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# A Critical View on the Criticism of Money

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The idea of a world entirely without money is undoubtedly appealing, precisely because such a world would be in complete contrast to our everyday experiences. In the following discussion I will subject this idea to critical scrutiny. I begin with a brief look at the role of money in earlier, non-capitalist societies. This is relevant because many radical critiques of money—and of related phenomena such as exchange and markets—appear to be based on the idea that these phenomena were either unknown outside capitalism or only played an unimportant part. In the following sections I turn to the future, discussing possible ways of organizing distribution and production without money and exchange—with a critical reflection on the difficulties and limitations that would arise from such approaches.

My perspective on the possibility of a world without money has changed, partly in the discussion process accompanying the genesis of this book. While I used to see it as a desirable and essentially feasible utopia (e.g. Siefkes 2013), I now see fundamental problems, for which—as far as I can tell—there are as yet no convincing solutions. At the same time, critiques which regard the abolition of money as a *necessary* element of a better society now strike me as analytically false or in any case not sufficiently justified, since they wrongly consider specific functional principles of money and exchange within capitalism as universal—as necessarily linked with money and exchange.

## 1. Is Money a Fundamentally Capitalist Phenomenon?

The idea of a "post-monetary society" implies that money is a historical phenomenon of limited duration. All the tools (in a broad sense) used by humans have come into being at some point in time. In principle it makes sense to think about the circumstances in which they might disappear again in the future, and whether something else would then take their place, or whether their function would become completely superfluous. We could, for example,

speculate about a "post-car society," in which the function that is partly fulfilled by automobiles today (the transport of people and things) is completely taken over by other kinds of vehicle (e.g. trains, bicycles and drones). But we would also have to justify why we believed such a development was plausible.

Even more speculative would be an imagined "post-vehicle society," in which *all* kinds of vehicle (including aircraft) have disappeared because people and things move from one place to another in a different way—for example by "beaming," a notion popularized by *Star Trek*. The main reason why this is speculative is that it is totally unclear today whether such technologies can be developed at all, and if so, whether they would be sufficiently safe, practical and straightforward to make vehicles of all kinds obsolete.

If we are thinking about a "society after X," then, the first thing we need to clarify is what exactly we mean by X, and the second is why and in what circumstances we expect X to disappear one day. To answer the concrete question of what might be meant by money, it is helpful to begin by consulting a standard reference work such as the Gabler Wirtschaftslexikon (2017): "Money is the generally recognized means of exchange and payment which a society has agreed on."

To my mind this definition is good enough to work with. It stipulates that any "generally recognized means of exchange and payment" is money. A post-monetary society would therefore not be a society in which today's money (dollars, euros etc.) is replaced by *another* generally recognized means of exchange and payment. Instead it would no longer need any means of exchange and payment at all (or in any case no generally recognized ones).

Not every society thought of as money-free fulfills this requirement. In a "reputation economy" such as that imagined by Cory Doctorow,[1] reputation is acquired in a different way from money today, but it is also used to acquire concrete and useful goods, and thus assumes the role of a general means of exchange and payment.

The dictionary article quoted above does recognize money as a phenomenon of limited historical duration, but seems to posit exchange as more or less universal:

> The *transition from the barter economy to the monetary economy* began with what was initially a local custom: dividing the previously simultaneous exchange of two goods or services into separate processes of buying and selling by agreeing on an intermediary exchange good (Zwischentauschgut).

[1] For utopian literature see Schlemm in this volume.

According to this ahistorical notion, humans have always exchanged the things they produced, evidently independent of one another; money then emerged as a clever "custom," facilitating these acts of exchange by using a generally accepted "intermediary exchange good."[2] Just as false as this ahistorical idea of a pre-monetary barter economy (which only became truly practical after the "switch" to money) is the opposite belief: that people in pre-capitalist societies generally managed their economic affairs happily and without money, and that money and markets only became widespread with the worldwide triumph of capitalism. This idea is seldom explicitly expressed, but seems to underlie many a radical critique of capitalism.[3] In order to better understand the historical role of money and markets, it is vital that we take a closer look at non-capitalist modes of production.

## 1.1 Money, Exchange and Markets in Subsistence-Oriented and Peasant Economies

The economic anthropologist George Dalton—a student of Polanyi, who can hardly be suspected of an uncritical generalization of capitalist conditions—observes: "[E]very society . . . has an economy of some sort because personal and community life require the structured provision of material goods and services" (Dalton 1971: 25). This process is never left to chance, because if it worked too poorly (or did not work at all) this could soon lead to hardship and death (ibid. 31).

In this sense, then, it makes sense to speak of an "economy" even in relation to pre-capitalist or non-capitalist societies, referring to this structured process of provision for present and future needs. The process exists in every society, but it is only in capitalism that it takes the particular form of a multitude of private, competing firms, aiming to maximize their profits.

Dalton (1971: 31f.) also notes that not all but most economies have external trade, markets, certain forms of money, and some kind of accounting devices—so much for the idea of money as a specifically capitalist phenomenon. But at the same time, he stresses that these institutions are often only superficially similar: it would be quite wrong to conclude, from the mere fact of their existence, that such (often quite diverse) economies "basically" function in the same way as today's economy. This is a rejection of both neoclassical economists with their inadmissible generalizations, and

[2] For criticism of such ideas see Lohoff and Aufderheide-Kohl in this volume.

[3] As Habermann (2014) writes: "Without capitalism [we need] no financial markets, no paid employment and no money." This suggests that the three phenomena mentioned derive their justification for existence purely from specifically capitalist processes, and therefore do not play any substantial role either before or after capitalism.

critics of the market and capitalism, who see markets, money and accounting as unmistakable characteristics of the specifically capitalist mode of production. While there are clear differences between different modes of production, these are more subtle than we might think. One difference is that in subsistence-oriented economies external trade is only used for the import of goods that are not available locally, while in the capitalist global economy it is based on the principle of cost minimization (the least-cost principle; Dalton 1971: 58).

Another key difference is that traditionally, in subsistence-oriented economies, only produced material items are offered for sale in markets. There are no markets for labor or land, or such markets only play an insignificant role. Most people are not dependent on successful market transactions to secure their livelihood; instead this is ensured by subsistence production in the framework of small groups (ibid.).

