves what and how much of it.

15. At this point, it should also be remembered that the element that all of the current popular economic policies have in common is to focus on economic growth, consumption and job

creation, while allowing multinationals to commercialise, especially in the countries of the North Atlantic, products manufactured at low cost in developing countries, when instead what governments should do is to stimulate the increasingly evident local production that create local jobs and reduce the carbon foot print on the planet. With these premises, current governments understand that it is essential to stimulate savings and investment, or — as a last resort, and to avoid deflation — print more money or reduce the fractional reserve of banks to expand the credits for investment and consumption. That is, more bricks and mortar and more incentives for consumption. However, the effectiveness of these policies is, at the very least, debatable, if not refutable, since the common sense of today (which also constitutes 95% of the Economy as a science) dictates that, in times of crisis, the opposite occurs, that is, that savers are cautious and postpone investment/consumption. Those who eventually do invest, do so by buying goods that best retain value over time, such as gold or real estate (also known as hard or tangible assets), assets that in themselves, it is known, contribute close to nothing in the economy to the much-needed production and creativity. It only means that value is stored and investment or consumption are postponed for better times. That's the way things are, and that's how we've been accepting them to this day. As for those who invest other people's money, by committing to also paying an interest, the same common sense leads them in times of crisis to be even more cautious and reticent, taking less borrowed money and, therefore, investing less. The recovery of the economy in these situations generates huge unrecoverable losses — many of them immaterial and hardly perceptible from "above", such as the reduction in welfare or the degradation of the environment —, it is long and causes social unrest. Finally, it is increasingly difficult to support the idea of unlimited economic growth on a planet with finite resources: only cancer grows indefinitely. It takes something better than all this. A new money has the potential, as I see it, of ending all these dysfunctions and ensuring economic stability, even if that will mean reducing consumption and leaving money in the background, situating thus people and the environment at the forefront, as it should be. I will go into more details about this point in Proposal.

16. Competitive selfishness, individualism, state subsidies, prioritising private property over the common good and the efficient market-hypothesis are the basis of the philosophies and, in general, of the ideologies that are behind current economic policies. Their defenders consider them as a price to pay or, if you want, a necessary evil of economic stability, human progress and human evolution. They are an excuse for the seemingly universal welfare that trickles down to all of us from the use of accumulated capital, despite its increasingly obvious adverse effects, both for society in general and for the environment. "For every complex and difficult problem, there is always a simple, easy and wrong answer," M.L. Mencke. Economic growth is a complex and difficult problem, and the policies based on the premise of the end that always justify the means constitute that easy answer, i.e. the easy answer of economic growth that is in any case and above all guaranteed by what the wealthy and the speculators do with money (or "trickle-down economics"); economic theory according to which taxes on businesses and the wealthy in society should be reduced as a means to stimulate business investment in the short term and benefit society at large in the long term). It is argued that all the social and human inefficiencies or the adverse environmental effects of capitalism are necessary and transitory elements in a Schumpeterian process of creative destruction that, in the long term, always ends well (that if we will live to see it, since, remembering Keynes , "In the long term we are all dead"). As attractive as linguistically we find the oxymoron "creative destruction", we must remember that, from a global perspective, destruction always means somebody, somewhere loses or, more often than not, nobody wins. Some legitimately see themselves as "cautious investors" and have always known how to take advantage of other's crises (it is worth remembering here that the Rothschilds' squeezed their fortunes mainly from the misery of others, like the Napoleonic wars), therefore, consider themselves winners, but they should remember that the counterpart of the appreciation and/or increase in the number of their opportunely-acquired assets are the social welfare of others (the many) and the environment that, when time comes, always forces all of us to pay all of our outstanding

bills, no exception made. Politicians today, especially in the West, increasingly seem to ignore and omit from their speeches something that is should be obvious to anyone: if something cannot grow indefinitely, one day it will stop. “Indeed, development presents the western model as a universal archetype for the planet. It assumes western societies constitute the pinnacle of human history. This product of western sociocentrism is also the driving force behind frenzied westernization. In practise, if development does not necessarily bring positive aspects of western civilization to the rest of the world (human rights, liberties, democracy) inevitably it does bring its vices. This development that purports to bring solutions ignores that western societies are themselves in crisis due to their own development. This has in effect fostered intellectual, psychic and moral underdevelopment. Intellectual because the academic training we westerners receive teaches us to separate everything causing us to lose the ability to link and consequently to think about fundamental problems in a global way. Psychic because we are dominated by purely economic logic that only views growth and development from a political perspective and we are forced to consider everything in terms of material gain. And moral because in every respect egocentricity sweeps away our common purpose. Excess, hyperspecialization, hyper individualization, and a loss of common purpose all amount to malaise, albeit in the lap of luxury.” (Morin, 2011). On a planet with finite resources where everything is interconnected and works as a whole, we are all losers. The key in all this is sustainability – a word widely (ab)used lately by politicians but, despite its general tendency to be vulgarised, still retains much truth about the man-nature binomial. Human history and, above all, the way nature works provides innumerable examples of conflict resolution and evolution in harmony, where the opposite of competition prevailed. Wealth breeds defensive positions among humans. When people have something to lose and are wary of risking too much, they abandon their sense of duty and selfishness increases, which invariably leads to social conflicts. Cooperation, reciprocity, collaboration, teamwork and the application of any mutual system lead to results that, to some extent, favour everyone and, above all, leave little room for violence, discord, conflicts and destruction, highly probable results in a competitive climate. It is not necessary to dwell much on this subject; we are all very familiar with it. We receive daily socialising lessons on how private property and wealth lead to material and spiritual separation, limitation and exclusivity, with negative and discouraging net long-term effects, both for the inner peace of each one of us and for the social peace in general. Likewise, we know that creativity, originality and productivity occur much more easily in a climate of mutuality in which the attitude of “I’ll scratch your back and you’ll scratch mine” prevails than in a competitive and destructive environment. Again, something better than the current system based on competitive selfishness and the accumulation of private properties is needed, and it doesn’t matter if one does it with or without the purpose of speculating about their private properties’ future value. I frankly hope that my Proposal is sufficient at least as a starting point for public debates seeking other alternatives to the current way of organising both the society and the economy.

17. In order for both cooperation and collaboration to be effective and to display all their benefits, trust among the participants in a certain joint activity/endeavour is essential. In turn, for there to be trust there must be, above all, equal opportunities for all to access all the information available regarding: the resources used – both material and intellectual; the production, optimisation and transformation processes and their costs; and the profits, actual and potential. After all, a company is basically a formula for the organisation and optimisation of resources through a transformation process of matter or human/intellectual resources with the aim of producing certain scarce goods or services for which there is demand in the economy and for which there are no substitutes in nature. The fact that some have more merits than others, depending on their role and the degree of participation in said organisation and optimisation process, is to some (sufficient) extent admissible, but it is not whatsoever if those who – apart from having privileged and exclusive access to relevant information and to the use of capital and to, more often than not, other people’s resources –

also risk what is not theirs'. And if, in the end during an economic crisis, they are insolvent or, being on the verge of bankruptcy, have become so large and important for the economy, we cannot let them fail. In order to avoid this happening and damage an essential, hardly-earned trust, apart from facilitating equal opportunities for accessing all relevant information, it is important that the application of the rules of the game should be done without discrimination, protectionism, exceptions or favouritisms. A new system for the processing of information and a renewed monetary system – apart from offering transparency – has the potential to foster and restore all the trust needed between all the different economic agents, even if they occasionally have dialectical positions and purposes. It should also be remembered here that what is commonly identified as money in today's economies takes very rarely the form of legal tender and coins, that is, of physical or digital money. They are credit rights that are specified in certain type of documents (agreements and contracts), both on paper and on electronic supports (here also comes the electronic money, which is basically the promise of payment of the one that stores the information about the credit in digital format), that circulate with the same degree of acceptance as legal tender. It should also be remembered that when we talk about rights we know that there is always, on the one hand, a right holder or holders thereof and, on the other, a natural or legal person/s – determined or not by a contract and/or by the law in a broad sense – that accepts the correlative obligation to respect and/or fulfil the rights of the former. The trust that each one of them places in the other/s regarding the respect and satisfaction of the exercise of the rights involved is key here. However, trust does not come out of nothing, it is not an occurrence or a state of consciousness without any or with very little connection to the real world. Trust is informed and is nourished by all the information that we have, or that we know with certainty that we can have, on the other participants, both in our daily commercial/financial transactions, in institutions and in society, in general. Trust is most importantly based on the information we have about the mechanisms, legal and/or customary (to get an idea about the effectiveness of the mechanisms consolidated by customs, consider the debt collectors of today), which are activated in case of a breach of contract or of the promise to pay. If the information that is available is inaccurate, incomplete, intentionally hidden or falsified or the mechanisms referred to are slow and ineffective and the defaulter is an economic agent "too big to fail," the trust fails and the consequences can be systemic and translate into huge, unrecoverable losses. Again, the secure storing and processing of information along with the possibility to publicly validate the information are of utmost importance. Since the last economic crisis, we have seen more and more evidence of the damage suffered by trust between various economic agents and between them and those that guarantee the compliance with the rules of the game. Trust is volatile, it goes on horseback and returns on foot, and money as it is – due to both the weaknesses described (in 4) and to indulging itself into being speculated with – is the main cause of this gradual and widespread loss of confidence. Its restoration can be achieved, I insist, only through a new form of money, which will be beneficial not only for commercial/financial transactions, but also for the vast majority of human activities that have economic/social/environmental relevance.

18. Modern man has been accepting that, outside the strictly private sphere, everything they do, create or manufacture can be included, by a capitalist yardstick, in one of these two broad categories: productive or unproductive; that is, there are activities that contribute to the domestic product and activities that do not. In simple terms, if you don't make money with what you do, it won't be productive and nobody in the economy will be willing to spend or invest money in it. And of course, if nobody invests in it, it will never be productive. It is the snake biting its own tail. However, we all know that, on the one hand, to guarantee people personal and social well-being and for the society to function without tensions, it is necessary to invest in certain goods and keep certain public services functional, safe and optimal, of which the most important are: health, transportation systems, citizen security, telecommunications, energy systems, drugs authorization and education, which by themselves do not generate economic profits that can be valued in money or do not do so in a direct and

easily perceived way (this category also includes the education and care of parents in the preschool and elderly stages dependent on family assistance very difficult to value and include in current economic models; for instance, Nancy Folbre addresses these issues in: "Greed, lust and gender: A history of economic ideas" 2009). Likewise, it is known that a considerable part of the population, whether or not it is dedicated to something that may one day be productive – through the same capitalist criteria – is considered inactive. Mariana Mazzucato is right when she says that if one thinks in marrying his babysitter, he should abstain from doing it, as the work carry out by said babysitter will stop adding to the GDP of the country, but on the other hand one is free to pollute, as somebody is paid to clean the environment, and that is adding to said GDP. Most of us accept as something natural and without criticism that it is more important how much one earns and not the role that one plays within the organisation, company, community or group to which s/he belongs or has connections with. That is, money, this abstract instrument that we created, is once again used as a single yardstick to measure the importance of any productive/useful human activity, which explains why, for example, today's youth do not want to perform twixter jobs that do not require (special) qualifications in industries such as hospitality, health, agriculture, construction or commerce; they do not feel motivated by it. And who is to blame them? They have been taught, implicitly or explicitly, that all that matters today is to have money, loads of it. Hence, the mobility in employment of these youngsters, after completing their studies or training – especially in the West – is very low and governments have to decide whether to open the doors to immigration or to raise the minimum inter-professional salary, generating in both cases as many social tensions than by doing nothing. The productive and unproductive dialectic forces are reconciled and maintained in a certain social and political equilibrium, year after year with each state budget, through the creation, by various means, of new money and of (more) programs to spend it (with doubtful social benefits sometimes). The heated and moralising political speeches – especially since the 2008 crisis – focusing on social justice, complemented by some occasional promises of that pie in the sky to avoid protests, have only managed to do the opposite, i.e., to deepen the social inequality among citizens and sow more distrust, both in the politicians and in the democratic institutions of today. The time of keeping the masses distracted with bread and circuses has long gone for the connected man of today. The truth is that the more debts there are and the less investment and the less economic development from the previous year/s brought to the present, the more difficult the conciliation will be, as well as the deeper the social unrest and the less efficient the mechanisms to demand political responsibility to those in office. This could in any case be done through the mechanisms of today's democracy, since "it is a kidnapped, conditioned, amputated democracy ..." (José de Sousa Saramago). Both social groups, productive and unproductive, use money, but only the group or, if you want, the productive sector decides how much to invest and how much to share, in addition to having the prerogative, together with the central bank, of determining or influencing in the value of money, so that the "inactive" and "unproductive" group is increasingly dependent on the other group, pushing it closer and closer to the "Malfare (sic) State." An asymmetric and oblique relationship of dependency in favour of the productive sector that delves into each economic crisis and exists only because the design of the current monetary system is ineffective. This inefficiency is due to the existence of physical and digital anonymous money which increasingly disconnect itself from the value of things (things in a broad sense that are socially relevant). Both groups need money, but only one of them preserves the exclusive ability to produce it and to influence the process of its distribution and allocation. In other words, money is the social hinge between the market and all those (legally declared and protected in most developed countries) beneficiaries of the social welfare. The dialectic of this relationship derives from the fact that those who intervene in the market have the sole objective of maximising and securing their profits and paying less taxes, this being, in fact, the basis on which capitalism rests on, which makes it incompatible with both the fundamental democratic values that keep us together and with justice and fairness. At all times they – especially banks and other

speculators who have in the end a lot to lose – will do everything in their power to immunise themselves against losses and squeeze profits out of everything that can be sold and – if it proved to be “crap” (like the CDO’s of the 2008 crisis), and can thus not be sold – they will change its wrapping and sell it anyway. In recent decades, their sophisticated methods of making easy or “funny” money and their characteristic layer of accounting opacity have further removed them from the real economy. The pension funds and the long and painfully accumulated savings of many honest, hard-working workers were not enough to satisfy the greed of the banks and other financiers – of the North Atlantic, above all – that triggered the last economic crisis. Nor do they suffice to cover the damage created by all those “modern” financial instruments that ruined entire countries and whose exoticism only proved to be surpassed by its toxic and global economic outcome. They managed to create the mother of all private debt bubbles in human history that, at best, will be paid by one, two or even three future generations, if it will not break the economy of the world; it remains to be seen. In addition, they made that trust, that citizens used to place without questioning in politicians, political power and democratic institutions, become so weak that is practically non-existent, leaving a vacuum of legitimacy very difficult to fill through the democratic mechanisms that we take for granted today. Moreover, democracy, conceptually and as a formula for institutionalisation and legitimisation of political power, may be very different from the sacredly defined and articulated in most of the constitutions in the developed world; in this sense, see the take on democracy of Philip Coggan, a journalist/economist, in his recent book "The Last Vote: The threats to Western democracy" or the informational approach of societies and democracy of the sociologist Manuel Castells in his innumerable works.

