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New institutional economics and ancient camel drivers : in which way modern
economical concepts can help to understand the changes in long distance trade in first
millennium BC Mesopotamia

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Historians have found the possibility to use models coming from other academic fields appealing yet risky. The end of 19th century has been a time of opposing views in ancient economic history between the supporters of Mahler and Buchner¹. This wrangling has impacted ancient economic history for a long time, leading to a gap between so-called primitivists and modernists. It is now-a-days well-known that this debate often lead to theoretical dead ends. But at least, it help to reveal the problem of models use in history. Because of those long years of sterile debates, some scholars are still reluctant to use theoretical models. But an increasing number of historians are becoming aware of the usefulness of such models to help understand ancient evidence. The problem remains for historians to choose which model could be relevant for their studies. Those inspired by M. Weber, K. Marx or K. Polanyi² have often been used in ancient history, but their limitations have since become apparent. Research is currently exploring new paths : observation of ancient evidence leads historians to focus on the issue of economic growth, technological progress, or demographic expansion³. They also deal with the issue of economic change and of the factors which enable or obstruct this change. Those new questions show a need for new theoretical background.

Current research in economic sciences commonly uses the so-called neo-classical model. This theoretical framework brought to modern economic research a rigorous modelling, which appears to be very efficient to provide easy and clear explanations of modern world. According to classical economic theory, economic choices are supposed to be the result of an arbitration made by fully rational individuals: neo-classical *homo economicus* preferences are rational and can be identified and

¹ On the use of economic models in ancient history, see the introduction of (Scheidel, Morris, Saller, & more, 2013). On the same subject in Assyriology, see (Laetitia Graslin-Thomé, 2009, pp. 91–181).

² (Polanyi, 1977). For a more or less critical use of Polanyi's thesis in Assyriology, see (Renger, 1984) (Clancier, Rouillard, & Tenu, 2005).

³ It is the core of books like (Scheidel et al., 2013) or (Jursa, 2010).

classified. To achieve his preferences, the neo-classical *homo-economicus* would make the best use of an information supposed to be comprehensive and relevant⁴. Unfortunately this assumption, which has been convenient to elaborate economic studies related to modern worlds, is, from a historian's point of view, far too unrealistic when applied to ancient times. This explains why historians have recently turned to NIE⁵: this branch of economic research refutes the assumption of perfect rationality, and explores the consequences of a bounded rationality, in order to provide an accurate description of actual human behavior. Another point of mutual interest among economists related to NIE is their interest for institutions and different kinds of organizations that structure economic life. Some NIE economist advocate that those organizations and institutions⁶ might have been responsible for economic change. This goes well with current questioning of historians, dealing with economic change and conditions of economic growth. This article will revisit different aspects of what NIE theories could offer to the field of ancient studies, by giving concrete examples from ancient Babylonia.

Indeed, the focus put on NIE in ancient history gave a new place to the ancient Orient in ancient economic history. Assyriology has not played a major role in the XIXth century debates between so-called primitivists and modernists. Those debates arose at a time when Assyriology was still in its infancy, when discovering and editing texts was the primary goal, and Assyriologists have been reluctant to take part in theoretical debates in the past⁷. Things have since changed, and more studies in Assyriology have made references to theoretical models⁸. The entrance of oriental studies in the debate on NIE is even more relevant now that ancient Near East provides textual evidence which suits with the kind of reasoning advocated by the NIE. For example, NIE explores individual behavior and the way official or nonofficial institutions determine economic choices. It also stresses the importance of organizations in organizing, and sometime obstructing economic life. Evidence from ancient Mesopotamia often gives clue to allow us to answer these kinds of questions. In this part of the ancient world, since the development of writing towards the end of 4th millennium BC, texts related to every aspect of human life are numerous. The clay tablets, on which scripts were written, were well-preserved

⁴ See, for example, (Durlauf & Blume, 2008).

⁵ See, recently, (Bresson, 2009) (Bresson, 2009). See also (Scheidel et al., 2013) and the critical review of this book, in (Bang, 2009) or *Topoi* 17, 2011. For other attempts to find new theoretical models, see, for example (Archibald, Davies, & Gabrielsen, 2005) (Fibiger Bang, Ikeguchi, & Ziche, 2006).

⁶ The difference between institutions and organization has been coined by D. North (Richter, 2005).

