

Princeton/Stanford Working Papers in Classics

Texts, contexts, subtexts and interpretative frameworks.
Beyond the parochial and toward (dynamic) modeling of the
Ptolemaic state and the Ptolemaic economy

Version 1.0

March 2006

JG Manning

Stanford University

Abstract: My concern in this paper is the historical interpretation of the Greek and demotic documentary papyri of the Ptolemaic period, the role of Archaeology in the context of Ptolemaic economic history, and the application of social science theory towards an understanding of Ptolemaic Egypt.

© JG Manning. jmanning@stanford.edu

I am concerned with two things in this paper. First, with the economic history of Ptolemaic Egypt, and how Papyrology (in the broadest sense, to include the important corpora of Greek and demotic ostraca) and Archaeology can help build a better, more dynamic, model of the Ptolemaic economy. That goal is, after all, what should unite papyrologists, archaeologists, numismatists and others. My ideas presented here are merely a sketch, and they can hardly be comprehensive with respect to recent literature or to the possibilities (and limitations). I must confess that I have stated my own skepticism in the past about developing a dynamic model of the Ptolemaic economy.¹ The main point I want to make is that whereas the history of the Ptolemaic economy has been written generally from an ideal and static perspective (and mainly from a state-centric perspective), I think now, with the combination of social science thinking and the better use of archaeological material together with the papyri and inscriptions, we may begin to understand at least some Greco-Roman developments over time, and the economy as a whole. The relationship of economic history to the many specialized, technical fields that together make up the study of Greco-Roman Egypt (I use the term merely for convenience to refer to the historical period from 332 BC to the fourth century AD), is too large to tackle in this brief paper, but that it should be tackled there is no doubt.

My second concern is building an institutional case study of Graeco-Roman Egypt. Dominic Rathbone has elegantly made the case that Roman Egypt matters a great deal to Roman history generally.² Similarly, I argue that Graeco-Roman Egypt matters (or should matter) to economic history because Graeco-Roman Egypt, as an historical unit, provides an excellent laboratory for studying institutions over time and their effects on the economy.

The fact that we are here today asking how Papyrology and Archaeology can benefit from each is actually, in my view, a subordinate question to how both fields can help us understand economic history. The gap between Papyrology and Archaeology is created by the fact that both fields tend to be descriptive rather than question driven.

¹ J.G. Manning, "The relationship of evidence to models in the Ptolemaic economy (332 BC-30 BC)," in J.G. Manning and Ian Morris, eds., *The ancient economy. Evidence and Models*. Ed. J.G. Manning & Ian Morris. Stanford, 2005:164.

² Dominic Rathbone, "The ancient economy and Graeco-Roman Egypt," 1989. Reprinted in W. Scheidel and S. von Reden, *The Ancient Economy*. New York, 2002:155-69.

Furthermore, in Rathbone's words, both "...tend to produce competing hypothetical explanatory models on a grand scale."³ There are, of course, notable exceptions.⁴ Both fields also require years of specialized training, which tends to create sunk costs in a specialization. This has not always been the case (e.g. Vogliano and Breccia at Medinet Madi), but the last two generations of scholarship have seen increasing specialization grow with the increased amount of information available. I have neither the space nor the time here to propose a research agenda for the whole of Greco-Roman Egyptian history, but there can be little doubt that an agenda, and a unified set of questions, is necessary. And it is surely worthwhile for us, although we tend to forget, to ask broad questions: what are our aims, what are we trying to accomplish, and what would we like to know?

More specific questions are also important, and I shall ask a few of them below. Roger Bagnall's recent survey of archaeological work in Egypt from 1995-2000 and Traianos Gagos' summary of work at Michigan provide excellent starting points for what might yet be accomplished. Recent work is considerable, and there is much yet to digest even for specialists.⁵ An outsider citing work done even in the 1990's is apt to be far off course without an easy guide to know why. What I want to do here is to suggest some ways that social theory and Archaeology can advance the economic history of Ptolemaic Egypt, and how we can build a unified picture of Ptolemaic and Roman Egyptian society. Both of these will help place the study of Greco-Roman Egypt at the center of many important debates.