19. There is a paradox surrounding two of the businesses that generate the largest profits on the planet that draws our attention: banks and energy companies. In spite of being the richest and with the greatest potential to contribute to the general well-being, they are the ones that least share and contribute, via taxes, to it. Not only that, but they are the ones with sufficient means to sustain continuous, formal and informal, influence in politics to maintain their economic privileges all over the world and secure their profits, no matter the cost. And the paradox continues. While banks, on the one hand, do not add any perceptible value to the economy – on the contrary, they create structural instability and push entire nations to bankruptcy, energy companies, on the other hand, exploit and take out profits accounting by the billions from the planet's non-renewable resources – which are supposed to belong to all of us –, contaminating the environment on their way to maximisation of profits. Their great excuse, eagerly embraced in the political discourse, is that they create wealth and jobs and, if they fail to do as promised or if they generated more damages than benefits, they are now too large and important for the economy to us let them fail. In times of plenty, and especially before the rise of the Internet and the consequent modern technologies of communication, all this went unnoticed, but this latest crisis highlighted the impudence and lies of these and the other parasites of the economy, causing people to become very sensitive to these injustices and take to the streets to protest. To somehow repair their image, many of them let seep through a few breadcrumbs for the good of humanity; of course, all printed on large poster filled with humanitarian epithets and images of starving children. On the other hand, they continue as if nothing to pressure governments to privatise in their favour public goods and services such as drinking water, health and education and, to divert the attention from the citizens affected by their actions and create smoke screens with their donations through foundations or charitable NGOs, which are really nothing more than ingenious legal instruments of capitalism, now adjectivized as cultural. In fact, we all know that all this is nothing more than another of their socially subversive methods aimed at taking full advantage of all possible tax exemptions and put a more friendly face to the public shame of the institutionalised almsgiving: charities, foundations and NGOs. Seeing how they put all their effort into creating for us kind and human perceptions, such as that of an altruistic older brother who lives tormented by the suffering of the less fortunate on the planet, makes us want to throw up, knowing who they are, what they do and what they invariably want: money

and, consequently, political power. They are the ones that keep us divided into exploiters, exploited, haves, have nots and, in general, winners and losers, not the market, genetics or even luck. The rules for operating the system have been created and kept in place by them; it is not the result of spontaneous historical evolution of man and of its institutions. The promoters of change, therefore, will never be someone among their ranks. And if any change that benefits us all will eventually happen, no one will deserve to be less remembered by history than the philanthropists of our time who do not let them escape any opportunity to publicly masturbate their egos with their statues or posters with the millions they donate on the background. The world's problems will not be solved based on large donations, gentlemen! And in any case, not coming from those who keep us under their domination after having squeezed all our resources and vitality.

20. All of them, banks, powerful, value-extracting multinationals, oligarchs, corrupt politicians and all the other power-thirsty parasites, are nothing more than a very small class of invisible intermediaries that stand between the visible class, 99% of human population, and the creation of money, in collusion, of course, with those holding the political power. Modern monetary systems have not been devised to ensure the welfare of humans and preserve the environment, but to keep the same people in control of the money-making, value-extracting machine. Their methods of enrichment are simple and invariable over time: lose track of each newly created physical or digital monetary unit and decouple it from its initial function, as publicly declared. Along the way – M1 to M2, M2 to M3, QE 1, QE 2, and so on – through various and complex legal, financial and accounting mechanisms, money changes hands and/or country several times, information is added or deleted and, above all, assigned with priority to value-extracting businesses or for bribing those who offer the best guarantees to increase or maintain their privileges in the economy. But their big business does not end with these initial prerogatives. The greatest social and environmental injustice comes in fact from the money that banks create on a daily basis. The different ways in which the social and the environmental responsibilities are avoided come in the form of consulting and auditing offered today by the best companies in the world, the big four, PwC, Deloitte, Ernst & Young and KPMG. Among the methods of evading both social responsibility and taxes, stand out for their illegality and immorality the followings: double accounting, tax havens (recent official figures place their number in the world around 60, among which: Delaware, Bermuda, Ugland House of the Cayman Islands, financial centres of EU countries, such as England, Luxembourg, Ireland and The Netherlands), fictitious/double accounting, nominal shareholders or social administrators, fictitious or front-companies, frontmen and other methods to lose track of profits and amassed fortunes, hide their true beneficiaries and evade legal, moral, fiscal and social responsibilities. But their methods are neither secret (many of us may have heard about the technique of the Irish/Dutch Double Sandwich used by the big ones such as Google, Apple, Amazon and Microsoft to pay less taxes, often close to zero), or so complex to make them incomprehensible and, consequently, fight them or make the people behind them legally and socially responsible (in this regard, see the article “The 20 trillion dollars missing” from the English magazine The Economist, of 16 February 2013, and the solution they suggest and visit: <http://www.icij.org/offshore>). However, the battle against it can never be won by the democratic and international collaboration channels we know today. The only way to bring some meaningful change will be by radically altering or rethinking today's monetary system. The money they create, whether it is lawful, illicit, laundered, illegal, out of nothing or from speculation, only serves to keep alive this malignant tumour of society, the money creators, and its advanced metastasis now threatens to kill its host: us. In any case not before having gone through a long and painful agony. Their money only serves to feed and add shades of grey to the way things are valued, where everything can be anything, according to the interests of the money creators and their accomplices, although they call it doing business. If we only consider the money lawfully created, we see that it has helped little the real economy. All they have achieved was an unsustainable debt bubble about to explode whose nominal value is 20,000 times the value of the world economy. It is absurd to think that we

will ever be able to pay that debt, and that is precisely what the money creators want, that we do not pay it off. Keep paying the debts will do it. And there is no need to believe in conspiracy theories. The only thing left to debtors is, therefore, to work, pay the interests, save money, give up consumption, accept cuts in their welfare, beg for condonations, vote for demagogues (politicians that sell the natural resources of their lands at ridiculous prices) and, above all, shut up. When the last economic crisis broke out, the value – the gross product of the global economy – was around 45 trillion euros, of which almost half, around € 20 trillion, vanished as if by magic; according to the IMF's McKinsey, see the link above. The money they create circulates as a cash check and changes hands without leaving any trace. It goes along a dark and winding road where money is abused, prostituted – so to speak –, devalued and embezzled until finally it is assigned to its last destination in the economy: the production of the goods and services that people need. It is understood, any good or service except those offered by the parasites serving the wealthy and the value-extracting businesses, experts in accounting, finance, legal advice, insurance and advertising companies. Once the base of the economic pyramid has been reached, money becomes visible and working people add value to it through their physical and intellectual effort. Money is not a thing or a good, it is a social institution, it is an insurance for the well-being and for the rights of all those who create something tangible, useful and valuable! It is legitimate, then, to ask what is the exact function of all those that today create money? Why does there have to be someone who does not participate in the production of everything we need to decide how much money should be created and where to be allocated? Why shouldn't be ourselves who create all the money we need to ensure our well-being and, if money ever becomes redundant, eventually do without it?

Proposal

We need more than ever in our history a viable and lasting model of social and economic organisation. A model which is socially fair, economically stable and environmentally sustainable. We observe with resignation and impotence a growing lack of connectivity and identification of the citizens with the politicians or, to be more exact, with the visions and economic and social programs proposed and sustained by today's politicians. They speak louder and louder to create increasingly ballooned perceptions to fewer and fewer people, or rather, to fewer and fewer people who approve and support them at the polls. This is due to the fact that they address to and differentiate citizens into classes and categories as predefined and stable across time and space: workers, retirees, students, socially dependent, independent, unemployed, entitled to social benefits and without right to them, productive, unproductive, people in a precarious economic situation who deserve to be publicly supported and people who do not, the poor with children and the poor without children and, in general, good and bad citizens. In other words, they want to convince us that in each given situation there can only be two colours, white or black, one or the other, despite the wide variety of greys that reality presents to us. And that is what they fear most and, at the same time, hate. The reason why is rather simple. In politics, nuances are difficult to define, obtain consensus on them and, consequently, control without discrimination, with less or more social or ethical justification. Having things in black and white, helps those who govern us, a lot, but has doubtful beneficial effects on the governed ones. Today's politicians declare that they understand their citizens, know exactly what they need or want at all times and, above all, how to provide it to them; and here are included, understood, monetary policies and the necessary – according to them – austerity measures, when time comes. They assume that each citizen can only belong to one or a certain number of category/ies in a given socio-economic context. Likewise, they assume that each citizen is at all times aware and certain about the class/ies or category/ies to which he/she belongs, that each one of us knows his place in relation to others, and this, they insist, is the most important for us. I wonder if it's not exactly the other way around. More and more voices

argue that today's politics is more about politicians, as individuals, than about their political actions while in office. Assuming that each citizen belongs to a category or social class and acts accordingly, is more than a bad policy that can have some collateral and temporary adverse effect on social cohesion, the economy or the democratic institutions. In the rapidly changing world of today, their comfortable assumption has systemic effects and invariably pushes us to at least one of these results: political suicide and irresponsible power vacuum; in most cases, a crisis of democratic legitimacy; in some extreme cases, to anarchies, antisocial individualism and violent nationalism; and, in all cases, to irreparable and tense social polarisations (winners and losers, exploiters and exploited, in this situation, indeed, there are only two colours). And on top of it all, it also constitutes an insult to the intelligence of the taxpayers or, at the very least, of their constituents and followers. It is sad to see how much the politicians of today resemble the arrogant, sociopathic, corrupt and paternalistic tyrants and monarchs of the – not too distant – past or, in some Asian countries, even of the present. And it becomes even sadder knowing that, given the small number of alternatives to the social organisation systems that we have available, they are, and assume that they should be, the only ones enabled (enlightened) to make in our name all the important decisions that affect our well-being of today and of the future. Last but not least, politicians have no choice but to think in the short term, terms of minimum of 4 to a maximum of 10 years, that is, they live under the dictatorship of the short term, but not because they opted for it, but because it is an inextricable part of the current system. When Juncker said: "We know what needs to be done, but we don't know how to be re-elected after doing so" he did nothing but state the obvious (we must moralise politics not make politics with morals) and reaffirm past political curses without giving any solution.

We all know, despite all this, that in reality the awareness that each one has about himself is far from being clear, well defined and stable, temporally and contextually. Once we have overcome our deepest fears, rational or not, the manifestations of our beliefs and ideas and our social relationships, our personalities in action, are much more varied, changing, plastic, adaptable, surprising and unique. In any case, we are much more than the classes in which governments place us with the legitimate intention of making us more "governable" or controllable for the benefit, they say, of our well-being and/or security. We are much more and can do much better than the theoretical machines of converting goods into happiness. The truth is that, in a politically uncomfortable way, we are all different and in constant change and adaptation and, in any case, our passions and motivations are much more varied and even less rational and predictable than that of a good consumer/taxpayer conveniently theorised by the economists with influence on the current socio-economic policies, with narrow views and abstract and generalised solutions. We are used to thinking that the only thing we need is good leaders, fair institutions, a detailed – despite repeating cold, alienating abstractions of the past – model of social organisation and just/opportune measures or actions, at least on paper, so that we will all live happily together, but this irresponsible comfort has begun to teach us its dark and socially corrosive side. The only thing that can save us from any of the two extremes to which that comfort leads us by default, anarchy or tyranny, – destroying the Earth on the way to it – is something unprecedented in the history of social structures and models that man has created for himself: information and communication technologies. But what will make this time the difference is not the fact that this is a new technology with the ability to determine a new society and culture, as did the steam engine or the telephone, but its great virtue is being technology that is both ideologically and politically neutral, a technology from the people, for the people, with the people. Today we can avoid falling into anarchy or tyranny by just applying in an appropriate, pragmatic, transparent and timely manner all the knowledge we have accumulated, both in humanities and in science. We do not need charismatic leaders, new and promising ideologies, like the "extreme" centre ideologies of today's social democracies, and more laws, that is, bigger governments on our backs. The only thing we need is democratic transparency of all socially relevant information, that is, to provide democratic transparency to the secure processing of all information that we have about each other and it matters to us all, of both the information we already have and of what we are going to generate in the future, including, it is understood, the

information generated by any transaction in which money — or any other asset that could be converted into it — is involved.

The history of the last, relevant to the purpose of this writing, 150 years has revealed us a growing tendency of the different governments and legislators in office to let themselves be persuaded — or to be outright bought by the highest bidder — by powerful transnational corporations and defend their interests before anything else; all in the name of the (indisputable?) economic growth and job creation on which they have made us dependent. This has had, and still has, a decisive contribution to the gradual structuring and constitutional consecration of a social and economic model currently replicated in most countries. A model whose foundational and functional pillars are: private property, competitive individualism and consumption. Under these conditions, the fact that we all want money not only no longer surprises us, but has become a natural way of life, despite presenting itself increasingly clear to us as addictive and suicidal.

A new monetary system, moderated and optimised by a system of social values, that is, a system where the creation and circulation of money are precluded by and subject to social and environmental merits, is, in my opinion and proposal, the most economical and safe way to break this politically, socially and economically destructive path and together evolve in a stable way. We need an apolitical organising model of our social and economic affairs characterised by both pragmatism and adaptability. The theory of separation of powers or, to be more exact, of the functions that underpin today's liberal state under the rule of law model has never ceased to be just a theory, which now betrays itself as an increasingly utopian theory. The alleged checks and balances — meant to limit a naturally invasive state on the rights of its citizens, the same citizens that constituted and instituted it with legitimate powers, and to ensure a fair distribution of wealth — work much better in theory than in practice; and the same goes in relation to the independence and political neutrality of the so-called negative legislator and defender of fundamental rights, the Constitutional Court. Any pyramid structure will always have to have a solid base in order to remain standing. When the base of the pyramid is disintegrating and fragmenting and the structure tends to become an unstable octahedron pointing down, the roots of the parasitic, blood-thirsty elements of the society (the bulky class of value extractors: rentiers, speculative investors, banks, creators of "value" for shareholders, "vulture funds" and the political accomplices of all of the above) deviate to connect directly to the ground and keep standing a structure, doomed to collapse, that challenges gravity. This odd, unnatural structure only serves in fact to keep the business of those scroungers working. Hence it is suicidal to continue relying on solidity of the structure of the current system. And no matter if the separation of powers and the distribution of wealth are effective or not, what we need are transparent powers which are unselfishly committed to the common good. To be able to do this we have to start by atomising and democratising both the monetary and the economic power. Like any pyramid structure, the current socio-economic structure is linear, that is, Newtonian, deterministic, ruled by cause and necessary effect, centralised and hierarchical, whose functional imperatives are: authority obedience coupled with distracted, unsympathetic and irresponsible materialism, i.e. consumerism that only leaves behind losers and winners. We need a form of spatial, non-linear organisation, that is, a Darwinian structure, in the form of a decentralised network (like the Internet), whose interdependent, personal and institutional constituent parts, continually and on the go nourish and adapt, both to each other and all together to their natural environment. A system, after all, that accommodates and harmonises all our differences and personal aspirations, fitting, without breaking, all the contingencies of the social and economic life (minimising the systemic risks and the entropy, if you want, that governs it) and with the ability to adapt to any change without breaking its continuity. That is, all the political and social reforms such as revolutions, civil wars and the overthrow of governments, which have always required us to start over and trade off the social order and our welfare.

