



**The Origin of Money:
Enhancing the Chartalist Perspective**

by

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Introduction

The goal of this paper is to enhance the Chartalist approach to the origin of money, by embedding it in the concrete historical and socio-economic circumstances of ancient societies, such as Ancient Mesopotamia ca. 4000 B.C. to 2500 B.C. It will be argued, that given the absence of bureaucratic tools such as writing, census systems and formal means of personal identification to detect those with payment obligations¹, money emerged as a practical solution to the problem of achieving the maximum possible fulfillment of the citizens' payment obligations to the State (or, what amounts to the same thing, reducing their avoidance), where these obligations (and, i.e. debt relationship of the citizens to the State) were already in place before monetization was introduced.

Chartalism views the origin of money in relation to several practical solutions. One of them is the work effort inducement problem for the economy as a whole, where direct, once-and-for-all monetization of the economy is a means of coercing (though indirectly and without recourse to overt force) the local population into supplying labor services and goods to the public authority. In this account, the introduction of money places the local population into a previously non-existent debt relationship to the public authority. It will be argued in this paper that local populations of ancient societies, such as the Mesopotamian, were already forced to supply labor services as well as goods to the higher authorities without the mechanism of money (i.e. the debt relationship existed prior to the introduction of money), so that the Chartalist explanation of the emergence of money does not adequately grasp the ends of monetization, when applied to ancient Mesopotamian societies. Thus, it will be argued that the Chartalist account can be strengthened by recognizing that money was an instrument of control over the fulfillment of payment obligations that were already in effect, rather than a mechanism of forcing the population into these obligations in the first place, which is what Chartalists often argue. Whereas one of the end results coincides with that of Chartalism, i.e. all the local population is forced to contribute labor services or goods to the public authority, the means-ends relationship, and hence the evolution of money,

¹ Those with payment obligations will also be referred to as "taxation units", whereby we mean citizens, households, production units, etc.

differ. In establishing our mechanism of monetization, we utilize the evidence of Mesopotamian clay tokens and their assemblages into clay envelopes – bullae.

Our focus is the historical period from ca. 4000 B.C. until 2500 B.C., which captures the Mesopotamian population movement from isolated settlements to towns (until ca. 3200 B.C.), the period of early high civilization (ca. 3200 B.C. – 2800 B.C.), and the era of Mesopotamian rival city-states (since ca. 2800 B.C.). The end of the period chosen also coincides with the disappearance of circulation of clay artifacts in question, and the appearance of silver as a unit of account.

Part I. The Chartalist Theory of Money and Its Origin: A Brief Overview and Critical Appraisal.

The Chartalist (State Money) framework is rooted in the seminal contribution of G. F. Knapp's (1924) book, *The State Theory of Money*. A key distinction of the Chartalist approach to the nature and origin of money is an alternative to the Mengerian/Metallist or “barter theory of money” view, which holds that money emerged as a convenient media of exchange, beginning as a commodity with some optimal, for the purposes of exchange, characteristics². Karl Polanyi (1962 [1944]) and the substantive school of anthropology have demonstrated that this approach relies on a false characterization of “human nature”, which is not supported by anthropological and historical evidence. In fact, anthropological evidence speaks sharply against the Mengerian view³.

The Chartalist approach, on the other hand, denies the origin of money in the context of private barter exchange. The key aspect of the Chartalist account of the origin of money is the debt relationship of the citizens to a sovereign power. Money is introduced by the State, not by private trading agents. Since money does not emerge as a commodity with favorable characteristics, conducive to it becoming a universal media of exchange, it has to obtain its value through a different mechanism. Money, as a “creature of the State” is the “thing” which is used to settle tax obligations to the State, i.e. money is the

² See C. Menger (1892) for a detailed account, as well as the list of these characteristics.

³ See for e.g. K. Polanyi (1962 (1944), Ch. 4 & 5; 1957a; 1957b), G. Dalton (1971, Ch. 6 & 7).

means through which obligations to the State can be extinguished. The State imposes tax obligations upon its citizens, specifies the unit of account in which these obligations are denominated, and should be redeemed. The citizens have to obtain the units in which their debts to the State can be extinguished. This is the Chartalist mechanism through which money obtains its value. Therefore, in the Chartalist framework, money is linked crucially to the obligations of the citizens to the State. Money is a “pay-token”, or a “ticket” used as a means of payment of obligations to the State (Knapp, 1924, p. 32)

[Money] frees us from our debts, [...]. First and foremost it frees us from our debts towards the State, for the State, when emitting it, acknowledges that, in receiving it, it will accept this means of payment. The greater the role played by the taxes, the more important is this fact to the tax-payer (Knapp, 1924, p. 52).

The functions of money as a means of payment and media of exchange in private transactions are derived from its primary role of the unit of account in which obligations to the State can be paid⁴.

.... the state first decides what it will use or accept as money in its own transactions, and that this must then be acceptable as means of settlement of private debts (Wray, 1998, p. 26).

The Chartalist framework emphasizes that, as a “creature of the State”, money was an invention of the public authority for the purpose of inducing the local population (i.e. those under the “jurisdiction” of the authority) to supply goods and services to the sovereign power, or, what amounts to the same thing, as a means of placing the local population into a debt relationship to the public authority. This is achieved through the introduction of tax-obligations denominated in a State-money unit of account. The need to obtain the State-money in which tax obligations can be extinguished induces the local population to supply goods and services to the public authority in exchange for State-money.

In the Chartalist approach, the public demands the government’s money because that is the form in which taxes are paid. [...] modern state [...] – uses taxes as a means of inducing the population to supply goods and services to the state, supplying in return the money that will be used to retire tax liability (Wray, 1998, p. 37).

⁴ This summary of Chartalism is based upon Wray (1998, pp. 23-9; 37), Goodhart (2003, pp. 5-9), Knapp (1924, pp. 25-53).