³ Rathbone 1989:156.

⁴ E.g. Dominic Rathbone, *Economic rationalism and rural society in third century AD Egypt. The Heroninus archive and the Appianus estate*. Cambridge, 1991.

⁵ R.S. Bagnall, "Archaeological work on Hellenistic and Roman Egypt, 1995-2000," in *AJA* 105 (2001):227-43.; Traianos Gagos, "The University of Michigan papyrus collection: current trends and future perspectives," in *Atti del XXII Congresso internazionale di Papirologia*, Firenze 1998. Vol. 1. Florence, 2001:511-37. An excellent and valuable survey of Italian archaeological and papyrological activity, often in conjunction, is provided in *One hundred years in Egypt. The path of Italian Archaeology*, ed. Maria Casini. Milan, 2001, esp. pp. 87-183.

Papyrology, or where we've been

The study of Ptolemaic and Roman Egypt is distinguished from earlier periods in Egyptian history in the amount of documentary papyri dating from the former, and it is the study of the documentary papyri, together with numismatics, that has dominated work on the Ptolemaic and Roman Egyptian economies.⁶ The papyri, by the way, give Ptolemaic and Roman Egypt a special status in Economic history—these are the best-documented pre-modern economies in the world—that remains to be exploited.⁷ In other words, to be brief, what we do matters to several fields (inter alia economic history, historical sociology, legal history) outside of our traditional “audience.” Yet despite the clear value of the papyri, some historians have dismissed the documentary papyri as merely of parochial interest because of the limited space and time that they document, and, importantly I think, because of Egypt’s marginal status in ancient history. Attitudes are changing, if slowly. Fields are still highly specialized, and there is rarely work across the Ptolemaic/Roman/Late Antique divide.⁸ From an economic history perspective, though, crossing this divide is essential. The nature of Papyrology cuts against this, dividing up work into narrow historical categories: Ptolemaic, Roman or Byzantine. This is particularly true of documentary specialists who tend to focus on new texts and archives. As a result, different questions are, implicitly, asked of the sources.

Despite the abundance of papyrological material from the Ptolemaic period, there are severe interpretive problems that limit our ability to study economic behavior. These interpretive problems are well known and have been treated by many scholars. I will only summarize a few of them here.⁹ Among the most important limitations of the papyri is the fact that while some villages are very well documented at certain moments in time,

⁶ Important new work generated from work at Alexandria by Olivier Picard, "L'apport des monnaies des fouilles d'Alexandrie," *Études alexandrines* 10 (2004).

⁷ Cf. Roger Bagnall, "Evidence and models for the economy of Roman Egypt," in J.G. Manning and Ian Morris, eds., *The ancient economy. Evidence and Models*. Stanford, 2005:187-204.

⁸ Alan Bowman's historical survey *Egypt after the pharaohs 332 BC- AD 642: from Alexander to the Arab conquest*. Berkeley, 1986, (rev. ed. 1996) is a great exception.

⁹ See in general R.S. Bagnall, *Reading papyri, writing ancient history*. Routledge, 1995; J.G. Manning, *Land tenure in Ptolemaic Egypt. The structure of land tenure*. Cambridge, 2003:13-21.

there are very few places where we have sufficient documentation to understand change over time. It is also important to note that the range and type of documentation differs substantially from the Ptolemaic and Roman periods. Here Egyptian climatic history, burial practices, and an archaeological research design driven by the hunt for papyrus has combined to yield papyri and ostraca from two main sources for the Ptolemaic period: (1) The Zenon archive from Philadelphia, and Greek papyri found in villages from the south Fayyum and from the nearby Herakleopolite nome, and (2) demotic Egyptian papyri from family archives, bilingual family archives from Greco-Egyptian military families, and tax receipts, all from the Thebaid, that narrow stretch of the Nile valley from, roughly, modern Sohag up to Aswan.