In capitalism, individuals, households and firms are faced with innumerable choices: which of the countless goods they should buy, what occupation they should specialize in, what kinds of goods they should produce, and what technologies they should use to do so. Many of these choices take the form of monetary calculations, or these at least play a certain part (Dalton 1971: 78). In subsistence economies, on the other hand, the choices are much more limited—because people mainly produce for their own use, and because the existing ecological and technological conditions, with a low level of technological development, often present few options. But even if alternatives are imaginable, they are usually not explored, because there are precise conventions about what is customary, from which individuals do not deviate. This is because it would disconcert the people around them and might make it impossible to fulfill social expectations (e.g. about providing for relatives; ibid.).

Furthermore, traditional economies are mostly on a very small scale: just a few hundred or a thousand people are closely linked in their economic interactions. True, there is often also external trade, or ritual relations of exchange with external groups, yet these are only of secondary importance. These economies are also "small" in terms of the very limited number of goods produced. Often one or two essential types of goods (e.g. sweet potatoes or cattle) play a central role in people's lives; these are produced in subsistence production within a village or an extended family ("lineage"). They are supplemented by a few dozen other kinds of goods or services which are only occasionally needed and are if necessary procured from specialists (Dalton 1971: 90).

Dalton (1971: 95) describes another mode of production as "traditional peasant economy"; this includes, for example, European agriculture in the

Middle Ages, and the Russian *mir* (village community). Here subsistence production for personal use and production for the market coexist. Many people earn a substantial proportion of their livelihood by selling things in the market. Land, labor, tools, and other means of production can also be bought or hired for payment, though these specialist markets are usually limited. Most families work their own land and make many of their tools themselves; wage labor exists, but most people are not wage laborers. Since hardly anyone is solely dependent on the market to secure their livelihood, the fierce competition for market shares is absent, as is the need to produce as efficiently as possible and to sell as much as possible.

Both in traditional peasant economies and in subsistence economies, then, products are traded, but factors of production such as land and labor are not traded, or only sporadically. Markets exist, but are not used as universally as in capitalism. Instead land is often distributed according to principles of status. This is traditionally the case, for example, in many African Bantu societies, where every household is entitled to a certain amount of land. This land can be lent but not sold; if the household gives it up, it reverts to the community. The right to the labor of others is not usually gained by employing wage laborers, but by way of kinship (family members join in the work) and reciprocity (for big projects, all the families work together; Dalton 1971: 127f.).

Traditionally, markets were only of secondary importance in Africa; the majority of production was organized by means of reciprocity and redistribution (Dalton 1971: 134). This distinction between different principles of production has its origins in the work of the economic historian Karl Polanyi ([1944] 2001), who differentiates between *market exchange, redistribution,* and *reciprocity.* Redistribution means that a central political authority demands certain contributions, and then distributes the resources gathered in this way in accordance with political decisions. Usually all these principles (or at least two out of three) play a part in the organization of society, but different societies vary in terms of how the principles relate to each other, and which of them is dominant. Today market exchange dominates, but tax-funded public services (schools, fire departments, the military, social welfare) are based on the principle of redistribution, and private households work on the principle of reciprocity.

Here reciprocity must not be confused with "voluntariness"; instead it is based on clear social rules (Dalton 1971: 27, 53). Even today, if someone has given us a birthday present, it is difficult to imagine going to their next birthday party empty-handed, or if someone has helped us move to a new house we cannot refuse to help with their next move, unless there is a good reason.

As there were markets for certain products in many societies, without market exchange being the socially dominant principle, Dalton (1971: 144) distinguishes between market places on the one hand, and the market principle or market mechanism on the other. Market places are specific locations where things are bought and sold, while the market mechanism ensures that nearly everything—including labor and raw materials—is traded at market prices, regardless of particular locations. While a weekly market is a specific place, the "labor market" is a social institution.

In feudal Europe there were markets (especially in the towns) for some types of products (especially foodstuffs), but there was no market principle; land and labor were seldom sold. Instead land was made available by redistribution in relations of dependence: feudal lords granted their vassals land for farming, and demanded contributions—in kind or in labor—in return (Dalton 1971: 223). In general the vassal had a lifelong right to farm the land, as long as he paid the contributions demanded, and he could hand this right down, but not sell it. Access to labor was based on the principle of reciprocity: the whole family joined in the work, and on special occasions such as the harvest, all the families helped each other out. Occasionally day laborers were hired, but this tended to be the exception (ibid.: 226f.).

Nonetheless, market places can be very important for buyers even in societies where the market principle plays only a secondary role, because there are some goods they can only acquire on the market (Dalton 1971: 150). So it would be wrong to conclude that, without the market principle, market places and paid transactions were an unnecessary extra.

External trade was another form of exchange that has existed in practically every society, regardless of whether markets and money otherwise played a role in society. In pre-capitalist Africa, for example, external trade was often carried out by the "states" or political rulers; there was no market, strictly speaking, as there were no independent buyers and sellers. Often goods were exchanged for other goods, as there was no universal money that both sides would have recognized (Dalton 1971: 154). In this respect, external trade did actually correspond to the "barter economy" conjured up in the economics narrative, yet this is only a small, albeit essential segment within modes of production that were otherwise governed by different rules.

## 1.2 Non-Capitalist Monetary Economies

While Dalton is mainly concerned with highly subsistence-oriented societies with a low degree of differentiation in the division of labor, there are societies which already attained a high level of division of labor thousands of years ago, and in which many people lived in cities. (Cities are places where no

subsistence-oriented food production is possible, so this area, which is crucial for survival, has to be organized differently.) Examples are China and the Roman Empire.

A good insight into Chinese society before the emergence of capitalism can be found in the classic Chinese adventure novel *Outlaws of the Marsh* (English translation: Shi and Luo 1988). This novel, written in the fourteenth century, is set in the twelfth century. Even if the plot is fictional, the book probably paints an accurate picture of the mores of society at the time. It describes a society in which there are markets, taverns and inns, landlords, street vendors, and prostitutes.

