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Money: instrument of quantification, agent of rationalization, cultural object

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Abstract

This paper details the substantive themes in the Sociology of Money and makes a critical assessment of how sociologists have studied the phenomenon. It shows how classical theorists saw money as a symbol and an agent of rationalization in modern societies. In particular, it examines the assumed relationship between monetization and quantification, exactness, alienation, discipline, and calculation in modern societies. The paper also discusses how money has been conceptualized more recently not only as a vehicle of rationalization but also as a cultural and cognitive object that is shaped by social categories, values, meanings, and everyday practices. The final section discusses how a relational approach could be incorporated into the sociological analysis of money.

Keywords

economic sociology, money, quantification, rationalization, relational sociology.

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Dinero: instrumento de cuantificación, agente de racionalización, objeto cultural

Resumen

Este artículo detalla los temas sustantivos en la sociología del dinero y ofrece una evaluación crítica del enfoque empleado por los sociólogos al estudiar el fenómeno del dinero. Muestra cómo para los teóricos clásicos el dinero era un símbolo y un agente de racionalización en las sociedades modernas. Más en concreto, examina la supuesta relación entre monetización y cuantificación, exactitud, alienación, disciplina y cálculo en las sociedades modernas. El artículo también analiza cómo el dinero se ha conceptualizado más recientemente, no solo como vehículo de racionalización, sino también como objeto cultural y cognitivo que está conformado por categorías sociales, valores, significados y prácticas cotidianas. La sección final reflexiona sobre cómo se podría incorporar un enfoque relacional en el análisis sociológico del dinero.

Palabras clave

sociología económica, dinero, cuantificación, racionalización, sociología relacional.

Money is usually defined in a narrow way that only underlines its economic functions: a store of value (an asset that users can save, retrieve, and exchange at a later time), a medium of exchange (an intermediary instrument used to facilitate trade), and a unit of account (a numerical unit of measurement of the market value of goods) (Vera, 2017). This paper argues that such an approach is far too limited in scope and that if seen through the eyes of sociology, money can be understood as a polymorphous, many-sided social institution.

Like other socio-economic institutions and practices (e.g., gift exchange, taxation), money is intertwined in the total social process (Mauss, 2000). Money is a complex phenomenon; it is simultaneously economic and moral, material and cognitive, political and psychological. Unfortunately, few works have tried to grasp its multifaceted dimensions–or at least to chart the disciplinary bodies of specialized literature focusing on the problem of money (Dodd, 2014).

This paper details the substantive themes in the Sociology of Money and offers a critical assessment of how sociologists have studied the phenomenon. First, it looks at how classical theorists saw money as an agent of rationalization, quantification, and calculation. Second, the paper discusses how money has been conceptualized not only as a vehicle of rationalization but also as a cultural object that is shaped by meanings and everyday practices. The final section discusses how a relational approach could be incorporated into the sociological analysis of money.

The Sociology of Money

> Money, like any other economic institution, is one element in the total social process, and as such, it is subject-matter not only for economic theory, but also for sociology and, finally, for the historical, ethnological, and statistical 'investigation of facts'.
>
> *Joseph Schumpeter* (1991, p. 519)

Randall Collins once said that "money is doubtless the single most important neglected topic in sociology" (1979, p. 120). The topic is also an elusive one. The question "What is money?" is much more complex than it seems. Even though money is part of everyday life, most definitions of money are too narrow in their scope.

The *Oxford English Dictionary* defines money as "Any generally accepted medium of exchange which enables a society to trade goods without the need for barter; any objects or tokens regarded as a store of value and used as a medium of exchange." This definition touches on some key elements of money: it is a medium of exchange, a store of value and it is a social convention; but it fails to mention money as a category of thinking, and the relationship between money and the political authorities that produce and/or back it.

We need some other complementary definition if we are to grasp the sociological dimension of money. For example, we can use Crump's one (1992, p. 92):

> Money, in its broadest definition, is the means of comparing –in quantitative terms– two unlike things on a scale which is common to both of them. The reason for making such a comparison depends upon its institutional context, in which there must be, in any case, a recognized common "standard of value" applicable to different categories of things. This abstract concept has no natural basis. The different categories brought under one and the same "umbrella" are a matter determined by cultural factors […]. The categories can be as disparate as "shoes and ships and sealing wax, and cabbages and kings" as long as they possess the elusive quality of "value", measurable according to a single yard-stick. In arithmetical terms, money is a sort of "common denominator", which "reifies" value in terms of recognized units.

This definition underlines many of the cultural and cognitive features that are important for a sociological study of money and that are usually underestimated by economists.

