Sign Systems of Lust and Slavery. Money as the consecration of bread and wine

Hanappi, Hardy

VIPER - Vienna Institute for Political Economy Research, TU Wien - Inst. 1053 Economics

3 January 2021

Sign Systems of Lust and Slavery

Money as the consecration of bread and wine

Hardy Hanappi
VIPER – Vienna Institute for Political Economy Research
Hanappi@gmail.com www.econ.tuwien.ac.at/hanappi/
Version 04-02-2021

Abstract

Money is real. Few other objects are perceived with comparable attention. At the same time its content, its mystery, evaporates behind its physical form. For every commodity producing human society money has been a steady companion since it emerged[1]. Money forms, the way in which money took on its material cloth, have changed a lot. Money forms, the blood running through almost all social interaction, have been a mirror, a reflection of the essence of a society's working. This paper is an attempt to look behind the veil that money forms as ***sign systems for social value*** produce.

Thus two concepts are the starting point for the investigation: ***Sign systems*** and ***social value***. Sign systems are directly coupled to the perceptions of human individuals. More precisely, they are connected to a society's communication processes, including self-communication, i.e. personal thought. The mystic force of money forms, its resemblance to sexual attraction, derives from its root in direct and blunt relevance for each human individual in a fully developed commodity producing society. It can be redemption, it can be disgust. 'Money speaks, wealth whispers' expresses this interface between individual and society, distinguishes how the force of the money form is transmitted[2]. The first part of the paper will develop a sketch of a theory of this interface, of sign systems as social systems.

The second part will then focus on the concept 'social value'. The perspective will be changed: What is beneficial from the point of view of the species will be the starting point for a discussion on how it materializes in certain money forms. It turns out that money forms follow an evolutionary trajectory[3], leading through alternating stages of contributing to the stabilization of a mode of production and then actively destroying it in revolutionary turning points – just to give birth to a new form of representation of social value[4].

Finally, a third part shall provide ideas on the connection between the first two parts. How is desire and pain injected in personal perceptions by the interference of social value loaded money forms; and how are vice versa these passions and grievances shaping the potential constellation of social value regulating institutionalized forms in revolutionary times? In

[1] Compare (Hanappi, 2013a)
[2] This part can build on important work done by Alfred Sohn-Rethel (1978, 1990), compare also (Ausubel, 1968).
[3] Compare (Hanappi and Scholz-Wäckerle, 2017).
[4] It is, of course, only a question of naming if this new form should be called a new ‚money form'.

conclusion this part will also present some immediate consequences of the theoretical results on contemporary global economic policy[5].

1 - Sign Systems and Social Value

The use value of an apple is a feeling. For some individuals in certain moments of their life to *see* an apple coincides with the wish to *eat* an apple, to eat *this* apple. It might even happen that this human individual does not see an apple with its eyes, it might just imagine an apple in its brain. To be able to do so it must have stored this image of an apple in its memory; the apple must be a *sign* in its memory. Even more: The apple must be part of an experience, of the experience of 'apple eating', which is stored in the human individual's memory[6].

We do not encounter an apple too often when we walk down the streets of life. Its use value - more precisely: the memorized coincidence of eating it and a feeling of lust - somehow might influence our choice of walks. The remembered feeling of lust, this ingredient of use value, is deeply rooted in the biological setup of our species. Its origins evidently go further back in the history of bi-sexual mammals; simple lust is possible without the sophisticated framework of the ratio encapsulated in a human brain. But as soon as this framework exists, as soon as a rich inventory of experiences enables enhanced internal model-building, as soon as communication between the members of the human species invades the self-communication of each individual, as soon as this point of evolution is reached, lust loses its innocent biological status. Feelings are becoming socialised feelings, use value is mediated by a communication sphere that enters each individual's brain. The sign system used by the human species enables it to project shared experiences into the models that individual members maintain in their brains.

The attempt of Stanley Jevons[7] in 1871 to reduce use value to a static, inborn preference order aims at the core of *any* theory of social value. Use value becomes a mystical quantity called utility. The interaction of human individuals characterized solely by the imputed properties of the utility functions they possess was developed in a veritable, subtle sprachspiel by John von Neumann half a century later[8], and till today is the backbone of the heaviest theoretical attack on class theory that ever was launched. If each agent can be characterized by possessing a preference order with respect to a given set of commodities, e.g. different apple-like objects,

---

[5] Compare also (Hanappi, 2020).