I make the subsequent proposal with the aim of inspiring public debates and, at best, lay the conceptual foundations for a socially fair, economically stable and environmentally sustainable, dynamic, decentralised, functional and adaptable model. A model of organisation that favours value over price and that, in order to remain functional, does not have to go periodically through

slow and complex political processes that, however democratic in theory, are condemned to lose in the end their transparency towards the public and dedicate themselves exclusively to the business of keeping the same people in power to the detriment of everyone else. I do, however, mention that the model I propose will be more useful as a guideline or tool than as a social/political project, like, say, a business plan. This means that the results can vary greatly depending on the cultures, peoples and/or the natural resources that give it form and support it. My proposal is meant to be more like a virtual matrix, a tool box and a starting point for change. A change that benefits everyone and not just a restricted and exclusive class to the detriment of the rest of us. It could also be, I may say, as a degradable socio-economic scaffold, ideologically and spiritually neutral, with the virtue of supporting an indefinite number of potential forms of organisation, all of them, endowed with dynamism, plasticity and adaptability, while preserving their strength and functionality. Paraphrasing Darwin's famous axiom, it will not be the strongest social structure that will survive, nor the most intelligent, but the most adaptable to change.

Consequently, I propose:

1. (i) Digitise all cash in circulation. (ii) Make each monetary unit – digital or electronic – unique and distinguishable from all the others. (iii) Introduce into the monetary system other units of value that accrue independently of money but that are to be required every time money is spent or it changes hands for consumption. To make their description easy, I will refer to them as personal credits and real credits, although they may be represented by any other term that best describes them (they may be as well called social values or social merits). Their functioning: for the acquisition of any good or service – excepting the basic and necessary ones – it will be required a real credit to be paid with each monetary unit reflected on the retail price. For a predetermined amount and type of goods, the buyer, a natural person, it will also have to pay an amount to be determined of personal credits, as an indirect social tax (that is, a tax on consumption). (iv) Digitise all socially relevant information – at the beginning, this will be made up by all the data relating to the commercial/financial transactions and to the identity and the solvency of the economic agents using this new money; gradually all the other social and economic relevant information will be added – and store it in exclusive servers in the national territory of the country/region adopting the new monetary system. (v) Create a system for the processing of information whose functionally autonomous phases complement each other and are distinguished according to the formula: ADA (Analogue<->Digital<->Analogue). (vi) Create and implement a secure electronic identification device (Secure Mobile Identification Device). Also, create and implement in the system a secure personal storage device for all the private data that exists in the system about each and every person, including the data generated by the access, modification, blocking, cancellation or transfer to third parties of said data (Secure Analog Memory or SAM). (vii) Abolish the function of all paper throughout the national territory to serve as a material support for documentary evidence in courts, public administrations, commercial transactions and any other activity or factual situation related to the above – paper documents, such as contracts or identity documents, will obviously continue to exist, but they will not be admitted as supporting evidence when presented by the residents throughout the national territory; instead, it will prevail only the information in digital or analogue format stored securely. (viii) Abolish the interest on money, allowing only agreed percentages on potential profits – provided that the activity is classified in the national territory as economically productive, socially useful, for research or in the common interest – or discounts, on certain occasions, always in relation to the productivity or utility mentioned and under the accrual principle. (ix) Establish by law a collection of goods and services that are predetermined as necessary and basic goods. These basic products will display a white label, for example, and will be deprived of all brand names or distinctives aimed at identifying the producer (they will do, however, have a code name, for product safety and consumer protection reasons).

These products will meet minimum preestablished quality standards and, very important, their acquisition will not require the consumer to pay any personal or real credit in exchange. Proclaim at the same time the FREE access to these goods as a constitutional right of any natural person that is declared in need and resides in the territory of the country in question. (x) Create legal mechanisms to eliminate from the system non-productive money or money that has been declared socially non-functional, in situations of economic crisis/recession, no matter who owns it and what is the origin of that money, as well as create mechanisms to generate new money at the service of necessary and desirable social functions with the sole purpose of keeping the economy balanced. (xi) Allow a reasonable (to be determined) transitional period of time for a phased implementation of this new monetary and credit systems.

2. **Digitise all cash in circulation and make each digital or electronic monetary unit – both of the money already in circulation and of the newly digitised one – unique and distinguishable from all the other units.** In a negative way, declare, after a transitional period of time, without value all the physical money in circulation, so that it can no longer be used and accepted as a means of payment. Since money is information, the digitalisation of physical money involves creating an IT system that supports all that information and allows its access and processing with security, not only of the information related to money, but all the other information generated when transacting with money: who creates and for what purposes money is created; who are all its successive possessors; what is the relationship between the money used in each economic transaction and productivity, research, development, social utility or common good. It is worth mentioning here that one of the greatest advantages that society and economy will have from the digitisation of all money is that it will be practically impossible to commit any financially motivated crime, including civil corruption and bribery, and, in general, any misdemeanour that leads, directly or indirectly, to money. Another important advantage of the new system will be that banks will become redundant, although some financial entities, such as the investment funds, may survive, but the profits they promise may not be as attractive to investors (see the role of the proposed personal and real credits). So, the big value extractor will be gone from the economy. It is easy, therefore, to imagine the opposition that the proposed digitalisation would generate, so it will be necessary that the pressure for change comes from all the citizens and not from the market or from politics, for the reasons set out in the first part of the article. Even if it comes from a government, to be effective, the digitisation of money – as opposed to the de facto digitalisation of money that is happening today and as an essential element of the modernisation I propose – has to make each monetary unit unique and distinguishable from any other. Digitisation will necessarily have to go, I have to insist, hand in hand with the digitisation of all information related to any human activity with social/economic relevance, whether or not it generates any tangible economic or material profit (without being exhaustive, studying, researching, working, education and caring for children or for the elderly are some examples of socially relevant activities). The unity and semantic structuring of information in digital format within the system will allow people and their social and economic activities to be continuously articulated, through the aforementioned credits, both with: the generation and spending of money; the concession of credits for investment; and consumption. Money currently “has no smell”, provides anonymity to its owners/possessors and allow them to do with it whatever suits them best, even if it is detrimental to others or the environment, therefore, humanity would do itself a great favour if it endowed money with others features that make it traceable and distinguishable. Firstly, digitising everything, giving each monetary unit an unique name and, secondly, conditioning its spending. We have shown a lot of ingenuity and commitment (especially by the financial sector) to multiply money, but our planet has neither the means nor the necessary resources to produce all the goods and services that now or in the future can be bought with all the money we have created until now, most of it, from nothing (consider only the theoretical value of the modern financial derivatives 2008, around 560 trillion euros, that is, 12 times greater than the value the world's

economy in aggregate is able to create in one year). The next evolutionary phase of man will be to limit/condition consumption. The obvious solution will therefore be conditioning spending, conditioning that should come from the system itself. Not of the system that we know today, but of an inclusive, all-embracing and omniscient system that is constituted by all the information that people have at their disposal about the others, in conditions of transparency and security. By reading this, anyone would argue that the conditioning of spending can become very complicated, if not, in most cases, impossible. Indeed, given the contingency, dynamism and the infinite variety of commercial/financial contracts (think of the distortions which any market, national or international, is subjected to, due to the very existence of futures contracts, very frequent in the stock market today) and the unstoppable globalization of the modern financial products and, in general, of any business, it would be impossible to identify, distinguish, or anticipate all the situations, places, moments in time and types of transactions in which money can be earned and invested, let alone condition the spending of money, especially if the hypothetical study is intended to create the basis of a legal rule, whatever the range, and a legal system. What we have to do is to change the method and take a shortcut. Although from the digitisation of money the majority of the today's social problems, such as corruption and other economic crimes, will be solved, the new digital money, by itself, will not be able to stop people from moving capitals, or from spending and make them spend less or, much less, refrain from spending they legitimately earned money on certain goods and services that use up non-renewable resources or pollute the environment. In other words, since money as an institution will continue to exist (and neither, in the future, can it be eliminated at once without leaving something in its place – if only the consciousness of the money users of the future), all monetary units themselves will have to continue to have the same value and purchasing power, so that moralising money and making lawful only the money generated, for example, through certain productive or socially useful economic activities, could become a drag on the economy and an obstacle to investments, apart from constituting an unsolvable legal and technological challenge. Consequently, the best solution to all this will be to introduce into the monetary system new conditioning factors that are generated independently of money and, at the same time, provide the economy with other values, other than the ones resulting from capitalism, but desirable for both society and the environment. These factors are the personal credits and the real credits.

3. **The convenience of introducing the personal and the real credits into the monetary system.** The premise is that, in considerable amounts, and once covered certain basic personal needs, money gives its owner/possessor certain extra powers. As wealth (money) concentrates in fewer and fewer hands, so does the power that comes with it. Having money, lots of it, one can acquire means of production, financial assets, raw materials, labour and – usually other people's – ideas and decide what, and at what price, for whom and how much to produce of a particular good or service that, it is known, reports net profits (the historic driving force of capitalism). Likewise, money gives its owners status and social recognition, it is frequently and increasingly used to gain influence or primary participation in the political and macroeconomic decision making of the associated country and gives priority and timely access to information that guarantees the success of economic transactions and, in general, of any business. It is the reason why we all want to have money, the more, the better, and everything else will follow. But this passion towards money, that we all have been historically cultivating, we all know, is the origin of all evils, and now threatens to destroy both humanity and the environment. The pundits of the economic liberalism insist, even after the lesson of 2008, that the only way to guarantee economic growth (this being another mistake they make) and to stimulate productivity and creativity is by not imposing limitations on the power derived from or associated with money/wealth and, in general, on the accumulation of capital. To some extent, and in theory, this may hold water, but history has taught us that when money and capital accumulate all in the hands of a few, the result is always the same: monopoly, unsustainable indebtedness of the rest, bankruptcies, massive unemployment and

deep cuts into the social welfare, not to mention the excessive and irresponsible depletion of non-renewable natural resources and the pollution of the environment (on the accumulated power of transnational corporations, see in English: "The Network of Global Corporate Control", <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0025995>). Like all great power, it should also carry great responsibilities (although I doubt that it is our weak democracy of today that reminds this to the already "too big to fail", much less impose it on them). I am aware that trying to limit that power, so rooted in our (now globalised) money culture, by simply digitising it and making each monetary unit distinguishable, borders on the utopian. Apart from being a multidisciplinary project, technologically and legally very complex, limiting the economic power will face significant formal and informal political resistance from those favoured by the status quo (mostly because they have so much to lose). Its effectiveness it will be practically void, for example, behind the doors of the arbitration courts (mediating state-investors disputes) and boards of directors of large companies, national and multinational, that drive our lives and decide our fates. By this I mean through cooking their books and closing collusive deals that, to ensure and/or consolidate the monopoly and power economic, they are taken behind closed doors and never transcend to other economic agents or to the consumers, who in the long run always turn out to be the most economically affected by their decisions in the medium/long term. And if we take into account other facts that would easily escape our control, such as the asymmetry of information in the market and, in general, any contingency of life or historic event relevant to the economy, we realise that it is not even worth trying to limit said accumulated economic power. So, finding the ideological basis and legislate who, within what limits and in what situation, is allowed to acquire certain goods and services could be more complicated than regulating climate, since it means having a lot of information and data points – if not all of it, including all the private that lack social, politic or economic relevance –, setting clear objective criteria – running thus the risk to shut out and cause injustice to many particular situations – and issuing a value judgement and decision for each and every particular case. Not to mention that all this will push the ideology of entire system to the (almost) forgotten and hated totalitarian regimes of the past. Simply put, regulating and creating incentives to obtain socially and economically desirable results will only add complexity to the already existing complexity and push abroad even more capital and assets (in the innumerable and intricate tax havens). The best way, in my opinion, to eliminate all the socially counterproductive effects of money is to take a shortcut and condition the acquisition, in certain situations, of certain scarce goods existing in the national economy, whether these goods are classified as necessary or not. Without being exhaustive, I am referring to both luxury, leisure and entertainment goods and the goods and services, despite being in the generic first necessity category, whose quality is above pre-established standards. The power given by money to acquire these goods and services will also have to carry (social and environmental) responsibilities. In other words, those who want to access them will have to contribute to society with more than just money. They must have accumulated enough social merits beforehand. It will have to be a new concept of socio-economic legitimacy. Both the personal and the real credits will make it possible: the greater the economic power, the greater will be the responsibility required to those affected, that is, the greater the number of credits will be required. Being rich will no longer be so attractive and rewarding. Being rich it will also entail social commitment and social responsibility towards those who put all their personal effort in providing the haves with those goods and privileges they take for granted today. The legitimacy and operating rules of the credit system will neither be imposed nor guaranteed by force – through inflexible legal criteria and procedures – but will be affirmed and continually adapted to the social and economic reality through their use. The only power that everyone will respect (and fear) will be that of the information contained in the system: latent, all-embracing, impeccable and objective. Apart from that, it will be a power that will never ever forget anything. It will be this same power that, I dare to predict, will also end any kind of conflict in the world. If at all times the citizens of any country have in their

possession in analogue format all the information that concerns them, including, it is understood, the records of their properties – personal, real estate and intellectual – little will remain to be occupied and dominated, since based on this information, the occupied person/population may at any time reconstitute their rights and political system and marginalize any attempt of occupation and forced submission (calling into serious question the role of the UN or of any other world organisation that replaces it in the future; the only necessary thing it will be a safe physical storage place to keep copies in analogue format of all the personal information of all citizens of the world; it is understood, each citizen will hold his/her own secured copy). Moreover, democracy, with the introduction of the credit system and with the digitalisation of all information, can finally emancipate and free itself from the yoke of the economy (if it will survive as a science, with the current tenets). Economic power will never be as influential and concentrated in the hands of the few as it is today and globalisation will finally be able to free itself from its negative influence and be beneficial to all in what in reality is. It will be the beginning of a peaceful and mutually beneficial international cooperation unmatched in human civilisation. In summary, the new digital money, complemented by the credits, the digitalisation and the safe processing of the information concerning all citizens, will lead to: (i) power, especially the political and the economic ones, being atomised and becoming local and being distributed transparently and in different amounts among all according to the social merits of each one of us; (ii) the greater the economic power, the greater the social responsibility to be enforced on the owners/possessors of said power; (iii) the ideologies and much of the public institutions that we know today becoming redundant or, those that survive the transition at least, becoming more flexible and functional – it will be the times of doing (rather than of speaking and building utopian ideologies) and of the appreciation of the social values; (iv) all the budgetary allocations of the country, and in general all public expenditure (including, it is understood, the expenses in armament and wars) that exceed a socially and economically safe limit in the face of inflation and/or unemployment, becoming transparent and thus being decided by everyone, with regard to both the convenience and the amount of such expenditures; (v) the production, especially of food, being local; (vi) we all being more interdependent, more committed to others, more socially active and, in short, busier with the Social (and Community) Affairs, which is what the Economy should be called (95% of it is already common sense anyway); (vii) enabling us to move from a mercantilist, social and economic system of prices, where economic capital dominates the social and political ones – creating exploiters and exploited – to a value system, where economic, social and cultural capital intermingle optimally to the benefit of all citizens and, finally, (viii) us achieving a general economic and personal prosperity based on the merits, dedication and personal – physical and intellectual – effort of each citizen/resident (and not on cheap credits, the great financial invention that in the last 20 years has been dominating the consumer based economies of the developed and developing countries around the world). It is my prediction for the 21st century. I would mention here that I am not an adept of the equality of all people, it would kill not only our creativity and cultural diversity, but also our personal motivations to obtain merited recognition from others. In addition, the credit system will ensure, at least, that the rich of the future will be much more socially committed to the common good, as well as being the social models to follow, contributing to the reaffirmation of the (scarce) social values so painfully obtained in the past that now seem to have been ignored/relegated under the force of the predominant economic ones.