There are, however, no capitalist entrepreneurs, focused on turning money into more money. On the contrary, the "important" characters whose stories make up most of the plot are officials (almost all male), who are paid by the state and acquire additional wealth from bribery, or robbers, who have their own strictly hierarchic chain of command—a kind of unofficial state against the state. Wealth (and its augmentation) is important, but no self-respecting person would establish or invest in a business to increase his wealth. The most highly esteemed characters are rich, but do not hold on to their money; they spend it liberally to help all those in need (cf. e.g. Shi and Luo 1988, vol. 1: 280).

## 1.3 Money and Markets Do Not Add Up to Capitalism

This short historical retrospective shows that money, markets and capitalism are by no means as closely linked as radical critiques of capitalism sometimes suggest.[4] This is also emphasized by the Marxist historian Ellen Wood (2002, ch. 4), who points out that trade and money can be found in many pre-capitalist societies. Wood argues, however, that capitalist structures only emerge when the compulsion to compete against others and to underprice them whenever possible takes hold. Money and trade played a major role in medieval cities too, but as prices and the right to practice a trade were regulated by guilds or the government, it was neither possible nor necessary to defeat one's competitors.

Andreas Exner (2010) rightly points out the distinction between "economies with markets" (in the sense of marketplaces) on the one hand, which have a long history and take many forms, and "market economies" on the other. It is only in the latter that nearly everything is bought and sold, especially most people's labor and a large proportion of the usable land; in other words, it is in the latter that the market principle is predominant. So far

[4] See footnote 3.

there has only been one form of market economy in this broad sense, the capitalist market economy. In this respect we can agree with Exner's statement that "market economy and capitalism go together."

But a society without money would logically be one without marketplaces: money and markets (in both senses of the word) would have to disappear completely. Here the historical retrospective gives rise to skepticism, since money, marketplaces and other forms of exchange (such as regulated external trade) *have* played a certain part in most societies so far. At the same time, the retrospective shows that there are numerous other possibilities between the two extremes: a capitalist market economy on the one hand, and societies with no money or markets on the other. A statement such as "anyone who wants to overcome capitalism (and its brutality) must also renounce money and markets" creates a false dilemma, and conflicts with the real diversity of possible means of production which can be imagined, or have appeared in the course of history.

Critiques of money-based economic activity are also often premised on the idea that things which were possible in the past could work again in the future. Thomas Herzig (2011) declares, for example: "For a start, the moneyless society is not a utopia. It has functioned sustainably for most of the time since *Homo sapiens* appeared around 160,000 years ago." Such ideas are not only imprecise, they are also based on conditions that differ dramatically from the current situation. For example, the population density used to be much lower. True, capitalism today is not able to provide "sustainably" for seven billion people: many lack the bare necessities, while at the same time the earth is being systematically overexploited. But earlier societies, especially the hunter-gatherer cultures which were in fact money-free, needed many times more land per person than the amount that is now available. So a direct return to pre-capitalist modes of production is unthinkable, since the seven billion people are not simply going to disappear.

Another substantial difference is the vastly increased complexity emphasized by Dalton (1971). On the one hand, this includes the numerous manufactured goods (commodities) that people can consume, as long as they are able to pay. On the other hand, it includes the highly differentiated division of labor, which has brought forth a multitude of different occupations. Today this complexity is mediated by money: everyone can decide for themselves what they will consume, but only as long as they are able to pay for it—money is the primary means of distribution.

At the same time, money plays an essential role in the production process: firms produce in order to make profits, that is, to turn money into more money, and people go to work in return for payment. Despite all the ideological glorification of work as something that gives meaning to life,

most people are probably aware that they mainly work in order to earn money.

In a money-free society, production and distribution would have to be organized in completely different ways. But how could this work, and what would be the consequences? In the following discussion, both aspects—production and distribution—will first be considered separately, though of course they are obviously not independent of one another. I will start with distribution, although it might seem to be of secondary importance, because the discussion of possible modes of distribution shows up problems that are not discernible when we focus on production.

## 2. Distribution Without Money?

Today the distribution of many goods works via money. If we want to acquire a good we pay the price set for it and gain access to it in return. Sometimes we acquire full property rights, including the right to sell on the good to others as we see fit, at a freely negotiable price; sometimes we only secure limited rights of use. How could all this work without payment?

One possibility is "taking what you need"; here there are two alternatives, depending on how "need" is defined. Does every person decide subjectively, as he or she sees fit, or is need defined by social institutions, according to objectively formulated criteria? In the latter case, this is distribution according to socially defined need. Today, for example, statutory health insurance in Germany and other European states mainly works this way. Medically necessary treatment which has been prescribed by a doctor is paid for by the health insurance fund, and thus the cost is shared by all those insured; the person receiving the treatment pays little or nothing.

If, instead, everyone can make their own subjective choices, then the prevailing principle is "help yourself" or "take what you want." Today, for example, access to public parks and streets works in this way. This model sounds ideal from a "communist" perspective, but has the obvious disadvantage that it only works if there is enough of the good in question to satisfy everyone's need for it. This leads to the question of money-free production, which I will return to later. But regardless of the concrete mode of production, it should be clear that in the case of material goods and services it would probably not be possible to avoid a demand surplus at least in some cases (a demand surplus arises when the number of people wanting to use a particular good, made available at a price of zero, exceeds the quantity of the commodity that is available). The finite nature of the earth and its resources makes this a given.

Things are different for information products: as soon as these have been created, they can in fact be shared with any number of users, with very little additional use of resources. Thus the "help yourself" principle appears to be the appropriate mode of distribution for information products, though admittedly this does not answer the question of how they are to be produced.

But how can material goods and services be distributed if there is a demand surplus? One possible way to solve this is to leave it to the producers to decide who will have the available goods. In this case, the producers could for example sell the goods to the potential customers who are most willing to pay—but this would be the money-based solution, which is out of the question for a post-monetary society.

Another option would be for the producers to produce mainly for themselves, for their collective personal use. Only if something is left after this is it distributed to others. This would be a return to subsistence production. Post-capitalist subsistence production would differ radically from the pre-capitalist version, however, since it would undoubtedly make use of many of the technological possibilities that exist today. I therefore refer to it as "high-tech subsistence" (cf. Kratzwald 2014: 122). While in traditional subsistence production the main things produced were food, clothing and housing, high-tech subsistence production would also be able to produce many other goods, thanks to modern production methods such as 3D printing. But it would also have to be able to reproduce these modern production methods themselves in a completely decentralized way.