Therefore, Chartalists emphasize that the introduction of money concurs with the imposition of citizens' debts to the State, whereby the State *induces* the population to supply labor services or goods through a mechanism that is distinct from overt coercion (i.e. overt force, violence). Thus, money is an alternative to overt coercion, though it serves a coercive function, as it enables the State to extract real resources and labor services from the population. In the absence of money and taxation, the State would not be able to obtain anything from its populace, except through explicit force⁵.

Alternatively, Chartalists argue that money may be introduced as a means of facilitating the fiscal base of the State, after the obligatory payments in kind and a debt relationship of the citizens to the State are already in place. It is argued that it may have been burdensome for the State to manage the collection of various goods from the population. While the government “could in theory require payment in the form of all the goods and services it requires, this would be quite cumbersome” (Wray, 1998, p. 46). It was desirable for the State to introduce a mechanism through which payments could be standardized. Money, in this account, emerges “as [a] means of standardizing tribute or taxes levied by the rulers (ibid., pp. 50-52). Therefore, rather than stipulating what specific goods and in what quantity had to be contributed, the State would demand that they had to be paid in the form of token-money, which it introduced, so that the State could, upon collection of the money-tokens through taxation, choose the type of goods to purchase (and also when to purchase them). Note that in payment for goods and labor services, the population would be willing to accept the token-money issued by the State, since the imposition of a token-denominated tax would create a universal demand for this “currency” among the population subject to taxation.

While the palace could have obtained whatever it needed by imposing ‘in-kind’ taxes with a list of every item it wished and imposing specific taxes on specific producers [...], imposing a ‘five mina’ head tax on each, then using mina-denominated state money to purchase needed items while accepting the same mina-denominated state money in payment of taxes would be a far simpler process (Wray, 1998, p. 50).

⁵ Note that in Wray's (1998) “hypothetical governor” account even the use of overt force fails to generate a supply of goods and labor services from the local population.

Once a money tax was levied on a village, and later on individuals, the palace would be able to obtain goods and services by issuing its own money denominated debt ... (Wray, 1998, p. 52)

In addition to fiscal base cumbersomeness, other problems associated with in-kind payments are identified by Chartalists and linked causally to the emergence of State money. For example, taxation in-kind might have resulted in an overabundance of one type of good and a shortage of others, and may also have created an “incentive for the taxpayer to provide the lowest quality goods required for payment of taxes” (Tymoigne and Wray, 2005). As a solution to the problem of fiscal base imbalance, and supply of inferior quality goods, the State would stipulate that the tax is paid in the form of token-money that it issued, giving the State control over its future purchases as in the mechanism outlined above⁶.

When taxes are received in goods or labor, the balance of goods (and labor) obtained will not be that required for public sector expenditure; so, money reduced the transaction costs of government, *pari passu* with that of the private sector (Goodhart, 1998, p. 416).

Thus, the State-money framework suggests two possible mechanisms through which the economy might have been monetized through the introduction of State pay-tokens (i.e. State money). The first mechanism deals with a context of previously non-existent debt relationship of the population to the State, where monetization is a means of establishing such a relationship without recourse to overt coercion (i.e. force, violence). The second mechanism presupposes that the payments of tribute to the public authority are already in place. Money emerges as a practical solution to the problem of fiscal base cumbersomeness, disproportionate contributions of different kinds of goods, and the supply of goods of lower qualities. What follows from this, is the governor’s stipulation that tribute is paid in the form of pay-tokens, which gives the governor control over its purchases. However, such a mechanism relies on a trade (in addition to debt) relationship between the public authority and its citizens, which exists under

⁶ Here, it is not clear why the balance of goods and services obtained would not match the needs of the State, since, as Chartalists argue, the State could stipulate what goods and services, and in what quantity and quality, it required.

private property regimes, or in modern colonial regimes, rather than in ancient despotic-communal possession regimes.⁷

For the purposes of this paper, we will focus on the first mechanism through which Chartalists suggest that monetization may have occurred. This framework is presented in Wray's (1998) "hypothetical governor" account. It should be noted that Wray (1998) acknowledges the stylized nature of this account rather than its genuine historical basis. The real world monetization "is much more difficult and complex (Wray, 1998, p. 54). The "hypothetical governor" account succinctly described by Wray (1998) in the following paragraph will be analyzed in its relevance for the socio-economic modes of organization of ancient societies, such as in Mesopotamia.

Let us suppose that a woman were appointed governor of a colony that had not been previously introduced to money, prices and markets. This colony has a fully functional, although traditional (that is, tribal), economy [...]. The new governor arrives with her chequebook and several bags of paper money and coin. Her charge is to organize the indigenous peoples to build the governor's mansion, to provide the necessary food and services for the governor and her family, and to accomplish a few tasks enumerated by the home office (a new road, for example). The governor announced various job offerings and pay scales. To her surprise, no one shows up for work; higher wage offers still produce no takers. She calls the home office for troops and uses the threat of violence to induce the indigenous peoples to provide labor. However, she finds the indigenous population to be 'lazy, [...], unmotivated' (although they had been quite successful at providing for themselves before she arrived!).

... the way to introduce money into the economy (and, in particular, to generate a supply of labor offered for money wages) is to impose a monetary tax. In many cases, the indigenous population would already have been familiar with the payment of taxes or tribute, albeit in non-monetary form. Once taxes have been imposed, the governor need only define what must be done to obtain 'that which is necessary to pay taxes'; she announces that so much 'twintopt' can be obtained for construction work on the mansion, so much 'twintopt' for delivery of food to her family, so much 'twintopt' for work on the new road, and so on. [...] the indigenous peoples would readily accept anything the governing paid, provided she would accept the same in payment of taxes (Wray, 1998, pp. 54-55).