4. **The personal credits (PCs)**, apart from money, will be paid on the consumer price of a certain good or service as a social tax by any resident natural person (hereinafter, the term person/s will be understood as referring to an individual/s, excluding thus legal person/s). Its amount will vary depending on the type of good and on the personal circumstances surrounding the affected person. The PCs will not expire and will be personal and non-transferable. Their functions are meant to: (i) limit the consumption of certain goods and services; (ii) fragment, distribute and limit the economic power; (iii) promote solidarity and awareness among

citizens, both with each other and of all regarding the predicaments left behind by economic growth; (iv) make the business externalities visible and compensate for the pollution of the environment and; (v) promote social justice and equal opportunities. The credits, in short, will lay the foundations for and stimulate an economy very different from the current one. A social economy that goes far beyond the commercial (some people selling products to others), and whose fundamentals and functioning predicates will focus on the quality of social relations and mutuality. The current money alone can never fulfil all these functions or contribute effectively to their adoption. This is due to the fact that each and every one of the monetary units has, from the side of the consumer, the same nominal value, regardless of its origin, of its previous holders and of the concept in which it changes hands. However, we all know that to produce goods and services — whether they are for consumption or intermediaries —, it takes ideas, committed people, dedication, effort and natural resources, in addition to having to internalise (a requirement that has been discussed lately, both in society, as in the political arena, but has resulted in little to no political action) the externalities. The producers of all the tangible goods and services in the economy, therefore, are the only ones who have the (socio-economic) legitimacy of deciding who, to what extent and with what money they are granted access to their acquisition, especially when large amounts of scarce, non-renewable natural resources are depleted in their production, all those resources that belong to all of us and sustain all life on the planet. Every time we give up consumption in the present and save it for the future, we are confident that, sooner or later, money will have the value to acquire an equivalent amount of goods and services (or to invest in their production or provision). Our relationship with money is reduced, therefore, in the end to the utility it provides to acquire goods and services for consumption, regardless of the category those goods and services belong to: basic, necessary, scarce, abundant, substitutable or for leisure, pleasure, culture, social recognition, luxury or fun. Anyone possessing money, whether or not the money is legal or of legal origin (to get an idea about the anonymity of the money, the Norwegian Central Bank has recently published on its website that 70% of the cash is used in criminal activities, including corruption, and only 30%, therefore, in lawful or legal economic activities), currently have the unconditional right, from the legal and even from the moral point of view, to acquire those goods. Even if, for example, we have had some extra drinks and our money is "not worth" to acquire more in certain places, we can always find a solution for it. The same goes for the illegal money resulting from selling illegal drugs or weapons. Despite finding certain limitations and requiring the "help" of experts, in today's global world these are easily overcome (think only of the "dark web", the tax havens and the legally protected banking secrecy in countries like Switzerland, where banks happily accept — and encourage the practice — cash without asking questions). And if we talk about easy money as a result of speculation or coming from "favours", once achieved, it is "laundered" and easily finds its way back into the pool of anonymous and indistinguishable legal money. This money is worth like any other money to acquire any good or service (or, even, to be delivered in exchange for any other "favour", whether these are lawful, illegal or prohibited). Personal loans, together with the digitalisation of money (apart from making it impossible, at a minimum, the acquisition of illegal or prohibited assets, tax evasion and corruption), will impose a considerable limitation or conditioning on the acquisition of certain assets, goods and services. They will function like any other value that is accrued and accepted in return, with the added difference that the PCs will be imperatively required by law to every resident person when acquiring those specified assets, goods and services, while fulfilling all those social functions mentioned above. In order for the PCs to fulfil the function of incentivising both the creativity and the productivity, it will be convenient to distinguish between: basic personal credits (BPCs) and specific personal credits (SPCs). Any (resident) person, regardless of their age, social status, sex, etc. and their personal motivations, who physically or virtually attends the place where an activity is carried out, whether or not actively involved in it, classified as socially useful or of common interest, ARE PROFITS GENERATED THROUGH SAID ACTIVITY OR NOT, will be entitled to earn a certain amount of BPCs. Their amount will be calculated on a

fixed rate per hour basis – prorated by minutes – and will be assigned to any person based on the time attended, that is, they will be personal assistance credits. Once these conditions have been fulfilled, the system, by default and automatically, will generate and assign the BPCs in favour of that person. The SPCs, on the other hand, will accrue and may be claimed only for performing or participating – physically and/or intellectually and in an interactive way – in an activity previously classified by law as productive/creative, socially useful or of common interest, also, are profits being generated through such activity or not. Its accrual and allocation will be agreed, thus creating a certain degree of social and/or professional commitment, by the parties involved, with the possibility of being reviewed by an ad hoc committee. In the event that such activity is carried out by a single person, or by two with previous ties of friendship or kinship, economic, academic, institutional or similar nature, the assignment will be made ONLY by an ad hoc committee, upon request of the stakeholders. It is worth mentioning here that the legal classification of these activities, apart from the fact that it will be done at the beginning with the democratic participation of all, will not be exhaustive or constitute a closed list, but will be extended and updated periodically as a result of the use and the participation of all the citizens/residents, providing the socio-economic relations with dynamism, flexibility, adaptability and sustainability. The SPCs will accrue based on the relationship that the activity will have with social utility, common interest, research and creativity and will not depend on time, but on the results, current or potential. To calculate them, the number of BPCs will be multiplied by an index (1.1; 1.2; ... n , where $n \geq 1$; if the index is 1.0, the activity will not accrue SPCs, but only BPCs) that will be established through the personal and secret vote of the participants in the activity. The participants will use as reference unique criteria, established previously by law and updated according to the use that will be given to them, according to the professional or the occupational classification of the activity. As I said, in cases where there are only two participants – linked by a relationship of friendship or kinship, or by an economic, commercial, academic, institutional or similar relationship, being there therefore a risk of being affected by abuse or any vice, such as partiality or collusion – there is a conflict of interest or the result of the activity is a unique invention or creation difficult to estimate, the award of the PCs, upon request of the interested party, will be done by a committee or a popular jury of lay people and experts in the field or in the industry of the activity in question. The personal credits, as the name says, will have to be, as a general rule, non-transferable. In order to strengthen the social cohesion and stimulate the exchange of certain strictly community/local social goods and services, such as the care of children or the elderly, it would however be socially convenient for PCs to be transmissible, or rather to be paid in exchange of certain services or of being provided for a defined period of time, among community members or among friends, relatives, colleagues, etc. (in this case, they would work as the "fureai kippu", or "caring currencies", in Japan, or the "time dollars" in the US; unlike the proposed PCs, both currently work as a complementary currency, not as a substitute of the conventional one) and as long as there is no money involved in the transaction. In the case of a transaction that is valued in (conventional) money and the money is effectively paid together with the PCs, the general rule of non-transferability will apply. The relational situation and the personal qualities of both the transferor and the acquirer that will justify the transmissibility will be deducted and qualified at the time of the transaction, automatically and ex officio, by the system, taking as a valuation basis the information regarding the digitalised background and factual situations that are contained in the national database, which will be the only reference for all kinds of transactions. In this way, the transmissibility of the PCs (only the basic ones or, as I said, the credits for personal assistance), will fill the unintended gap created by their initial ex officio assignment, when they are created for the first time, in which case as mentioned they are not transferable. Finally, the PCs have the potential to completely revolutionize and reform the punitive and sanctioning system, both criminal and administrative. Excepting the criminals declared by a judge socially dangerous, the imposition of a penalty in the form of negative

PCs, being subtracted from the current total or generating *ex officio* a certain amount as debt payable in instalments, could be, from any point of view, an alternative far superior to the measures consisting in paying a fine or in any degree of deprivation of liberty (consider only the public expenses it generates and its dubious socializing effect). Making a person pay with their personal effort and/or their creativity or productivity, apart from not generating unnecessary expenses, will not only be beneficial for society, but it will be criminally as a corrective measure much more effective and even rewarding to the punished person. As for the fines or the indemnity/compensatory payments, however you look at it, paying an amount of money, in most cases, neither compensates, nor deters, educates, or prevents, it is simply that: pay; much less effective as a punitive/corrective measure, or with no effect at all, when it comes to affluent people.

5. **The real credits (RCs)** will be generated in all other situations where PCs are not earned/generated. The RCs will be transferable, impersonal and, in situations of economic crisis and as extraordinary measures, they may be legally declared lapsed, i.e., they become obsolete. Both the variety and the shear amount of the situations in which the capital, goods, intellectual creations or, in general, any type of asset used in the profit-generating economic processes – that occur autonomously and without the personal intervention of the holders or owners of the assets during said process – do not allow to give a comprehensive definition of the RCs proposed. Therefore, it is more useful to define them in a negative sense. The RCs will accrue in all other situations where nobody (no natural person), and this is important, intervenes, understanding by intervention both the mere presence and the carrying-out of any type of activity, physical or intellectual; that is, whenever said activity generates PCs, either basic or specific. In the event that these persons do intervene – including those other than the owners or holders of the capital or the asset/s employed throughout the entire production process – the PCs will accrue in favour of said persons (it is understood that legal persons are excluded), in an amount that, at that specific moment in time, corresponds to each of the intervening persons for the performance of each affected activity. The RCs will be generated by default in a ratio of 1:1 (one to one) and, very importantly, they will be transmissible (which, as a general rule, is not the case for the PCs; for the exceptions to this rule, see the point on personal credits). As an example, the capital (financial assets and capital goods) invested in: the manufacture of a vehicle, the construction of a rented property (2nd home) or the commercialization of a book ONLY would generate RCs, and not PCs, in favour of the owners of the capital, of the good or of the copyright (of the book, the plan or the patent/s). A RC for each monetary unit will be charged on the end price paid by the consumer (although the consumer may, above or below, modulate and change the parity of a RC for each monetary unit). The PCs that correspond will have been generated in the initial phases of the activity/process when the capital was created/generated or the ideas were materialized in favour of their respective creators/producers. On this basis, the accumulation of money/assets will keep people – physically and morally – in close and continuous connection with both the production of all those goods and services that, currently or potentially, the possessors can acquire with money, and with those other activities and resources and commodities existing in the economy or natural resources – like research, creativity and, in general, any natural resources – that affect and condition the living circumstances and expectations of all. This might seem discriminatory to the reader, but the introduction in the monetary system of the proposed credits, along with all the other measures, is the only way to: limit both the economic power and consumption; reduce social inequalities; protect the environment and coerce the capitalist system/methods of today to adopt to all the new operating principles set by the credits, making it more and more effectively socially and environmentally responsible and committed (by that I mean that I am undoubtedly for capitalism, but for a moderate one). The consumer – within 7 days (or, for certain goods, at any time before the end of its shelf-life or guarantee set by the manufacturer at the time of sale/delivery), say, and once they have the product in their possession – can change the parity set by default, i.e., one CR corresponding to each monetary unit of the

consumer price, with total autonomy and based only on the economic information included in the electronic or digital label of the product available online (said label will have to contain, is my proposal, a whole lot more information available online than just the price), such as: the percentage of the profits generated from the sale of the product; the shared percentages of these profits among the owner(s) of the capital and the employee(s)/contractors contributing in the production process; the economic efficiency of the product in relation to the resources used; the environmental impact of the product and the relation between the production of said good or service and the local resources (where the product is commercialised), including labour; and, finally, the total amount of the costs externalised during the productive process. The upward or downward correction on the corresponding parity RCs/monetary unit made by the consumer will have a determined lower (the lowest) limit the RCs equivalent to the monetary investment or of any other nature (the unitary production costs of the good or service in question). When it comes to professional services – such as those provided by an architect, a lawyer or a doctor – a minimum number of RCs (apart from PCs) will be assigned by default for each service, performance, provision or intervention, according to the historic averages previously established by law. Said professionals (disagreeing with that minimum) may dispute it before an ad hoc popular committee. The seller/supplier/service provider will set the price, i.e., the amount of money to be paid, and the buyer/acquirer/beneficiary will set the value (social and environmental), that is, the RCs. The same will apply to public goods and services. Very importantly, the purchaser of the good or service will pay as many RCs as on a 1:1 ratio corresponds to the end price, but the seller, supplier or service provider (should they do it on their behalf or on behalf of third parties), will only receive the RCs that the acquirer/buyer decides to grant them, so that the fairness of the productive process and the resources used will be more important than the market price. What most matters in the credit system proposed is thus the relationship between the product and the resources used, including manpower, and the impact that said process has on the environment/society/economy. Not so much the price and the profits generated in the transaction. Likewise, it will be declared by law that any amount of money obtained with the sale or commercialisation of all goods and services in the national territory that is not covered by RCs – due to having obtained from the buyers/acquirers less real credits than money – can be neither spent, nor distributed as dividends, during or at the end of the fiscal year, by the company, manufacturer, producer or service provider. Likewise, said money cannot be transferred abroad either. It is understood that any amount of money that is not covered by RCs, including the money coming from abroad, can be invariably reinvested in the national economy at any time and without having to comply with any legal requirement (making thus social justice to the economy). When the acquisition of a good is made in favour of a legal person (like a company or a corporation), the acquirer and legal representative of said person who signs or agrees on the acquisition contract, will have to put “from his pocket” the PCs that have to be paid, according to the category to which the good or service belongs and always in relation to productivity or creativity within the activity to which said good is assigned in the company. Alas, in a case by case basis, the amount of PCs to be required are tied to and will result from the personal circumstances of the legal representative acquiring the good/s, when the good/s belong either to the category of luxury, leisure or entertainment good/s or are in no way related to any of the productive processes of said legal person. In this way, on the one hand, individuals will no longer be able to “evade” their fiscal obligations, “hiding” behind a legal person, and they will be forced to make their own personal contribution to society, economy and/or the environment. On the other hand, capitalism will correct itself by default and be, finally and effectively, socially and environmentally responsible. All this, without requiring complex laws and the (delayed and, most probably, ineffective) intervention of the government/s and/or the legislator/s. In addition, the proposed credits will place the consumer and his needs, without mentioning the environment, at the centre of the economy. Consumers will transcend from a passive position to an active and decisive one, an unparalleled move in the history of