These days I have my doubts about whether subsistence production in small groups can be a desirable basis for a post-capitalist society. Of course it is possible that such a scenario may come about (whether desired or not), if the highly networked and extremely complex capitalist mode of production experiences a catastrophic collapse, and small groups of "survivors" have no choice but to fall back on their own, local resources and skills. Whether there would then still be computers and reliable sources of power, the essential prerequisites for high-tech solutions such as 3D printers, is doubtful: a "post-collapse society" (Heimrath 2012) would probably be forced to return to low-tech subsistence.

But even if high-tech subsistence were still an option, production in small groups—which can organize themselves spontaneously and without money—would probably leave much to be desired. And in the case of cooperation in large groups, the question that again arises is: "How does the division of tasks and goods function without money, compulsion, or excessive bureaucracy?"—a question that is still relatively easy to resolve in small-scale subsistence production.

While high-tech subsistence could produce a much greater range of products than has traditionally been possible, such groups are unlikely to even come close to the range of products available under capitalism. A miraculous machine that can produce "anything" at the touch of a button, without requiring either precursor goods that are hard to obtain, or work-intensive finishing, does not yet exist, and is unlikely to exist in the foreseeable future. Furthermore, 3D printers and similar machines which are of interest for decentralized high-tech subsistence have so far mainly proven valuable for the production of prototypes and individualized single items. When products are needed in greater quantities, industrial mass production is still the more efficient option.

Thus the subsistence perspective, even in its high-tech version, seems set to remain a "second-choice" way of life: anyone who is still able to find a reasonably well-paid job in capitalism is likely to see the great range of cheaply manufactured mass-produced goods as more attractive. Only people wishing to "opt out," and those who can no longer make a living in the capitalist labor market, might see a more or less high-tech subsistence production as a way out, albeit one that would demand considerable self-denial and less efficient "DIY" production. In order for a post-capitalist way of life to become widespread, however, it would have to be attractive enough to win the favor of the majority of the population, who still see capitalism as quite acceptable.

This condition would probably only be fulfilled if post-capitalist society could also, in many cases, produce things in great quantities and with a high degree of division of labor, and if the producers were willing to use only a small proportion of the goods they produced themselves. Which brings us back to the question of the "money-free" distribution of the remaining goods.

One conceivable version would be a system of nepotism or cronyism: the producers decide who will receive their products on the basis of personal acquaintance and favor. In such a society, personal relationships would be everything; a loner or misfit would remain poor and probably die early, because the relatives and acquaintances of the doctors and nurses would be given preferential treatment in hospitals. So society would certainly not be improved if money were replaced by personal relationships!

This leaves other variations in which the producers do not decide as they see fit, but products are instead distributed on the basis of a general system negotiated within society. Just as a reminder, we are only talking about how a demand surplus is dealt with: those cases where somebody would end up empty-handed if everyone were simply to help themselves. Various "money-free" solutions to this problem could be found, for example:

- First come, first served (FCFS): everyone can help themselves to all available products; but if the shelves are empty, you are out of luck.
- Distribution by lot: anyone who wants to have a particular kind of product puts their name on a list; lots are then drawn to distribute the available goods among those on the list.
- Rationing: for each scarce product category, those responsible determine exactly who is allowed to consume how much of it, so ideally no one ends up empty-handed.

Although all these methods are fundamentally fair, none of them is altogether convincing. FCFS causes stress, because for every potentially scarce commodity one has to be sure to be on the spot at the right time, when the next distribution is due to happen. Furthermore, the method is susceptible to nepotism or cronyism, with insiders passing on information to friends and acquaintances about when something will be distributed.

Distribution by lot is totally arbitrary and also susceptible to manipulation. It is possible to increase one's own chances by asking friends to apply for the desired good as well, and to pass it on if they win. And the rationing process would force everyone into the same mold, without taking into consideration the divergence between individual needs.

Furthermore, all three methods would probably lead to the emergence of a black market, via which people who have received one of the scarce commodities would sell it on to those who received nothing. Even if there is officially no money, a suitable reward or return gift would no doubt be found, leading to barter trade, or one of the scarce goods would take on the role of a black-market currency. Even if such black-market transactions were illegal, it would not be possible to prevent them altogether in a non-totalitarian society.

Algorithmic rationing, as conceived by Stefan Heidenreich,[5] would not necessarily be any better. Heidenreich's proposal involves "intelligent" computer programs, which decide who receives what goods. Unlike the above-mentioned methods, not everyone is treated the same; instead different people have individually differing entitlements to goods. On the one hand this allows different needs to be assessed better than in the case of a strict rationing system. On the other hand, people would be giving up control of major aspects of their lives to computers. Even if Heidenreich stresses that the algorithms used must be the result of democratic debates, the individual loss of sovereignty would nonetheless be scary.

Furthermore, the distribution algorithms in such a society would have power which even dictators could only dream of. This raises the question of

[5] In this volume.

who will control the programmers who create these algorithms, or (in the case of self-learning algorithms) at least their basic framework, and how hackers can be prevented from manipulating the algorithms to their own advantage. Moreover, self-learning algorithms are generally a "black box": even their programmers cannot reconstruct in detail *why* an algorithm has made a particular decision. If the decisions of the algorithms were to lead to suffering or obvious injustices, it would therefore be difficult to intervene and correct them.

This short critical overview of money-free distribution methods shows that the supposed cure is not necessarily better than the disease. Of course markets and prices have serious disadvantages, in their capitalist version in any case. But the same goes for the attempts to do without them, and besides, the market would probably creep back in surreptitiously.

These disadvantages could only be avoided in a genuinely affluent society, in which there was enough of *every* good to satisfy all demands, even if it was given away at a price of zero. But as stated above, a universally affluent society is not a realistic prospect for the foreseeable future, at least as long as humanity remains on earth, with its finite resources.

So perhaps a price system is not a bad idea, at least for some of the goods that are not available in abundance? Certainly not for all goods: for some things, such as comprehensive medical care, distribution according to socially defined need makes more sense. And other methods such as FCFS, distribution by lot, and rationing may occasionally be justified. But since all of these methods have their disadvantages, a social debate about this is needed. There is no generally "right" answer, and in some cases a majority of people would probably, with good reason, favor the use of a price system for the distribution of goods.