⁷ (Laetitia Graslin-Thomé, 2009).

⁸ See, for example, (Jursa, 2010) for first millennium Mesopotamia.

by the climate in Mesopotamia, resulting in the preservation of thousands of documents⁹. Ancient Mesopotamian tablets provide details in different aspects of economic life, to varying degrees according to times and places. We have both the juridical texts which show what NIE calls the rules of the game, and the all-day testimony, which sometimes helps historians to see the discrepancy between how things should have been and how things actually happened.

This article will focus on Babylonia in 6th century B.C., which seems to be a suitable time period to test NIE efficiency in ancient history. First of all, it is one of the best documented places in antiquity. M. Jursa, in his recent book on Babylonian economy, estimated there to be 19,000 published texts, with many more to be published¹⁰. Most of them come from main Babylonian temples or originate from private archives. There is another reason to take a special interest in this period – M. Jursa’s recent book showed that it has been a time of economic change: tablets showing new economic behavior, surveys¹¹ highlight demographic growth, which may have been accompanied by economic growth. Nevertheless, 6th century Babylonia did not remain in history as the starting point of a significant economic renewal, while economic changes definitely occurred, they were not as significant as they could have been. In this matter, Babylonia appears to be a case study of what NIE tries to explain: what drives the economic changes, and at the same level, what prevents economic change from occurring.

However, to be efficient, the use of NIE must not be too generalised. Several approaches are gathered under the same common banner of “NIE¹²“. Theories of the firm¹³, of transaction costs¹⁴, or of historical change¹⁵ are several facets of this common school of thought. This article will pick and choose from these different NIE theories, looking for the elements that could help historians to understand 6th century Babylonia.

From an economist’s point of view, the main theoretical achievement of NIE is the concept of transaction cost. It originates from Ronald Coase’s¹⁶ article on the firm, but its main theoretician is

⁹ For an introduction to ancient mesopotamian history, see (Radner & Robson, 2011). For an introduction on first millennium mesopotamian history, see (Joannès, 2004).

¹⁰ (Jursa, 2005) (Jursa, 2010).

¹¹ (Adams, 1981).

¹² On NIE in general, see (Richter, 2005) (Chavance, 2012)

¹³ (Williamson, 1985).

¹⁴ (Williamson, 1981).

¹⁵ (North, 1981) (North & Thomas, 1995).

¹⁶ (Coase, 1937). See also (Coase, 1998).

Williamson. Transaction costs include, besides the prices, all the costs occurring during economic exchange: it includes search and information costs, related to the necessity to determine which goods are present in the market and at which price. Bargaining costs are included as well: they are the cost required to elaborate an appropriate contract between parties involved in the transaction. The costs related to the risk involved in the exchange are very important as well. Those transaction costs are not commonly taken into account by neo-classical theory where prices are supposed to be simply determined by interaction between market supply and demand: it is the famous “invisible hand of the market”. But in real life, and furthermore in antiquity, transaction costs are not to be neglected. Commonly, they are too high to facilitate a successful transaction. A wealthy landlord will not loan his money to an investor, because he does not know where to lodge a claim if he does not get his money back. A merchant will not travel abroad to bring back luxury goods because travel costs are discouragingly high. A craftsman will not produce this beautiful artifact because he does not know how to locate a potential buyer. If transaction costs are lowered, all those transactions would have become possible. It was a new trading network which was becoming established. Hence, even if Williamson didn't write about this topic, transaction costs can play an important role in economic change throughout history.

The emphasis placed by Williamson on transaction costs draws the attention of Assyriologists, because Neo-Babylonian documents give a significant amount of information on transaction costs. In antiquity, high transportation costs form a significant part of transaction costs. 6th century Babylonia is a disparate area where some goods exchanges were simple and cheap, while others were much more costly. The transport costs in this time period have recently been estimated at up to 20% of the load value for local trade¹⁷. One can imagine that they are even higher for long distance trade, especially as the costs related to the travel risks are to be taken into account as well. In one text¹⁸, for example, agents from the Sippar temple were commissioned to gather wood in Lebanon. From the record of that was given to them for the trip, we learn that the agents required shoes, travel goods and even archers for protection. In this context of very high transport costs, only valuable goods were being moved. There is no noteworthy change in the 6th century compared to earlier periods. A few lists of imported goods date from this time¹⁹: they are more or less the same as in previous centuries. Technical progress

¹⁷ Weszeli, in (Jursa, 2010, p. 151).