In Wray's "hypothetical governor" example, the tribal subsistence economy acquires a colonial status and is introduced to a previously unknown concept of a colonial governor. The newly imposed colonial authority unsuccessfully attempts to extract goods and services from the local populace through

⁷ For definition and distinction between private property and possession regimes, and their implications for money use and its functions, see G. Heinsohn and O. Steiger (2000, pp. 67-73, 81-2, 93-5).

money offerings, including wages. Neither the use of threat and violence can force the local inhabitants into supplying goods and services to the newly arrived colonial ruler. Therefore, in order to generate the supply of goods and labor, the governor has to monetize the economy by imposing a monetary tax.⁸ However, when applied to ancient societies, such a mechanism fails to consider the redistributive modes of socio-economic organization that were carried over from the tribal communities.⁹ Such an account relies on a spontaneous introduction of a governor (or at least a sudden desire to tax), and the need to find an alternative to explicit force (the use of which does not produce the desirable results). While this characterization may be reasonably accurate as a description of the events under modern colonial history, it is probably not applicable to the ancient economies, where taxation grew out of religion¹⁰ and, perhaps, gift-exchange in reciprocal modes of societal integration¹¹. Such an approach lacks an evolutionary basis since it relies on an *ex nihilo* imposition of a new payment convention with the arrival of a new governor.

In contrast, I would argue that such a new payment convention (i.e. monetary taxation), like other economic institutions, could not be imposed *ex nihilo*, but had to evolve through the Veblenian process of adaptation of means to ends in a concrete historical process, the end being, initially, the control over the fulfillment of *existing* payment obligations in kind. The means of achieving this control had to be adapted to a specific socio-economic environment and the problems posed by it. It is unlikely that a rather complex idea like monetization, as a means of inducing the local population into supplying goods and services to the public authority, would emerge spontaneously in the mind of a ruler. Payment obligations most likely evolved gradually from religious sacrifices¹² or reciprocal gift-exchange, while the means of achieving control over their fulfillment had to be grounded into concrete historical circumstances.

⁸ Note, that in the “hypothetical governor” account, Wray admits that the local population may have been introduced to payments of tribute in kind, before the arrival of the governor. Therefore, it is not clear why the governor is not able to force the population into supplying goods and services to her by using force.

⁹ See Dalton (1971, pp. 26-8; 71-4).

¹⁰ See Henry (2004) for the account of the emergence of taxation out of religion in Ancient Egypt.

¹¹ See Finley (1965, pp. 58-65; 100-103) for a practical account of gift-exchange and its consequences for obligatory payment obligations to the rulers, in Ancient Greece.

¹² See for e.g. Schmandt-Besserat (1982, pp. 875-6).

In the following section we will briefly examine the modes of socio-economic integration of Ancient Mesopotamian societies. The goal is to develop a historically-informed account of how monetization and the *concept* of a pay-token could have *evolved* out of practical solutions to the problems faced by ancient rulers.

Part II. Ancient Mesopotamian Societies: Socio-Economic Modes of Organization

As Dalton (1971) pointed out, the functions performed by money are closely linked to particular modes of socio-economic organizations of different societies:

The essential point is that the characteristics of money in any economy, including our own, express the basic organization of that economy. [...]. Money is linked to specific modes of transactions (Dalton, 1971, p. 169).

In Dalton's view, "money is what money does", and it did different things during different stages of history. It is futile to project functions of money performed nowadays or in recent history (e.g. means by which taxes are paid; non-violence means of extracting goods and services from the population for the State; means of forcing the population from non-monetary subsistence into monetary trade-oriented economies), into the ancient societies where the modes of transactions and socio-economic organization were different. Therefore, in order to hypothesize about the origin of money in ancient societies, about functions performed by it, it is necessary to closely examine the integration and transaction modes of those societies, rather than project existing preconceptions back into ancient history (see Dalton, 1971, p. 171). The introduction of money has to be viewed as a practical solution to a material problem situation that is specific to the temporal and local circumstances.

To accomplish this, we begin by examining the institutional arrangements of the Ancient Mesopotamian societies. As pointed out by L. Oppenheim, one of their distinguishing characteristics was the practice of central collection and redistribution (Oppenheim, 1957, p. 31). The economic structure of these societies was organized around agricultural village communities (commons), which were scattered around a city-center. The agricultural goods produced by these various communities were then channeled

into the city-center. Once collected from the villages, the agricultural surplus would be further redistributed towards the members of a priest-king bureaucracy, warriors, public laborers, etc.

Oppenheim describes the arrangements as follows:

Thus deriving income in agricultural products and labor from its own land and using it for the maintenance of a plethora of officials, as well as for such mainly social purposes as the decoration of sanctuaries and palaces, such an organization was bound to grow in size and power to extend its holdings. The two interwoven production and distribution cycles were administered from the center by a bureaucratic staff using highly complex systems of book-keeping and accounting ... (Oppenheim, 1957, p. 31).

Obligations to the Temple were paid in kind. They were the products of Mesopotamian fields and gardens cultivated by the village families (*ibid.*, p. 35). Oppenheim's account is consistent with that of D. Schmandt-Besserat, who characterized the Mesopotamian economies as redistributive, relying on payment of obligation in kind.

The depiction of banquets and gift presentations in various art forms suggest that, during the period from 3500 to 2500 B.C., Sumer had a redistribution economy involving three main components: Mesopotamia had a redistributive economy that involved three main components: (1) a temple which conferred meaning and pomp on the act of giving; (2) an elite who administered the communal property; and (3) commoners who produced surplus goods and surrendered them to the temple. This redistributive economy relied upon a system of record-keeping and, indeed, could not have succeeded without it. This function was fulfilled in the third millennium B.C. by cuneiform writing and, going further back in time, by pictographic writing and tokens¹³ (Schmandt-Besserat, 1996, p. 105).

Nissen (1988) points out that the emergence of authorities in the Mesopotamian societies took place gradually, unfolding together with the redistributive modes of Mesopotamian communities, and, later societies (Nissen, 1988, p. 100). Isolated settlements were growing closer and closer together (ca. 4000 B.C - 3200 B.C.) due to the climatic change, whereby the problems posed by increased population density required establishment of rules and rulers (*ibid.*, pp. 60-1). In addition, the establishment of authority was closely related to religious cults (*ibid.*, p. 100), and emerged out of sacrifices for religious

¹³ Note that D. Schmandt-Besserat relates tokens to the system of obligatory payments to the Temple. This issue will be further dealt with in this paper.

festivals (ibid., p. 83). In kind payments to the rulers were perceived as “gifts to gods” (Schmandt-Besserat, 1996, p. 105). The fourth millennium sites bear evidence (e.g. seals and sealings featuring Mesopotamian priest-kings) of a huge public sector and of the earliest bureaucracy (ibid., p. 33). The Uruk period (3500 B.C. - 3000 B.C.) bears evidence of huge public works projects as manifest by monumental architectural buildings (temples, palaces) – presumably for conducting the cults of Mesopotamian city-gods (Nissen, 1988, pp. 96; 99-100).

