Markiewicz, Tomasz

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Tomasz Markiewicz

HEQANAKHTE AND THE ORIGINS OF *HEMIOLION*[*]

NUMEROUS PAPYRI from the Graeco-Roman period attest the increase of 50% in loans of commodities, irrespective of the duration of the loan. To be exact, ἡμιολία – as this practice is referred to in the Greek documents – may denote either the interest stipulated on the loan or the penalty incurred by failure to repay on time.[1] Whereas as interest the *hemiolia* is attested only in loans of commodities (the 50% rate in money loans being considered usurious and forbidden by law), as penalty it was also employed in money loans.

The 50% increase is attested already in the Pharaonic period. As penalty in a money loan it is preserved only in one known document, P. Berlin 23805, dated to 343 BC.[2]

[*] The present paper was written for the most part when the author was holder of the Mellon Fellowship at the American School of Classical Studies at Athens. I am very grateful to Dr. Edward BLEIBERG for providing me with an electronic version of his paper 'Loans, Credit and Interest in Ancient Egypt' that was otherwise inaccessible to me.

[1] N. LEWIS, 'The meaning of σὺν ἡμιολίᾳ and kindred expressions in loan contracts', *TAPA* 76 (1944), pp. 126–139; reprinted in IDEM, *On Government and Law in Roman Egypt*, Atlanta 1995, pp. 17–30. See also R. TAUBENSCHLAG, *The Law of Greco-roman Egypt* Warsaw 1955 (2nd ed.), pp. 345–347, H. J. WOLFF, *Das Recht der Griechischen Papyri Ägyptens in der Zeit der Ptolemaeer und des Prinzipats*, I (ed. H.-A. RUPPRECHT), München 2002, pp. 91–92

[2] K.-Th. ZAUZICH, 'Ein demotisches Darlehen vom Ende der 30. Dynastie', *Serapis* 6 (1980), pp. 241–244.

On the other hand 50% interest in commodity loans appears in the following documents:

DOCUMENT	DATE & PROVENANCE	CAPITAL	TO BE RETURNED	INTEREST
Tablet MMA 35.3.318 *recto*	9 October 686 BC Thebes	30 sacks of barley	45 sacks of barley after 8 months (on 30 Choiakh, year 6 = 10 June 685 BC)	50%
P. Louvre 929 [= *P. Choix* 3]	March/April 498 BC Thebes	1 artaba of wheat	1 ½ artaba of wheat after 1 month (Tybi of year 24)	50%

To these we may add also two further documents where the 50% increase is not mentioned, but seems to be included in the sum stipulated by the contract:

DOCUMENT	DATE & PROVENANCE	CAPITAL	TO BE RETURNED	INTEREST
P. Louvre 3228 B [= *P. Choix* 1]	10 May 703 BC Thebes	22 ½ sack of emmer	22 ½ sack of emmer (15 sacks of capital + 7 ½ of interest ?) after 1 month	50%?
P. Strassb. 4 [= *P. Hou* 13]	June/July 487 BC Hou	27 sacks of barley	27 sacks of barley (18 sacks of capital + 9 sack of interest?) to be returned on demand	50%?

Let us turn the attention to the different periods at which those loans have been contracted, as they may indicate their purpose. The transaction of Tablet *MMA* 35.3.318 recto was concluded in October, about the time of

sowing in Upper Egypt, therefore it can be said with some probability that it was the seed grain that was lent here – it was to be returned in June, *i.e.*, some time after harvest, after 8 months. *P. Choix* 3 records a loan drawn up just before harvest – to be repaid after just one month, from the freshly harvested grain. The situation behind *P. Choix* 1 may have been similar if the harvest happened to be a little late this year (*e.g.* due to big inundation). In *P. Hou* 13 the barley lent was probably harvested not long before – it is to be returned on demand and we have no clue as to the purpose of the loan.