## 3. Moneyless Production

I understand production in a broad sense, as in Dalton's definition (1971: 25), encompassing the provision of necessary and desired activities and goods. In this sense, cooking food at home or putting the children to bed is also production, just as much as installing software on a computer or manufacturing the computer.

When it comes to the question of how things are produced, we must first distinguish between production for personal use, in an extended sense, and production for "general others." Here production for (extended) personal use means for oneself and for relatives and acquaintances—for people one has a personal relationship with. If I cook for myself or my family, or fix a friend's

bicycle, this is production for (extended) personal use. If I assemble a bed or a computer without knowing who will later use it, this is production for general others. Production for general others can also take place when those who will benefit from the production are personally known to the producer, but she or he has no personal relationship with most of them beyond the production process. Plumbers, hairdressers, and most other service providers meet their customers, and in some cases they become good friends with them, but as a rule the personal relationship is not essential for the performance of the service.

Today production for (extended) personal use is usually unpaid, and that for general others is usually paid, but this is not always the case. Someone who volunteers at a soup kitchen or *Volxküche* ("people's kitchen"), produces for general others without payment, and conversely, even among close acquaintances payment may occasionally be arranged for regular activities such as tutoring or babysitting.

Production for (extended) personal use is an important part of the production process in every society, which is often undervalued and tends to be "forgotten"—a fact that is rightly lamented, especially by feminists.[6] From a historical perspective, this mode of production was dominant in subsistence-oriented economies: subsistence production is production in fairly small groups for collective personal use, which can certainly be understood as production for (extended) personal use, since the group ensures that there are at least loose relationships between all of its members.

### 3.1 The Dunbar Limit

Of course this is the limitation of subsistence production, as mentioned above: since it is based on personal relationships, it mainly works on a small scale. I will refer to this as the "Dunbar limit," after the "Dunbar number" identified by the anthropologist Robin Dunbar, which indicates the number of people with whom someone can maintain personal relationships. Typically, the Dunbar number is stated to be "around 150," though it can vary individually between around 100 and 250.

Groups that are strongly oriented toward subsistence and production for collective personal use, and which dispense with forms of mediation such as money or distinct social hierarchies, almost never exceed the Dunbar number. Nomadic hunter-gatherer cultures—the oldest form of society in the history of humanity—live together in groups that rarely have more than 50 people. Modern intentional communities such as Twin Oaks in

[6] Kratzwald (2014) and Habermann (in this volume).

the US and the Niederkaufungen commune in Germany seldom exceed 100 members. Those among the community-supported agriculture (CSA) projects that spread costs among groups of subscribers in a solidarity-based, self-organized way (instead of charging everyone the same amount), rarely have more than 150 shares (a share can belong to more than one person, for example a family, but this does not have any direct impact on the structure of the project). Lars Heitmann[7] also shows that projects which attempt to largely or completely dispense with money only very seldom exceed the Dunbar limit. The same goes for the "peninsula" projects described by Friederike Habermann (2009).

In my opinion this is no coincidence. Smaller groups are able to forego fixed prices and other mechanisms for linking individual contributions (costs) and usage, because they are manageable enough to agree on all the necessary decisions in direct communication.

Beyond the Dunbar number—in groups with several hundred, several thousand or more members—direct communication of everyone with everyone else quickly becomes impossible, and no group member can still maintain personal relationships with all the other members. But such larger contexts beyond the Dunbar limit are likely to remain essential for the organization of production processes.

### 3.2 Central Planning?

When it comes to producing for general others, beyond one's personal acquaintances, a further distinction can be made between *centralized* and *decentralized* coordination. *Central* does not necessarily mean the whole world or a whole country, but it does mean that there is a production plan for society as a whole in a particular geographical area, a plan that makes binding provisions for all the inhabitants of this area and their rights (to take and use goods) and obligations (to contribute). Such a production plan could certainly be created democratically. Based on everyone's wishes regarding consumption and production, a production plan for the whole society could be created, attempting to reconcile the different wishes as well as possible, and allocating each person their place in the production process. This could then be put to a vote; only after passing the vote would the plan be implemented.

Whether this would be practicable is a matter of doubt.[8] But even if it were feasible, such a central planning process would give no freedom to individuals. If it wanted to replace money as an instrument of mediation, it would have

[7] In this volume.
[8] Cf. Kathöfer and Schröter in this volume.

to fix both the tasks (obligations) and consumer options (rights) of every person, without each person necessarily agreeing with it. (It would be virtually impossible for a complex society with tens of thousands or millions of members to reach any decision that is not completely trivial by *consensus* among all its members.)

### 3.3 Decentralized Coordination and Reciprocity

In the case of *decentralized* coordination, on the other hand, individuals decide what they want to do and consume/use, without having to agree on this with everyone else. Production for general others organized in a decentralized way means that individuals or organizations produce goods for other people or organizations; another possibility is that the members of an organization produce collectively, but only for themselves. If we disregard this last case scenario for the moment (I will return to it under the heading "commons"), then the producers and beneficiaries of production diverge here. The question is then whether reciprocity (recompense) is explicitly arranged, implicitly expected, or not expected at all.

*No reciprocity* is expected, for example, by charities, or in the case of hobby and leisure activities whose results are made freely available to others (for example when an amateur choir invites people to a free concert). The same goes for acts of helpfulness towards strangers. For presents and favors between friends, on the other hand, it is *implicitly* expected that this will be reciprocated at a later date, even if we would never explicitly state this or "enforce" this claim. If we have helped a friend to move to a new house, we are disappointed if she later refuses to help us move without giving any reasons.

*Explicitly* agreed reciprocity is the predominant mode in capitalism: here two parties agree on a contract which stipulates performance and reward. The transaction only takes place if the two sides are able to agree. If one side does not keep to the contract that has been negotiated, the other can enforce the claim (if necessary in a court of law), or demand that what she has paid or given be returned to her. Explicitly agreed reciprocity, however, does not necessarily have to involve a "legal process"; instead of an enforceable contract, it is possible to imagine, for example, an understanding reached in front of witnesses. In this case, a participant who breaks the deal without good reason would at least be exposed, and might find it harder to reach such understandings with others in the future. I will use the term "agreement" as an umbrella term for both: contracts with a legal process, and understandings without one.