¹⁸ (Bongenaar, 1997, pp. 392–395).

¹⁹ Dyes, wood, wine, metals, honey. For references of the texts, see (Oppenheim, 1969) and (Laetitia Graslin-Thomé,

was limited, even if some roads were being built, mainly for military purpose but benefited travelers as well.

One significant technical progress nevertheless has been the domestication of camel and its increasing use for carrying goods through the deserts²⁰. The first textual evidence of camels being used in long distance trade dates back to the middle of the 8th century BC, in an inscription written by Ninurta-Kudurri-Usur, a local baron. The inscription boasts of having stopped a convoy of camels carrying exotics products²¹. The shipments carried by camels were much more significant than the smaller ones carried by donkeys in previous periods. Later, in the roman period, the domestication of camel allowed trade from Arabia to flourish. Paradoxically, there is no mention of camels in Neo-Babylonian texts. It seems that the owners of the Babylonian archives did not take part in this emergent and promising long distance trade²². We will have to go back to this paradox later.

Williamson's main conclusion is that transaction costs cannot be reduced to transport costs. Sixth century Babylonia faced several transformations which reduced transaction costs. As an example, the existence of a simplified system of weight and measurement was a significant development²³. In Neo-Assyrian texts, the measurement of weight still lacks standardization, leading to a great deal of difficulties and errors, be they intentional or not²⁴. In Neo-Babylonian texts, the system was much simpler. Nevertheless, heterogeneity remained a reality and the multiplicity of terms used to define the quality of silver²⁵ was significant: silver was defined as *pešu*, *nuhutu*, *šibirtu*, *ša ginnu* as example. The risks associated with fraud on the quality of metal remained a problem²⁶. The concrete

2009, pp. 27–55). See for IIe mill (Faist, 2001)..

²⁰ (Jasmin, 2005). The oldest bone remains which could be related with camel domestication date back to IIIe millennium in the Yemen. In Mesopotamia, the first picture of a domesticated camel is to be found on the obelisk of Aššur-Bel-Kala, son of Tukulti-Ninurta Ier, and dates back to 1100 BC. The middle-Euphrats town of Hindanu gave dromedaries as a tribute to Tukulti-Ninurta II (890-884). But domestic camel were not in common use before the VIIIth century BC in Mesopotamia and Levante.

²¹ RIMB II S.O.1002.3, in (Grayson, 1991). See also (Liverani, 1992) and (Laetitia Graslin-Thomé, 2009, p. 75).

²² This Arabian trade of incense is well attested archaeologically. Numerous incense burners have been found in Mesopotamia for Achaemenid period. See (Avanzini, 1997) (Jasmin, 2005).

²³ In Neo-Assyrian texts, the measurement of weight still lacks standardization, leading to a great deal of difficulties and errors, be they intentional or not. In Neo-Babylonian texts, the system is much simpler. We no longer find mention of the different terms which were abundant in Neo-Assyrian texts. (Powell, 1978). (Powell, 1990).

²⁴ (Müller, 2004) gives several examples of additions of quantities expressed in minas which seem wrong to modern scholars. They have often been taken as a sign of the low calculation skills of the scribes, but may rather be the accurate result, incomprehensible for us because of the complexity of the units of measure.

²⁵ (Joannès, 1994) (Vargyas, 2000) (Jursa, 2010, pp. 474–490).

²⁶ The simplest way to check the silver fineness is to smell it, what obviously cannot happen for a very single transaction, and, anyway, requires a delay which wasn't not very convenient for every-day transactions. One can wonder if the

manipulation of silver was not self evident. This Neo-Babylonian contract gives an idea of the difficulties related to use of silver for some part of the population.

21200 strings of onions owed by Marduk-šuma-ibni son of Nabû-ke-šir, heir of Babutu to Nabu-ušallim son of Inia, representing the business company *harranū* of Iddin-Marduk. Marduk-šuma-ibni will deliver the onions by the 15th of the month of Nisan and [...]. **Nabu-ušallim guarantees for the cutting-up of the silver ingot of 87,5% fineness which is already at disposal of Marduk-šuma-ibni.** Nabu-ušallim guarantees for the payment of thirty-one shekels of silver of 87,5% fineness. [...].