[...] the priest-king, public monumental architecture, measures, seals, and complex tokens – represent the elements of an elaborate bureaucracy. They indicate the presence of a powerful economic institution headed by an En, who acted in public buildings decorated with mosaics and relied upon a control of goods involving seals, bevel-rimmed bowls, and complex tokens (Schmandt-Besserat, 1996, p. 33).

The textual sources belonging to the period ca. 3000 B.C. – 2500 B.C. describe the movement of goods in and out of the palaces and the temples, such as yields from the estates and offerings from worshipers. Redistribution consisted of disbursements of the daily rations of barley, beer, and other commodities to the members of the priest-king bureaucracy, as well as to the temple dependents (e.g. the infirm, soldiers, public laborers, etc.) (Schmandt-Besserat, 1996, p. 105).

The above archeological evidence shows that Chattalism in the Mesopotamian societies could not have emerged as an *ex nihilo* imposition of a debt relationship of the citizens to the State, as in the “hypothetical governor” account (Wray, 1998, pp. 54-5). In these societies, obligations to the State most likely grew out of religion. Simply assuming the authority’s *ex nihilo* imposition of a money-tax requirement does not provide an evolutionary historical account where money emerged as an adaptation of means to ends in a problem situation. In addition, nowhere does the factual evidence (including art) suggest that payments to the public institution were collected in the form of tokens, as Chattalists often argue). Individuals and guilds had to deliver fixed amount of goods in kind, under the penalty of sanctions. In addition, Mesopotamian temples had a coercive system to enforce the collection of these payments (Schmandt-Besserat, 1996, p. 108). This, too, stands in contrast to the Chattalist framework,

which introduces monetization as an *alternative* to using explicit force as in Wray’s “hypothetical governor” account (Wray, 1998, p. 54).

Even though payments to the public authority were made in kind, Schmandt-Besserat (1996, pp. 33; 108) suggests a possible link between “taxation” and tokens:

[given] the obligation for all individuals or guilds to deliver a fixed amount of goods in kind, under penalty of sanctions. The complex tokens played a part in the collection of taxes and tribute that is typical of a state economy (Schmandt-Besserat, 1996, p. 108).

However, she does not propose a concrete mechanism to explain how these tokens might have played a role in the collection of taxes and tribute. Our goal is to establish such a mechanism. Thus, our aim is to provide insight into the link between “taxation” and pay-tokens (the link established by Chartalists), while recognizing the fact that “taxes” were paid in kind and the use of force was common (as evidenced in art; see for e.g. Schmandt-Besserat, 1996, p. 109). Before doing so, we provide a brief introduction into clay tokens and their assemblages into clay envelopes – bullae.

Part III. Introduction into Clay Tokens and Bullae

This section will deal with a peculiar group of artifacts, known as clay tokens and clay bullae. Our interest in them is related to the Chartalist view of money as a “pay-token”. Here, we provide a brief overview of the anthropological approach to tokens and bullae.¹⁴ We will speculate upon a possible link between tokens and the Chartalist approach to money that would be grounded in the specific modes of socio-economic organization of the Ancient Mesopotamian societies.

Clay tokens are small, geometrically shaped objects (1.5 – 3cm) that date as far back as 8000 BC. The interest in studying these artifacts did not emerge until the end of 1950s. Prior to that, the artifacts

¹⁴ It should be noted, that this is only one of the interpretations. Anthropologists have not yet formed a unanimous opinion as to what functions clay tokens and bullae could have performed. See for e.g. S. A. Jasim and J. Oates (1986, p. 352); M. Shendge (p. 2-3); Nilhamn (2002, p. 39)

were largely ignored by archeologists, as these “unidentified small finds” were not considered “important enough to end up in a publication” (Nilhamn, 2002, p. 27)¹⁵.

Schmandt-Besserat was one of the first scholars who picked up the line of research on tokens and bullae. She established that tokens were one of the earliest counting tools. In her interpretation, each token would stand for a concrete unit countered. A collection of tokens would, thus, represent a collection of countered units. In this way, a track of inventory could be kept. Due to the variety of objects countered, tokens would take different geometrical shapes. (Schmandt-Besserat, 1996, p. 15-6)

The following passage from “*Archaic Book-Keeping*” by Nissen, Damerow and Englund, gives a useful description for the first acquaintance with tokens:

The most ancient *counting symbols* are the so called tokens, each token representing as counted unit. A small heap of tokens would thus represent the sum of the countered units. A unit could either be a discrete entity, like a sheep from a flock, or a specified measure of a certain product, such as grain. In this manner, the total number of animals in a herd or the capacity units in a granary could be established and monitored. [...] such totals [heaps of tokens], were then put away in a safe place with restricted access [...]. When the tokens were extracted from their container some time later, their represented value could be compared with the countered amount of the same product (Nissen, Damerow and Englund 1993, p. 11).

Since tokens were used in a one-to-one correspondence of the token to the unit represented by it (a product or a capacity measurement of a product), and the type of the product countered was indicated by the shape of the token, while the quantity of units involved was shown by corresponding number of tokens (Schmandt-Besserat, 1981, p. 283; 1996, p. 95-6), the accounting system was cumbersome and awkward. This is because the ability to record abstract numbers did not exist until after 3100 B.C.