Sociological treatments usually emphasize one of two dimensions of money, either its abstract-rationalistic nature or its cultural dimension (Zelizer, 1992, 2001). In a long tradition spanning from the classical accounts of money made by Marx, Simmel and Weber, to contemporary social theorists, money is seen as an agent of rationalization, devoid of cultural content, impersonal, colorless, and immune to social influence. In this body of literature, money is related to alienation, calculability, objectification, and rationalization.

On the other hand, studies made by anthropologists, historians and sociologists stress the idea that money is a cultural object embedded in networks of meaning, an object that is classified, earmarked and personalized by individual groups in everyday life. Carruthers (2005) groups the main substantive topics in the Sociology of Money categories such as: money and politics; the making of money; money and metrology; money and meaning.

Money and Politics. Money and politics are strongly linked. To begin with, money is a symbol of political sovereignty. Modern States mint, regulate, and produce money. States can also standardize and monopolize money; in fact one the most significant monetary processes of the nineteenth and twentieth centuries was the forced substitution of local monies in favor of currency made and controlled by the national and colonial States. States' interest in controlling money is mainly driven by a desire to boost tax revenue and national integration. Standardized, stable money helps to boost the economy, which in turn raises more taxes; and a single national currency helps to integrate isolated economic communities and regions into a single interdependent national market (Carruthers, 2005).

The Making of Money. Public authorities are the most visible creators of money, however, there are other bodies that complete or share this function with them. Banks print notes that work as money and other forms of payment –such as electronic money, chips in a casino or welfare coupons– that circulate more or less openly alongside "official" money. Minting is critical in the making of money if users are to trust the medium of exchange. Producers of money have to meet public expectations. If a community considers that the only "real" money is gold then coins must be minted from this precious metal if they are to be accepted. The divisibility of money is also very important for users and must be considered by those minting it and designing it, as the conflicts regarding the traditional English division of the pound into 20 shillings and 240 pence and later into the modern decimal currency have shown.

The production of money is also important because it reveals the crucial difference between money as a physical object and money as an intellectual tool. As Witold Kula noted,

> A distinction must be made between physical contacts with money, when money is passed from hand to hand in the form of physical objects, i.e. coins, and contacts with money as an intellectual category. Money in the sense of an intellectual category makes it possible to evaluate everything, to add different qualities to one another, to find a kind of common denominator for all things, and to express everything in the form of price (1980, p. 35).

These two forms of money are relevant for sociological analysis. Both the physical and intellectual aspects of money should be studied, since both are expressions of particular social relations. As a physical object, money has to be considered in relation to the material and cultural conditions of a given society. The materials used to make money can be scarce and actually affect money's function; this happened many times in Europe up to the nineteenth century with the lack of metals to mint enough coins for small-scale transactions (what was called the "big problem of small change"). Money is also an object that may lose mass, and can be deformed, adulterated, counterfeited, marked, and destroyed. Merchants used to inspect money carefully to verify its purity and it was common for them to carry pocket-size balances to confirm the coins' weight (one of the commonest images of greed is that of a money lender weighing coins on a desk, such as in the paintings of Quentin Massys).

Yet money as a physical object has also been a useful way to convey messages and spread images. Coins and bills have been used as small canvases to portray gods, politicians, and national symbols. The faces of Julius Caesar and George Washington are symbols of Roman and American currencies, respectively. Some coins are even known by the name of kings, such as the famous *Louis d'or* in France. In fact, Marc Bloch (1967, p. 234) showed metal coins possessed a few properties that made them a more suitable form of money than peppercorns. Here, one should note that peppercorns were a common token of exchange in the Middle Ages, given that they were relatively scarce, had high value, low weight and volume, and were durable and fungible. This meant that peppercorns met the minimum formal requirements of money. Yet metal coins had the advantage that they could bear "the stamp of the public authorities". Peppercorns cannot be marked and individualized by State authorities and are thus a more abstract form of money than metal coins.

It is no accident that the rise of Nation States coincided with the appearance of money as a truly massive phenomenon (with bills printed by States in the nineteenth century), and that this new State-made money became a medium for official propaganda exalting nationalism (Helleiner, 2003). Zelizer (1994) has analyzed the political debates in the United States over the inscription "In God We Trust" borne on the American currency. Not surprisingly, a new Iraqi currency was created shortly after the invasion of Iraq by the United States. The new currency replaced the old dinar bills bearing the face of Saddam Hussein with new dinars bearing the pictures of an ancient Babylonian ruler and a tenth-century mathematician. Yet using money to convey political messages is a two-edged sword. There have been cases of people writing anti-State messages on the back of bills. All these phenomena, almost exclusively explored by numismatists, are waiting for an imaginative sociologist to explore their social significance.