any type of socio-economic organisation. The consumer, directly and instantly, – and without having to wait (around 5 years) for the government of his choice to do it – can thus moderate (moralise, if you like) capitalism and make it more responsible and committed to what, in reality, constitutes its material basis and is the reason that allow capitalism to exist: people, along with their effort and their ideas. As for the difference between RCs and PCs, the former will be imperatively required to all residents in the national territory for the acquisition of any good or service produced or imported in the economy – not so for those goods previously declared of first necessity (when they are acquired, of course, by a person declared in need) and for the investment goods and services, as long as said investment is aimed at the investigation, development and production of goods or the provision of services that have previously been declared by law as socially useful or of common interest –, while the latter will be required, apart from the corresponding RCs, only for the acquisition of those that the law categorizes as goods and services destined to luxury, entertainment (including alcohol and tobacco) or leisure. The PCs will be required even for the acquisition – applying, where appropriate, proportionally to the corresponding part of the end price – of certain goods and services whose quality, even being essential/basic goods, is above, according to the law, preestablished functional and quality standards or in cases where for the buyer/acquirer said goods and services are not considered necessary (e.g., when a person is acquiring a second home or a second car, having at the moment of acquisition all the basic needs filled). Another important distinction is that the accrual and assignation of the PCs – apart from the fact that they will always require the intervention of the individual in question and of being non-transferable – will have two difficult, if not impossible, limitations to avoid: TIME and OPPORTUNITY COST. 24 hours pass at the same rate (despite our occasional and relativistic perception of it) for the rich as for the poor. Thus, being economically affluent may not help much towards aspiring to be happy – much less than today, in any case – or, in many cases, it may not help at all. As for the opportunity cost, the luxury goods, for instance, will cost the rich not only money, but also personal credits, so one will have to (badly) decide whether to spend the credits on that product or other having the same features or utilities, but it is cheaper and is not included in the category of luxury goods, for which, therefore, no PCs are required. To all of us in the end, we will have no choice but to face our own consciences and ask ourselves seriously at least once in our lives: what is it that I am best at that can valuable to and valued by others? What is that that I can best do that has value, both for myself and for others? Or what is that that I consider contributing to having a good life and where exactly does the necessary ends and the optional kicks in? Having a bulky savings account and hoarding wealth will no longer be a way of life filled with privileges, but it will be as burdensome as having debts, since it will also tax its holder with an indefinite personal debt to others (if they want to consume anything above necessary). Apart from that, the PCs by their nature will be scarce and consumable/expendable. To obtain them one will have to continuously commit himself with others; with their community or with the society at large. Under the current system, having enough money, one not only does not have to work, but one does not even have to perform any activity at all, be it physical, intellectual, productive, creative or any related to the above. I am referring here especially to the idle rich, which are not few today. The only thing the rich have to do today to maintain their socio-economic privileged position is to always keep an careful eye on everything that, on the one hand, those who multiply their money and manage their assets do and, on the other, stayed briefed about everything that do those who oversee their profits to evade taxes, experts which, of course, they will never fall short of. Money today attracts the “best” of the world’s experts. With the introduction of the credit or social merits system, all this, and much of what is known today as predatory capitalism and “trickle-down economics”, will end. And, to avoid moving from one tyranny, individualistic and competitive capitalism, to another, that of the merits decided by blind masses, from a certain age – that of retirement ordinarily – the PCs will be generated automatically for each person according to a predetermined formula, which will basically take into account the average amount of PCs obtained throughout the life of the person entitled

to them; the same as in the pension system of today. From the introduction of the credits, accumulating money will cease to be a way of life and an unconditional insurance for the personal well-being, but will entail some correlative responsibilities towards others, the true producers of goods and services in the economy. The impact that the credits will have on the consciences of each one of us will be immediate and will condition practically all our future plans: why accumulate money if I will never accumulate enough PCs to enjoy all that money for myself? Indeed, one can never produce enough PCs to spend all the money one obtains and exceed ones' needs, no matter how one obtained it (in the lottery or casino, from speculation, as an income of any kind, from an inheritance or from any non-productive source), unless they invent, create or produce something that others consider valuable and/or useful. From the introduction of the proposed credits in the economy, the most economically important metrics, value and price, will be as easy to dissociate and perceive, as never before in our history. In the same time, the value-price binomial will turn more dialectic than ever before. If the societies of the future are going to have rich people, the rest of us will have the undoubtful confidence that they really deserve it, contrary to the perception we care to have about them today. The capital of the most fortunate will continue to generate many RCs for itself, but for the acquisition of what makes worthwhile being rich – luxury, quality, complacency (and even self-esteem), being served, comfort and leisure – it will be necessary to possess something much scarcer and more difficult to obtain: PCs. That is, on the one hand, the personal credits will require their inexcusable presence and/or intervention in the socially or economically valued activities, whether they like it or not. On the other hand, the PCs will mean to them being creative/productive, if they want to obtain from others the biggest number of PCs, for the luxury goods, in the shortest possible time, leaving them thus more time for leisure. But well, they will be left with the consolation that money will allow them to at least preserve (in front of the populace) the prerogative of being able to invest at any time in training as good and curious researchers and, in general, in the accumulation of all knowledge or information that is to be considered both relevant and socially useful; the 21st century will belong to them (and to the geniuses born poor, as has always happened in history). Their fortunes coupled with the system of credits will be all they need to generate – much readily and much more easily than the less fortunate – great and unique ideas, being thus able to obtain from a jury or ad hoc popular committee all the SPCs needed to preserve their acquisition power for all the luxury and leisure goods of their routine life. And if we were to move to the other end of the economic spectrum, that of the less fortunate – of those in need (especially in the developed countries, where they enjoy currently a decent level of social protection) – the PCs have the potential to profoundly affect the ideologies or philosophies that define and justify the welfare system and institutions of today. The PCs will highlight in the same time the need for the social redefinition of the welfare state, thus overcoming the deadlock of today's sterile political debates around the distinction between the deserving – with children, for example – and the undeserving poor. Despite involving free necessary/basic goods for every individual administratively declared in need, the credit system will ensure that each person is much more responsible and committed to the rest of the members of the community or society to which they belong. In addition, the credits will serve us all as an effective tool to distinguish between where the necessary ends and where the optional begins, making visible in each acquisition the opportunity cost of it, all of which will have considerable social, economic and environmental implications for consumption. To the socially inactive person the distinction we make today between productive and unproductive will cease to be relevant. Nevertheless, leisure and entertainment will cost all of us much more than money. It will also cost us all (as well as the rich) personal credits. In any case, the budgetary allocations to the socially assisted will in the future have to be modal, that is, the money could only be spent for what they have been issued and destined to, for the goods and services that were previously declared basic and necessary (all those, for example, with a white label, be it the label physical or virtual). The credit system proposed, thus, is the expression and is in intimate relationship with the social utility and the common

good that go far beyond and in many other humanitarian/environmental desired directions than the economically profitable. Yet, the most important elements that I want to highlight about the potential of a monetary system moderated and conditioned by personal and real credits, will be the self-regulation of the economy and the limitation of the power derived from capital and, in general, of any valuable asset, like land. From the introduction of the credits, the regulation and the correction of the free market – increasingly demanded since the last economic crisis has begun – will not only occur and apply automatically and spontaneously, but will NOT get into conflict with productivity and creativity. Moreover, it will stimulate them. Finally, the beneficial effects of the credits will not end in the external physical world, but will also be projected inward, on the consciences of the credit system/money users. They will become the most effective moral tool of the modern man, since they will help him impose limitations to himself (leaving out of work, unfortunately, a large part of today's psychologists). The proposed system of credits will protect man not only from the actions of others, but from man himself too. They will shield him against all those pernicious effects of his historical abuses and vices, such as greed and selfishness, which unfortunately have taken root in our culture, disrupting and stressing our social peace for such a long time. Our relationship with money will change forever. Money will be much less important, it will be just another social/economic tool, and the whole world, not just the economy, will cease to gravitate around it. Man, finally, will become the exclusive centre of his worries, making his future, and that of the community to which he belongs, economically predictable/controllable, balanced and sustainable within his natural environment. People will gain moral ground, so to speak, to things, and the whole society will gain ground to capitalism. The space does not allow me to go into more details here, but I would discuss with interest any comment, observation or suggestion I receive from the reader.

6. **The national system for the processing of information.** I mentioned in the previous **Considerations (1 to 20)** some security problems that occur to me in relation to the security of the online transactions, especially when it comes to: user authentication, data storage, access, transfer and, in general, any action that amounts to data processing. My proposal to solve all, or the most important, of these problems distinguishes the improvements in the software from the improvement in the user-authentication hardware. As for the improvement of the software – in order to guarantee the introduction, modification, access, cancellation, blocking and transfer of data in a secure way within the system –, my proposal is based on the premise that the only way to achieve it is by physically and virtually separating the functions carried-out by the hardware from those of the software. The meeting of the two will occur only to fulfil certain functions, it will be volatile and short lived and the user will neither have access to the software – to the computer language in which it was written –, nor to the commands (to all of which will only have access the IT specialists and system administrators). At present, the hardware, PCs or any other network electronic access devices are acquired inseparably with the software that at any time afterwards the acquirer can access to modify, reinstall, update and replace (or hack without being detected or tracked), without affecting the functionality of these devices; all this on top of the already existing precarious online authentication methods and technologies. Therefore, it is necessary that new exclusive programming languages are created, without the user, or public at large, being able to access them. These languages could even incorporate some totally new characters, from the alphabets of other languages, for example, or abstract and totally unpublished ones created for this purpose. This technique of separating the software from the hardware is already in use today. It is known as distributed computing (also, cloud computing); the most representative examples of it being Google Drive and SkyDrive. Although it has generated enough criticism, for limiting the creativity and freedom of users to install certain applications and to perform certain tasks – thus making them dependent on the service provider –, distributed computing can be the ultimate solution in terms of security, as long as the user is guaranteed to access at any time a secure backup (also in analogue format) of all the information that concerns him personally, being made available on the cloud by himself or by

third parties. Contrary to what it may seem, the network will be totally secure only if it contains ALL the information and of ALL of us (also of the authorities, civil and military, and of other public officials), all of which is already digitised and stored in the servers and the one that will be digitised in the future, as long as, I insist, the problem of user authentication is resolved every time they connect to the national network. Paper document-digital document duality is another important element that fuels legal uncertainty and economic instability, and not a possible digitalisation of all legal, social and economically relevant information. Paper documents, which are not few, with great importance for the economy and for the legal and administrative system/documents, which are in the exclusive possession of individuals — and at their discretion, therefore, to disclose or not — are those that generate insecurity and not the hypothetical situation where all the information in digital format is stored indelibly on the national servers and on the secure personal (analogue) storing devices. My proposal, as a solution to these limitations and contingencies — apart from new computer languages and characters and the abolition of the paper document to serve as lawful evidence — is to create some devices that allow users to have in their possession — in analogue WORM format (Write-Once-Read-Many) or any similar immutable object storage device; any old or new digital format creates more dependence on the digital system on top of the problems given by the obsolescence of the applications and of the computer programs — , all the information that concerns them, be it generated by themselves or by any other resident user with access to the servers and to the national network. ITC (information and communication technologies) should be the working language and means of conveying the information. The secure, reliable object storage device should be the guarantee for every individual user, against failures, abuses and, in general, vis-à-vis the unchecked power of those who keep, manage and “monitor” all our information. The programmers and IT technicians, who keep the system optimally working from the “inside”, can do little off their preestablished technical and lawful commitments, since people will have in their possession at all time, each one in their personal analogue storing device, all the updated personal information as a guarantee against any abusive use, file corruption or deletion (which , it is understood, for the programmer, it is not a problem), be it accidental or intentional. Equally important, therefore, will be that users had the possibility to continuously update said information in a secure way to effectively serve them as a safe evidence in case of misuse or loss of the information in digital format. As a scheme, the system will consist of: exclusive servers located in the national territory (including the redundant servers for backups), secure access and authentication devices for users and secure personal analogue storage devices. The information will go from analogue to digital, which will be the instrumental or working medium, and from digital to secure analogue, which will work as a means of guarantee, validation and cross-checking of the information. All this, very important, without the user (including all users, that is, including public authorities and state intelligence agencies) being able to access the software programmes. The characters of the interface, for display, access to and interaction with the system, will be those of the alphabet used by the users. The programming language will be very different from that of the interface (even today, for each of the languages in which the operating systems are written and are available on the market, there are two different alphabets, one for the user and one for the programmer). The physical network and all other peripherals and access devices to the www may continue (and will be) the same as those used today, including for mobile telephony and for other devices connected to the red. Moreover, these will constitute an accessory part, therefore, not essential, of the new system. A fundamental condition to make possible the implementation and effective operation of the new money and of the proposed PCs and RCs, will be the digitalisation, not only of all the money, but, I insist, of all the information that has to do with: economic content rights, contracts, agreements, related declarations of will, notarial powers, wills, acquisition and registration of property, identity of persons, commercial transactions, the accounting of the patrimony and the economic activities of all the economic agents, the deductions and withholdings that are applied to incomes and the amounts transacted in social