In this contract²⁷, one of the parties, a local producer of some type of onion, requested that the silver already given to him be cut by the businessman who was to buy his harvest. This uncommon contract clause has been interpreted by M. Jursa²⁸ as a sign that the seller, a rural farmer, did not know how to cut a large piece of silver, and preferred to trust the buyer, a businessman better accustomed to such a delicate task.

The establishment of a more monetary economy was, nevertheless, an evolution which could have reduced transaction costs. If we are to accept the conclusions of M. Jursa²⁹, silver money becomes increasingly used in transactions in the sixth century. This new economic tool led to the development of new, and maybe more productive, economic activities. M. Stolper was the first to demonstrate how the increasing reliance on money, mostly for fiscal reasons, led to the development of entrepreneurial activity by private businessmen acting on behalf of the palace or the temples³⁰. As an example, the Ebabbar temple of Sippar specialized in date grove exploitation. The Babylonian evidence coming from this temple is numerous enough to allow quantitative studies to appreciate the nature of this activity. The work was done by M. Jursa, who managed to estimate the date production on the temple estates in a given time period³¹. His conclusions carry interesting lessons : the production of date fruits by far exceeds the temple's needs : the temple administrators obviously calculated that it was better for the temple to specialize in the production where they are the most efficient (economists would say where there comparative advantage lies). They planned to exchange their surplus for money. After which

touchstone hasn't been used in VIth century Babylonia. The *aban tasniqti* "stone of verification" could refer to this touchstone, but the evidence is not clear enough for complete proof. Anyway, it seems that this touchstone was already in use in old Babylonian times. See (Le Rider & Chaunu, 2001) (Jursa, 2010, p. 476).

²⁷ (Wunsch, 1993, no. 65).

²⁸ (Jursa, 2010, p. 479).

²⁹ Conclusions presented in (Jursa, 2010).

³⁰ (Stolper, 1985)

³¹ (Jursa, 2010, pp. 572–573).

they used this money to buy commodities that they renounced to produce in the temple's estate. Such arbitration is only possible in an at least partially monetarized economy. This monetary background allowed the temple to specialize in the production of the goods that they produce the most efficiently³². This probably allowed for higher production level than in a purely self-supply system. In this perspective, change in transaction costs allowed new economic behavior, and increased general production.

The legal environment is the part of transaction costs factors which has received the most attention by modern economists³³. Contracts and legal framework facilitate exchange by reducing related risk. Mesopotamian evidence related to contracts is abundant³⁴, and shows that changes occurs in first millennium BC. As a sign, the repertoire of pertinent legal formulae is richer in the Neo-Babylonian records than anywhere else in the Ancient Near East. The example of partnership contracts is especially relevant. Babylonian partnership contracts are known already from the first half of the second millennium BC. They were at this time phrased as simple loans, but included a statement that the sum lent was placed at the debtor's disposal for a business venture. This legal formulation remained in use in the Neo-Babylonian period. However they were innovative procedures to be found especially in the so-called *harranū*-contracts. The very name of those contracts refers to trade caravans, but their purpose was larger : *harranū*-contract were basically a way to gather money, for whatever purpose³⁵. In most case, one person, the "investor," loans money to another, the "agent", who is expected to do business with this capital. But M. Jursa has recently proved that this form of contract was subject to legal innovation, under the influence of economic development of the Neo-Babylonian times³⁶. At this time examples of true partnership appear, where two or more partners invest the same amount of money and share the business work³⁷. The regular contracts, used since the third millennium BC, were basically a way to bring together capital and work. Neo-Babylonian innovation lies in the fact that when both (or more) partners bring capital, the purpose is different : it is to raise more capital. M. Jursa

³² This is what economists call relative comparative advantage, following Ricardo. See (Laetitia Graslin-Thomé, 2009, p. 164)

³³ NIE focuses on private solutions, saying that "in many instances, the participants can devise more satisfactory solutions to their disputes than can professional constrained to apply general rules on the basis of limited knowledge of the dispute" (Galanter, 1981, p. 4).

³⁴ See, for example, (Wunsch, 2003). (Jursa, 2008)

³⁵ (Lanz, 1976) (Wunsch, 2010, pp. 51–53)

³⁶ (Jursa, 2008) (Jursa, 2009).