[6] Recent research in neuroscience seems to suggest that consciousness itself is identical to the capacity to have experiences, i.e. to store experiences, compare (Koch, 2019).

[7] 'Far be it from me to say that we ever shall have the means of measuring directly the feelings of the human heart. A unit of pleasure or of pain is difficult even to conceive; but it is the amount of these feelings which is continually prompting us to buying and selling, borrowing and lending, labouring and resting, producing and consuming; and it is from the quantitative effects of the feelings that we must estimate their comparative amounts. … Now the mind of an individual is the balance which makes its own comparisons, and is the final judge of quantities of feeling. … The theory merely ex- presses that, when a man has purchased enough, he derives equal pleasure from the possession of a small quantity more or from the money price of it.' (Jevons, 1871, p. 13-20).

[8] Von Neumann utility theory, known as VNU, was introduced as a constitutive element of game theory in (Neumann and Morgenstern, 1944, pp. 15-30).

a preference order, which has certain analytical properties, then the exchange of certain amounts of these objects can lead to a Pareto-optimal situation, compare (Gravelle and Rees, 1981, pp. 456-502). All it needs in such a setting is a perfect market mechanism, i.e. an institutionally enabled exchange platform, which allows for the mutual transfer of the matching quantities of commodities and - in case of missing knowledge about the preference order of the trading partner[9] – an institutionalized communication process, i.e. a bargaining algorithm, which irons out missing knowledge.

For the concept of Pareto optimality, which plays an important role in the neoclassical theoretical construct, its ideological purpose has to be explained too. It defines as 'optimal' any situation *after* the exchange has taken place, which is characterized by the fact that no trader can improve its position on its utility function without reducing the utility of the trading partner. In other words, both agents cannot propose alternative deals that make both better off, there is no win-win alternative. Thus this type of 'optimality' actually is just a statement on the availability of win-win alternatives of voluntary bargaining, it is mute with respect to the state of the power relation between agents. The set of Pareto-optimal points contains points of all possible power relations, the concept of Pareto optimality therefore bans all political, power-related issues from the scope that it covers. It reduces *political economy* to a narrow field that calls itself mistakenly 'neoclassical' *economics*.

Behind the veil of redefining individual use value as the quasi-genetic property of all humans to have well-defined preference orders, the second important value, which amplifies its social determination, namely *exchange value*, disappears. Relative prices based on the scant notion of the exchange ratio between physical quantities of commodities are a somewhat useless theoretical concept[10]: For whatever reason an exchange had occurred, it always determines the social value of the two involved commodities *at this moment*. As already noticed by Jevons in the text cited above, it needs the concept of money to bring life to the ever-changing transitory exchange values of commodities. Contrary to the use value of an apple, the use value of money is not directly bound to biological needs, the opposite is true: It is solely bound to the social organisation of society. It brings life to social value by killing the transitory randomness of feeling use value. The somewhat more timeless dimension of exchange value, crystallized in a coin, allows individuals to traverse this moment's feelings and to introduce a more stable element representing social value in their mental models.

This introduction of durability, of a finite but non-zero time slice, is a very remarkable feature of exchange value. It is this feature that enables the *transport* of social value. From one geographical place to a *different* geographical place, from one point in time to a *later* point in time. The three functions of money, which standard economics textbooks often mention,

[9] The Nobel Prize won by Thomas Sargent in 2011 was mainly based on his introduction of the ‚Rational Expectation hypothesis', which assumes that such bargaining processes are not necessary, because all agents (in an assumed long-run equilibrium state, of course) already know all other agents' preference orders. The theoretical fight started by Jevons lingers on.

[10] In his excellent book on 'Marx' Economics' the neoclassical author Michio Morishima brilliantly shows how useless utility theories are (Morishima, 1978). It is always possible to fit a plausible one to one's favourite model.

namely store of value, accounting support, and independency of exchanges, all are just appearances of this underlying feature of the carrier system. For the always finite time slice during which it is used, this signal system provides a constant, i.e. time resistant, measure that can be shared by the involved individuals.

The implications with respect to geographical space are remarkable: A currency is accepted as money as long as a powerful social institution, a financial authority, guaranties that debts can be settled by payment with this currency. To be able to guarantee this the financial authority must be part of a state authority, which can exert direct coercive power, e.g. police power, which can ensure the validity of the state's currency. This power centre usually secures its position by introducing a monopoly of direct coercive power reserved for its own police. Thus a political unit governing a certain geographical area and the currency, which it enables within this area, are intimately interwoven[11]. Not only as constituting the same physical reality, but also as being present in the minds, in the internal models, which the area's citizens use when they use the exchange value of their use values.