Ancient Roman law distinguished between three kinds of contract (or, in more general terms, agreement):

1. *do ut des:* I give so that you may give, e.g. sales contracts, tenancy agreements or loans (one party gives a certain amount of money, the other later pays back a larger amount).
2. *do ut facias:* I give so that you may do (or, seen from the other side: *facio ut des*—I do so that you may give), e.g. employment contracts or service agreements.
3. *facio ut facias:* I do so that you may do: reciprocal obligations, e.g. a defense alliance (in which all parties commit to helping if one of them is attacked).

It should be noted that the first two forms of contract are asymmetrical, while the third is often, but not always, symmetrical (both sides agree to do the same things, e.g. to assist each other in case of need). The first form of contract may look symmetrical (both sides "give"), but only works if both sides give different things.

Money does not feature in the third kind of agreement, but is likely to play a part in the first two kinds. Some kind of "intermediary exchange good" (Gabler Wirtschaftslexikon) or "general equivalent" (Karl Marx) normally appears on at least one side as the thing that "I give" or "you give." Without money, such contracts can only include barter transactions, which are so inflexible in comparison to money-based transactions that they are only likely to be an option in exceptional cases.

### 3.4 Commons

Critics of this Roman concept of law will complain that it is incomplete: in particular, it lacks the concept of "commons," which refers to products and resources that are jointly produced, maintained and used, and to the manner in which they are produced and used. The management of traditional commons, which revolve around material resources (such as grazing land or an irrigation system) can be described as a fourth kind of agreement:

- We do so that we may receive.

While the Roman contract types distinguish between "I" and "you" (both parties incur obligations, but in general different ones, at least for the first two types of contract), in the case of the commons all those involved merge into a joint "we." Here too, the people involved have rights and obligations, but these apply equally to everyone. The "flows" of a commons system (for example the water from an irrigation system) are shared among all those involved in a jointly agreed manner, which ensures that nobody misses out. The costs are shared in a similar manner: for example, the parties involved take turns at performing certain tasks, and all the parties involved (often

families) take part in occasional stints of work maintaining or developing the commons by delegating one person of working age.[9]

Here obligations and rights are inseparably linked—traditional commons are not a "free lunch"; they too involve a kind of explicitly agreed reciprocity. The new, digital commons go a step further: they not only function in a money-free way (from the point of view of the user, in any case), but also forego the expectation of reciprocity. Everyone is permitted to read Wikipedia or surf the net with Firefox, without having to write articles or programming code.

Which of these productive options for interaction would still be possible without money? I would assume that the first two legal forms—"I give so that you may give" or "so that you may do"—would largely disappear. In exceptional cases these could still occur in the form of barter agreements (instead of money, specific useful goods are exchanged). But as soon as it comes to anything more than exceptions, it is likely that some form of money will appear (e.g. IOUs), because of its greater flexibility.

The most radical proponents of a money-free world assume that every form of explicitly or implicitly expected reciprocity will vanish along with money.[10] But even if implicitly expected reciprocity and money-free forms of explicitly agreed reciprocity continue to be seen as legitimate, I still have doubts as to whether asymmetrical agreements based on "I give so that you may give/may do" could be completely replaced if they disappeared. Symmetrical agreements as in traditional commons would be possible even without money, but are too inflexible in many cases. For example, traditional commons do not normally involve a division of labor in the sense of differentiation and specialization; all tasks are performed by all those involved, either pro rata or in turn.[11] In principle, a highly differentiated division of tasks is conceivable, but this requires considerable efforts at coordination, since all those involved must accept the differentiation as fair. Here the Dunbar limit once again comes into play: a few dozen parties may be able to reach individual agreements about who will take on what tasks, but when hundreds or thousands of people are involved this becomes impossible.

At the same time, even if contributions are individually differentiated, everyone has basically the same rights to take and use goods in a commons scenario: everyone is entitled to their share of the "flows" produced. And as a rule only very few kinds of products are distributed via a commons system—perhaps access to water, locally grown vegetables, or firewood. However,

[9] Cf. Ostrom (1990) for the analysis of various arrangements of this kind.
[10] Cf. Meretz in this volume for the question of "social obligations."
[11] Cf. Ostrom (1990: 49, 53f., 63, 65f.).

every person living in capitalism uses hundreds or thousands of different product categories, and there are substantial differences from one person to the next in terms of which products are used and how much. Some people like to travel a lot; some regularly drink cocktails or fine whiskey; some have pets that need to be provided for; many people eat meat, while others reject the consumption of meat or even that of any animal products as unethical; different people have completely different hobbies, and usually need various products to pursue these.

How could the same commons system satisfy all these different needs? There is only one answer to this: not at all. The number of "flows," and of contributions and participants required to produce these, would be much too large for all participants to agree on a uniform set of rules for the distribution of "flows" and duties. In order to satisfy such diverse needs in accordance with commons principles, people would therefore have to participate not in one but in a whole series of different commons systems—and thus also make the relevant contributions for each of them. This, however, would probably lead to a highly fragmented life structure, involving constant switching between different activities in very different contexts. The resulting diversity would probably appeal to some people, but might make others feel stressed and overwhelmed.

Some tasks cannot be dealt with in this way at all: a health commons, dispensing with specialist doctors and nurses and dividing all tasks equally among its members, would probably have a detrimental effect on their health. But employing professionals, who are paid and can therefore devote themselves to a single thing instead of having to participate in dozens of other commons systems, would contradict the paradigm of money-free production. A similar solution would be for different commons systems to agree to mutually recognize contributions to any one of them, as I proposed in *From Exchange to Contributions* (Siefkes 2008). This would not necessarily require money, but it would necessitate some unit of compensation very similar to money, which would make it possible to reduce contributions to a "common denominator" and make them comparable.

## 3.5 Renouncing Compensation and Implicit Planned Economy

But perhaps it would be possible to forego every kind of compensation, instead of continuing to use money or something very similar? Perhaps the doctor could devote herself to the health of others, while trusting that others will make sure she has enough to eat and a nice place to live, that her pets are also well fed, and that she can have an extended holiday twice a year?