The practical consequences of these facts are that the main lines of historical investigation have been supported on the rather flimsy foundation of two archives from the Fayyum, the famous Zenon archive (which comprise nearly a third of the Ptolemaic Greek papyri) from third century BC Philadelphia in the northeast, and the Menches archive from late second century BC Kerkeosiris. Both archives, one documenting the administration of a large estate of the finance minister of Ptolemy II, the other an official archive of a village scribe, the lowest rung in the bureaucratic ladder, provide us with a state-centered view of the economy in the Fayyum. Rostovtzeff's work on the Zenon archive is perhaps still the most widely read historical analysis of the Ptolemaic economy, but his view that the archive stood proxy for the whole of Ptolemaic Egypt, an "Egypt in miniature" as he put it, is no longer a tenable view. The family archives from southern Egypt do offer a different perspective on the lived human experience of Ptolemaic Egypt, Egyptian family structure, inheritance patterns, contractual relationships and the like, but the contracts that are preserved in these archives are laconic concerning local village economies and, in contrast to the Zenon or Menches archives, we get the near total absence of the state with one important exception, taxation.

Demotic specialists, on the other hand, tend to shy away from historical interpretation altogether, focusing their energies on family archives from the south, and on editing new material. Needless to say these two foci have emphasized two different aspects of Ptolemaic society. While the bulk of the important Ptolemaic Greek papyri were already published by the 1950's, the publication of demotic papyri still has some

way to go. That is not to say that there have been no important Ptolemaic papyri published recently, or that corrections to old texts, and new ideas brought to bear on older texts, do not matter. Indeed one need only think of the current work on the University of California-Berkeley papyri (from Ptolemaic Tebtunis) or the late second century BC Copenhagen land survey from Edfu studied recently by Thorolf Christensen.¹⁰

General conceptual frameworks that treat Egyptian society as a whole, or that would engage Egypt in larger debates about the ancient economy, are largely absent. In the final analysis, the papyri, as any quick read of Bagnall's survey article would reveal, offer us only a limited (and generally a static) view of the Ptolemaic economy from some parts of Egypt. There has been little synthetic work since Préaux and Rostovtzeff, both now more than fifty years old. Archaeology has already helped us understand regions such as the eastern desert that take us well beyond the Fayyum/southern Thebaid bias of our documents. But the integration of texts with this new evidence requires a more theoretical framework, which is where I turn first.

Greco-Roman Egypt, the “ancient economy” and some theoretical questions

One of the main conclusions of a book that my colleague Ian Morris and I have just finished editing on the ancient economy is that the types and the scatter of the evidence that survive across the eastern Mediterranean basin has strongly shaped our understanding of the economies of this region, and has led scholars, incorrectly, to see substantive differences that probably did not exist in reality.¹¹ The main contrast is, of course, the one between the northern and the southeastern Mediterranean that shaped academic departments in the nineteenth century, and many of the debates driven by Moses Finley. There have been major intellectual shifts after Finley, and it is clear that Egypt can no longer be left out of mainstream ancient economic work. Another result of the Stanford ancient economy volume, I think, is that ancient economic historians can

¹⁰ Thorolf Christensen (2002). *The Edfu nome surveyed. P. Haun inv. 407 (119-118 B.C.)*. Ph.D. thesis, the University of Cambridge. Although the bulk of recent work in demotic studies has centered on Roman period literary papyri, there have been important demotic texts published. Among them is a family archive from early Ptolemaic Thebes published by Mark Depauw, *The archive of Teos and Thabis from early Ptolemaic Thebes*. Brussels, 2000.

¹¹ J.G. Manning & Ian Morris, eds., *The ancient economy. Evidence and models*. Stanford, 2005.

ignore economic theory only at their peril. We can debate which economic theories are useful and, where possible, which theories can be improved by the ancient evidence, but the lack of a conceptual framework based broadly in the social sciences is no longer tenable.