The implications with respect to the time dimension are even more exciting: Consider again the apple, which its owner now has not eaten to activate its use value, but has sold it to get a certain amount of money. Being a citizen of the above mentioned political unit the owner has done so because an internal model maintained by the owner anticipated a preferable use value to be derived from the result a *later* exchange of the money possessed by the sale of the apple. At this point of the argument it is important to note that feelings are not only positive. Anticipating a *negative* feeling, a pain, will lead to the introduction of an anticipated negative use value in the internal model of the citizen. Not being hungry today, but anticipating that painful hunger will come in winter induces the squirrel to hide some nuts. What is hardwired behaviour in animals has become flexible, brain-based modelling outcome in the human species. The long time that it took Darwinian evolution, based on the extinction of the unfit, has been shortened dramatically by the availability of a sophisticated mirror image of outside processes within the brains of the members of the human species. Experiences are stored and identified as typical, as relevant signs. These signs are exchanged in a new sphere, the *communication sphere* of *close-by individuals* using a shared sign system. Consciousness, the sign system and social survival and expansion of the species are all built by the same evolutionary process. The very experience of time itself is part of this social process.

Time is a *contradiction*. Social memory, entering the individual memories and in turn shaped by the evolution of a society's knowledge that aggregates individual contributions, this memory is a collection of past experiences. Time is always over when you look at it. But its only use value is to provide some persistent overarching procedural structures that will have use value in the future, in a situation that time has not reached yet. The point where past and future touch each other, the present, is the point that each individual experiences as time. At

[11] The idea of an *optimal currency area* put forward by mainstream economists neglects this power related aspects, and substitutes them by a consideration of a predefined economic landscape of exchange possibilities. The empirical record of the history of currencies does not fit at all to this idea.

this inflection point the past is reflected as a possible future with the help of an internal model that encapsulates the experiences of the individual. The particular characteristic of the human species is that the communication sphere transforms each individual into a social individual. The time the individual feels entails *at the same time* another time, namely the whole history of mankind. For an individual member it is at the same time its own time and the projection of the past on its current status. These two feelings contradict each other[12].

Money, as essential part of the communication sphere, carries this contradiction too. The use value of the moment contradicts qua definition the socially more durable nature of the exchange value. This contradiction produces the thrill that money entails: Will the future exchange value lead to more lust, or at least to less pain? This thrill is inescapable, since tribes of human individuals are social entities, exchange values exist from the very first social forms onwards[13]. Like the lust for sex, the innate feature of bisexual mammals to come together with the opposite sex, the necessary tension between use value and exchange value - its oscillating contradictory dynamics – is a basic property of human societies.

As this line of argument should have made clear, the understanding of use value and money cannot stop at the study of the human individual; despite the fact that this proceeding contradiction occupies much of the thoughts of most individuals. In fact, another, even more promising starting point is to consider the evolution of the carrier system of the contradiction, the evolution of money.

On the surface of a history money, the signal system of exchange value often is described as a historical sequence of the physical properties of the carrier system, e.g. from Kauri shells and salt via gold and silver to electronic money. This is quite amusing but misses the essential point. This essence concerns the way in which money is embedded in the respective society's dynamics, how it in turn shapes the further evolution of society. This feature of a money system, how it is framed and how it frames the social system of a certain historical era, this feature is called a *money form*. Capital, the centre of the investigations of Karl Marx, is a special money form. And since – as Marx shows – this money form has started to shape all social processes, this historical mode of production is correctly called capitalism. The money form took command over all social processes – including the working of the internal models of a large proportion of human individuals[14].