Money and Metrology. This is probably one of the most overlooked problems in the sociological study of money, and it deserves careful attention. Measurement, according to North, underlines all exchange and "throughout history measurement has occupied the attention of human beings in their effort to improve the exchange process […]. The very terms price and quantity imply the ability to measure those two dimensions" (1987, p. 593). Money itself is a unit of measure and for centuries its *value* was determined by the *quantity* of precious metals it contained.

As a unit of account, money transforms qualitative differences into quantitative ones. This quantitative measurement suggests objective monetary valuation. Here again, this process needs a receptive audience able to understand and accept this kind of abstraction and that possesses the mathematical skills to do so (Carruthers, 2005). Here the Sociology of Money ties in with the problem of the social distribution of knowledge, specifically with the spread of numerical literacy.

The historical relationship between money and measures sheds light on the evolution of the roles played by money. In modern economies, as today's consumers well know, the value relationship is stated in terms of a variable amount of money against a fixed quantity of a commodity. For example, when the cost of gasoline changes, what varies is the price of a fixed quantity of gasoline; so a *liter* of gasoline that today costs $2 may cost $2.40 six months later. We are familiar with this notion of a variable sum of money for a fixed quantity of a commodity.

However, in pre-capitalist economies the value relationship was stated the other way round. That is to say, the quantity of the commodity was variable while the quantity of money was fixed. In this sense, prices were fixed and could not be altered (as part of a medieval conception of the "just price"); so, when the cost of a commodity rose or fell, what varied was the quantity of the commodity. The most common example was bread. Barring few exceptions, bread prices stayed the same in Europe up until the eighteenth century. Swings in the real price of bread took the form of changing the weight of loaves. When wheat and flour prices rose, loaf sizes shrank. Sometimes a given sum of money (say 5 pence) would buy one an 18-ounce loaf, at other times the same 5 pence only bought a 13-ounce loaf (and the same happened with other products such as butter and cheese). In other words, the prices of some basic commodities *were expressed in the quantity of the commodity, not in the quantity of money.* As Kula (1986) noted, price as a mechanism that reduces all factors to a common denominator in a given commercial operation is a relatively recent phenomenon. Money actually became the *universal commodity equivalent* only after the advent of capitalism.

Virtual money. Lately, sociologists have begun paying attention to new kinds of money spawned by information technologies. Hitherto, money usually took physical form (salt, shells, beans, gold, and so forth) but it is now becoming "disembodied" and "virtual", and it moves around the globe in large amounts at great speed (Carruthers and Ariovich, 2010).[1] New forms of payment (such as electronic payment systems) and the worldwide use of communication technologies (such as mobile phones) are shaping money in both big financial institutions and in the everyday lives of people in every corner of the world (Vera, 2017).

Despite the novelty of these empirical phenomena, the theoretical foundations underlying these recent sociological studies is not so different from the divide between sociologists who see money as a tool of rationalization (now enhanced by new technologies), and those who see money as a culturally-shaped object that is creatively appropriated by common folk in their daily lives (Maurer, 2015). The former predict that the arrival and dissemination of crypto currencies will amplify the rationalizing power of money by its "dematerialization." On the other hand, since the early developments of virtual currencies, culturally-inclined sociologists have cast doubt on the idea that electronic money would create an entirely impersonal, uniform medium of exchange. Instead, they claim that users and producers of E-money frequently reshape the new methods of payment

1. It is important to remember that "virtual" money is not actually "dematerialized"; plastic, fiber optics, and computer servers and memories are as material as gold, salt, and coacoa (Borisonik, 2018, p. 2).

to convey meanings and mark different kinds of social relations (Zelizer, 2011, p. 146-7)

One of the Sociology of Money's premises is that money's impact not only goes beyond the economy but also that money itself is affected by non-economic factors. Thus money cannot simply be confined to the economic sphere because, like all economic institutions, it is socially embedded.

Money as Agent of Rationalization

For decades, sociological discussions on money centered on the problems of alienation and rationalization. These topics were prominent for the older generation of economic sociologists. Marx (1972) emphatically linked money with the idea of the alienation and moral perversion of capitalist society. Later Simmel and Weber expanded this topic.

For Weber, the concept of rationalization meant that social action is disciplined, systematic, rigorous, and methodical; it also implies areas of social life that are directed by logic, regularity, calculability, and predictability. In his words, "a system of economic activity will be called 'formally' rational according to the degree to which the provision for needs –which is essential to every rational economy– is capable of being expressed in *numerical, calculable terms*, and is so expressed" (1978, p. 85). Consequently, a crucial element of rationalization *calculability*: money, technology, free labor, capital accounting, and double-entry book-keeping are all social practices and institutions that helped the development of rational capitalism (Vera, 2008).