contributions and common expenses, the registries of goods, personal property and real estate registries, and the list continues, I don't intend to exhaust it here. Due to the attractive strength and economic importance of money, it will be necessary for the new system to incorporate much of the information that concerns people and is relevant to the organisation and operation of the communities and the society in general. To ensure a safe use (of the processing) of that information, I insist again, apart from being necessary that the servers contain all the information that concerns the residents and has social/economic relevance (and also any private information that people want to store on the state servers) , it is very important that the access and authentication of the users – of all of them, without legal privileges in favour of public authorities or officials – be established in a secure, validated way. In addition, all records of: access, entry, modification, cancellation, conversion and blocking of data (also known as metadata) will have to be recorded indelibly on the servers; every document, file or data entry will have as many versions as modifications, none will be lost. The information will be recorded and integrated/structured in the memory in a semantic way – that is, the data will also contain other information that describes their content, meaning and structural relationship and facilitates their search, evaluation and recovery. A distinction will be made between at least the following categories of information: public secret, public open, private open and private secret or intimate. Access to this information will be made through different levels of security – for example, public authorities will have access to higher levels, each according to their level of clearance; related to their legal qualities, functions and duties – and the users, natural persons, will be allowed to recover at any time updatable copies in analogue format of all the information that concerns them exclusively (including, of course, third-party access records to their data, metadata, and the references of the documents declared secret by an authority – not being able to access its full content until its declassification – public or private, that include either their names or their activities or make reference to their names/activities). All the information that does not come from the system or from the secure personal storage devices, that comes from the www or any other electronic device/net and is written in languages or through applications off the national system, will not have value as evidence in the national territory, but they will do have informative and accessory weight along with the official information, and may only be incorporated into the system by resident users through secure access devices. In summary: (i) the system will contain all the information, and the records of the actions resulting from the processing of the information, generated in the national territory by all the activities and interactions, digitised or virtual, of the persons residing in the territory; (ii) the access to said information will be made only through secure devices; (iii) for evidentiary purposes, only the information in digital format recovered from the system that, where appropriate, may be validated and cross-checked against the information contained in storage devices in analogue format, to which any resident person shall be rightfully entitled; (iv) the users will not have access to the software of the system and can only connect and access the system through said personal secure access devices; (v) to enter data from the global network in the system, or of any other network other than the national, official one, the user will have to log in and connect through the secure device. The conversion and transfer of external data to the system, from the personal folder www created by default and in which the resident will temporarily deposit the data, for example, upon express request of the user's for the transfer, will be done without their intervention and, in any case, after logging out; (vi) any electronic device, other than one of the secure homologated devices, may be connected, wired or wirelessly, to the national system, since the system will have protocols installed with all the drivers (controllers) converted of the devices available on the market, but the connection will be made only to the hardware of said devices and will always pass through the secure connection device (thus forming a virtual loop) that will contain the software in its volatile or working memory, as long as a previously registered resident requests the secure mode connection; in addition, any previously registered device or hardware element located physically outside the system will have to carry printed on them a barcode

or QR (Quick Response Code) that is readable by the user's secure identification mobile device and, lastly and most importantly, (vii) the user, be it the user public authority or not, may not erase data from the system, although it may be able to block the access to certain content for reasons of privacy or for being required for a defined period of time by an authority exercising a public function. Moreover, no data can ever be deleted. Any document, file or data entry, once created and saved, will have as many successive versions as modifications made to them; all versions will be recorded and stored. And if any document/data is deleted from the system, with or without any intention, by any person who, lawfully or illegally, has had access to the programming language, it will prevail in any case – as a fundamental right of the citizens constitutionally guaranteed – the information stored in the personal storage device of the aggrieved person, corroborated, where appropriate, by a public prosecutor/authority and/or by any person designated by the person concerned.

7. **SMID (Secure Mobile Identification Device).** The key element to make the system I propose here work is the mobile device – therefore, wireless – for the secure identification of the user and for the access to the official and public data base. Without it, all the concepts, ideas and solutions built around it will lose much of their conceptual endorsement and pragmatism. It will be the device able to connect and mediate between people, that is, between the physical/material world, let's call it the relevant world, and the system, that is, the digital world, which will be the virtual world where connections and interactions materialise and are functionally optimised. In Considerations (from 9 to 13) I shared some thoughts that occur to me now about the security online and about the worrying vulnerabilities of the current system. I refer to it for this purpose in order to save space. The premise from which I start to solve them is that the SMID, or any other functionally similar portable electronic device, will only be effective, in terms of its security, if its design and electronic functions converge in a way that it will make impossible, through various means, the access of the user – or of any other person and regardless of their lawful intentions and security clearance – to the internal physical part and, therefore, to the software of any such device. In other words, the *raison d'être* or the main function of the device will have to be to prevent the access to the software stored in its internal digital memory, however minimal the potential invasions or improper connection may be. The interface, like a touch screen, the sensors and the detectors inside – with the function of projecting electromagnetic waves for the detection of physical biometrics outside for further processing and digitalisation – will be the basic hardware elements that any secure authentication device will have to contain to ensure minimum system security; so far, nothing new. What the SMID I propose should do in addition will be: a).- nobody should be able to access the software for data collection, processing and transmission (which will be all encrypted, of course), that is, nobody will be able to access the programming language of the software and communication protocols and b).- the security elements integrated in the SMID will make impossible the physical access to the internal part of the device and to the aforementioned software; in other words, any attempt to improperly access its interior will instantly lead to the unrecoverable loss of all the information that integrates the software. That is, if any person, with or without any criminal purposes or even by mistake, tries to access and log, physically or through any digital device, into the SMID using any connection means that are not natives of SMID, its internal memory will be simply deleted in an instant, permanently and unrecoverable. All the security hardware and software elements will therefore have a single function, which is to protect the data in SMID's internal memory (the software for communication and data processing) and instantly delete (purge) it with any attempt to access it in an improper/no native way (in case of memory loss, the device will lose its functionality and, whenever possible, it will have to be recycled and/or reprogrammed). All the physical parts and security functions that compose the SMID will, in conclusion, have the main task of preventing the access by any means, physical or virtual, to the software inside it (to the characters, syntax and sequences of computer instructions). Its use will be limited to capturing the metrics related to human characteristics and features (biometrics) and the digital communication instructions from

outside. After processing and encrypting the data, the communication with the system will be established. Its internal memory will be of a RAM (Random Access Memory) type, that is, volatile, which will be deleted after the end of each communication session, and the permanent software will include at least: the identification data of the device, the basic commands for switching it on and off, the first communication software, or *handshake* with the server, and the encrypting software (which could be based in a method I propose in this [article](#)); all the data will be stored in the BIOS chip (basic input/output system) of the SMID. Everything else necessary for the operation of the SMID, the applications and the operating software of the internal composing parts of the hardware, will be received from the server and will be loaded into the RAM after each and every connection. The pairing of the SMID with any external hardware element, peripherals and other SMIDs, will always be done through the national server. The data packets that the SMID will send to and receive from the system will follow a virtual loop, so that, in order to connect with the outside world, the SMID has to CONTINUALLY BE IN PHYSICAL CONTACT with the user during the process of authentication of the user (that is, that it will not be necessary to be in contact between identifications), going always the packets of data first through the server. If the physical contact of the pair user-SMID is lost, the connection between the user, their SMID and any network or device off the national system will be instantly cut off and the session will end. The design and the ergonomics of the SMID will converge functionally to ensure that the SMID interferes as little as possible into the user's natural movements while wearing it, but its operation processes must be continuous and effective. Being in continuous physical contact with the user during user's authentication (it is therefore advisable to wear it when the user is on the move or has both hands busy), the SMID will automatically capture all the identifying and/or biometric data that SMID requires from the user, with or without the intervention of the user. Consequently, during the connection, the SMID can emit a live, random request to the user to enter identifying data (some characters of their various passwords and answers to secret questions, preestablished or not by the user and the system beforehand; these questions could be like the name of user's first school, brand of user's first car, etc. that only the user and the system could possibly know) in the boxes and fields and among the characters that the user's screen of the SMID will display. This may contain some characters that the user has never used or that only he uses, for example, from other languages, but that only the user exclusively may possibly know; this will depend on the characters (existing or created ad hoc) that the user will have chosen to include before defining their passwords and identifying protocols in the system. Among the elements of the internal hardware, the SMID will contain electronic modules whose technical characteristics will enable it to connect through any existing wireless connection spot using any market available technologies: Wi-Fi, GSM, Bluetooth and even the newly created LiFi technology (Light Fidelity, proposed at the end of 2011 by the LiFi Consortium). The security elements of the SMID – whose exclusive functions are to make impossible any access by brute force, physical or virtual, to its internal hardware, to "steal" or exploit, for criminal or illegitimate purposes, the software, off the "legitimate" access path ways, say, and functionally native to the device and only when the device requires it – are the most important security elements, not only for authentication and for the user-server communication, but for the entire proposed system. And last, but not least, the SMID can be completed by an electronic identification card and by a specific authentication method associated to it. The use of such card should not be restricted to only the legal residents of the country, but may be, and it is advisable to be, used by all other natural persons who temporarily visit (for tourism, visiting friends or family, study, business, etc.) the country. SAM (Secure Analogue Memory) will be the secure and personal analogue storage device that will complement and integrate the functioning of the entire proposed system. Its most important functions, for all the legal residents in the country (not only for its citizens), will be to store all personal and private information in analogue format so that it can be used in situations of discrepancy, legal or factual, that require cross-checking against other information contained in the system or to serve as evidence in any matter of legal,

administrative, commercial or civil nature of interest to the person in question. It is of the utmost importance that the memory be of the WORM analogue type (Write Once Read Many) and, thus, be enforced and function independently with respect to the information stored and transferred in digital format from without and from within the system. The technology that best meets these requirements is the holographic memory. It is very small in size (1 terabyte of data can fit in a niobite crystal as big as a lump of sugar), it is indelible, it is easy to transport and store and allows the user to add other virtual security elements to protect privacy and prevent misuse by third parties. The minimal required security elements that I can think of for SAM could be: i).- record the information on a kind of very small glass disks distributed in tables (10 rows x 10 columns, for example) and by jumps according to a personalized 10 digit PIN (the PIN can be obtained from the user's fingerprint; in a forum [this method](#) is proposed), so that, if a person wanted to access its content and find a meaning to it, it will be impossible to recover the whole text and make it meaningful; also, in order to make decryption more difficult, the same amount of information as the relevant one may be included in the empty spaces of said disks, but whose content, public, open and redundant, is "filled in" said tables, each of the times the user connects the SAM to the system to update it; ii).- fragment both all the private and confidential documents of all individuals and the official documents declared secret/classified — thus, no one can download and access, including the person concerned/affected by said documents — into pieces (snippets) of single words (or even loose characters), where each piece of text or word has a sequential order number attached to it. These snippets are then stored in the national servers and in a special section within each SAM belonging to the information downloaded from the servers. Said section could be called, e.g., the "official table of validation and cross-checking of documents" and it will be replicated and stored in the SAM of each resident natural person and into the database of the entire system. Each time a user connects to update their SAM's personal information, the official certification table stored in their SAM will also be updated automatically and by default. Each time, within a judicial or administrative procedure, the validation/certification and cross-checking/comparison of a document is requested by either party, whether declassified or not, or the secrecy of the proceedings is to be declared within said procedure or not, it will be checked whether the word recovered from any SAM — connected to the system at that same moment and chosen at random by the system — corresponds to that of the document submitted for comparison, both the literal content of the word, and the number that indicates its consecutive position within the document. Consequentially, and at the request of any interested party, a second validation and cross-checking of the same document could be made and a second word from the official table will be randomly chosen and validated. With the integration of all these security elements integrated in the SAM, it will be achieved: that most of the democratic power is devolved to the citizens and made more effective, i.e., through the democratization of the access to all relevant information, while preserving the national security; that the judicial and administrative procedures become more effective and reliable, i.e., by ensuring the undoubtful authenticity of all the exhibited evidence relevant to the case; that no person is convicted/penalised in a judicial or administrative procedure — especially in those declared secret by a judge or a public authority and in those that the fundamental rights of individuals are restrict or denied — without having had said person the opportunity to challenge the validity and integrity of the evidence(s) and documentation/s (or the transcript, where appropriate, of the audio/video file constituting the evidence) that led to said conviction/limitation of fundamental rights, whether or not one has been granted access to its content at that time (one may do so, in any case, when said document is declassified and declared public and open); that the malaise of falsification, corruption and harmful and intentional loss of documents with public, social or economic relevance is eradicated (think only of double counting and manipulation of the accounts of tax evading companies/individuals, very frequent today); that both the corruption of public officials and public authorities and the tax evasion practices — frequent today among high-income

taxpayers – are considerably reduced, or even eliminated; that the power of the state – especially in those cases where it is necessary to forcefully impose legal duties and obligations on citizens – is impersonalized and become free of the informal influence of various individuals or businesses to the detriment of the public or the national interest; that the costs generated by the public institutions are cut down, by reducing their number and their budgetary allocations, and made more flexible, making them thus more updatable/adaptable and; finally, that the democratic responsibility is reinforced and made more transparent, especially of those that act in the interest of the public, be they invested with authority or not.

8. **Abolish paper to serve as evidence.** Paper has a long and fascinating social history and up to now has served us, generally, with fidelity, helping us to materialize, represent and record everything that has been having legal, social and economic relevance; i.e., factual or legal events that needed to be preserved as evidence: agreements, treaties and conventions, escrows, mercantile/financial transactions, declarations of will, laws and regulations, identification documents of individuals and of personal property and land, birth and marriage records, affidavits, representations and accounts of values, including money, manifestations, declarations and personal intentions, binding opinions, and so on. Leaving aside for a moment the tragedy of the tree cutting, the same paper – apparently so faithful and irreplaceable – has a dark side to it. Paper has served, just as well, socially irresponsible counterfeiters and corrupt creators of values – including the money and debt creators of today – taking the bearer of the document on paper full advantage of the anonymity that any such document privately hold provides to them. I am referring here above all to the private documents with the potential to be constituted as sole evidence in a legal procedure that are signed without dating, to the notarial papers hold privately and to the physical money of today that is anonymous, that is, that is used as an instrument payable to the bearer. No matter how much the security measures on the document (such as holograms, photosensitive dyes and others) are improved, paper will always remain just that, paper. It can never fully guarantee the security of the information it contains; and effectively serve the public interest that the information contained may have attached to it. The guarantee the private documents with legal effects should give us is void, when data – as relevant as the date – is added after going into effect (think only of the “voluntary” notice of termination given on a document without date that the worker is constrained to sign at the same time of signing the employment contract, very frequent since the last economic crisis, or the resignation documents without dating that a company director signs in exchange for money allowing irresponsible millionaires to evade taxes and social responsibilities) or all those relevant documents kept private, “just in case”, to the detriment of the public interest. Apart from being easy to lose, destroy, corrupt, substitute and imitate with fakes, paper has the insurmountable inconveniences of being fragile, ephemeral and being kept exclusively private; i.e. the information contained in a private document never made public could stay private indefinitely, despite its relevance to the public/third parties’ interest. The individuals that hold a document (any document with legal effects) have the prerogative to exhibit it only when it best suits them, replace it with a document that is more adjusted to their up-dated interests, modify/falsify the document at will and get away with it; and even destroy it, thus making it disappear forever, with or without any interest in part or all of the information contained in it that has relevance to justice, the economy and/or the public interest. I will give an illustrative example that is very relevant and has a considerable impact on the functioning of any economy. Those who launder money in tax havens (see <http://www.icij.org/offshore>) always get away with it just because the documents on paper have – depending on the country – exclusive priority or play as exclusive legal evidence before any other corroborating source of information. They also count on fact that the relationship the frontmen or straw man that represents them has with the real director of the tax evading company is signed in a private document which is not publicly registered. The frontmen behind whom they hide, each time they sign document, being notarized or private, for the constitution of those fictitious societies from which they

