

# MASS PRODUCTION IN MESOPOTAMIA\*

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## **Summary: Mass Production in Mesopotamia**

This short paper responds to some interesting remarks made by Assyriologist Marc Van De Mieroop. It considers the meaning of mass production and its relevance in an ancient Mesopotamian context. The paper discusses mold technology and craft goods. It also analyzes evidence for Ur III and Isin workshops. Finally, the paper deals with the question of whether craft goods were produced only on order for an advance payment. The conclusion is that Mesopotamia knew mass production as well as production of craft goods in advance of order.

**Keywords:** economies of scale – division of labor – specialization – spot market

## **Resumen: Producción en masa en Mesopotamia**

Este breve artículo responde a algunas apreciaciones interesantes efectuadas por el asiriólogo Marc Van De Mieroop. Considera el significado de la producción en masa y su relevancia en el contexto de la antigua Mesopotamia. El artículo discute la tecnología de molde y los bienes artesanales. Analiza la evidencia provista por los talleres de Ur III y de Isin. Finalmente, trata la cuestión acerca de si los bienes artesanales fueron producidos por encargo con un pago por adelantado. La conclusión es que Mesopotamia conoció tanto la producción en masa como la de bienes artesanales por encargo.

**Palabras Clave:** economías de escala – división del trabajo – especialización – lugar de mercado

Speaking of Mesopotamia Van De Mieroop maintains that “*as there was no mass production of craft goods to be available to the buyer on the market, they were custom-made for an advance payment.*”<sup>1</sup> One may well wonder

\*My thanks to Jan Gerrit Dercksen for his most helpful comments. The responsibility for any errors is mine alone.

<sup>1</sup> Van De Mieroop 2002: 171.

whether this means that the ancient production strategy was backward or precocious! As I press the keys on my Dell computer, I am reminded that something known as “mass customization” is very much “in.” Basically, this is a build-to-order (BTO) system in which orders precede manufacture and customers pay in advance. Be this at is may, Van De Mieroop presents no supporting evidence nor does not tell us what he means by “mass production” or by “craft goods.”

Let us see what can be made of Van De Mieroop’s interesting assertion beginning with the problem of mass production. Obviously, if we are talking about *contemporary absolute amounts* of production then, of course, mass production did not (could not) exist anywhere in antiquity. However, if mass production is understood as a *technique* for producing standardized craft goods involving division of labor/specialization and/or economies of scale, then the concept is applicable to Mesopotamia.

#### MOLD TECHNOLOGY

Obviously, Mesopotamia was intimate with utilitarian objects made in molds. These *standardized* “craft goods” ranged from clay figurines used as votive offerings to pins, pots, and axe-heads. Concerning pottery production, Van De Mieroop has elsewhere observed:

*“The professionalization of pottery production is also visible in the archaeological record. From early prehistory on, starting with the earliest permanent settlement in Mesopotamia proper, pottery was standardized in shape, ware, and decoration. At times, the standardization for certain types of vessels was so rigorous that something approaching on industrial level production can be imagined. For instance, in the late fourth millennium, enormous numbers of bowls, now referred to as bevelled-rim bowls, were produced in moulds of one shape and a limited number of sizes. ...Finally, we have a limited number of accounts listing enormous quantities of pots produced in specialized workshops. Unfortunately, no archive of such a workshop has been preserved, but their existence cannot be denied.”<sup>2</sup>*

<sup>2</sup> Van De Mieroop 1987: 177.

Van De Mieroop goes on to quote an Ur III text listing “*an enormous number of vessels produced in a single year.*”<sup>3</sup> There is no reason to assume that all the steps in the production process for the pots were taken in the same place by the same craftsman. Indeed, it is reasonable to assume that there was a flow of work. *The mold technology demonstrates clearly that Mesopotamia realized mass production gains via division of labor/specialization.*

This brings us face-to-face with Van De Mieroop’s “craft good.” It might immediately be objected that an object made in a mold has ceased to be a “craft good” because that object was not made from beginning to end by a single skilled craftsman. I have two responses. First, the objection reduces Van De Mieroop’s important claim to a tautology. If a pot previously (or possibly) produced by a single skilled craftsman is instead “mass produced” in a mold-technology involving the use of workers of various skills and even of unskilled labor, then it ceases to be a craft good. So, of course, there has been no “mass production” of “craft goods”! Second, and more importantly, why should we care about this? The ancient consumer ends up with the pot and he/she gets it at a lower price!

#### OCCUPATIONAL AND PROCESS SPECIALIZATION

Moreover there is evidence for the Ur III period that “craftsmen,” including workers in wood and ivory, gold- or silversmiths, stone workers, carpenters, smiths, leather workers, rope makers and reed workers, produced final products and were not necessarily responsible for all the steps in the production process. This is indicated by the fact that “*along with raw materials described for the individual objects to be produced, many times other manufactured items are listed as materials to be used for the production of different objects.*”<sup>4</sup> Thus, we have evidence not only of *occupational* specialization but also of *process* specialization within an occupation. The objects being produced, it should be added, are primarily luxuries of undetermined ownership.<sup>5</sup> As is well known the division of labor is limited by the extent of the market. It is well to add that the market must be even larger to support process specialization than for occupational specialization.

<sup>3</sup> Van De Mieroop 1987: 177-178.

<sup>4</sup> Loding 1974: 6, citing the twelve column tablet UET III, 1498.

<sup>5</sup> Loding 1974: 2, 6, 16.