Weber was concerned with "the sociological consequences of money". In his words, "Everywhere it has been money which was the propagator of calculation" (1978, p. 107). Thus, calculation is key to Weber's idea of economic rationalization, and calculation needs to be based on quantitative and impersonal systems; numerical terms, he said, are "unambiguously and without a wholly subjective valuation" for economic activities (1978, p. 101).

Weber's contemporaries in Germany were also intrigued by the problem of rationalization in the capitalist world. Sombart wrote a history of what he called the "art of calculation". For him, calculation meant "the tendency, the habit, perhaps more –the capacity– to think of the universe in terms of figures and to transform these figures into well-knit systems of income and expenditure" (1915, p. 125). This calculating habit was closely linked to capitalist expansion and had its roots in the development of commercial arithmetic and accounting in Renaissance Italy. It was there and then, with the incorporation of Arabic numerals, that the first double-entry book-keeping manuals were published and the first schools were opened to teach merchants the techniques of making financial calculations.

Contemporary historians have developed Sombart's thesis, showing how since the end of the Middle Ages, merchants and bankers involved in large-scale trading needed more than just book-keeping records. They also needed to systematize their knowledge of writing, languages, arithmetic, geography, the use of the abacus, and weights and measures so that they could manage the rising flood of information bearing on their businesses (such as information on the exchange value of currencies, harvests, convoy schedules, etc.). To learn this, non-religious schools were founded; treatises on the most advanced mathematics of the time (which came from India and Islam) were published to explain the use of positional notation and zero; and commerce handbooks –with descriptions of commodities, currencies, weights and measures, itineraries, custom charges, the calendar and so forth. In short, a set of new cultural instruments spread technical and practical knowledge within this social group, which later on became one of the main agents of rationalization in Europe.[2]

This emphasis on linking rationalization with economic processes (mainly capitalism) was also underlined by Simmel. In *The Philosophy of Money*, he explored the connection between calculations and money in modern urban life, writing vivid accounts of the impact of modernity on people's lives (2004, 1971). Among the many memorable metaphors used by Simmel (1971) to describe these phenomena was that of imagining all the clocks in Berlin suddenly going wrong in different ways, disrupting the city's economic and transport systems. His point was that social relations in a money economy require precise coordination of human activities and thus a stable, standardized time measurement and scheduling framework.

According to Simmel –and this was one of his main contributions to the sociological analysis of money– money not only altered economic exchange but also transformed all spheres of social life (law, democracy, time, etc.). The modern mind has become more and more calculative. In his words, "the calculative exactness of practical life which has resulted from a money economy corresponds to the ideal of natural science, namely that of transforming the world into an arithmetic problem and of reducing every one of its parts to a mathematical formula. It has been the money economy which has thus filled the daily lives of so many people with weighing, calculating, enumerating, and the reduction of qualitative values to quantitative terms" (1971, p. 327-8). The complexity of modern life, linked to money and the intellectual character of urban relationships, has transformed punctuality, calculability, and exactness in ordinary folk's daily activities.

Simmel contrasted the impulsiveness and emotional nature of previous eras with modernity, where money –indifferent and

2. See Le Goff (2004, pp. 34-43, 119-128); Swetz (1987).

colorless– has become the common denominator of all values; it abstracts the individuality, particular value, and specificity from all things; it is indifferent to individual qualities; it extracts "from the totality of the stream of life one abstract, general factor which develops according to its own independent norms and which intervenes in the totality of existential interests and imposes itself upon them" (2004, p. 442). The rationalist character of modern times is manifested in measuring and calculating with exactitude all actions, based on the abstract equalization of everything.

These themes continued to intrigue German sociologists for some time after Weber and his contemporaries. The link between money, rationalization and modernization is present, for example, in the work of Norbert Elias, whose work *The Civilizing Process* suggests some ideas on the history of the monetary economy in the Middle Ages. Elias was interested in the relationship between "barter economy" and "monetary economy" –not for its own sake but rather how it tied in with two other phenomena: State formation and the expansion of chains of human interdependence (2000). Elias noted that most feudal European communities were "autarkic", dedicated almost completely to self-maintenance, and with scant economic exchange with other communities. Unlike in trading cities, rural regions were self-sufficient and had almost no way of taking part in larger economic exchanges. In these "barter economies" there were no middlemen in the transfer of goods between producers and consumers. However, this all began to change at the end of the Middle Ages,

> Slowly do the various districts become interconnected, are communications developed, are the division of labor and the integration of larger areas and population increased; and increased correspondingly is the need for a means of exchange and units of calculation having the same value over large areas: money (2000, p. 206).