are appointed sole administrators, also sign at the same time: (i).- a statement of doing everything and at face value what the real director or the real owner of the assets commands him to do; (ii).- a notarized document returning ("unselfishly") to the rich who evades taxes the position of company director and the powers that are inherent to it and (iii).- a resignation letter signed by the frontman (on paper, of course, what else?) LACKING THE DATE to avoid responsibilities (more information at: <http://www.icij.org/offshore/how-nominee-trick-done>). These documents, it is understood, never come about or are never registered in any public record of the country where the income, benefits or assets come from. These documents are kept private, just in case the substitute who "prostitutes" his identity does not comply with the agreement and wants to turn, with or without any material interest, against the interests of its rich client/principal. It can be said, therefore, that the whole set of the tax havens relies on the vulnerability of the national systems to accept paper, on public and/or on private documents, as a preferential means of proof, rather than, e.g., the statements of the witnesses or the legal/judicial presumptions that apply. Paper has earned itself this preferential position in history only because, up until recently, there was nothing else to replace it. Little changes the fact that these documents are signed before a notary public, especially when the signing person exercises the rights contained in it in a country other than that of the evaded one and is protected by trade secrecy. Paper documents are kept in safe deposit boxes until the time to be displayed has arrived. In addition, how could today's governments control the economy and the judicial system if a large part – the most relevant, for that matter – of the accounting and financial records of large multinationals does not transcend to the country's public records? And all that information, of course, that is available in paper or electronically in its exclusive computer servers are inaccessible and inviolable. It is clear that the defenders of the status quo, and the politicians who are accessories to them, are aware of this and would never speak in public about this vulnerability to possibly put it in the open for the public to debate; something better than the current information processing and validation system is needed and, in any case, it should be a unique system in which all the information is processed in a consistent manner and as a whole, without hidden, corruptible or left empty spaces to be filled at will and adapting to the exclusive interests of the Establishment. The current estimated value of the money hidden in these fiscal heavens was worth in 2008 around 32 trillion US dollars, just over half of the world economy's production in a year, therefore, paper (and private digital files relevant for the economy) not only does not serve to fight against tax evasion and the "flight" of capital, on the contrary, paper is its main faithful and legitimate accomplice. Paper, due to its clear vulnerabilities and its precariousness, no longer serves us faithfully to guarantee the social and democratic transparency and justice we need and deserve to have. We would return to the recordings on stone, which offered much more security than paper, unless obvious and insurmountable inconveniences prevent us from doing it. The modern technological man needs something tailored to his condition and requirements: an analogue memory (a holographic data storage device which records information throughout the volume of the medium and is capable of recording multiple images in the same area utilizing light at different angles; the information can be visualized directly through the senses with the help of a magnifying means and is represented by signs/images corresponding to physical magnitudes and meanings) that stores all the socially and economically relevant information in a very small volume and, therefore, is easy to wear. In addition, since said memory is analogue, characterised by single writing and multiple reading, it cannot be erased or modified, which will mean a significant advance in terms of information security, fundamental in the functioning and development of any society. Identity documents, contracts, commercial transactions, personal and business accounting, registry data of movable and immovable assets, worker insurance history or social activities, personal medical records, and all other data that represent the relationship of a certain natural person with the outside world (community or society), material or immaterial (such as ideas, institutions and any other abstraction), and with its immediate, continuous and permanent social context,

including relationships and interactions with other people, all of them are represented by data that may be accessed in the system whenever necessary, with the possibility of being validated and cross-checked, at the request of the stakeholders, against the contents hold in the analogue personal memory that each citizen holds in their possession. Given all the existing technologies, and the potential to move forward and create more efficient ones, which could be used to process data and carry out commercial/financial transactions with safety and convenience, why do we continue to rely on all those personal and material intermediaries: judicial secretaries, public notaries and officials checking boxes, commercial records, registration of immovable or movable property, identification documents, paper money, stock contracts, etc. Why do we still count on all these intermediaries that so much cost the taxpayers, considering how vulnerable and corruptible (or corrupt) have they become? Holographic data storage technology, or any other with similar functions and outcomes, is currently the best suited technology to meet all the security and transparency requirements essential for our democracy to be effective and functional, being at the same time comparatively cheaper, safer and easier to use, access and preserve. Interestingly, after all, is also the fact that holographic memories could be considered nothing more but "posh" and technologically advanced descendants of the stelae or stone tombstones of the past. Without their help the emperors couldn't have built and controlled their empires after all.

9. **Abolish the interest on money.** Apart from the cost of opportunity involved and its inflationary and destructive economic effect on material, environmental and social values, the interest in money has become socially and morally unacceptable. It is a barbarity wearing Prada. The interest on money only serves to make the rich increasingly richer and everyone else increasingly indebted (to the former, of course). Which, in theory, could be reluctantly tolerated, if it were not for the fact that the rich today are increasingly powerful and influential in politics and decide, directly or indirectly, who has access to everything the rest of us need. Let a thousand flowers bloom! the optimists might say. Yes, let them flourish, but don't let a very few of them "suck" all the water available to the whole. From the digitalisation of all the money, well, of the information that represents it, the banks, which historically have been the most important entity for storing cash (and other similar liquid assets), will become redundant, since there will be nothing to be physically stored. Why would anyone want to store their money under the care of another person or entity, if this money will be at all times within the system, the large depository by default? If we stop thinking for a moment, we realize that, if all the money is stored as digital information on unique and exclusive national servers, it will not only make any sense to go to a different depository within the same system (system that, in the end, is all of us or, to be more exact, it is the sum of everything we do/want or stop doing/wanting) – especially when the depository and lender of today charges commissions to depositors and interest to borrowers –, but money will not even need to circulate, in the sense that "circulate" is understood today. The only thing that will really matter will be who owns the money, so that, from the digitalisation of cash, it will be this virtual ownership that will "move" and, where appropriate, be replaced by a new ownership and not the money itself; that is, money circulation will lose its conceptual and defining sense. Business loans will come from all the money that their legal holders decide to keep within the national system (that is, that in principle can be taken out of the system, but only if it is covered, in a 1 to 1 ratio, by real credits, as mentioned above on RCs) as available for investment loans. Once the investment project has been reviewed and, where appropriate, received the pertinent assessment on its feasibility, resources used and profit sharing agreed ratios, the holder of the money will formally agree to grant the loan to the applicant/s or not, and regardless of the relationship of trust between the holder of money/funds and the borrower. Both the transparency, the legal certainty and the trust (to which I should add the guarantee to be paid back), fundamental in any transaction, will all in any case be guaranteed by the national system. In case there are no savers who want to lend or that the pool of money is not enough, the credits will be generated automatically by the system and the participation (of all, in this case) in the profits – only WHEN SAID PROFITS

ARE GENERATED – will be will made according to percentages or quotas that an ad hoc committee of citizens decides to grant (something like the Spanish Official Credit Institute, but much more transparent, impartial and without charging interests). Said committee will draw all the information it needs from the national system/servers, regarding the creditworthiness of the borrower, transactional history and others related. The loans for consumption, on the other hand, will be granted automatically by the system – money from thin air, very much like today, but with the capital difference that the loan will only be granted if the applicant is solvent, economically and socially, that is, if s/he has proved being worthy of credit – to applicants who meet certain minimum social requirements (I refer to what I said above regarding the PCs and the RCs) and, very importantly, without the application of any interests to the principal. The only interest that will be applied will be that which all citizens have in the wellbeing of the people living next door. In this way, not only a large part of the savings would be exhausted (those who decide not to lend the money, in situations of economic crisis, risk having their money declared automatically, after a certain period of time, expired or extinguished) before generating other money (out of nowhere, as at present), but that the money supply would expand in an adjusted and precise measure and strictly obeying factors, without being exhaustive, such as: population growth, need for new infrastructure, research or development of new technologies in energy, education, medicine, etc. The mechanism I propose, apart from being impersonal, transparent and objective, has the desirable potential of fostering, above all, creativity and productivity, so important for the stability and the sustainable development of any economy today.

10. **Approve by law a collection of goods and services that are considered necessary and basic.** Any modern social organisation or system that does not offer an economic cushion or social insurance without discriminating to its individuals and families, not only will not survive the passage of time as a whole, that is, it will end up destroying itself, but it will lack all democratic legitimacy and it will invariably end up generating social tensions that can only be controlled by force, exercised implicitly or explicitly by your government or leader, thus leading to one of the two possible extreme situations: tyranny or anarchy. These basic goods and services, as we well know, are: education, health, nutrition, social security and housing. The minimum content of what constitutes education or nutrition may vary depending on the culture, the economic situation and the resources of the country or region to which they relate. The identification and institutional implementation of these basic goods and services may well be done through democratic mechanisms such as the publication of lists and the setting of deadlines for citizen proposals, processes that would culminate with the classic adoption of their final content in a referendum. Instituting these goods and services and making sure everybody gets access to them is not only a human, but will constitute the material/tangible basis (not the ideologies) on which any individual can grow and evolve and thus contribute to the well-being of our current and future generations; “I'll scratch your back and you'll scratch mine”. The proposed monetary system, together with the personal and the real credits that complement it, will work much better and can be accepted as legitimate unanimously if it will be accompanied by the institution of said basic goods and services as state provided social insurance. The situation will be very similar to the current one in developed countries, but the entire system will be much more effective and cheaper to maintain, in addition it will be able to accommodate, without losing its functionality, the humane caveat or exception of not demanding personal credits from all those declared in need. Indeed, demanding personal credits for the acquisition of basic goods and services will not only be inhuman and tyrannical (and it does not matter if the tyranny is exercised by the majority), but will eventually prove to be highly corrosive or destructive for the personal development and social peace. The most important function of the institutional recognition and adoption of this range of basic goods and services will be to constitute a limit to the eventual dysfunctions and unwanted side effects of a hypothetical social organisation that bases the functioning of its economy on digital money and on personal and real credits, institutions that, as such they will be impersonal and will go into effect ex officio. The new

digital money coupled with the proposed credits will find their justification in both the private property and in competition, tending thus to relegate (outsource) or have no interest in anything having to do with the social benefits and the wellbeing of the rest of the citizens that are most in need or deserving special support from all of us: under age children and/or without legal capacity, the elderly, the disabled, mothers bringing up children under age, the unemployed, the people without professional or academic training, etc. In any case, the right of access to basic goods must always be declared or recognized by a public authority or, on appeal, by a popular committee. Deciding whether a person — and, where appropriate, the people who depend economically on it — is entitled to such basic goods and services, will in any case be based on all the economic and social information that is contained in the system about the person declared in need. In addition, each monetary unit received will, in any case, carry the distinctive limitation that it can only be paid in exchange for those basic goods and services, from an official public list, with the exclusion, it is understood, of any other good not contained in said *acquis*. By having a digital system where each monetary unit and each related transaction are, at all times, identified or identifiable and tracked, the provisions or, if you want, restrictive measures will be applied automatically, instantaneously and cheaply; that is, there will be no cumbersome paperwork, administrations and laws/procedures that are time consuming and are difficult to apply without discriminations, apart from being a pecuniary burden on the taxpayers. Finally, the proposed economic/social cushion, used according to the minimum conditions mentioned, solves the insurmountable problems of all social welfare systems today, especially in the developed countries. Indeed, the welfare system of today is doomed to become, sooner or later, a heavy and unsustainable economic burden of the state; a system which at the end of the day will mutate into a legal "carcinogenic" institution that not only has lost its initial function, but it has become counterproductive, it is deterring the citizen from being productive/creative and motivated and from simply aspiring to be happy.

11. **Establish legal mechanisms to eliminate non-productive money from the system and to create a new one at the service of productivity and of society in general.** Above, in "Abolish the interest on money", I made a brief reference to the possibility of legally declaring certain money expired or due to expire. The great unintended economic and social advantage that can be obtained from the implementation of a system (or the metamorphosis of the previous system) that contains the information of all the monetary units identified and in digital format in the economy will be that money can be destroyed or blocked instantly at the press of a button; an unattainable dream today of anybody invested with public authority, be it a minister (especially of economy or justice), a judge, a public prosecutor or a public advisory body. Money will lose its current prerogatives of being the sacrosanct, untouchable and elusive, value "transvestite" that today so effectively hides the identity of its ephemeral holders. It will become, through the proposed PCs and the RCs, a simple and transparent tool. A tool, among many others that are equally useful, for enabling/enforcing the social, economic and environmental justice. Naturally, from its implementation, the only thing that will matter and count will be that people, their ideas and their actions, become more socially and environmentally responsible. The new money will be the easiest and most modern way back to the natural and to the intrinsic value of the things that societies have lost a long time ago. Of course, destroying money instantly represents, above all, power; power that, in the wrong hands and disconnected from democracy, could become very destructive and difficult to contain. History reminds us, through innumerable examples, that power tends to corrupt, and absolute power corrupts absolutely (Lord Acton). The legal conditioning and the depersonalisation, or the institutionalisation, if you will, of the power to destroy money will be the only thing that will clearly differentiate it from its unwanted dark side. The easy part of all this, having a system capable of knowing and controlling everything socially and economically relevant, will be to promulgate a set of legal norms that condition the power to cancel/block money, while ensuring that the people/legal bodies who exercise it are much less, if at all, important than the objectives that are intended to be achieved with such law. In

the last decades, above all, the ability of our governments and legislators to create complex and extensive laws has increased exponentially, but that came at the expense of having to pay a high price in terms of transparency and effective applicability. Reality has always surpassed fiction, and it always will. Our laws will never be exhaustive enough to provide for the infinite complexity of human creativity and of their inter/actions. And all this happens because the operation of the current system allows it and our governments are missing the shot. Having an inclusive and transparent information system, the laws on conditioning the cancelation of money – that is, that meet the demands of who, when and how much – will have to be as concise and clear as possible. Almost all the experts in macroeconomics have assumed and unanimously agreed that the economy progresses over time in a cyclical manner, that is, that it follows recurring and inevitable patterns of expansion and contraction, and that the contraction phases invariably generate economic crisis. The most decent solution or remedy to this was proposed almost a century ago by JM Keynes, being most used today by governments, but this solution is incomplete, limiting itself to softening and reducing the economic costs of the crisis through the budgetary spending of the State, better known as fiscal policy. In short, it is intended to stimulate aggregate demand to favour income and employment. During economic crises, the elements of the economy that are most affected and most concern governments are employment, inflation and consumption; what is needed, therefore, is to stimulate private investments and/or increase the budgetary state expenditure. If the private sector, especially the banking sector, does not respond adequately to these requirements, the obvious solution is to spend public money (in infrastructure and social benefits, basically) and create employment so that people can spend more, that is, to increase consumption. Another set of measures that governments take jointly or consequently to said fiscal measures are included in what constitutes the monetary policies, which are basically aimed at controlling the amount of money in circulation and/or the interest rate applicable to credits (the legal interest on money, on lending/borrowing). The importance of the role that money plays in all these measures, fiscal and monetary, is obvious. With the introduction of the new money proposed, governments will have the opportunity to do more than just stimulating the economic activity and cross their fingers so that the economy recovers on its own. Despite the proliferation of sophisticated, and more or less successful, economic models and theories, today's governments are determined to rely on something as ethereal as the "invisible hand of the market" (an expression coined by Adam Smith), ignoring that we have come a long way since Smith's theories and that nobody's hand has been perceived until now; that happens, it occurs to me, because such hand simply does not exist. Governments, with the power to destroy/cancel money in their hands, will become the true and effective architects of the economy, thus recovering all the legitimacy lost over the last, at least 70 years. The only thing they will have to do in time of crisis will be to declare expired (or due to expire at the end of a stated period of time), within a legal framework provided, all the economically idle money, that is, all the unused money (it is understood, the money that people and families save for future expenses of their routine will be excluded up to a certain reasonable, lawful limit and for certain lawful purposes). Likewise, all the money that – during a certain prudential period of time during the crisis – is generated from the sale of certain capital or equipment goods and other market values, may be declared expired or due to expire after certain time, excepting the money needed for personal/family consumption for legal periods of time. The only thing that will legitimise the power to destroy money will, consequently, be the opportune recovery of the economic stability. The general premise that motivates the cancelation of money is that, from the economic and social point of view, the money invested/productive is more important than all the existing money in the economy, which is actually an abstraction with intended instrumental vocation, despite its other demerited qualities attributed to it at present. In other words, what matters is the use value of money and not its (potential) exchange value, that only manage to generate more units of it. What matters is the money as a means, not the money as an end. The fact of declaring money expired/due to expire before being eventually cancelled reinforces and