This would mean, among other things, the disappearance of any explicitly agreed reciprocity. What is clear here is that explicit agreements could *not* be replaced by the implicit expectation of reciprocity on an individual basis, as is normal for presents and favors. Modern production processes are too complex for this: it is not only the doctor who contributes to a patient's treatment and recovery in a hospital, but also nurses and numerous other employees, who keep the hospital running, and all those who provide the necessary equipment, drugs, energy, water, etc.

When mediation is money-based, previously signed contracts ensure that all participants are paid, though often (as a critical aside) in a very unbalanced way. It is not necessarily the patient herself who pays; it may instead be a health insurance fund or the state, funding a health system which is free for users. It would quite obviously be impossible—and utterly overwhelming—if the patient were implicitly expected to give appropriate return gifts to *all* the involved parties.

At most, then, it is possible to imagine an expectation of reciprocity on a general social level (others do something for me, I do something for others, though generally not the *same* others), or alternatively, the renunciation of all expectations of reciprocity. In the latter case, people would only become active if they felt like doing something, or if they considered a task sufficiently useful and important.

From the point of view of producers, both these options sound good: they involve doing something for others, but deciding autonomously what and how. From the point of view of consumers, however, the complete renunciation of reciprocity creates problems, since this minimizes their influence on producers. When making a reciprocal agreement such as "I give so that you may give/do," I can always ensure that the conditions are right for me. If the terms do not suit me, I will perhaps find another provider who offers me better ones, or I can renegotiate and, for example, increase my own offer in the hope of better terms. If direct reciprocity is renounced, however, all that consumers are left with is the "hope principle." They can express wishes, but what the producers do with the (probably very numerous) wishes is entirely up to them.

This problem may seem less serious if we fall into the trap which I call *implicit planned economy*: the idea that it is *actually* already obvious what needs to be done in society as a whole, and that all we have to do is find, for each task, someone who will actually *do* it. Stefan Meretz[12] falls into this trap, for example, when he writes: "From a systemic perspective, it is irrelevant who makes the necessary contributions, as long as it is assured, on average,

[12] In this volume.

that it securely takes place." In fact, very little is "necessary" in complex societies.

Strictly speaking it is not even "necessary" for everyone to become as old as possible, though this is undoubtedly desirable; and there is virtually nothing necessary about the way people spend their days.

In money-based mediation, people decide for themselves what is desirable for them, not only as producers, but also as consumers and users. Someone who has a limited monthly budget can at least decide for herself how to spend it, beyond the "bare necessities." This individualization of decision-making options can be criticized, e.g. when parents have to pay for their children, and therefore, in comparison to people without children, have to do without certain things. But such injustices are linked with the actual *distribution* of money, not with the fact that it is used at all.

When money is used as a "flexible means of rationing," people decide for themselves what they see as necessary or desirable. Decision-making is decentralized, and lies with the different consumers or users themselves. In my view it can certainly be argued that this is better than leaving it in the hands of the producers or a central authority. Producers can survey people's wishes, but they cannot know how important people's different wishes are to them. If, on the other hand, I have my own budget, I can decide what I will allow myself to have immediately, what I will postpone having (and perhaps save up for), and what I can do without altogether.

### 3.6 Stigmergy and Self-Selected Teams

A concept occasionally mentioned as an instrument of mediation to convert decentralized wish lists into useful products is "stigmergy."[13] In brief, stigmergy means that people leave suggestions or cues about what could or (from their point of view) should be done, and other people, to whom a certain suggestion makes sense, and who see themselves as having the relevant skills, then implement this suggestion—without anyone forcing them or paying them to do so. Probably the biggest and most impressive example of stigmergy is Wikipedia. Never could the makers of traditional encyclopedias such as the *Encyclopedia Britannica* have dreamt that a group of unpaid amateurs would destroy their business model! Yet the remarkable success of this stigmergic self-organization depends on very specific conditions, which cannot be created for most production projects. The secret of Wikipedia's success is that all the countless suggestions for possible improvements and expansions can be dealt with *separately*. Whether I am

[13] See Meretz in this volume.

correcting a spelling mistake in an article, searching for and adding missing sources, rewriting badly written or non-neutral paragraphs, or starting completely new articles, I can do so at any time, without being reliant on any specific preliminary work by others. Every possible change is "atomic"; it has no other prerequisites than the existence and availability of Wikipedia itself.

For most material production processes, the situation is quite different: here a whole series of preparatory steps are usually necessary. In order to assemble any material thing—be it a bicycle, a Wi-Fi router or a sofa bed—*all* the necessary parts must first be present; all the necessary tools and resources must also be present, and a suitable workshop or manufacturing environment must be available. If even just *one* of the dozens or hundreds of elements needed is missing, then the production process cannot begin, or will fail. Conversely, it makes little sense to produce individual components and precursor products without knowing whether they will be used anywhere. It becomes even more difficult if the good or its precursor products do not have a long shelf-life, or if living creatures play a part in the production process.

In the vast majority of material production processes, then, the "atomicity" of the necessary tasks is not given: most tasks are dependent on various other tasks, which must be carried out shortly before, shortly after, or in parallel.

A further key factor in the success of stigmergic self-organization is that no lasting damage is done if individual tasks are completed badly or incorrectly. In Wikipedia, inappropriate or malicious changes can quickly be reversed by others. Similarly, free (or open source) software often involves stigmergic changes carried out by all those who feel called to develop the software. But there is always a core team or maintainer who has the last word and reviews all the proposed changes before incorporating them into the software (or not, as the case may be). This means that users only have to trust the core team or maintainer, but not the potentially large number of other people who have contributed to the development in one way or another.

In general, it is a characteristic of successful stigmergic projects that contributions can be made *first*; it is only *afterwards* that they are checked to see whether they are harmless and can be included long-term. Many activities have an immediate effect, however, and their consequences can no longer be undone. Few patients are likely to put their trust in a hospital whose nurses and operating teams work on the principle of "There's work to be done here: any volunteers?" The harm that they could do, due to inexperience, carelessness or malice, is simply too great.