Before 3500 B.C. tokens were plain, as Schmandt-Besserat classified them, i.e. they did not bear any markings or inscriptions of their surface. Later, ca. 3500 B.C., tokens appear with various marking and inscriptions on their surface – they become complex, as Schmandt-Besserat identified them (Schmandt-Besserat, 1996, p. 16). The emergence of complex tokens coincides with the transition from

¹⁵ See also Schmandt-Besserat, 1996, pp. 8-9.

isolated settlements to towns, i.e. with the process of urbanization, accompanied by increased specialization of labor and proliferation of manufactured goods. Thus, Schmandt-Besserat concluded that an increase in the variety of the commodities that had to be countered, led to the proliferation of token shapes, as well as appearance of markings and inscriptions on their surface, in order to indicate specific characteristics of goods countered (ibid., p. 82). Whereas plain tokens stood for products related to agriculture such as cereals, animals, land, etc., complex tokens represented city merchandise. Schmandt-Besserat links plain tokens to the rise of the rank societies, whereas “it was the advent of the state which was responsible for the phenomenon of complex tokens” (ibid., p. 107).

The direct relationship of this new accounting device – complex tokens – with the development of the Mesopotamian temple is significant because it implies that the changes in the token system played a role on the rise of the state (Schmandt-Besserat, 1996, p. 108).

It should be noted, that tokens were found in both private/secular and public/official contexts. The majority of tokens, though, come from public settings, such as temples and sacred precincts (ibid., p. 30). Tokens were also excavated from ancient public storage facilities and warehouses. When tokens were found in domestic settings, the artifacts were usually clustered in storage facilities such as vessels. In private buildings, the counters were never found in large quantities¹⁶ (ibid., p. 37).

The evolution of the token system from plain to complex also witnessed a change in methods of storing them. Tokens, perforated in the middle of the surface, appeared around 3500 B.C. The perforation of tokens suggested to Schmandt-Besserat that they were strung to be kept together in the archives – possibly to separate tokens dealing with the same transaction (ibid., pp. 39-40).

Another innovation was the storage of tokens inside so-called clay envelopes – bullae, which came into being ca. 3700 – 3500 B.C. and persisted until 2600 B.C. They were hollow, spherical envelopes into which tokens were enclosed when the clay was still wet. When bullae were closed, they

¹⁶ As Nissen (1988) has pointed out, even though the majority of tokens that were unearthed come from such public complexes as temples and palaces, taking into account that public areas have been excavated by archeologists more often than private quarters, the nature of this distribution of tokens cannot be attributed with universal significance.

were imprinted with a seal, presumably bearing a direct relationship to the tokens enclosed in the envelope. Schmandt-Besserat suggested that the enclosed tokens most likely reflected a particular transaction, which required them to be stored separately (*ibid.*, pp. 39; 44). The quantities handled in bullae were typically small,¹⁷ the equivalent of about five bushels of grain or five sila¹⁸ of oil (*ibid.*, p. 103). The number of tokens enclosed into clay bullae varied from two to fifteen (*ibid.*, p. 46). Most of them were plain and probably represented agricultural staples (*ibid.*, p. 49).

Anthropologists believe that in addition to preventing unauthorized access to the tokens, the sealing of the bullae also identified the parties to the transaction:

A discussion of the people involved in the transactions is conditioned above all by the seals they used. [...]. Not only does the seal impression secure the integrity of the surface of a clay document, but the individual who impressed his seal is also identified as the guarantor of the transaction involved. [...] Being sealed, these documents no longer gave information concerning merely quantities of goods, but also concerning the persons who were responsible (Nissen, Damerow and Englund, 1993, pp. 15; 17).

Sometimes, the outer surface of the clay bullae bore the impressions of the tokens it contained. However, such practices were not very common. Nevertheless, the technique of conveying information on the surface of the bullae by impressing tokens into the soft clay, however uncommon it was, was crucial to anthropologists, since this led to the emergence of writing.

Writing first appeared in Mesopotamia ca. 3500 B. C. when “[...] tablets displaying impressed markings in the shape of tokens superseded the envelopes [bullae]” (Schmandt-Besserat, 1996, p. 125). As Schmandt-Besserat suggests, the fourth-millennium accountants soon realized that the tokens within the envelopes were made redundant by the presence of markings on the outer surface of the clay bulla (however uncommon these instances were). As a result, tablets or “solid clay balls” (as opposed to hollow clay balls) bearing markings in the shape of tokens, replaced the spherical envelopes filled with

¹⁷ Schmandt-Besserat (1996, p. 103) indicates that the quantities handled in bullae were small relative to the size of long-distance trade (not relative to “tax” payments), in order to point out that tokens were not related to foreign trade.

¹⁸ 1 sila = 0.82 liters

tokens (ibid., p. 57). The “pictographs” of the early Sumerian writing were derived directly from the shapes of the tokens (ibid., p.7).

It should be pointed out that upon the invention of clay tablets, clay tokens, bullae and tablets were all circulating at the same time in the same contexts since 3500 B.C. As an example, in the sacred district of Eanna in Uruk they all “... belonged to the same temple areas and *dealt with identical goods in similar quantities*. [...] The small number of tokens enclosed in each envelope corresponds with the same small quantities of goods recorded on the third-millennium tablets” (ibid., p.105).

Anthropologists’ primary interest in clay tokens and bullae is related to their household (communal and public) inventory-keeping or accounting function, and to the role played by the artifacts in the emergence of writing. Anthropologists are not so much concerned with exploring the concrete links between clay tokens, bullae and taxation, as well as the mechanisms through which tokens and bullae may have served as the earliest forms of money. This could be explained by the anthropologists’ unawareness of the chartal theories of money, and the orthodox notion that the earliest monies were commodities with intrinsic value (esp. precious metals). Nevertheless, despite their primary focus on the inventory-keeping function of the clay objects, anthropologists also suggest that the links between clay tokens, bullae and taxation existed¹⁹. However, what is lacking is a concrete mechanism that would describe the possible role played by tokens and bullae in the process of taxation. The goal of the next section is to develop such a mechanism that would depict the instrumental role played by the clay artifacts in the process of public taxation, suggesting a possible account of the emergence of token-money in ancient Mesopotamia.