We have here the three basic categories of grain loans:

1) loans of seed grain advanced at sowing time and repaid after harvest;
2) short-term consumption loans advanced to needy farmers in the period of food scarcity before harvest;
3) loans contracted for different purposes, not connected with the agricultural cycle.

What connects them is the interest – invariably it is 50%.

What a historian of economy would like to know is why Egyptians kept to this practice for centuries and what the economic meaning of 50% increase on loans contracted under different circumstances and for different periods was.

As usual, the evidence is scarce, but does exist. The oldest unquestionable mention of a 50% interest on a grain loan comes from a Ramesside papyrus *P. Turin P.R* 9 that informs us about a litigation ensuing from an unpaid loan of 10 sacks of barley. The loan was contracted on the 30th of Tybi of year 5 (of Ramesses II) and was to be repaid with an increase of 50 % at the end of the year.[3] But it was not, and the debt increased to 30 sacks

[3] E. Seidl, *Einführung in die ägyptische Rechtsgeschichte bis zum Ende des Neuen Reiches*, Glückstadt – Hamburg – New York 1957, p. 54, followed by Bernadette Menu, *Recherches sur l'histoire juridique, économique et sociale de l'ancienne Égypte*, Versailles 1982, p. 243, thought that the interest recorded in this transaction was 100% per annum and the 50% increase was charged because the loan was to be repaid after half a year. But I think 50% was alredy the standard interest on commodities irrespective of the loan duration, and 100% was only charged as punitive interest. Penalty consisting of 100% increase is stipulated in some Demotic documents, e.g. P. Cairo 50122 = *P. Hawara* 24/D.

in the course of year 6, in compliance with the usual penalty of 100% (the doubling) attested also in some ostraca of this period. (O. Cairo 25553 and O. DeM 61). Unable to discharge this considerable debt, the debtor sought to acquit himself from the obligation by offering two donkeys and some copper scrap in its stead. Apparently no agreement was reached and the case was eventually brought to court.

There are, however, reasons to believe that in the Ramesside period the custom was already quite old. The Heqanakhte papers from the early 12th Dynasty may provide some of the earliest evidence.[4] Several of his papyri mention debts of grain (emmer and 'full barley') that others owed to Heqanakhte. We are never told how these debts came into existence: they may have resulted from unpaid rental fees on land leased out by Hekanakhte; or they may represent loans advanced by him to his neighbours. Allen suggests that entries with debts specified by place name as well as debtor may represent rental fees due, while those listed by debtors' names only record loans.[5] He further states that 'earlier and contemporary evidence indicates that this kind of loan, known as *ṯ3bt*, was seen as a civic duty owed by those who were well off to their less fortunate neighbours. As such they seem to have been made without interest, the only obligation on the part of the debtor being repayment in full.'[6]

I remain sceptical as to whether the loans recorded in Heqanakhte's papyri were really interest free. First of all, it is not quite certain that we deal here with *ṯ3bt* loans, as they are never called by this name by Heqanahkte himself, and the word seems to be only mentioned on the small unplaced papyrus Fragment A, the exact context being lost. Furthermore I am not convinced that *ṯ3bt* in this context necessarily meant an interest free loan.

[4] The Heqanahkte papers have been first published by T. G. H. James as *The Heqanakhte Papers and Other Middle Kingdom Documents*, New York 1962. Since then a considerable bibliography on Heqanakhte has accrued, but earlier editions and studies have been now superseded by the magisterial re-edition of J. P. Allen, *The Heqanakhte Papyri*, New York 2002.

[5] Allen, *The Heqanakhte Papyri* (cit. 4), pp. 159 & 163.

[6] Allen, *The Heqanakhte Papyri*, (cit. 4), p. 163.