A major part of that framework, it seems to me, a framework by the way that should unite archaeologists and papyrologists and indeed other specialists, should be centered on institutional change and on the performance of the economy.¹² The former, of course, the issue of continuity and change, has been a staple in Egyptian history for some time, but for the Ptolemaic period it has tended to focus on culture (literature, religion) rather than on the overall institutional structure of the state or on institutional change. The issue is important in understanding how the Ptolemaic economy functioned, and how and why it changed over the course of the three centuries of Ptolemaic rule. The papyri by themselves can tell us little about the velocity of circulation of coinage, the changes in settlement patterns over time, the total amount of land under cultivation, the internal movement of population, the standard of living and so on.

In his seminal paper on the future of the study of Hellenistic economies, John Davies, discussing the implications of Susan Alcock's work on Hellenistic settlement patterns, has laid out four parameters by which to understand the archaeological evidence: (1) level of urbanization, (2) signs of colonization, (3) demographic variability, and (4) agricultural (dis)intensification.¹³ Greco-Roman Egypt is the only region that can offer both a sufficient documentary and archaeological record with which to assess change over time with respect to these four parameters. Dominic Rathbone's work on sites the Fayyum has demonstrated how fruitful the study of the documents and the archaeological record in tandem can be. We are beginning now, with work in the Delta, the western oases, and the eastern desert, to move beyond the Fayyumic bias of Greco-Roman Egyptian history, and we can look forward to revisions, perhaps major, in our understanding of settlement patterns in this period.

¹² This is the view advocated above all by Douglass North. See, e.g. *Structure and change in economic history*. New York, 1981.

¹³ John K. Davies, "Hellenistic economies in the post-Finley era," in Zofia H. Archibald, John Davies, Vincent Gabrielsen and G.J. Oliver, eds., *Hellenistic Economies*. London, 2001:30.

In order to analyze change over time, we must first understand structure, i.e. the historical institutions in Egypt, and we must then understand how and why institutions change, and how we can measure this change. We need, then, a theory of institutions.¹⁴ An institutional perspective on Ptolemaic development and economic performance raises several questions. Among the most important, it seems to me, are the following:

(1) Do institutions matter in explaining change, or are the demographic regime and climate change the main drivers of history? This is, of course, an enormously important and much debated question. I ask it here because I think that Greco-Roman Egypt is the perfect laboratory to answer it. I don't have the space to treat demography in this paper, but needless to say it is of the highest importance.¹⁵

(2) What is the nature of the state? Our conceptions with respect to this question have been centered on "colonial" or "multi-cultural" models. It is fair to say that at this point both "models" have been undertheorized.

(3) What was the impact of Ptolemaic fiscal institutions on the economic development of the Ptolemaic state?

(4) Is there a difference between Ptolemaic and Roman economic performance, and if so, can institutions help to explain it?

Social scientists have long recognized the importance of the Ptolemaic and Roman Egyptian sources, if not the papyri themselves. Max Weber, for example, devoted long sections of his book *The Agrarian Sociology of Ancient Civilizations* to Greco-Egyptian society. We, of course, can make many modifications to his views, especially those concerned with the origins of "modernity," but this is not to diminish the kind of thinking

¹⁴ The literature on institutional theory embraces several large fields, Economics, Law, Sociology and Political Science among them. A good overview may be gained in W. Richard Scott, *Institutions and organizations*. 2d. ed. Thousand Oaks, 2001.