The pacification of large territories, social differentiation, and the monopoly of force and taxation helped to connect people from more distant places. Then, the importance of the money economy began to grow. Slowly but steadily, more and more people became middlemen between the producers and the final consumers. This was a prolongation of the chains of interdependence and money was a key instrument in this process: "At any rate money is nothing other than an instrument which is needed and with which society provides itself when these chains grow longer, when work and distribution are differentiated, and which under certain circumstances tends to reinforce this differentiation" (2000, p. 207). Thus, for Elias the labels "barter economy" and "money economy" mean specific ways in which people are bound together –something that yields a fruitful sociological framework with which to analyze economic processes.

According to Elias, the civilizing process is closely related to calculability, foresight, and detachment. The ability to use the systems of social orientation such as time, money and measures is key for a more civilized behavior. For Elias the process of lengthening and differentiating chains of interdependence is expressed in "the submission of both people's feeling and acting a minute differentiated regulatory time-schedule and to an equally inescapable accountability in terms of money" (1998, p. 98). Thus greater interconnection among individuals requires an increasing regularity of conduct and sentiment.

Echoing Simmel's ideas, Elias considered that punctuality, calculability, and exactness are required of individuals in modern life. They need to use instruments of social integration –such as clocks, calendars, coins, checks, scales and rulers– in order to be able to interact socially with other individuals. Furthermore, these instruments can only be used by individuals with a high level of self-constraint and self-awareness, i.e. by comparatively highly civilized individuals.

Contemporary sociologists have revisited some of the topics studied by Weber, Sombart and Simmel to shed new light on them. A particularly interesting case is the series of sociological studies on the history of accounting and its consequences for the economy. For example, Carruthers and Espeland (1991) traced the development of double-entry book-keeping. These authors showed that such record-keeping was invaluable in managing the complexity of large modern businesses. However, they also revealed how double-entry book-keeping needed complex rhetoric devices to be legitimized and a receptive audience able to understand and use the tool. The broader social and institutional context thus plays a big part in the success or failure of economic innovations.

Money as Cultural Object

> People are smarter than money
> *Viviana Zelizer* (1998)

Money is an agent of rationalization that transforms human relations yet it is also a cultural object imbued with meanings. The relationship between money and culture can be seen at many levels, even in apparently trivial things. Monetary practices (such as tipping) that seem straightforward at first glance often turn out to be complex and full of social, moral, legal, and symbolic nuances once we put them under the looking-glass (Vera, 2013).

DiMaggio and Zelizer are among the sociologists who have tried to organize a systematic research program on culture and economy. DiMaggio (1994) stresses that "economy has an irreducible cultural component" and that it needs to be considered if we are to fully understand economic phenomena. He suggests that there are two conceptions of culture relevant to Economic Sociology. One of these is where culture provides the categories and understandings that let actors engage in economic action. The other is where culture is actually separated from the economy and only affects it externally, in the form of norms and conventions that constrain the individual's pursuit of self-interest.

Zelizer relates culture and economy saying that sociology has to challenge the focus of mainstream economics (and of some economic sociologists) on "individual choices within constraints", where culture is only considered –if at all– as an element shaping preferences but not as a cause of economic behavior. It is necessary, Zelizer (2005) argues, to directly integrate culture (that she defines as "shared understandings and their representation in objects and practices") into analyses of economic phenomena. By doing so, topics such as household labor, ethnic niches and sexual economy (which only appear on the fringes of economic studies) can be incorporated into the research agenda of Economic Sociology. In particular, she suggests that gender and consumption are two areas of study that can be fruitfully explored if economy and culture are properly linked.

In the rest of this section I will look at some important themes in the relationship between economy and culture: moral economy; knowledge and economy; and money and meanings.

Moral Economy. What makes an economic system possible? There are several social structures that ensure the existence and reproduction of an economic system: organization of labor, capital, property rights, technology, means of transportation, etc. We can also include in this list the knowledge and skills that ensure individuals in the system will act in certain ways, the cultural capital that is embodied in the actors: the know-how of trades and occupations that are acquired by education, imitation, and practice; the knowledge of the social conventions, such as awareness of taking part in economic interactions (e.g. the skill to close a business deal, or the ability to haggle); the capacity to gather and assimilate information to participate in the market, and so forth.

Recently, the moral dimension of economic life has attracted considerable attention (e.g., Wilkis, 2015) and concepts such as "moral economy" have resurfaced. The moral economy makes economic practices *legitimate*. The concept refers to forms of exchange tied to norms of fairness, and it can be defined as "collectively validated beliefs about just distribution and exchanges rooted in both the community and the past. […] The center piece of moral economy is that all forms of social exchange have moral attendants, which convey a sense of legitimacy or illegitimacy" (Mau, 2011, p. 466). The concept became popular with E.P. Thompson's (1993) brilliant study on peasant uprisings against what were considered immoral economic practices covering speculation with staples –mainly bread– in times of scarcity and famine. Since then it has been explored in various directions.