The meaning of the term *ṯ'bt* is not undisputed. Gardiner first considered it to denote a kind of grain.[7] *Wörterbuch* (v 354, 10) gives the meaning of 'grain loan' (*Darlehen an Getreide*), which was universally accepted, especially when Vandier analyzed some late Old Kingdom – early Middle Kingdom 'autobiographical' inscriptions, where advancing *ṯ'bt* to the needy in times of economic strife is presented as an act of benevolence on the part of local nobles.[8] On the basis of these inscriptions it was generally assumed that *ṯ'bt* were interest free loans of grain issued by local dignitaries to their people in times of famine just before and during the First Intermediate Period until the re-established central government took it upon itself again at the onset of the Middle Kingdom.[9] The traditional interpretation has been recently challenged by Meeks, who argues that *ṯ'bt* had a more general meaning of surplus of grain from the last crop stored away for the case of a bad harvest next year.[10] It was from such surplus that grain loans (or perhaps donations in some cases) were advanced.

We may assume that such loans were interest free, although the texts themselves do not state this explicitly. But we must not forget that the context here is rather specific: these are idealized biographies of local nobles boasting of their own righteous behaviour in accordance with the *maat*. *ṯ'bt* may have denoted an interest-free loan in this context, but it could be a generic term for 'any kind of loan', including interest bearing loans contracted under normal circumstances between individuals such as

[7] A. GARDINER, *The Admonitions of an Egyptian Sage*, Leipzig 1909, p. 68 (9.4–5).

[8] J. VANDIER, *La famine dans l'Égypte ancienne*, Caire 1936, pp. 105, 107, 121–122, 157.

[9] As it was summarized by Bernadette MENU: 'il s'agit d'avances de céréales accordées par des fonctionnaires à des particuliers et que ces avances étaient remboursables, probablement dès que possible, c'est-à-dire à la prochaine récolte. Ce prêt, conçu comme un *service public* est sans doute gratuite.' (MENU, *Recherches* [cit. n. 3], p. 228). See also E. BLEIBERG, 'Loans, Credit and Interest in Ancient Egypt', [in:] M. HUDSON & M. VAN DE MIEROOP (eds.), *Debt and Economic renewal in the Ancient Near East*, Bethesda, Maryland 2002, pp. 257–260.

[10] D. MEEKS, 'À propos du prêt de cereals en période de disette', [in:] N. KLOTH *& al.* (eds.): *Es werde niedergelegt als Schriftstück (Festschrift Altenmüller)*, *SAK Beiheft* 9 (2003), pp. 275–280. The appearance of the word *ṯ'bt* in the Heqanachte's papyri has not been noted by Meeks, but it is perhaps irrelevant to his discussion since here the context is unfortunately lost.

Heqanakhte and his neighbours. There is, moreover, nothing to link Heqanakhte's modest business activities with charitable actions of dignitaries much more wealthy and powerful than he was. The context is altogether different here. Heqanakhte was no VIP spending surplus of his financial means in charitable actions that would buy him social recognition and better chances in front of Osiris' tribunal; he was a relatively modest man trying to preserve his family's level of life in difficult times and looking for a bargain wherever he could find one.[11] Everything that we know about Heqanakhte's dealings renders it rather improbable that he invested almost 100 sacks in grain in interest free loans out of pure kindness.[12] His carefully devised strategies seem to contradict the belief that the idea of profit-making was completely alien to the Egyptian mind.[13]

The debts entries in Heqanakhte's papyri deserve a closer look. They are as follows:

DEBTOR	LOCALITY	AMOUNT (IN SACKS)
Letter III, ll. 6–8		
Neneksu	Hathaa	15 emmer
Ipi Jr.	Pool of the Sobeks	13 ½ full barley
Ipi, son of Nehri	New District	20 emmer
Desher, son of Nehri	New District	3 emmer
Account V, ll. 39–54		
Senuhetep, son of Ishetni		18 full barley
Hetepkhnum, estate manager		7 ½ full barley
Big Khety, son of Semekhsen		4 ½ full barley

[11] Cf. B. J. KEMP, *Ancient Egypt. Anatomy of a Civilisation*, London and New York 1994, p. 240.

[12] This figure refers to the total amount of debts thought by Allen to represent loans (listed in Account V ll. 37–54 and VI ll. 15–19. 100 sacks would have made about 20 yearly income and would keep his household salaried and fed for about 5 months, cf. ALLEN, *The Heqanakhte Papyri* (cit. n. 3), p. 165.