Part IV. Clay Tokens, Bullae and Taxation: Re-Examining Their Relationship?

¹⁹ Curiously, Schmandt-Besserat’s 1982 publication in *American Anthropologists*, “The Emergence of Recording” seriously questions the appearance of tokens in a private household setting, as a house inventory-keeping device. She raises the questions regarding possible direct links between tokens, non-public sector, and involuntary payments in kind. This publication will be further dealt with in this paper.

The purpose of this section is to re-examine the function of clay tokens and bullae as inventory-keeping or accounting devices in a household context, and, instead, to suggest a possible role that the clay artifacts may have played in a context of public taxation (or payment of obligatory contributions in-kind). By reconsidering the function performed by clay tokens and bullae, we attempt to identify plausible explanations for the emergence of money in Ancient Mesopotamian societies through an adaptation of means-to-ends problem solving that is specific to temporal and local societies discussed above. It will be suggested that money in the form of clay tokens and bullae emerged and evolved as a means of bureaucratic control over the fulfillment of in-kind payment obligations of the citizens to the public institution.

Despite her primary focus on inventory-keeping function of clay tokens, bullae and tablets, Schmandt-Besserat also suggests that the clay artifacts were related to taxation. “The complex tokens played a part in the collection of taxes and tribute that is typical of a state economy” (Schmandt-Besserat, 1996, p. 108). The archeologist argues that such inventions as complex tokens and clay bullae reflected “the need for enforcement of deliveries of goods owed to the temple” (ibid., p. 110). According to Schmandt-Besserat, some of the pictographic tablets, were “[...] official receipts of commodities delivered by individuals or guilds” (ibid., p. 105). The receipts provided information about the items received, the quantities received, the name of the donor, the date of the delivery, the administrator who checked the commodities, and so on. These kinds of clay tablet receipts remained within the archives of the public institutions (ibid., p. 105).

It will be suggested here, that the donating parties or “taxation units” (e.g. villagers, production guilds) also required some form of a receipt, which would certify their contribution to the public sector. Clay token(s) and bullae may have performed these functions as “certificates of contribution” (“tax receipts”, to use modern terminology) that the donors could keep for themselves. These “certificates” would be further collected from the donors by the “public collectors” when the latter would be commissioned to the local villages, to check if all “taxation units” had their “certificates of contribution”

(i.e. tokens and bullae), and retrieve and punish those that failed to obtain them. The fact that the royal bureaucracy had its own “tax receipts” (clay tablets) would allow them to compare the tablet “tax receipts” with the token “tax receipts” collected from the “taxation units”, and identify any counterfeit on the part of the donating parties (i.e. determine whether the tokens that were collected from the “taxation units” corresponded to royal records). Such a mechanism, it will be argued, was the practical method to identify those parties who failed to make their contributions to the public authority (i.e. identify “taxation units” who failed to pay the tax).

Why would such a mechanism be in place? The key is the absence or underdevelopment of census systems, as well as the non-existence of formal means of personal identification (e.g. a citizen’s passport). Consider that if the royal bureaucracy had been able to record (on the clay tablets) the names of the units who paid their taxes, what good would that information have been if a list of *all potential* “taxation units” was not kept given the absence or underdevelopment of census systems? In such a situation, the list of the actual donors could not be compared against the list of the potential donors, and the “tax-evading” units could not be identified. Moreover, even if this comparison could be made, how could the “tax-evading” units be identified and retrieved, given the absence of personal identification means?²⁰ As we know, the only members of the population bearing any formal objects of personal identification were the members of the kingship and priesthood bureaucracy (they had their own identification seals).²¹ Thus, perhaps, the only way that made it possible to identify the “taxation units” who failed to make their contribution to the public authority was to “mark” the taxation units who contributed. This marking could have been performed in any manner; however the easiest way was, perhaps, to “mark” compliant “taxation units” by giving them the token(s) that would stand for the units they contributed. At the end of the “taxation year” (which, most likely, coincided with the harvest year in ancient societies), public collectors would go to the surrounding villages to verify contributions (i.e. collect the tokens) and retrieve

²⁰ In addition, the places of residence of taxation units would be unknown, which would make it difficult to locate the units in case of their failure to donate a surplus to the public institution.

²¹ See for e.g. Nissen (1988, pp. 77, 79, 117).

any parties who failed to demonstrate their “certificates of contribution” (i.e. those who lacked clay tokens). This is consistent with Schmandt-Besserat’s view that tokens were disposed of “once the transaction they represented was concluded. There is even some evidence that tokens were discarded after the harvest” (iibid., p. 37). Individuals who failed to hand in the tokens to the public collectors would be punished for failing to produce the surplus for the public authority. They could then be channeled into the pool of public laborers (ibid., p. 108).

One of the issues raised by the above hypothesis, which describes tokens as “certificates of contribution”, concerns the nature of “taxation units” in question. Were they individual or collective, such as a family, a clan, a village, etc? Schmandt-Besserat has argued that the term is applicable for both individual and collective “taxation units” (individuals and guilds) (e.g., ibid., pp. 105; 108). However, Oppenheim has suggested that term is more appropriately applied to collective entities:

The villages contained a number of families which supported themselves by cultivating adjacent [to the city] fields and gardens, *paying taxes collectively* either to a ruler residing in a fortified palace or to an absentee owner connected by birth or feudal status with some sort of central power. The village units themselves, or the income derived from them, were negotiable within certain restriction which varied according to time and region. [...] The village community remained remarkably stable, and the *obligation to pay taxes collectively counteracted individual deflections* [...] (Oppenheim, 1957, p.35).

In these [Mesopotamian] cities, however small they be, a communal bond had so completely replaced all loyalties of the inhabitants beyond those toward the immediate family that not even their traces can be found (ibid. p. 30).