2 – Peripetia of Money Forms

It has been argued that the communication environment is not only responsible for the social character of production and reproduction of the human species, but that it also frames the way in which internal models of the outside world are built in the brains of human individuals. A specific way of the former, i.e. a specific mode of production, thus implies a *specific way of*

[12] In Marx theory the second character has been named the 'Gattungswesen' of an individual.
[13] See again (Hanappi, 2013a).
[14] Sohn-Rethel has tried to root human thought in an even more general element of human evolution: commodity production (Sohn-Rethel, 1978). Marx can be cited for both views: 'Die Logik ist das Geld des Geistes.' (Marx, 1844, p. 571).

perception that the individual members of a society maintain, communicate, and - in doing so – amplify. It was Alfred Sohn-Rethel who paved the way to a theoretical understanding of the historical roots of the dominance of equilibrium models in modern scientific discourses. Equilibrium is a point where the time that bargaining takes, suddenly stops and a qualitatively different action set, namely the exchange action itself, takes over. By subtracting the communicative part of bargaining from the overall exchange procedure – exchange of property owners, of course – the remaining physical action is a purified example of relative quantities of two commodities. Taking a certain commodity as numeraire, this commodity becomes money, 'equilibrium money'. As exchange of commodities is the signum of all commodity producing societies, it seems evident that human logic in a very fundamental way follows the procedures of 'equilibrium money'. This is the basic idea of Sohn-Rethel's approach (Sohn-Rethel, 1978). But many different modes of production have been (and will be) commodity producing societies. It cannot be expected that the division of labour, on which most of the human species' welfare progress is based, will become a broadly reversible process. As a consequence, this static 'equilibrium' background of human thought – in essence a *belief in certain natural relationships* – will continue to be present.

But for the capitalist mode of production it is necessary to take into account that this pure overarching type of 'equilibrium money' never was a specific *money form*, i.e. a set of well-specified historical mechanisms which frames the actions of the different classes in this society. In the capitalist mode of production this money form is called capital.

The specific way in which all commodities, all services, all labour spent on their production is looked at when a year of production is over differs strongly from what the use of 'equilibrium money' would suggest. Each past year is not a set of (averaged) equilibria derived from exchanges between independent and equally powerful commodity owners. The new element introduced in capitalism is ***growth***, accumulation of money, this indeed is the characteristic form that money takes on. The pivotal change that occurs when commodity producing societies turn into the specific form of capitalist societies appears according to the following sentence:

The use value of capital is *more* capital.

The surprise is that the entity that entertains this use value is not a single human individual, it neither is the totality of the human species, it is the ultimate form of a ***self-referencing, abstract algorithm***. And parallel to Sohn-Rethel's 'equilibrium money' the money form of capital became an additional intruder in the brains of a growing part of the human population. As it is the case with the former, also the idea of capital, of intrinsic growth, is amplified by the communication environment in which it is embedded. What in principle seemed to have been possible to calculate with the help of 'equilibrium money', namely the total sum of produced commodities and its mirror image of the total sum of (competence-weighted) work time of the past year, now pales in front of the dominance of growth rates of accumulated stocks of frozen labour time, of capital. It is an abstract algorithm, the capitalist algorithm[15], which has taken over command in the advanced countries in today's world as well as in the internal models that a large majority of their populations use for thinking. The fate of the social value, i.e. the exchange value of a commodity as it is modified by the social circumstances that had enabled its production, this momentous social value is evaporating in thin air under the perspective of the relentless search of unimaginable large amounts of capital for new growth possibilities.

But don't forget: What now appears as the chaotic confusion of an age of alienation, of a world torn apart into extremely unequal classes, all of them missing class consciousness, this turmoil in its beginning 400 years ago, really was advancing a *historical mission* of mankind: The *increase of labour productivity*. By taking away part of the lifetime of workers to accumulate capital, some capital owners acted as *entrepreneurs* and introduced new production techniques as well as new dimensions of use value. For some social strata in some continents this process enabled a substantial increase in welfare, new products and services combined with less labour time and a shift from hard physical work to intellectual work. But since these advantages always were introduced under the imperative of maximizing profits, of achieving the highest rate of growth of the capital stock owned by a selective group of human individuals, the investment projects of this group were producing ever stronger inequality of wealth and income. The general mechanism at work is easy to understand: (1) For investors expected demand must be *effective* demand (compare (Keynes, 1936)), i.e. products and services must match the potential needs of those who have enough money to buy them. (2) The money to be spent for those who receive wages and salaries for their work time must be minimized, because they reduce the growth of the capital stock. So on a global level two types of populations emerge, those who consume and influence the direction of innovation and those who are kept on the lowest level of possible reproductive existence.