Debtor	Locality	Amount (in sacks)
Account v, ll. 39–54		
Sankhsobek, son of Nefersedjerut		5 emmer
Ankh, son of Wesret		5 ¼ emmer
Ipi, son of Kha		1 emmer
Khentekhai-hetep, son of Ipi		3 full barley
Khentekhai-hetep, son of Metjenuti		30 emmer
Ishetni, son of Renenrehut		3 full barley
Ruddy Khety		1 ½ full barley
Nakht, son of Shed		1 ½ full barley
Khety, son of Meru		1 ½ full barley
Shed, son of Shed		3 full barley
Account vi, ll. 1–20		
Nenref and his brother, sons of Sebeknedjem	Northern Hathaa	15 full barley
Ipi Jr.	Pool of Sobeks	9 full barely
Ipi, son of Nehri	New District	21 full barley
Sisobek	Place of Netting	4 full barley
Sau	Place of Netting	3 full barley
Hay, Custodian of Hounds	Place of Netting	10 full barley
The house of Khentyankhef		4 ½ full barley
Sirenenutet, son of Sisit		2 full barley
Neferqerer, son of Seputi		1 full barley
Sikhentekhai Nu		6 full barley
Total		**79 ¼ emmer** **132 ½ full barley**

If we accept Allen's hypothesis that entries without place names represent loans, then we might notice that all but two such amounts are easily divisible by 3. Therefore they may represent not the principal lent, but principal increased by 50% interest. These entries are too numerous for it to be a mere coincidence. It thus seems possible that actual loans advanced by Heqanakhte to his debtors looked like this:

Debtor	Principal	Interest	Total amount due (as given by Heqanakhte)
Senuhetep, son of Ishetni	12	6	18 full barley
Hetepkhnum, estate manager	5	2 ½	7 ½ full barley
Big Khety, son of Semekhsen	3	1 ½	4 ½ full barley
Sankhsobek, son of Nefersedjerut	3 ⅓	1 ⅔	5 emmer
Ankh, son of Wesret	3 ½	1 ¾	5 ¼ emmer
Ipi, son of Kha	⅔	⅓	1 emmer
Khentekhai-hetep, son of Ipi	2	1	3 full barley
Khentekhai-hetep, son of Metjenuti	20	10	30 emmer
Ishetni, son of Renenrehut	2	1	3 full barley
Ruddy Khety	1	½	1 ½ full barley
Nakht, son of Shed	1	½	1 ½ full barley
Khety, son of Meru	1	½	1 ½ full barley
Shed, son of Shed	2	1	3 full barley
The house of Khentyankhef	3	1 ½	4 ½ full barley
Sirenenutet, son of Sisit	1 ⅓	⅔	2 full barley
Neferqerer, son of Seputi	⅔	⅓	1 full barley
Sikhentekhai Nu	4	2	6 full barley
Total	**27 ½** **38**	**13 ¾** **19**	**41 ¼ emmer** **57 full barley**

Even if we leave out those instances where the principal would have to involve fractions of ⅓ or ⅔ of a sack, there are still 13 entries where the total amount can be smoothly split up into principal and 50% interest. To these we may perhaps add records concerning debts of Nenref and his brother (15 sacks = 10 + 5?), Ipi Jr. (9 sacks = 6 + 3?) and Ipi, son of Nehri (21 sacks = 14 + 7?) , which may also be loans despite mentioning place names in the respective entries.

Admittedly decisive proofs are lacking, but I would still venture a hypothesis that 1) Heqanakhte did advance loans of grain against interest; 2) this interest was 50%. If my interpretation of the Heqanakhte's loans is correct, then we are dealing with one of the most ancient and remarkably enduring economic phenomena in the world history – the 50% increase on commodity loans would have been attested in Egypt from the early Middle Kingdom to the Byzantine period. But why 50%? What was the economic significance of this stubborn practice?