It can be speculated, that if communal bonds were strong, as argued by Oppenheim, and the payments were made collectively, the “tax receipt” or the “certificate of contribution” could have taken the form of a clay bulla. This would signify the unity of the community as a whole and the collective effort of its members in meeting the payment obligation. It is also possible that a clay bulla could have been broken and the tokens inside redistributed between the members of a community. Or, perhaps, the symbolic wholeness of a clay bulla would have been preserved, and the clay envelope would never have been opened. In fact, this might be the most plausible scenario, as most of the clay bullae unearthed by

archeologists were found intact (Jasim and Oates, 1986, p. 350). However, the quantities handled in clay bullae were typically small (Schmandt-Besserat, 1996, p., 103), which is more suggestive that “taxation units” were families or guilds? No one knows for sure.

Another possibility is to suppose that the amount of tax contribution was growing gradually, which required the issuance of more tokens (i.e. “receipts”) to the “taxation units”. To prevent the loss of “receipts” as their numbers increased, they may have been enclosed into the clay bullae. Or, perhaps, bullae were a response to the problem of counterfeit, since they enabled the enclosure of the tokens inside of the bulla, and the authenticity of the receipt was provided by sealing the bulla with official seal impressions of Mesopotamian bureaucrats. After the inventions of sealed bullae, it is possible that loose tokens were no longer handled. That archeologists still find them in a loose form may be related to the fact that excavated bullae may have broken under the weight of the millennia, or during the archeological finds.²²

It is also possible that tokens served as payment to the laborers working at the public works projects. In this case, a token-payment would have certified his/her contribution to the socio-economic provisioning process. It is known to us that prior to 3000 B. C., the public institution was paying its laborers in kind, where the daily payment corresponded to the amount of grain held in the bevel-rim bowl (the daily grain ration) (Nissen, 1988, p. 93-4). However, these bowls, mass-produced in the millions, disappeared from circulation after being in use for around six hundred years. It is unknown to us what form of payment superseded daily rations of grain handed in the bevel-rim bowls (*ibid.*, p.84).

Perhaps laborers were subsequently paid in the form tokens. We can assume that it must have been cumbersome for the public institution to collect grain or barely from its agricultural community, to

²² Curiously, Schmandt-Besserat mentions the need of Mesopotamian accountants to keep track of what was not delivered. She suggests a possible link between accounting for unpaid taxes, and clay bullae. “Even more important, the levy of taxes made it necessary to keep track of what had *not* been delivered, what was still owed to the temple. The accounting for unpaid taxes, in turn, increased the need for archives, perhaps explaining the invention of envelopes and bullae” (Schmandt-Besserat, 1996, pp. 109-10).

keep a record of it, and to redistribute it regularly to the laborers at the public works projects. Perhaps, it would have been easier to give a laborer a token, certifying his/her contribution to the community in the form of labor. The laborer could then exchange the token for his subsistence in a nearby village. However, this mechanism would only work if the public works projects were located within a close geographical proximity to the village where food was available. In the opposite case, when the public works projects (such as construction of water channels) were located at a considerable distance from the agricultural communities, the public authority would be forced to undertake the transportation of laborers' foodstuffs to the public works sites, as the laborers would not be able to commute to the village to exchange their tokens for subsistence. Note, that in line with Chartalist argument, the village population would always be interested in obtaining the tokens from the public works laborers, as the villagers needed to hand them in to the public collectors commissioned to the village. Those who collected the tokens from the laborers, by giving them food, would no longer be required to pay the public institution in kind. Curiously, tokens representing labor-time are believed to exist. Such tokens, in the shape of tetrahedrons, "[...] may have represented two different units of labor, respectively indicating "one day" and "one week's work", or they may have referred to numbers of workmen, such as "one man" or "a gang" (Schmandt-Besserat, 1996, p. 115).

In sum, the scenarios outlined above offer hypotheses about the role of tokens and bullae as "certificates of contribution" or "tax receipts" within the communal-despotic, redistributive modes of organization of the Ancient Mesopotamian economies. The primary function of these tokens and bullae, appears to have been a mechanism of bureaucratic social control, in particular, control over the fulfillment of payment obligations of the citizens to the public institution (or, reducing the avoidance of such obligations). This extends the role played by tokens and bullae as simple inventory-keeping devices, viewing them, instead, as a means of accounting for the fulfillment of payment obligations in kind. These tokens could have provided the authority with a system of checks to ensure that the "taxation units" produced and contributed goods and/or services to the public institution. This system of checks could

allow the public bureaucracy to identify those “taxation units” who failed to make their contributions to the public institution.

However, further insights into the evolution of money as an institution may be gained by applying the important Veblenian concept of the “habits of thought”, which has a clear behavioral basis and links the past with the future. If we also account for the reciprocal habits of thought of the Mesopotamian community, then the tokens may be viewed as “counter-gifts”, given by the public institution to the community in response to the “gift” (“tax”) “given” by the community. Finley’s explanation of the meaning and the role of a “gift” in reciprocity-based societies may shed some light on this possibility:

The word “gift” is not to be misconstrued. It may be stated as a flat rule of both primitive and archaic society that no one ever gave anything, whether goods, or services, or honors, without proper recompense, real or wishful, immediate or years away, to himself or to his kin. The act of giving was, therefore, in an essential sense always the first half of a reciprocal action, the other half of which was a counter-gift” (Finley, 1965, p. 62)

There was scarcely a limit to the situations in which gift-giving was operative. More precisely, the word “gift” was a cover-all for a great variety of actions and transactions which later became differentiated and acquired their own appellations. There were payments for services rendered, desired, or anticipated; what we would call fees, rewards, prizes, and sometimes bribes” (ibid., p.64)

Thus the tokens and bullae may have performed a ceremonial function as a counter-gift given by the public institution to the community. As pointed out by Polanyi, and consistent with Finley’s statements above, “reciprocity demands adequacy of response, not mathematical equality” (Polanyi, 1957a, p. 73). The public authority could have “responded” to the community, by giving its members the tokens and/or bullae, as well as guaranteeing to them security and protection from external events, such as foreign invasions, climatic disruptions, etc. In this context, tokens and bullae could have performed integrative societal functions, as the members of the villages scattered around the Mesopotamian Temple would have perceived themselves as all belonging to the same public institution (e.g. the Temple) and would have felt protected by it. Thus, the Temple and the tokens it issued would have been the attributes of their collective identity.