More recently, Granovetter started applying the concept of "moral economy" to the study of business. For him economic transactions –including those in the modern economy– are bounded by normative precepts; and regarding business groups, "moral economy can be taken as a variable, asking to what extent a group's operations presuppose a moral community in which trustworthy behavior is accepted, normative standards understood, and opportunism foregone" (2001, p. 345). Thus, moral communities can be crucial for shedding light on the divergence between businesses strategies in different societies.

The sense of what makes an economic system legitimate and what economic practices are just or unjust permeates economic practices and provides a strong linkage between culture and economy. Particular notions such as the "just price" (that conveys a sense of fairness in the value of a product) and the "just measure" (the ethic prohibition of using double standards or false weights and measures in commerce) have been fruitfully studied by historians (Nettel, 1997; Kula, 1986). Today's growing demands for "fair trade" that fosters economic, social and environmental standards in international commerce –especially in products such as coffee, tea and cotton– open the door to sociological inquiry.

Some sociologists and historians have studied how the development of capitalism has been advanced, hindered, or otherwise altered by moral beliefs. The case of usury, for example, has received a lot of attention. Weber (1979, 1978) studied the problem of 'interest' in the pre-capitalist era. He described the novelty of the idea and how the religiously-inspired ban on usury inhibited the charging interest. In the Middle Ages this problem was partially solved with the practice of money-lending by Jews. These were allowed to lend money to Christians, since the ban on lending at interest only applied among the latter. Weber also noted that Protestantism scrapped the ban on usury in the seventeenth century. This subject was picked up by Benjamin Nelson (1969), who drew on Weber's ideas to trace the way the ban on usury –as set out in the Bible– changed between the fourth and nineteenth centuries. In the same vein, Le Goff (1988) wrote a highly suggestive study on the practices and beliefs of usurers, and how the Catholic Church in the Middle Ages considered usury to be a mortal sin. Le Goff suggests that the religious ban on usury hindered the emergence of capitalism in feudal Europe.

In her seminal article "Human Values and the Market", Zelizer (1978) opened a whole new set of sociological issues regarding the tricky relationship between economy and culture. Zelizer's paper discusses the interactions between the market and human values, and more specifically, *the problem of establishing monetary equivalences for things considered sacred* –and therefore beyond monetary definition, such as life and death. Her central hypothesis is that cultural resistance to including certain things into a market type of exchange introduces structural sources of strain and ambivalence in their marketing.

Zelizer studied the introduction of life insurance in the United States in the nineteenth century, an institution that was part of a general movement to rationalize and formalize the management of death. However, "putting death on the market offended a system of values that upheld the sanctity of human life and its incommensurability [and this] defied a powerful normative pattern: the division between the non-marketable and the marketable, or between the sacred and the profane" (1978, p. 148). With life insurance the value of human life became measurable by money; it converted human life and death into commodities. The acceptance and adoption of the life insurance industry is very much dependent on non-economic factors (such as religious outlook, family systems, and attitudes toward death).

Zelizer's idea of exploring the problem of establishing monetary equivalences for things which are defined as being beyond material concerns can be useful for delving into other economic phenomena. For example, economic calculations increasingly try to assess industries' impact on ecological resources. The idea is to be able to set a price on say the pollution caused by a factory. Yet the very idea of making such calculations has sparked bitter controversy between economists and environmentalists. Can one put a price on a forest or on an animal species, for example? Any possible answer to this question cannot be limited to purely economic terms since it involves an entire system of values. Other practices, such as the selling of blood or human organs, can also be framed in a similar way.

Knowledge and Economy. It is well known that money is a social convention. In itself, the form money takes –coins, shells, coffee beans, gold, a piece of cloth, etc.– has no intrinsic value. This conventional nature of money has been recognized even by mainstream economists, such as Milton Friedman:

> People accept money as such because they know that others will. This common knowledge makes the pieces of paper valuable because everyone thinks they are, and everyone thinks they are because in his or her experience money has always been accepted in exchange for valuable goods, assets, or services. At bottom money is, then, a social convention, but a convention of uncommon strength that people will abide by even under extreme provocation (Friedman and Meltzer, 2001).

This characteristic of money poses several questions for the Sociology of Culture. How is this convention established? What conditions allow the convention to persist? Under what circumstances is the convention lost? What happens when the belief that makes money a piece of paper is suspended?