³⁷ In some cases, one of the partner's invests less, but compensates by his work.

interpreted them as a response to a new, much more monetarized, environment³⁸. Those contracts allowed much more capital to be raised than classical mesopotamian contracts and allowed for larger business ventures.

Williamson paid special attention to the effects of transaction costs in modern economy, and to the way to reduce them. This led him to develop the theory of incomplete contracts³⁹. This theory is part of NIE, in this way that it revises the assumption of perfectly rational decisions. It takes into account the fact described by H. Simon that “boundedly rational agents experience limits in formulating and solving complex problems and in processing (receiving, storing, retrieving, transmitting) information”⁴⁰. According to Simon's model, economic agents have only a partial knowledge and understanding of their economic surroundings : they are not able to foresee how economic context will change during the length of the contract. Due to their bounded rationality, agents are not able to write contracts that specify the legal consequences in every possible state of the world. It is therefore much more efficient to provide contracts which leave space for personal appreciation of the parties. Their contracts are therefore incomplete contracts, with incentive effects rather than full description of all possible cases.

Neo-Babylonian evidence gives some examples of such incomplete contracts. The following text is one of them : YOS VII 63⁴¹

15 mina's of silver, property of the temple of the lady of Uruk and of Nanai, is to be given to Iqīša and Balātu, as a capital for their travel to Transpotamia. In proportion to the consignment which they will gather in Transpotamia, and will transport to Babylon, they will deliver to the temple Eanna (15 minas of silver's worth of) white wine, white honey, copper, iron, tin, blue-purple wool and other necessities for Eanna.

This contract was concluded between the temple's administrators and the agents, Iqīša and Balātu were commissioned to travel long distance, in Transpotamia, to bring back some exotic products. Long distance trade is a good example of economic activity bearing heavy risk and

³⁸ Those contracts goes beyond the traditional investor-agent contracts known in previous times. They allow for a the distinction between the company (and its capital) and the partners as ‘private individuals’ not that far from a business company understood as a fully independent legal entity in its own right. As (Jursa, 2008) noticed, it is not surprising that those new contracts arose at a time when private business increased.

³⁹ Williamson’s transaction costs economy is a theory of contracts under conditions of uncertainty and asymmetric information, where legal enforcement and self enforcement complement each another. (Williamson, 2000).

⁴⁰ (Simon, 1957).

⁴¹ (Oppenheim, 1969).

incertitude. Neither the prize nor the quality of goods can be foreseen at the moment of the departure. There is therefore no other way than to leave the traveling agent free to judge what the best choice is, once he reached the foreign market place. The contract concluded between temple and travelers is therefore a typical incomplete contract.

However Williamson warns us : those contracts are efficient because they leave the parties free to react to a changing economic context. But they are also dangerous, by allowing opportunistic behavior : one of the parties may try to manipulate the other one. For example one partner may keep some useful information for himself, not saying that he could have bought commodities at a lower price or of better quality for example. Ancient agents are aware of the risk of partner disloyalty involved in incomplete contracts. In the same long distance trade context as the aforementioned text, this new one (PTS 3068⁴²) stipulates that the delivery will not be accepted and the money given back if the consignment does not meet the temple's needs :

Three mina's of silver, property of the lady of Uruk and Nanāja, price of twelve talents of wool, is against the account of Ilu-rēšia-ušur, servant of the king. According to the temple's requirement, he will pay gold, bronze and other trade goods to Eanna, as he will find them in Meerland. **In case the qīpu and the šatammu are not pleased with those trade goods, he will give 3 minas of silver to Eanna.** This is in addition to the earlier deficit owed by him. Done on behalf of Mušezib-Marduk, qīpu of Eanna, Bānia, šatammu of Eanna, son of Tabnēa, of the Bā'iru family.

Some texts give an idea of strategies used by administrators of the temples to ensure the reliability of their partners. In a text⁴³, the capital given to the agent commissioned to travel abroad is given in the form of a large house. This is a good way to ensure that the person entrusted with the money will not disappear without having delivered the merchandise⁴⁴, a strong risk in those business transactions which involved traveling abroad. This measure however has its limits, as is demonstrated elsewhere⁴⁵: we learn in a text that the temple of Eanna had to initiate legal procedure to claim back a house entrusted as capital for the commercial goods after ten years without getting neither the money nor the shipment back.

⁴² (Kleber, 2008, p. 327).