As it has been already noted by D. Foraboschi and A. Gara, the 50% represents only the nominal interest on a loan – the actual profit of the lender depended on the change of the commodity's relative value (its 'price') between the moment of lending and the time of repayment.[14] In case of agricultural produce the fluctuations could be considerable.[15] Cadell and Le Rider quote instances of wheat price increasing before

[13] So BLEIBERG, 'Loans, Credit and Interest' (cit. n. 9), pp. 269–270.

[14] D. FORABOSCHI & A. GARA, 'Sulla differenza tra tassi di interesse in natura e in moneta nell'Egitto greco-romano', *Proceedings of the Sixteenth International Congress of Papyrology, New York, 24–31 July 1980* (= *Am. Stud. Pap.* XXIII, Chico 1981), pp. 335–344.

[15] Unfortunately the evidence about the possible range of such seasonal fluctuations from Pharaonic Egypt is very limited, to the extent that some researchers deny the existence of a free market in grain altogether – but my assumption here is different (cf. Chr. J. EYRE, 'Village Economy in Pharaonic Egypt' [in:] A. K. BOWMAN & E. ROGAN (eds.), *Agriculture in Egypt. From Pharaonic to Modern Times*, Oxford – New York 2001, pp. 53-54). The grain prices recorded in the Deir el-Medina ostraca show a remarkable stability over very long periods (despite occasional sharp increases in times of famine), see J. ČERNY, 'Fluctuations in Grain Prices during the Twentieth Egyptian Dynasty', *Archiv Orientalni* 6 (1934), pp. 173–178; IDEM, 'Prices and Wages in Egypt in the Ramessid Period', *Cahiers d'histoire mondiale* 1 (1954), pp. 903–931. However, the economic conditions within the workmen's village could have been very different from the rest of Egypt, see J. JANSSEN's remarks in 'Prologomena to the Study of Egypt's Economic History during the New Kingdom', *SAK* 3 (1975), pp. 127–185. The data furnished by the papyri from the Greco-Roman period is also rather wanting, but there is evidence that prices could vary considerably throughout the year, even by 100%. See F. HEICHELHEIM, *Wirtschaftliche Schwankungen der Zeit von Alexander bis Augustus*, Jena 1930, p. 64; R. P. DUNCAN-JONES, 'The Price of Wheat in Roman Egypt under the Principate', *Chiron* 6 (1976), pp. 243–245; H. CADELL & G. LE RIDER, *Prix du blé et numéraire dans l'Égypte lagide de 305 à 173*, Bruxelles 1997, pp. 57–58.

harvest to 150% the average after harvest in the course of the 3rd century BC.[16] A simple calculation can simulate actual profit on 50% loans in changing economic conditions (assuming that such loans are contracted before harvest and repaid afterwards):

- if the relative value of a commodity (its 'price') drops by 10% after harvest then the real interest is 35% (150% x 0.9 = 1.35);
- if the relative value drops by 20% the real interest is 20% (150% x 0.8 = 1.2);
- if the relative value drops by 30% the real interest is only 5% (150% x 0.7 = 1.05);
- if the relative value drops by 33% there is no real profit (150% x 0.66 = 1);
- any particularly abundant harvest causing the relative value of a commodity to drop below two thirds of its level at the moment of contracting of the loan means a loss for the creditor. The purchasing power of the commodity repaid (principal + interest) is lower than the purchasing power of the principal before harvest.[17]

The level of prices after harvest was more or less predictable every year since it depended on the inundation that had happened some months before. It is perhaps surprising that interest was not negotiated individually for each loan depending on the changing economic conditions.[18] If the custom of charging 50% was born out of short-term loans, it most probably did correspond with the average movement of prices in the longer term, in other words with the general expectation what the prices after a 'normal' harvest would be. We would have to conclude that the Egyptians generally expected the prices to drop by less than 33% after harvest, otherwise such loans would not be profitable to the creditors.