Note that accumulation of capital for the whole class of capital owners can never take place by 'buy low, sell high' actions. If in a matrix reporting all transactions between capital owners in the last year the sums along all rows are compared to the sums of all columns, then some advantages for certain groups and some disadvantages for other groups will be seen. But for the whole class of capital owners the sum of all advantages and disadvantages will be zero; the sum of the row sums and the sum of the column sums will be equal since there only is one sum of all the elements of the matrix. For the capitalist class as a whole, profits made by outsmarting other class members will not contribute to capital accumulation. The only sources of accumulation at the class level are (1) the exploitation of the working class, and (2) successful innovation that reduces necessary labour time[16]. Growing inequality, on a global as

[15] Compare (Hanappi, 2013a) for a precise definition of the capitalist algorithm.

[16] Therefore, innovation processes are ambivalent: Due their increase in technical knowledge they are a *potential chance* to increase leisure time for all; but due to their embeddedness in capitalism they steer production and product mix in a direction that amplifies inequality in wealth and income. From this perspective, inequality is a necessary epiphenomenon of the capitalist algorithm – and not an ethical scandal.

well as on a country level, is exactly the consequence of the combination of these two strategies.

The observed relationships between the monetary aggregates of an advanced country are very far away from the constancy that 'equilibrium money' considerations would suggest[17]. The feelings of use values of human individuals do not drive our current global political economy. It always was the power of ruling classes, which has been the foundation of the respective monetary regime, which then in turn determines the actions of class members. In the slavery mode of production, the slaves' lifetimes were taken as a whole from this class and were incorporated in the production process like other material components, like animals, like wheat. In other words, a 'pure' mode of exploitation, of acquisition of lifetime of the exploited class, did actually exist; in contrast a pure exchange economy using 'exchange money' never existed. This illusionary theoretical construct is based on the assumption that power relations do not exist[18], evidently the opposite of the major empirical findings in the sequence of modes of production. Marx had grasped the essence of the historical record much clearer, because he had included power in his critique of *political* economy: 'The history of all hitherto existing society is the history of class struggles.' (Marx, 1848).

Nevertheless, illusionary theoretical constructs can have a massive influence on the perception of social value, and in the sequel of the behaviour of humans. 'Equilibrium money' transports the idea of persistent social value, the idea of a golden coin with its validity amplified by the portrait of a powerful king on one side and its usability as a numeraire signalled by a number on the other side. The power of the ruling class is supported by the treasure of the feudal king stored as gold and silver, which can be used to pay soldiers and mercenaries. The parts of lifetime that are taken away from the farmers were first time slots, later agricultural products and finally money rents, which they had saved by extended self-exploitation. In these progressive steps the evolution of money as a device serving the ruling class becomes visible. But gold coins as money in feudalism lost their stabilizing power for this mode of production as they gave birth to a new class at the centre of its money management activities: the bourgeoisie. Kings and Queens had to borrow money from non-feudal merchants, which were the first representatives of the up-coming capitalist class. With these merchants and traders, older modes of production could be mixed with capitalist elements: Ships with merchandise could sail to Africa, exchange their manufactured goods for slaves, sail to America to sell the slaves, which then produced in slavery mode the new merchandise product: cotton. After coming home to England the cotton could be sold to textile producers. The overall capitalist profit, the accumulation of capital, needed a highly flexible type of money secured by the power of the British Empire: The Pound Sterling. This is how it became

---

[17] At the end of a year macroeconomic aggregates collected and computed by statistical offices necessarily follow some accounting rules that imply equalities. These must not be confused with equilibrium values of endogenous variables in a dynamic system. The processes in real systems usually strike a deal long before an equilibrium value is reached. A central role is played by the dynamics of frictions, e.g. in bargaining.

[18] The mainstream 'purely economic' model thus – due to the assumed absence of political power – derives an optimal allocation of resources directly from the unobservable utility functions of individuals. In this view, the only reason why we are still not in paradise is that not all markets are perfect markets yet.

the first carrier of the ‘capitalist’ money form. In this capacity its strength was directly derived from the global strength of the British Empire. A journey round the Western and Eastern trade triangle[19] took years and on British ships always soldiers were accompanying them. Credit given for years and manifest state power in the form of soldiers are only possible for a global hegemon.

As soon as this hegemonic power started to crumble after World War 1, the power of the Pound Sterling was eroding too. With World War 2 the full power of a new global hegemon, the USA, was spreading its wings in the form of a truly global capitalist money form, signalled, of course, with the currency of the new hegemon: The US Dollar. Today, the feeling of use value all over the world resembles the feeling of owning Dollars. Still for the overwhelming majority of people this use value has to be frequently and rapidly transformed into commodities, like an apple, to secure their biological survival; but for another part of the population, the rich part, new types of social value and more leisure time open up. The *mirror image* of surplus in terms of Dollars in different social strata and different continents and countries, is the distribution of work time that human individuals have to spend. This time means negative social value for them, though they are forced to spend it to receive the money with which they can buy the positive social value they need to compensate their pain[20].