⁴³ YOS XIX, 1. (Laetitia Graslin-Thomé, 2009, p. 51)

⁴⁴ (Laetitia Graslin-Thomé, 2014b).

⁴⁵ AnOr VIII 70. (Laetitia Graslin-Thomé, 2009, pp. 49–50)

In the modern world, when the transaction costs of coordinating production and exchange through the market are too high because of imperfect information, Coase and Williamson⁴⁶ explain that a common answer is the emergence of firms. Those firms can take several aspects, such as franchise, internal production instead of market use, take over of the supplier and cross share-holdings. All those structures rely on the idea that it may be better to assume internal transaction costs than relying on a too uncertain market. No firm or franchise existed of course in the ancient world, but the idea that internal transactions are convenient to avoid the market incertitude is not unknown in ancient times. If we take, once again, the example of the aforementioned text YOS VII 63, we can see those ideas in practice, for a long distance trade context. It is not easy to answer the question regarding the status of the agents commissioned by the temple to travel abroad to buy exotic goods abroad. It is difficult to decide if they belong to temple staff, or if they were independent merchants concluding contracts with the temple⁴⁷. Nevertheless, the very existence of those contracts showed that the temple administrators sometimes preferred to use personal contracts rather than relying on the market.

If we want to go further in describing ancient Babylonian economy in NIE terms, we can notice several economic structures not that different from what Williamson and NIE economists call organizations, and interpret as a way to reduce transaction costs. This article does not intend to fully investigate the comparison, but will limit itself to give several leading ideas. According to Williamson and NIE economists, an organization is a group of individuals bound by some common purposes to achieve economic objectives. Organizations include political, economic or social bodies. They are the players of the game, while institutions are the rules of the game. They are designed to internalize transaction costs, and to reduce the risks of dishonesty of the partners. Neo-Babylonian temples can be considered as examples of such organizations : they had an abundant staff, ruled important estates and herds⁴⁸. Those means of production were ruled by administrators, even if Assyriologists still need to investigate who exactly they were⁴⁹ and how they took their economical decisions. Nevertheless, thanks to the abundant evidence remaining from temple administrations, we have an idea of their strategies and achievements. Recent studies, as example, have focused on the kind of bookkeeping held by those administrations, what kind of economic forecasting they allowed, and what their economics goals

⁴⁶ (Coase, 1937)

⁴⁷ On this subject, see (Laetitia Graslin-Thomé, 2009, pp. 393–401).

⁴⁸ On Neo-Babylonian temples and their economic organization, see (Bongenaar, 1997) (Kleber, 2008) (Kleber, 2013).

⁴⁹ (Jursa, 2013)

were⁵⁰. In this case, to speak in NIE vocabulary, we have both the organization (the temple) and the institutions (the rules and tools they can use).

Other example of organizations in the sense of NIE can be found in private archives as well. A well documented one is the example of the Egibis⁵¹, a famous family of entrepreneurs : the about 1700 clay tablets that have been recovered from their private archives are helping to reconstruct the complex economic system that they managed to build. As tax farmers, they took control over the commodities suppliers, and built a strong network, involving shipping, storage and food-processing. By the end, they took control of the whole chain. We also know of the economic activities of a certain Iddin-Marduk⁵², thanks to approximately 400 preserved records that come from his personal archive : this business man bought agricultural commodities from the local producers, and sold them in Babylon. He played a go-between role between small rural cultivators and temples or state fiscal agents. His role was to convert the crops to cash needed by local cultivators to pay their taxes. Numerous contracts founded in his archives look like this one⁵³ :

1 mina of silver, in owed by Nergal-aha-iddin, son of Ahhē to Iddin-Marduk, son of Iqīša heir of Nūr-Sin. At the month of Nisan (5th), he will pay tback the silver and the interest. This is in addition to the earlier deficit owed by him.

Written before the harvest, this contract points out the amount of commodities to deliver, as well as the price and the delivery location. In a way, it transforms what could have been a market transaction into a contractual one. It is exactly what Williamson describes in his theory of the firm. From the producers point of view also, those contracts are a response to their inability to sell their crop by themselves. In a newly monetarised economy, they are required to pay their taxes in silver, but have neither the opportunity nor the knowledge to find it by selling their crop by themselves. They therefore have no other choice than to conclude contracts with a business man who was more familiar with the economic system. The NIE explains non-market forms of organization as rational consequences of market failures. The importance of such organizations in VIth century Babylonia may have indeed been a sign of a incomplete market system.