favours the use function, favours money as a means to a certain end, not the money as an end deprived of any use whatsoever. Future societies will earn much more than that which is invested in the productive economy, in the real economy of things. They will have earned welfare for all people and the preservation of the environment, far beyond than just collection more taxes that supposedly would be paid with intrinsically inflationary money that destroys the general welfare and the environment. Taxing the income of natural persons, from the perspective of the taxpayer, is the same as taking money from taxes and destroying them, since the taxpayers will never have the possibility of knowing what exactly that money was allocated to, and much less being able to influence the allocation of the money from taxes in anything productive. Taxpayers today only have to blindly trust their governments and ignore, if only for a moment, that much of that money will be eaten up by the interest applied to the unsustainable debts that the same government contracted irresponsibly on their behalf. It is not surprising that those who can contribute the most via taxes to avoid or reduce the economic crises – such as the last one – are the same who at the end of the day do the least for the economy in the first place, not to mention that economic crises are mostly the result of their insatiable greed and their irresponsible speculative investments aimed at easy money. Consequently, deciding what money and how much to cancel at a certain point in time in the economic cycle and when the economic situation requires it will be the easiest function of the system that I propose – there are numerous economic models and theories in this regard too – the most difficult part will be to find sufficient democratic support for the legitimacy and institutional materialisation of the proposed model. There will be voices that will vehemently oppose the cancellation of money, but isn't this exactly what happens during crises when the value of money inflates and its purchasing power plummets? What we need is not simply more money, but a qualitatively superior money. The difference, by no means insignificant, is that when declaring the money expired or due to expire – that is, that it will be placed in an intermediate phase before having been declared expired at the end of a certain period – its holders will have one last chance to convert it into something economically productive and/or socially useful. Of course, it would be advisable that, from the final declaration of expiration, the money cannot be used to buy anything that is not, currently or potentially, productive, thus eradicating both speculation and non-productive investments (in hard or tangible assets, such as land and real estate) that, we all know, so much damage adds to an economy that is already in crisis. And if money without RCs coverage is nevertheless used to acquire hard assets during the period of expiration, any such asset will have attached to it the restriction, i.e., it will not be able to generate RCs in a future sale. I have little else to say about the creation of new money as proposed here, the process will be more or less like the actual one, i.e., money out of nowhere. The difference with the new digital money will be that – in order to ensure the effectiveness and transparency of the different budgetary allocations in productive economic activities – will be reduced to a matter of pure computing, saving the taxpayer all the cumbersome, slow and unjustifiably expensive procedures of the state administrative apparatus, and its cost of its implementation and supervision will be reduced to comparatively imperceptible amounts. In addition, during economic crises, the new money can only be created once all the savings and idle funds of the economy have been exhausted/invested (or right after the lawful period of expiration of the old, economically idle money). In the future, the great disincentive for money lovers will be that the great fortunes will no longer carry the power and public influence that they now take for granted as legitimately inherent; money will also be a responsibility towards others and for the environment, a responsibility that will be made effective above all through the real and personal credits proposed. The rich of the future will not only be rich, but socially responsible as well. In addition, the new system will have the potential merit of creating ex officio socially responsible rich citizens. Those who have accumulated a certain amount of personal credits and have a historical average of credits situated above a certain threshold provided by law, are to be recognized ex officio the optional (personal or team) right to access monetary credits, the amount of which is proportional to the number of personal loans,

payable in newly created money during the crisis. Money will thus become the institutional cornerstone of a democracy that is real and effective, ensuring the wellbeing of all citizens, social justice, economic stability and the preservation of the environment.

12. Transition. We are used to the evolution and the historical mutation, if you want, of the social structures in all their forms is made by leaps, charging these processes to their members an irrecoverable, inhuman and useless price, and that the complete – creative in few cases – destruction of the old is the rule. The proposed social organisation model, based on the digitalisation of money and the democratisation of the information processing, will be the great exception to this rule. Moreover, not only will not destroy the old structures and revolutionise their funding ideologies, but it will use them as a starting point and vehicle for the transition, making a better and more optimal use of all their aspects, be they social, ideological or technological. Having learned the historical lessons and note taken, the element that the new social structures will have in common – given the wide potential varieties of them according to their cultural, geographical, technological, ideological and demographic context – will be their high adaptability to change. Wars and reforming revolutions will be a thing of the past. If I were to devise a transition plan, I would start by developing and implementing the technologies that would configure the new payment (or settlement and clearing) infrastructure – including the international ones, with emphasis on the security of transactions, single payment devices and platforms or virtual communication protocols – the process could last between 2 to 5 years, since many of the technologies that could make it possible already exist. The only thing needed will be a dedicated multidisciplinary team, including computer scientists, engineers, economists and experts in financial products, experts in settlement and clearing systems, physicists, chemists, experts in crystallography and synthetic biology, AI and others. The establishment of new rules and institutions on payments and on currency conversions and a specific campaign for the information and training of the citizens/users, which could last another 2 years, would complete this first phase before effectively implementing the new system. All the infrastructure, it is understood, will be designed exclusively to accommodate payments, settlements, clearings and conversions in the new identifiable and traceable virtual currency. Once the payment infrastructure has been implemented, the transition for the institutionalisation of the proposed credits could take another 5 years, depending on the degree of its popular and political acceptance and legitimisation and on the agility of the legal and procedural mechanisms put in place for the subsequent implementation and functioning. Only at the end of said maximum period of 12 years (for the implementation of the payment infrastructure, of the payment rules with their respective information campaign and of the credits) could be implemented the process that would integrate the entire system, i.e. the process of democratisation of the processing of information, of all the socially and economically relevant information. This could last from 5 to 10 years, depending firstly on the political resistance – both the formal one and maybe the one that is less so – of all those who defend the status quo and, secondly, on the effectiveness of the legal mechanisms created ad hoc for their institutional articulation. All new technologies, current and potential, will once again play a central role in this phase of the process and the democratisation of the processing of information, of all socially and economically relevant information. All these new technologies will make as feasible the implementation and development from scratch of the proposed system – despite its humanitarian and material cost – as democracy itself, not to mention its need, given the corruption and the abuses of the power we see today. I proposed above a personal analogue memory device, along with the elimination of paper and the official validation and cross-checking of documents, crucial for the whole process of democratization of the processing of information, but I did it with purely indicative purposes, far from me pretend to be to some extent prescriptive. Like all the ideas detailed in this article, more or less successful and persuasive, my proposal is rather of a what-if type and lacks, at the moment, a scientific basis or any experimental rigor. However, if the reader could learn something from the intellectual adventure here it is that if I could do it (that is, devise and

propose, with or without any apparent material basis, a bold and holistic alternative to the current system) others, working as a team, with the help of experts and armed with the kind of determination demonstrated here that everything is possible, surely they will do much better than me and even propose a solution totally different of the one here. The most important thing for any proposed solution should remain its institutional articulation through the current democratic channels. The difference, this time, will be that the public debate for change may be different from the usual ones; such as those repeated to satiety in today's media: raising taxes on the rich, more and better social benefits for the needy, creating jobs, building more public housing, regulating more and imposing more taxes on banks and on the entire financial sector, etc. The options for the ordinary citizen to promote change and improve his life will be considerably expanded and will gain relevance, especially an economic one. The ordinary man in society will go from a passive position, from a dependency position – limited to voting, paying taxes, taking out the garbage and protesting on the street when his rights are encroached by irresponsible and impotent governments – to a strengthened position of being the architect of his own life. This new man will have the possibility to control both the creation and allocation of money in the economy and the public information that concerns him exclusively. Everything else, that is, the public function of the State, may remain largely the same, but it will be much more efficient and transparent, unprecedented in the contemporary history of humankind.

13. Conclusion. In the first line of the article I said that what motivated me to write this article was to give something to talk about. Despite this, as I wrote, I have made some statements that seem to suggest otherwise; I did it for the sake of making my argument clear. Despite of it all, the article remains essentially a sincere invitation to debate. My biggest concern about the current public debates on the reform of democracy and the political processes that materialize it is that they fail to make visible one naturally obvious thing, despite being the white elephant in the room: money and, consequently, all the information which is behind and derives from its use in the economy. Likewise, the fact that the individuals, their families and their communities excluded from public debates for being irrelevant. They are in fact more important than any legal or social abstraction or fiction created for certain purposes or functions, including some unquestionable institutions like money and state. Contrary to what the common sense dictates to us ordinarily, when these institutions start to gradually move away from the reason and basis of their existence – that is, the people along with their well-being – to end up being ends in themselves, despite their obvious instrumental, accidental and contingent social role, we have had no choice but to let the entire system conform to this new form and fit its renewed and less transparent operational goals and principles, all served with brilliant wrappings of democratic discourses on legitimacy, the common good, stability and security. Hence, any enabling change must use a different rhetoric and go directly to the base on which the whole system is based. But what is the system? The system is all of us together with the information that represents and relatively qualifies all of our socially relevant actions, being ourselves and our well-being – without forgetting to mention the environment – the ones that have to accommodate in our lives those cool, collected and man-made “mutants” and fit in our lives their awkward and disturbing presence. The solution could, and should, be simple, and that is what the article is essentially all about: guidelines or possible steps to follow in any debate aimed at modifying or, where appropriate, recreating all the (institutional) fictions necessary for both the economic stability and the social justice, ensuring in the same time that in doing so we do not repeat the History where welfare and natural habitats are destroyed. Be it the system that wins the competition in the end, one thing is clear, we either solve it all or, otherwise, we all suffer the consequences. By now it seems that (crony) capitalism – destructive and feckless in the face of others and the environment – wins. Fortunately the rest of us, 99% to be more precise, is “too big to fail” and have now a social tool that the elites had not anticipated or had not counted that could prove so decisive to reverse the system that they now control in all its instances: the Internet and its consequent information and communication technologies. The current emergency

situation of humanity is not due to the supposedly destructive nature of man, but to the malfunction and distortions of the institutions that the elites, a very narrow sector of society, for that matter, have been creating and supporting in order to subjugate – through physical force or persuasion and other indirect and opaque methods – and dominate us all. Man, in his pure state and left to his own devices (but not in the anarchic sense advocated by some pundits), turns out to be ingenious and cooperative, but there will always be some us who will want to have more power over others, making all it takes and at any price to gain it, even at price of destroying humanity. The history of the last 6 millennia offers us a sufficiently reliable and eloquent testimony of the stubborn recurrence of this social phenomenon, ensuring us that it may happen again today. Hence, we need a system – whatever that system may be; and before any other system that bases its functioning and continuity only on the consciences of its mindful and rational agents (solutions built on this utopia abound in the network) – which, before anything else, prevents the accumulation and irresponsible use of power, above all, the political one. Despite the familiar and innocuous perception that we have about it, political power – in its historical sense – amounts in the end to the intention to "domesticate" and dominate. Wanting political power is not a feature of human nature. The elites, rightly defined by Owen Jones in his recent book, "The Establishment: And how they get away with it" (2014), have managed to get away with it only because the actual models of social and political organisation allow it; in fact, they have been designed on purpose to make it possible, through tools as seemingly harmless and legitimate as money, education and paid work. What I think is different or, I would even say, unconventional about the recipe for change proposed in this article is that it will not, as until now, destroy or reform (revolutions or wars, new laws, etc.) the old structures to achieve any favourable, fair and consistent change to the social reality. Likewise, its implementation will not depend exclusively on the conscience of the citizens and on a chimerical kind of spontaneous democratic consensus to lay the foundations of some institutions that guarantee everyone's well-being and the participation of all in all decision-making processes with social/economic relevance. It will be rather a social tool for defining and filtering, so to speak, our consciences. The proposed solution is less concerned with the implementation of certain, well-defined institutions, social structures and/or political regimes, that in the end invariably lead to both a greater number of laws and more complex ones. That is, public function, public authorities, wealthy individuals, market-leading companies and most of everything else will continue to exist, but for all of them money and accumulated capital will only be one among other economic tools. Money will be means for a certain, democratically legitimate purpose, and not the current pollutant fuel of megalomania for the occupation and exploitation of natural resources, or for war, destruction and imperialism. Moreover, the transition will be made through the same means and for the same purposes that elites preach us today as legitimately consensual and of indisputably priority, but which have surreptitiously taken advantage of to strengthen elites' dominant position and serve their exclusive and excluding agenda. The transition will be made through the democratic channel existing today, preserving the same undeniable and legitimate purposes, like the economic stability, the well-being of citizens and the conservation of the environment; elites will have a hard time denying them in future. The old excuses of protecting the national security (from military threats, terrorism, environmental risks, mass migration, etc.), our privacy and the need for economic growth, along with the need of jobs for all, that the elites have used to justify both the accumulation of power and their economic privileges, will lose their argumentative or persuasive force and will be diluted or moved to the background, like many other social/economic issues of the societies of the future; they will be everyone's business and responsibility in the priority order decided by all of us. Having as a functional basis a unique, impersonal and inclusive information system – a system that includes, or has the potential to include, all the information – that could be safely and interdependently accessed and used by everyone, the societies of the future will be able to effectively grow in harmony and peace without the need to deposit all their trust and resources in rigid, hierarchical structures and in utopias or failed ideologies of the

past. The modern technological man will be at the centre of both his concerns and needs and the practical solutions to them. Thank you for being with me until the end and, where appropriate, for your collaboration in the debate!

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