There are alternatives to stigmergy, which leave behind some of its limitations and are nonetheless based on the voluntary, non-contractual "self-selection" of participants. Voluntary teams can come together and take care of certain operations on a voluntary or honorary basis, be they hospitals,

farms, or software programs. The above-mentioned "core teams" of many free software projects function on the basis of this principle (though admittedly they are not always unpaid). The potential users can develop trust in such teams, and can test their competencies, and such teams can also implement larger projects, which cannot be subdivided into numerous atomic individual tasks.

Nonetheless, even teams such as these show the disadvantage of "one-sided" self-selection, which is not based on explicitly agreed reciprocity: the active members decide as they see fit what they will deal with, and what priorities they will set themselves; users who do not become active themselves can only express their wishes in a non-binding way. In the case of free software, this is shown by the fact that it is often written *by* programmers *for* programmers. Free programs are excellent when it comes to any kind of tool for the programming and management of computers and networks, where they often leave their proprietary (non-free) alternatives far behind. There are also free variants of other kinds of software—office programs, graphics and video editing, games etc.—but these often lag behind their proprietary equivalents to a greater or lesser extent. Often the user-friendliness of free software also leaves something to be desired from the point of view of non-programmers.

To some extent these differences are due to the fact that proprietary software companies have huge development teams, and small teams of volunteers cannot compete with their work. But of course these huge teams do not come out of nowhere: they consist of programmers who would probably, for the most part, not be sufficiently motivated to work on the software for many years voluntarily and without pay; the salary paid to them (which is ultimately funded by the users) provides the necessary motivation. And in order to survive on the market, companies must take the needs and wishes of their (potential) users very seriously, and design their products on this basis. "The customer is always right" or "the customer is king" is a slogan, but it contains a substantial kernel of truth. The users are considerably less important for teams of unpaid volunteers. Of course it feels good if the software is used and appreciated by a large number of people, and some users will probably become active contributors sooner or later, thus ensuring that the project continues. But this again leads to a certain "self-similarity" between the active programmers and their "favorite users": anyone who cannot program or contribute in another way is less interesting.

Also relevant for material products and services (activities) are the distribution issues mentioned above. A software project can offer the current version of the developed software to *everyone* who wants to download it. In contrast, a bicycle factory cannot simply supply bicycles to everyone who wants one, because every additional bicycle costs time and resources.

## 4. Money and Explicitly Agreed Reciprocity Cannot Easily Be Rendered Superfluous

Overall, it can be said that there are many arguments against money, and especially against its "autonomization" in capitalism, and the way it dominates all other relationships as a compulsion or drive to maximize profit. At the same time, however, a look back in history shows that this autonomization of the profit principle is much more recent than the use of money, and that it is by no means an inevitable consequence of using money. Most notably, no systematic tendency towards profit maximization can be observed in places where there are markets but no market principle—where products are traded, but not land or labor.

Moreover, the analysis shows that explicitly agreed reciprocity along the lines of "I give so that you may give/do" is an option for human interaction which can hardly be replaced completely and without losses by other options, at least in "large-scale" contexts that exceed the Dunbar limit. Without the use of money or a similar unit of compensation, however, this kind of mutual agreement is seldom likely to be practicable. As long as there is explicitly agreed reciprocity, a form of money will probably be used to mediate it.

There is no doubt that thinking about forms of society in which explicitly agreed reciprocity (and therefore money) is no longer useful for anyone and therefore disappears can lead to exciting and inspiring thought experiments. As has been shown, however, the obstacles to this are very high. In the short and medium term, therefore, a more modest, but still highly ambitious and at the same time extremely important question is likely to be on the agenda: If there were a society where the forms of mediation did not take on an autonomous existence (e.g. in the form of profit maximization) and turn against humans, and in which no one, neither individual humans nor nature, fell by the wayside, how could such a society work? It would be entirely possible for money to still exist in such a society as a means to an end. But money as an end in itself, whose multiplication and maximization take precedence over everyone and everything, could not exist here.

## References

Dalton, George (1971), *Economic Anthropology and Development*, New York: Basic Books.

Exner, Andreas (2010), "Das Zinssystem ist Schuld—ein Mythos der Krise," in BEIGEWUM and Attac Österreich (eds.), *Mythen der Krise*, Hamburg: VSA.

Available online: http://www.social-innovation.org/?p=3060 (accessed May 18, 2017).
Gabler Wirtschaftslexikon (2017), "Stichwort: Geld." Available online: http://wirtschaftslexikon.gabler.de/Definition/geld.html (accessed April 27, 2017).
Habermann, Friederike (2009), *Halbinseln gegen den Strom*, Königstein (Taunus): Ulrike Helmer.
Habermann, Friederike (2014), *Die gute Nachricht: Kapitalismus ohne Wachstum gibt es nicht*. Available online: https://www.degrowth.info/de/2014/06/die-gute-nachricht-kapitalismus-ohne-wachstum-gibt-es-nicht/ (accessed November 8, 2017).
Heimrath, Johannes (2012), *Die Post-Kollaps-Gesellschaft*, Munich: Scorpio.
Herzig, Thomas (2011), *Geldlose Gesellschaft—Alternative zum Kapitalismus mit Verfallsdatum?* Available online: http://www.streifzuege.org/2011/geldlose-gesellschaft-alternative-zum-kapitalismus-mit-verfallsdatum/ (accessed May 26, 2017).
Kratzwald, Brigitte (2014), *Das Ganze des Lebens*, Sulzbach (Taunus): Ulrike Helmer.
Ostrom, Elinor (1990), *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge: Cambridge University Press.
Polanyi, Karl ([1944] 2001), *The Great Transformation: The Political and Economic Origins of Our Time*, foreword by Joseph E. Stiglitz, introduction by Fred Block, Boston: Beacon Press.
Shi Nai'an and Luo Guanzhong (1988), *Outlaws of the Marsh*, 4 vols, Beijing: Foreign Languages Press.
Siefkes, Christian (2008), *From Exchange to Contributions: Generalizing Peer Production into the Physical World*, Berlin: Edition C. Siefkes. Available online: http://peerconomy.org/text/peer-economy.pdf (accessed April 17, 2018).
Siefkes, Christian (2013), "Produzieren ohne Geld und Zwang," in Raul Zelik and Aaron Tauss (eds.), *Andere mögliche Welten?,* 169–179, Hamburg: VSA.
Wood, Ellen Meiksins (2002), *The Origin of Capitalism*, London: Verso.