When the convention that allows paper money to function as such breaks down due to generalized uncertainty –e.g. in wars, or in severe economic crisis– people replace it with substitute forms of currency such as cigarettes or some other good (Cohen and Schachter, 1976). Obviously, Sociology seems to be better-equipped to answer these questions than economics does. However, this is a field to which sociologists have paid little attention, despite its great potential. One of the few exceptions is a study by Carruthers and Babb on the introduction of greenbacks in the United States after the Civil War. After the war, a big public debate started on two monetary alternatives (gold-based money and paper money) and it was actually a debate on the nature of money itself. Their work underlines money's contingency and its foundation in social convention: "Money's own value is socially constructed since people attribute worth to a medium whose physical characteristics are essentially irrelevant to its monetary role" (2006, p. 1556).

Probably the most obvious fact in the link between knowledge and economy is that knowledge is an economic element in itself, that is, knowledge can constitute *capital*. Marx noted in *Grundrisse* that "social knowledge" is a direct force of production, that "nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules etc. These are products of human industry; natural material transformed into organs of the human will over nature, or of human participation in nature. They are *organs of the human brain, created by the human hand;* the power of knowledge, objectified" (1993, p. 706). Other sociologists picked up this idea and studied certain types of knowledge that are part of the productive capital as can be land or labor (Goodfellow, 1950). In his theory of the different forms of capital, Bourdieu (2001) also underlined this concept of knowledge as a particular kind of capital.

Zukin and DiMaggio claim that there is a cognitive embeddedness in economic phenomena. This kind of embeddedness refers to "the ways in which the structured regularities of mental processes limit the exercise of economic reasoning" (1990, p. 15). Here, the definition of cognitive embeddedness needs to be broadened to embody the idea that it is not only mental processes that limit economic reasoning but also cognitive processes too (for these are socially shaped and make economic reasoning possible). As Goody shows, the historical development of different intellectual "technologies" made the very existence of large and complex economies possible. The invention of writing, for example, extended the possibilities of management, commerce and production "in transforming the methods of capital accumulation and in changing the nature of individual transactions of an economic kind" (1986, p. 46).

In this regard, Weber saw that economic rationality requires specific intellectual means and these are socially constructed in particular societies and can be spread from one society to another; but they are not a given of the human mind, they are historical creations. The aforementioned case of Arabic numerals and positional notation (invented in India) which were introduced into Europe in the fifteenth century through Italian merchants' contact with the Islamic culture, is revealing, because without those systems of thinking it is hard to imagine the emergence of capitalism. Economic rationality is not universal. Rather, it is the product of the interplay of particular economic and cognitive advances. Discussions on knowledge and economy have to consider this large dimension of reasoning as a historically-shaped human capability. Economic systems depend on a certain degree of knowledge accumulation and given collective abilities within the members of a society (e.g. literacy and numeracy).

Another issue subsumed in the general relationship between knowledge and economy is *information*. As Marx noted in *Das Kapital*, bourgeois society presupposes that individuals –as buyers– have an encyclopedic knowledge of commodities (1990, p. 126). Yet the fact that information is asymmetrically distributed generates interesting social dynamics. Economists have studied the question of "information asymmetry" (differences in the amount of information available to economic agents) and its counterpart –the idea of "common knowledge" (which every member of a group shares and knows is possessed by every other agent). In this regard, it would be useful for economic analysis to import some concepts and models from the Social Sciences, which have a more complex, contextualized understanding of how knowledge and information circulate in society.

As an example it can be mentioned the celebrated article on the bazaar economy by Geertz (1978), where he studied the role played by information, communication, and knowledge in exchange processes. The bazaar is a market where information about the price and quality of goods is poor, scarce, maldistributed, inefficiently communicated, and thus highly valued. Geertz analyzed how consumers obtain, protect and use that information. Every aspect of the bazaar economy reflects the fact that the primary problem its participants face is not balancing options but finding out what those options are. In this context, practices such as clientelization and haggling (which foreigners may see as accidental customs) are actually information search strategies in the bazaar.

Money and Meanings. The most important contribution in this field is Zelizer's *The Social Meaning of Money* (1994). Her central idea is that money is meaningful for the people who use it; money is continually shaped and redefined by different networks of social relations. Zelizer stresses this cultural aspect of money to respond to what was for decades the unquestioned notion of money as a rational, impersonal instrument (as portrayed by Marx and Simmel). Zelizer claims that people are not passive when they use money. She argues that instead of seeing money as something totally impersonal and anonymous, individuals make money their own by transforming, marking and classifying it.