From the complete extraction of the lifetime of slaves via the progressing forms of acquiring agricultural surplus from farmers in feudalism to the most sophisticated mechanisms of global value chains that secure capital accumulation in capitalism, it is always the relatively stable constellation of the forces of class struggle – secured by a corresponding set of social institutions – which ***distributes pain and lust*** over the classes with the ***help of a characteristic money form***. This distribution not only conditions material life circumstances, it also ***enters the brains***, the forms of internal models of human individuals. Capitalism has implanted the idea of ‘accumulation’, of abstract ‘growth’ in most internal model-building processes. Be it in the form of career aspirations, be it in the form of consumption growth, be it in the form of chasing the highest rate of return of assets, it always is mediated by the money form of capitalism, which is capital accumulation.

The multitude of contradictions that the speed-up of accumulation has produced in the latest decades now starts to drive the corresponding signal system over the edge. Being decoupled from understandable, commonly shared interpretative models of what goes on, the blind wish to accumulate drives decision-makers in finance into randomized choices, lets classes lose their remaining rests of class consciousness, and produces an unexpected revival of mystic and religious mass movements. With a new bogeyman, the *interest on asset portfolios* owned by invisible but equally disoriented small groups, the century-old hope for the force of general enlightenment seems to be gone.

---

[19] Compare (Frank, 1979, pp. 13 - 24).

[20] Notwithstanding the general fact that *to work* is *to suffer*, a little satisfaction might be gained by achieving expertise in doing one’s work.

If the human species survives the up-coming shake-up of capitalism, then a new stable global society probably will have detected a new money form. A money form that does *not* reverse the amount of necessary alienation that is an indispensable part of each commodity producing – welfare enhancing – society. But certainly a money form that gets rid of the most abstract imperative of *capital accumulation*. For the moment, all we experience is an incredible turmoil of alienated ideas surrounded by the most developed sets of knowledge produced in the singularized sciences, which dramatically are missing their synthesis. The concept of social value has lost its meaning.

What *still is determining* the future dynamics of the global political economy – despite the emptiness of the concept of social value and its correlate of interest rates built by expectations of future asset prices – *is the state of affairs in the global class struggles*, i.e. the dynamics of power relations. With information power being entangled in a multidimensional guerrilla combat, power recently is returning to its older form of direct coercive power. Either exerted by the state, i.e. by military or police, or by non-state groups dubbed 'terrorists' by the former.

Only the seemingly rather crude type of analysis based on the relationship between labour time spent and *basic* commodities received, can help to identify the global class dynamics at work today. And as data on worldwide military expenditure shows, see www.sipri.org, these martial global dynamics are stabilized by direct coercive power. The worst, most brutal regimes (states and local firms) in this setting are often those far away from their financial centres[21].

3 - The Return of Money and Lust to the Individual Mind

The very young Karl Marx did write poems and as a very sensible person was stupefied by the enormous influence, which religious views had on the internal models that the people in his immediate social environment had. His early critical writings - as a young student impressed by the idea of enlightenment - were trying to show that in real political and economic life the schemes of religious life indeed are just transformed to elementary capitalist rules of thumb. Even in his opus magnum he wrote: 'Accumulate, accumulate! That is Moses and the prophets!' (Marx, 1867, chapter 24/3). After his death, his friend Frederic Engels once noted that perhaps Marx should not have started his major book with a consideration of the contradiction between use value and exchange value, but rather should have jumped right into the class relationships presented later in the book. This eventually would have improved the didactics, would have made it more readable. There is some truth in this view, but nevertheless it cannot be denied that human individuals usually start their thought processes by considering themselves, by asking questions related to the feelings about use values, about lust and pain. The very young Marx, the sensible individual, was disgusted by the false religious feelings maintained in the world surrounding him. But *because* of this immediate experience

[21] See (Suwandi, 2019) for a description of firm behaviour in the poorest parts of global value chains.

of an individual, he saw it necessary to return to this individual perception to start his elaboration of the capitalist system with a chapter tailored to individual perception.