As was noted, anthropologists have primarily focused on the function of tokens and bullae as household inventory-keeping devices, rather than considering their instrumental role (in particular, control function) in the context of public taxation. Even though Schmandt-Besserat suggests that important links between tokens, bullae and taxation existed, she does not provide an explicit mechanism that would explain these links. Notably, Schmandt-Besserat's 1982 article, published in the *American Anthropologists*, is an exception. The archeologist seriously questioned the function of tokens as counters or household inventory-keeping devices, saying, "[t]his idea of keeping track of individual food reserves is not fully convincing" (1982, p. 874). Rejecting the notion that tokens somehow emerged as a solution to a private-sector problem, she maintained that "the token system is more likely to have stemmed from a compelling situation involving a large group, rather than from a private initiative", adding that this would have been related to control over fulfillment of agreements between parties (ibid., p. 873). She argued that the token system suggests "large-scale constraint rather than the invention of a household gadget" (ibid., p. 875). Suspecting that the 4th millennium B.C. tokens were directly linked to involuntary payment obligations to the public authority, Schmandt-Besserat made a Chartalist link:

[...] tokens of the 4th millennium B.C. may be viewed as records of the pooling of resources by means of ceremonial ritual. [...] the offerings were mandatory rather than voluntary and can be regarded as taxation. The first use of writing and, for that matter, the last use of tokens, was [...], a means of control upon the delivery of goods and ultimately a control on the production of real goods. *Can it be inferred that a system of redistribution through ceremonial ritual had its origin earlier and the tokens were related to such a process?*

Here, the anthropologist's arguments are consistent with the fundamental Chartalist position (i.e. that there is a direct link between tokens and taxation). Secondly, her account lends credence to the hypothesis developed in this paper (i.e. that tokens were the mechanisms of control over the fulfillment of payment obligations in-kind). However, there is a subtle difference in emphasis. Whereas Schmandt-Besserat suggests that tokens could have been used as a means of control over the fulfillment of *future* payment commitments, this paper maintains that they likely served as "certificates of contributions" that were already fulfilled (i.e. "certificates" of past or fulfilled contributions).

It appears that memorizing the great varieties of foods [...] *to be supplied* by different parties would be a burden to memory. The complexity of the process would be maximized when the ceremonial exchange system was promoted on a regional level. [...]. [...] thus putting to an end the face-to-face dealing between organizers and participants [of the redistribution ritual]. [...], can it be postulated that recording came about to carry out such transactions? Could the tokens be viewed as standing for pledges of food offerings *to be delivered* by individuals and groups at the time of ritual ceremonies? If so, their purpose was to formalize agreements between cooperating groups. They replaced evanescent verbal statements by binding permanent records that could be checked against the actual delivery of goods at the time of the events. [...]. They served as a memory aid, but more important, they were a means of verification for the delivery of goods. In this light, the pristine function of the tokens would be an instrument of control, and, therefore, a germ of power over food production in the hands of an emerging central authority” (ibid., p. 876).

Despite this slight difference in emphasis, there is significant common ground between Schmandt-Besserat’s (1982) position and the arguments presented in this paper, since both views emphasize the role of tokens as instruments of bureaucratic control over the fulfillment of in-kind payment obligations to the higher authorities, where these payments evolved gradually out of religious rituals. The primary difference is that Schmandt-Besserat (1982) sees tokens as representations of future payment commitments, whereas this paper describes them as indicators of past (i.e. fulfilled) contributions to the public authority.

Unfortunately, in her further works, Schmandt-Besserat did not fully pursue the research program set in her 1982 article. Her post-1982 research on tokens and bullae is primarily focused on their roles as inventory-keeping or accounting devices. Though a link between clay artifacts and taxation was never abandoned by the archeologist, she did not further elaborate the agenda set in 1982. This paper can be viewed as an attempt to further pursue Schmandt-Besserat’s 1982 research contribution identifying tokens as a means of control over the fulfillment of obligations to the public institution.

Conclusions:

Chartalists typically emphasize two possible mechanisms through which money (as pay-tokens) might have emerged. First, monetization is introduced by the public authority as a means of placing the

population into a previously non-existent debt relationship to the State. In this account, money emerges as an alternative to using explicit force in order to extract goods and labor services from the population. Secondly, Chartalists suggest that money was introduced in order to facilitate the already existing fiscal base of the State, as a solution to the problem of cumbersome, disproportionate contributions of different kinds of goods, as well as contributions of goods of inferior quality. In this account, monetization emerges as a solution to problems associated with in-kind payments, and eventuates in a trade (in addition to debt) relationship between the State and its citizens.

The arguments in this paper mainly address the first of these mechanisms. Here, we argued that while this Chartalist explanation may offer an appropriate characterization of events of the more modern (especially colonial) history, it cannot provide an explanation for the emergence of monetization in the societies of Ancient Mesopotamia. The goal of the paper was, therefore, to reconcile the Chartalist approach to the origin of money with the socio-economic modes of organization of Ancient Mesopotamia ca. 4000 B.C. – 2500 B.C.

It was suggested that initially, the function of token-money, may have differed from the one proposed by modern Chartalists. The hypothetical account presented in this paper relies on a pre-existing debt relationship between the citizens and the State, where debts are paid in the form of goods and labor services. Tokens are then introduced as the practical solution to the problem of control – i.e. making sure that all *existing* “taxation units” fulfill their contribution to the public authority, either in kind, or by supplying one’s labor. Our analysis leads to a different treatment of tokens as “tax receipts” or “certificates of contribution”, which would have been given to the “taxation unit” upon the fulfillment of the obligations. The token thus served as a “certificate” of past (i.e. fulfilled) contributions. Further, these tokens (“tax receipts” or “certificates of contributions”) enabled the authority to monitor the fulfillment of communal obligations and to identify and retrieve non-compliant parties. In addition, a mechanism was suggested through which tokens could have served as means of payment to public laborers. It is a mild correction that strengthens the Chartalist account.

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