Money does not depersonalize interactions; social relations transform money. Thus rather than seeing money only as a rational agent that destroys social ties, people incorporate money into social life. In other words, monetary practices are embedded in complex webs of meaningful social relations. Contrary to the view of money as a great equalizer, people actively distinguish transfers of money and the kind of money used according to the social relations involved: parent-child, priest-congregant, welfare official-aid recipient, are examples of relations that involve monetary payments but each one has a different meaning (Zelizer, 2001).

For Zelizer, money is, in a way, like language or dress. It is a means by which people give meaning to their life and differentiate their various social relations. We use different forms of payment to distinguish among social relations. Wives are not tipped but waiters and taxi drivers are. People do not make gifts to policemen lest they be called bribes yet a grandmother can give money to her grandchildren (providing the right sums are involved). To make proper or improper monetary transfers of money depends on socially-established definitions and on the social relations involved.

Final Comments: Money and "Pan-relationalism"

Pragmatist Richard Rorty has referred to his anti-essentialist stance as "pan-relationalism." This philosophical strand argues that social institutions –like electrons, human beings, stars and anything else– are large and expandable webs of relations, and that everything that can serve as the term of a relation can be dissolved into another set of relations. There are "relations all the way down, all the way up, and all the way out in every direction: you never reach something which is not just one more nexus of relations" (Rorty, 1999, p. 53).

This relationist outlook could be helpful for the Sociology of Money. There has always been an essentialist temptation to see money not a as web of social relations but as an object –a metal, an economic "law", a political authority– with an essence (a series of necessary and immutable qualities). This alleged essence could be the properties of a material substance (such as gold) or a technology (such as software). To see money as a relation that dissolves into another set of relations requires the adoption of a particular point of view.[3] As Bill Maurer states:

> [Money] comes into being by convention, agreement, and a set of relationships and obligations among people inside complex organizations like States. Because we are not accustomed to seeing these conventions or relationships the way we see objects like paper bills or images on the screen, we overlook them. It is not that money is "just" a relationship. It is that all that we are, as social beings, is "just relationships." These relationships include our moneys. These relationships also include all the technological, legal, and regulatory organizational and communicative apparatuses that make money, and that make it work, in its various forms (2015, p. 70).

Inspired by the work of Charles Tilly and the "relational turn" in Social Sciences, some sociologists are developing new theoretical concepts within a relational framework that goes beyond Mark Granovetter's

3. For the relational sociology of credit see (Lazarus and Lacan, 2018).

notion of embeddedness. There is, for example, the concept of "relation work" coined by Viviana Zelizer. This refers to the process of differentiating meaningful social relations in economic actions. For every category of social relations, people create a boundary and mark it by means of names and practices; establish particular understandings that function within that boundary; designate some economic transactions as appropriate for that relation and label others as inappropriate; and adopt certain media for facilitating economic transactions within that relation. In a nutshell, relational work points to people's creative efforts to establish, maintain, negotiate, and transform interpersonal relations (Zelizer, 2012, p. 146-9; Bandelj, 2012).

In a twist that is not free from irony, despite the risks of substantialism sociologists should consider what kinds of new social relations are prompted by essentialist beliefs in money. The reification of money has taken many forms (from the reification of gold to the reification of software and cryptography). Yet all of them stem from the idea that there are inner qualities in money's material incarnation or the technical form in which it operates. Yet this very substantialization of money –the shared assumption that a certain kind of money possesses an intrinsic and fixed quality– drives people to explore new ways of conceiving, creating, and using money.

What Dodd calls monetary "techno-utopias," such as Bitcoin and Freicoin, are examples of that. The belief that a sufficiently sophisticated form of electronic money can serve as a new, better form of gold, mixed with a crypto-anarchist ideology, has inspired several projects to develop different versions of E-money based on cryptography (i.e., techniques of secret writing). In theory, E-money makes possible the idea of a community defined by cooperation and whose "medium of exchange and a method of enforcing contracts that does not rely on governments" or a central bank (Dodd, 2014, p. 363). These crypto-currencies thus sought to get rid of central authority. Bitcoin has been the most successful of these attempts so far. Bitcoin quickly became the most widely–used alternative money system and it follows the principles of being "disruptive" (Borisonik, 2018, p. 7) and "without being governed by a central issuing authority" (Dodd, 2014, p. 365).

Last but not least, researchers should note how new infrastructures of value open the door to innovative social relations and facilitate the forging of larger chains of interdependence among people who are not immediately interrelated. For instance, Information and Communication Technologies (ICT) allow people to expand their economic relations to places where traditional economic infrastructures have little or no presence. Anthropologists have shown how in small communities, where there are no banks, people use airtime for mobile phones (bought through cards that are sold in convenience stores) as money. This 'airtime money' lets people make quick transfers to others in remote places (Maurer, 2015). Such creative appropriations of technology to store and transfer value prove, once again, that "people are smarter than money."

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