⁵⁰ (Jursa, 2004). (Laetitia Graslin-Thomé, 2014a).

⁵¹ Their original trade in agricultural products became a large business, financed by *harranu*-contracts, connected with institutional actors. See (Wunsch, 2000) (Wunsch, 2007) (Wunsch, 2010).

⁵² (Wunsch, 1993) (Wunsch, 2010).

⁵³ Nbn 943, (Wunsch, 1993, pp. 199–200)

Incomplete contracts, internalization of production or transactions to avoid transaction costs, most economic facts described by NIE are to be found in ancient Mesopotamia as well. One question nevertheless remains : does the use of NIE help to go further than a mere description, which would have been possible without using economic models ? The position advocated in this paper is that it may help to realize some paradoxes which deserve explanation. It also helps to draw attention to aspects that could have been otherwise missed. Previous pages have described transformations in Neo-Babylonian economy which impact the transaction costs. In an all too simple view of economic development, those transformations should be quickly adopted by economic agents. Nevertheless, they often were not, or incompletely. We have pointed out that despite evidence of camel use for long distance trade, this new means of travel is never mentioned in babylonian business men's archives. Equally, silver money is more commonly used, but not everywhere in the same way. We've seen above a text where one of the parties obviously didn't feel confident enough with the use of this means of payment as he required his partner for the cutting of the silver ingot : a modern economist would however tell him that paying in silver is the easiest way to pay. This is not a isolated example : when actual coins began to arrive in Babylonia, archaeological remains show that they were still cut as silver pieces⁵⁴. To the great surprise of modern economists, the local population didn't realize the economic benefits they could draw from the introduction of coinage.

All those clues lead us in the same direction. There were institutional changes, transactions costs fell, and these sometimes allowed economic growth. However, their impact was more limited that we could expect. To explain this paradox, it may be useful to read another economist belonging to the NIE, D. North. This economist is probably the most famous NIE economist amount historians, because he is the only one to have explicitly written on the impact of history on economic structures : historians can only agree with his famous saying "history matters". He explains that institutional change can lower transaction costs, and allow economic development. It is what usually holds historians attention. But the second side of D. North's reasoning seems at least as important. If the institutions may lead to economic change, other institutions may prevent it from happening. In most NIE's thought, development is seen as a response to the evolution of institutions that support social and commercial relationships. Economic growth thus depends on the degree to which the risky environment can be

⁵⁴ Suchs coins are to be found in the so-called Rassam treasury, found in Babylon, dating from the Persian times. (Reade, 1986) (Laëtitia Graslin-Thomé & Monerie, 2012).

controlled by institutions. Those institutions reduce information costs, encourage capital formation and capital mobility. They also allow risks to be priced and shared and otherwise facilitate cooperation. D. North, on the contrary, draws attention to the fact that institutions originally made to help economic practices are sometime still in place at a time when they are no longer useful, and sometimes counterproductive : their very existence makes economic activities more difficult and costly. This phenomenon, where some decisions were limited by other decisions taken in the past, even though past circumstances are no longer relevant, is called "path dependence". This fact, which has yet not been fully explored by historians, could be a significant contribution of NIE to ancient economic history.

According to D. North's definition, institutions can be formal like rules or laws, or informal like customs, traditions or code of conduct⁵⁵. Mentalities, social practices or interests of certain groups slow down innovations that could benefit the society as a whole. In his most recent publication, D. North draws attention to the mentalities and beliefs, and to the role they play in this path-dependence : legal institutions changes have no effect if the shared mental models and beliefs of the population do not change themselves. They are crucial points to understand how people may accept or reject a possible evolution : "in order to understand decision making under such conditions of uncertainty we must understand the relationship between the mental models that individuals construct to make sense out of the world around them, the ideologies that evolve from such constructions, and the institutions that develop in a society to order interpersonal relationships"⁵⁶. This is furthermore important in history that the mental structures tend to change considerably slower than legal framework.