Money as a sign system represents the money form that frames the interactions in a certain mode of production. In the slavery mode of production money is irrelevant for a slave, since it is pure power that takes away her or his lifetime. For slaveholders, money can start from some aspects of 'equilibrium money' but its implicit Matthew effect rapidly produces wealth hierarchies. Freed from spending lifetime as worktime the ruling class of slaveholders could cultivate its sign systems to develop the arts and the sciences, as well as some ideas of democratic governance within its class, e.g. early Hellenic democracy. The coins of precious metal, e.g. the silver Owl of Athens, already carried all the properties that mainstream economic theory describes as the essentials of money. The naïve *quantity theory of money*, namely that the price level can be computed by dividing the number of commodities by the number of coins, builds on the use of money in such an ancient city-state. Today such theories lead nowhere, a detailed critique is provided in (Hanappi, 2013b).

When the old empires of Athens and Rome collapsed as their hierarchical military structures exceeded the span that could be centrally controlled, the monetary unity also was immediately lost. This in turn reduced the possibilities of trade; culture and civilisation's achievements had to withdraw, sometimes could be stored in monasteries. But the next 1000 years nevertheless saw the emancipation of the human species relative to slavery. With the revolt of farmers, the main source of feudal exploitation, the exploited classes started to contribute only a part of their lifetime to their exploiters. And the steps of the form of their rent – from time, to physical commodity, to money – paved the way to the credit systems that in the late 14th century in the North of Italy initiated the birth of ***merchant capitalism***.

In the Middle Ages the perception of coins of precious metal as important was overshadowed by the Church's monopoly of ideological streamlining. The pope condemned the use of internal models that included accumulating money (profit). For non-feudal individuals a simple life, i.e. ore et labore, was all that the internal model should be about. For the feudal class the concept of honour, boiling down to the knights' duty to spread Christianity across the whole world, left no room for money-related considerations[22]. Most interesting: For both classes the notion of time was splitting into its two opposites. The *moment* that had to be mastered according to religious rules, and *eternity*, where[23] God would reward the sum of well-behaved and sinful moments. Money, as discussed in the context of 'exchange money', was perceived as a constant, a timeless sign being identical with its appearance as a coin.

With the emergence of credit for merchants, money was transformed into the new money form of capital. Two future classes were born: (1) A group of creditors collecting savings and

[22] Only towards the end of the Middle Ages, when kings had to hire and to pay mercenaries, when the role of honour declined, a treasure of coins started to become really important.

[23] 'Eternity' is an illusionary theoretical concept, which simultaneously is a place, e.g. heaven and hell, and a time-related concept. The impact of this illusionary concept on the internal models of Medieval minds was tremendous.

selecting possible traders who promise to make a profit by transporting commodities from one part of the world to another. (2) This group of adventurous merchants that recruited its members in close combination with military leaders aiming to extend the empire of a feudal monarch. For both of them a new property of money that involves time was essential, it had to be considered as the money form called capital. The amount of money advanced had to be smaller than the expected money amount that would be received after merchants came back from their journey. The two new elements in the new money form were *expectation formation* and - closely linked to that – a second anticipation concerning the *probability of the success* of the expected action. After the political takeover of state power by the capitalist class after World War 1 these two groups became the banking faction and the firm owner faction of the ruling class[24], the group of administrators of capitalist state power became the third faction. The prominence of *time* in the new money form implies that it has to be described as the *capitalist algorithm*.

After World War 2, growth (capital accumulation) - in the perception of the single human individual in OECD countries - was experienced as more and new (fashionable) commodities that could be consumed. For the great majority this *growth stagnated* since the early 80-ties, while for an ever smaller group in all the above mentioned factions of the ruling class this *growth exploded*. Outside OECD, the situation followed a similar falling apart, structured by the needs and possibilities of the transnational firms initiating global value chains. But also there, in the last decades, individual perception was modified by the influence of television, streamlining and filtering personal experience. Since the Arab Spring it is also clear that messenger services are able to amplify local and regional political movements in an unexpected intensity[25].

In the last decades, money as mankind knew it in the past, has become almost invisible for the individual – at least in the rich North. A handful of coins and a few banknotes remain a reminder on the longing for (in reality non-existing) privacy[26]. It could be used for the unexpected case that a small grocery accepts only cash, or to buy a porn-magazine without being recorded in a bank account, or the like. This rudimentary role of the disenchanted 'equilibrium money' is sharply contrasted by the hidden omnipresence of the new money form, the capitalist algorithm. It is the force behind geopolitical movements as well as it is a force in the way that human individuals interpret what happens around them. In geopolitics it incurs the danger of a 3rd World War, on the individual level it frustrates its users and leaves them in alienated confusion – a hotbed for nationalism, fascism, religious aberrance, and the like. The two levels are complementary and indicate that the end of capitalism is rather rapidly approaching.