[16] CADELL & LE RIDER, *Prix du blé* (cit. n. 15), Bruxelles 1997, pp. 57–58: the price of one artaba could fluctuate between 3 drachmas on the top end and 1 drachma after the harvest, 2 drachmas being the regular average price.

[17] The rare instances of the relative value actually increasing after a particularly bad harvest can be left out of consideration, since debts must have been nearly impossible to recover under such circumstances.

With loans of grain for sowing the situation was different. These were negotiated in summer and contracted for longer periods (cf. the 8 months of Tablet *MMA* 35.3.318 *recto* quoted above) and the fluctuation of grain prices throughout the year was more or less irrelevant to them, since in the long term the price was generally expected to come back to the starting point again. The 50% increase would thus represent roughly the real interest on such loans, unless some unexpected (but rare) crop failure happened.[19] It was a handsome profit for the creditor and an acceptable cost of a loan for the debtor. If we accept the assumption of a yield of 1:10 (seed grain = 10% of the crop)[20] then the interest of one-half on seed grain would represent only 5% of the total crop (principal + interest = 15% of the yield). Such loans probably bore *hemiolion* was born, although we not likely to ever exactly know how and when it came into existence. Once this happened, it became customary to charge 50% on all commodity loans, including those for consumption, irrespective of their duration. It is probably due to very slow change in economic conditions of the land and the conservatism of its people that this custom turned out to be so remarkably long-lived.

Heqanakhte's loans – if they were indeed loans – were most probably long term seed loans, as they appear to have been farmed a year before Accounts VI and VII were written.[21] The debts owed by various persons to him add up to about 210 sacks of emmer and barley, some 100 sacks (perhaps more) being loans. Heqanakhte's profit from such loans would be

[18] Or perhaps they were? Written sources are lacking and many questions have to remain unanswered.

[19] In such case the creditor's profit margin increased dramatically, but so did the risk of 'bad debts' difficult or impossible to recover. Heqanakhte would rather be paid in grain, but he admitted for the possibility of accepting payments in oil, the exchange ration being fixed by himself. Those were years of poor inundations, as his letters clearly state, even if an allusion to cannibalism was mere rhetoric exaggeration.

[20] Chr. EYRE, 'Feudal Tenure and Absentee Landlords' [in:] Sh. ALLAM (ed.), *Grund und Boden in Altägypten*, Tübingen 1994, pp. 114–115 n. 32. This is a careful estimate as much higher yields are not unknown from Graeco-Roman Egypt, cf. Jane ROWLANDSON, 'Agricultural Tenancy and Village Society' [in:] A. K. BOWMAN & E. ROGAN (eds.), *Agriculture in Egypt. From Pharaonic to Modern Times*, Oxford – New York 2001, p. 152; N. LEWIS, *Life in Egypt under Roman Rule*, Oxford 1985, p. 122.

[21] ALLEN, *The Heqanakhte Papyri* (cit. n. 3), p. 181.

about 30 sacks – not a very substantial entry in his budget (compared to the income from his land estimated by Allen at 510 sacks of grain in a good year), but not one to neglect either (it would have paid about half of the household's yearly taxes). Except for profit converting part of his yearly surplus had another advantage for Heqanakhte: grain cannot be stored forever, after some time it rots or dries up,[22] whereas loans are repaid in fresh grain every year. Therefore I am inclined to think that lending surplus grain was a regular habit of Heqanakhte, at least in good years, rather than one-time famine relief operation, as Allen suggests.[23]

Tomasz Markiewicz
Department of Papyrology
Institute of Archaeology
Warsaw University
Krakowskie Przedmieście 26/28
00–927 Warsaw 64
Poland
e-mail: *tmarkiewicz@uw.edu.pl*

[22] In Letter 1, *verso* 1–5, Heqanakhte complains over having to eat 'old, dried up barley' from the previous harvest instead of 'new, fresh barley' from the last harvest.

[23] If I am right then Allen's calculations of Heqanakhte's grain budgets (pp. 164–171) have to be adjusted accordingly.