From a historian point's of view, this emphasis put on the importance of the mental models of individuals is relevant to describe the mental rigidities which restrict economic change. Recent research in Neo-Babylonian economy draws attention on mentalities, and on their consequences on economic behavior. M. Jursa recently described⁵⁷ two different kinds of economic behavior that he called the "rentier type" and the "entrepreneur type". Most Neo-Babylonian archives belong to "rentier" families : their members sought to obtain a reliable income from mostly inherited positions and resources. Most

⁵⁵ According to D. North, institutions are "humanly devised constraints that structure political, economic and social interactions. They can be both formal rules (constitutions, laws, property rights) and informal restraints (sanctions, taboos, customs, traditions, code of conduct), which usually contribute to the perpetuation of order and safety within a market or society". (North, 1990, p. 3).

⁵⁶ (D. North & Denzau, 1994). The mental models are, according to North and Denzau, "the internal representation that individual cognitive systems create to interpret the environment".

⁵⁷ (Jursa, 2010) (Jursa, 2009).

of their economic activities were related to the exploitation of prebends and landed property. Those kind of economic agents obviously avoided the risk and the new economic activities. Temple administrators behaved in the same way. We have shown for example that they were reluctant to take part in long distance trade and prefer to deal with agents bound by contracts. Their compatibility, known through their numerous archives, is rudimentary despite the enormous amount of tablets produced : it is designed to control the temple staff and avoid misappropriation of goods, not to plan an economic strategy⁵⁸. A few archives show a different kind of economic behavior. The Egibi family, or the aforementioned Iddin-Marduk, are examples of Jursa's "entrepreneur type"⁵⁹. They tended to engage in a highly profitable but also risky venture business on taking profit from the increasing monetarization of the economy. One of their main activity was to organize the flow of commodities and silver transfers between cultivators and large institutions, temples, palaces or people related to the crown. Their economic activities were strongly related to palaces and temples. They made profit from their relationships with the crown to be awarded farming contracts or tax exemption to use transportation means⁶⁰. Their social status depended, at the same time, on their relationship with those preminent institutions. They often bought prebends, to be integrated into the local notability related to temples. The close relationship between the so-called entrepreneurs and the institutional sector of economy (temple or palace), evidenced throughout our texts, shifts their economic activities and innovation abilities toward temple and crown. It may have led them to ignore other economic tasks. This relative disinterest on outer economic fields could be part of the explanation of the fact that Neo-Babylonian business men obviously missed the opportunity of long distance trade development.

This article tried to apply some of the NIE conclusions to the study of ancient Neo-Babylonian economy. The transaction cost theory helps to take into account several aspects that play a role in economic change at this time : transport costs do not change a significantly way, but legal innovations in business contracts allow new business activities, on a large scale, as they make possible it to raise a higher level of capital than before. Nevertheless, the economic system is still imperfect, and we have in Neo-Babylonian times evidence of several economic structures which are labeled by NIE economists

⁵⁸ (Jursa, 2004) (Laetitia Graslin-Thomé, 2014a).

⁵⁹ (Laetitia Graslin-Thomé & Vivel, 2005).

⁶⁰ (Wunsch, 2010).

as a way to circumvent an unsatisfying market : incomplete contracts, organizations trying to internalize exchange instead of relying on the market were common in Neo-Babylonian times. Finally, it seems that historians have to take into account the newest development of NIE theory, which draws attention to the institutional rigidities which may restrict economic change. Bounded rationally of the agents, and, furthermore, mentalities are to be taken into account for an accurate understanding of modern and ancient economies. In some way, economic theory and history seems to converge on the same kind of interests. Thanks to its more nuanced view of economic reality, the NIE provide historians with models that are more useful in describing ancient facts than former economic systems. And actually, most of the facts that they highlight can also be found in ancient economy. It also helps to overcome the old debate between the tenants of a market or non-market economy in ancient times. Thus, NIE is particularly useful for historians, as it argues against a too “market-oriented” view of modern economies, a theoretical choice what is evermore true in ancient times. It encourages focus on institutional change and on mentalities, seen as an economic variable. NIE helps to ask the question of economic growth in antiquity in a more subtle way than previous research : technological change is not the only factor which has to be taken into account. Institutions can both accelerate or restrict economic change, mentalities and value system must not be put apart of economic explanations. In this sense, NIE gives a theoretical framework to explanations that have already been given by historians, to help form a fully coherent system. On the other hand, NIE is a good way for economists to have access to precise and up-to-date historical evidence, that could, in return, be fruitful for their own modelisation. But in this aspect, much work remains to be done.

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