---

[24] Merchant capitalists increased the overall labour productivity by spurring the global division of labour.
[25] Compare (Hanappi, 2016) and (Siapera, 2017).
[26] Compare (Hanappi, 1999).

Even if this shake-up erupts in a big bang[27], a surviving human species will use internal models that carry the marks of both: (1) The structure of the capitalist algorithm, and (2) the desire for constant existence, falsely proclaimed by a 'naturally' existing 'equilibrium money'. In the outside world a shared sign system will still be necessary and it certainly will use electronic media as main carrier system.

Lust and pain, the feelings that emerge at the bottom of our biological existence, will still be staring at signs representing mediated social value. But the all-embracing imperative to accumulate frozen human labour, i.e. capital, will be narrowed to the wish to accumulate the only element that cannot be expropriated: *human knowledge* – on both of the above mentioned two levels. This knowledge then can be used to ***substitute*** the ***concept of lust expanding reproduction*** for the ***crude ideas of growth***. It remains to hope that the future money form accompanying this revolution can master this secular consecration of bread and wine.

References

Ausubel D.P., 1968, **The Psychology of Meaningful Verbal Learning**. New York: Grune & Stratton.

Frank A. G., 1979, **Dependent Accumulation and Underdevelopment**, Palgrave Macmillan, London.

Gravelle H. and Rees R., 1981, Microeconomics, Longman Group, Essex (UK).

Hanappi H., 1999, **Die Zukunft des Geldes**, Wiener Studien zur Politischen Ökonomie, Band 13.

Hanappi H., 2013a, **Money, Credit, Capital, and the State**, On the evolution of money and institutions, in: Buenstorf G. et al. (eds), 'The Two Sides of Innovation. Economic Complexity and Evolution', Springer, pp. 255-282. Enhanced version of an invited paper at the Verein für Socialpolitik (Ausschussss für Evolutorische Ökonomik) July 2009 in Jena. Working paper published as (MPRA Paper No. 47166).

Hanappi H., 2013b, **Future Methods of Political Economy**. From Hicks' Equation Systems to Evolutionary Macroeconomic Simulation, paper contributed to the Research Project 'Futures of the Eurozone' Research Project 14261 of the Jubiläumsfonds of the Austrian National Bank. Published as MPRA Paper No. 47181.

Hanappi H., 2016, **Arab Spring - Islamic Winter - North-African Exodus**, working paper published as (MPRA paper 70514).

Hanappi H., 2019, **From Integrated Capitalism to Disintegrating Capitalism**. Scenarios of a Third World War, American Review of Political Economy Volume 14, Number 1 (2019).

Hanappi H., 2020, **Alarm.**The evolutionary jump of global political economy needed, Real World Economics Review, issue no.94.

Hanappi H. and Scholz-Wäckerle M., 2017, **Evolutionary Political Economy: Content and Methods**. Forum for Social Economics, Spring 2017.

[27] Compare (Hanappi, 2019).

Jevons S., 1871, **The theory of political economy**, Macmillan London.

Keynes J.-M., 1936, **The General Theory of Employment, Interest and Money**, Palgrave Macmillan, London.

Koch Ch., 2019, **The feeling of life itself**: why consciousness is widespread but can't be computed, MIT Press, New York.

Marx K., 1844, **Ökonomisch-philosophische Manuskripte**, MEW 40.

Marx K., 1848, **Manifesto of the Communist Party**, (original in German) J.E. Burghard, London.

Marx K., 1867, **Das Kapital**, Verlag Otto Meissner, Hamburg.

Morishima M., 1978, **Marx' Economics**, Cambridge University Press.

Neumann J. and Morgenstern O., 1944, **Theory of Games and Economic Behavior**, Princeton University Press, Princeton.

Siapera E., 2017, **Understanding New Media**, SAGE Publications.

Sohn-Rethel A., 1978, **Warenform und Denkform**, Suhrkamp, Frankfurt am Main.

Sohn-Rethel A., 1990, **Das Geld, die bare Münze des Apriori**, Wagenbach, Berlin.

Suwandi I. 2019, **Value Chains. The New Economic Imperialism**, Monthly Review Press, New York