Van De Mieroop (1986) has elsewhere provided additional evidence for Isin. A number of texts show a workshop employing carpenters, leather workers, reed workers and felters. It was supplied with inputs by a “supply house,” a “house of weavers,” and, with animal skins, by various individuals with no mentioned professional designation. The products of the workshop were sent for further processing or to various customers “*most prominently... the palace, the temples, and foreign dignitaries.*”<sup>6</sup> There is no question here of specialized craftsmen carrying out the entire productive process from raw material to finished product. Van De Mieroop explains:

*“This is especially clear from the activities of the leather workers. They received hides which had already been prepared for tanning... Just as the craftsmen did not always start from the basic materials, they did not always produce the entire finished product. Some products were, for instance, sent to the house of the goldsmiths to be used in objects such as thrones for deities.”*<sup>7</sup>

The ownership and method of remuneration of the workshop is not made clear in the documents. As a footnote to this discussion, we may take note that in the Isin workshop only the lids of vessels were produced.<sup>8</sup>

#### PROBLEM OF ADVANCE SALE

Now let us turn to the question of advance sale. What we do have are letters mentioning the intention to buy goods or the price one is willing to pay but these communications cannot demonstrate that craft goods were custom-made for an advance payment. There is, however, evidence against Van De Mieroop’s claim. In the early second millennium, Assyrian merchants sent “standard” Babylonian textiles (e.g., *kutānu*-cloths) to be sold in Anatolia. The Anatolian demand for “fine textiles” might be satisfied by purchase in Assur’s marketplace.<sup>9</sup> Advance payments were not required.

<sup>6</sup> Van De Mieroop 1986: 91.

<sup>7</sup> Van De Mieroop 1986: 90; cf. 1987: 33, 42, 118.

<sup>8</sup> Van De Mieroop 1987: 42.

<sup>9</sup> Veenhof 2003: 111.

Of course, craftsmen sometimes did require an advance payment. An Ur III lawsuit (ITT II 3538 = NG II 131) demonstrates that a private craftsman received an advance payment to produce a chair for a private buyer. The contract specifies that the chair was to be manufactured from boxwood and bronze.<sup>10</sup> It appears that this is a rather special chair to meet the tastes of a wealthy consumer. The special circumstances probably explain why the terms were reduced to writing in the first place.<sup>11</sup> Even today, when purchases of craft goods “off the shelf” are commonplace, it would not be surprising for a cabinetmaker to require payment in advance for a specialized, valuable product like the one in question.<sup>12</sup> Van De Mieroop adduces only a Mari letter as evidence for advance payment:

*“In the past I have given you grain for the acquisition of stones for a necklace, but you have not yet bought those stones...Now the goldsmith has received the gold and silver, but the toggle-pins have not been made yet...If the work is not finished soon, it is no longer a commission.”<sup>13</sup>*

Again, we seem to be dealing with a specialized, valuable product. Moreover, as Dercksen points out, “*the receipt of silver and gold by the smith might also be interpreted as providing him with the necessary materials.*”<sup>14</sup> The fact remains that there are many references in the ancient texts to trade in ordinary craft products and these do not demonstrate that payments had to be made in advance of production.

A *spot market* is a market in which products are bought and sold for cash and delivered immediately. The idea that Mesopotamian consumers and merchants did not know spot markets for “craft goods” is incredible on the face of it. An invariable practice of insisting upon payment in advance of production would have raised transaction costs by an order of magnitude. Such an increase in cost was easily avoidable. Urban craftsmen might, after

<sup>10</sup> Neumann 1993: 153-154.

<sup>11</sup> See Neumann 1993: 151.

<sup>12</sup> Another Ur III document (NRVN I 192) obligates a debtor to pay interest on a loan by performing carpentry work (Neumann 1993: 154). However, this appears to be an “antichretic” loan rather than a case of payment in advance for a craft good. In an antichretic loan, the debtor pays interest by providing the lender with (land or labor) services instead of cash.

<sup>13</sup> Van De Mieroop 2002: 171.

<sup>14</sup> Personal correspondence dated September 28, 2004.

all, count on a certain volume of trade and, in their own interest, produce accordingly.<sup>15</sup> Those producers who insisted, despite the absence of good economic reason, on being paid in advance for cheap goods/goods of everyday use would certainly have been punished by the laws of supply and demand – that is, they would have lost clients to competitors who sold off the shelf.

### ECONOMIES OF SCALE

There is one more problem to deal with. Van De Mieroop's implies that the ancients reaped no benefits from mass production. However, the kiln of the potter/oven of the baker/press of the olive oil producer gives rise to "fixed," "sunk," or "overhead" cost for his enterprise. There were also indivisible factors of production. Consequently, over some initial range of production, however limited, *per unit* cost would decline with the number of pots/loaves/olive oil produced per period. The reductions in average total cost due to "economies of scale" represent gains from mass production. The gains, it should be understood, would accrue even within technologies where a single skilled craftsman produced the entire product.

To summarize: (1) antiquity knew standardized craft goods; (2) craft goods did not invariably have to be paid for in advance; (3) there was mass production of craft goods. I cannot agree with Van De Mieroop about this matter.

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<sup>15</sup> In this connection Kawami (July 28, 2003) has called my attention to an old film titled "Folk Potters of Hebron" made by Robert Haber and distributed by Janus Films in New York City: "It clearly showed how the potter used members of his family as specialized workers and how pots were actually 'mass produced' on a small scale. There ...was a steady demand for certain types of ceramics and so the potter could, and did make them 'on spec,' that is prior to sale, or even order, since the potter knew the demand would be there." I understand that a corresponding Egyptian film is "The Potters of Deir Mawas" (Nickelson and Wendrich).

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