¹⁵ For theoretical considerations, and a model of demographic development in Alexandria, see Walter Scheidel, "Creating a metropolis: a comparative demographic perspective," in WV Harris and G. Ruffini, eds., *Ancient Alexandria between Egypt and Greece*. Leiden, 2004:1-31. The forthcoming study by Willy Clarysse and Dorothy Thompson of the Ptolemaic census will be a major contribution to the demographic history of Egypt and will also, we must hope, stimulate further archaeological work with respect to settlement survey, population densities and the like.

that is very much needed in Papyrology. The use of social theories to explicate the documentary material, has hardly been seen outside of a few Marxist historians. Rather, models (often implicit) of a highly centralized, *dirigiste*, colonial state have been the basis for understanding the papyri, especially the Greek papyri that are concerned with the new state bureaucracy and agricultural production in the newly settled Fayyum.¹⁶ The vast amount of new material published in the last few decades has made older analyses obsolete, but very little has yet been done on the general issues of Ptolemaic state formation and development. New texts beget new text editions, older texts get re-edited, and our understanding of the issues involved, outside of the cultural issues of ethnic relations between Greeks and Egyptians for example, remains locked within old debates.

There has been little done to map the data derived from the papyri onto dynamic social processes. This is changing. A forthcoming study on monetization will be an important step, and there are other hopeful signs.¹⁷ Another obvious phenomenon to study is what Sociologists call “decoupling.” Put simplistically, this is the notion that *social norms* can be separated, or “decoupled,” from actual *behavior*. Rules and expectations of state officials were established in writing, and presumably loyalty was reinforced by the power of the state to appoint officials. While the state carefully tried to control officials, including, importantly, those in charge of the temples, it was impossible to control every official’s behavior at all times. The decoupling of social norms from actual behavior must have been more of a problem under the Ptolemies than in ancient Egypt since we are dealing with a new elite, and the emergence of a new administrative language, Greek. The natural loyalties of family and other social groups centered around occupations (and language) may have been increasingly challenged by the new Ptolemaic realities of Greek administration that demanded loyalty in the chain of command of the bureaucratic authority, no doubt reinforced by personal visits of higher officials. It is this tension between the vertical, power relations of the state and the horizontal relationships

¹⁶ See, for example, Dominic Rathbone, “Ptolemaic to Roman Egypt: the death of the *dirigiste* state?” in E. Lo Cascio and D.W. Rathbone, *Production and public powers in classical antiquity*. Cambridge, 2000:44-54.

¹⁷ Sitta von Reden, Cambridge. Forthcoming. See also Giovanni Roberto Ruffini, *Social networks in Byzantine Egypt*. PhD dissertation, Columbia University 2005.

between family and friends in villages, or, to put it in sociological terms, between the formal and the informal social networks within the Ptolemaic state, that I am most interested in, since these tensions must have been major factors in economic performance and state development.

Another key issue in economic performance in modern theory is property rights. Defining, distributing, and enforcing property rights is one of the keys to economic development and growth, and understanding the legal system with respect to these is also fundamentally important. Can the theory accommodate the ancient evidence? That is to say, are there notable differences in the structure of property rights between Ptolemaic and Roman Egypt that explain economic performance? A property right is "an enforceable authority to undertake particular actions in specific domains."¹⁸ The right of access, withdrawal, management, exclusion and alienation can be separately assigned to different individuals, or it can be viewed as a cumulative scale moving from minimal right of access through possessing full ownership rights. But there are specific conditions--private property depends on the existence and the enforcement of a set of rules that define who has a right to undertake which activities on their own initiative, and how returns on this activity are allocated. Property rights are complex, and it is not simply a matter of state property versus private property as the situation in Egypt is so often couched. This bifurcation better reflects the status and organization of the holder of a particular right rather than the "bundle" of property rights that is usually involved.

Recently, the Economist John Powelson, in his universal history of land tenure, echoed Weber and earlier papyrological work. He summarized Ptolemaic land tenure this way:

In the early Ptolemaic period, there was little private property, mainly smaller tracts not suitable for corn. These were planted with vegetables, orchards, palm trees, vineyards. Large estates began to be granted in lifetime concessions to high officials, reverting to pharaoh on

¹⁸ Elinor Ostrom, "Private and common property rights," in *Encyclopedia of Law and Economics, Volume II. Civil Law and Economics*. Ed. Boudewijn Bouckaert and Gerrit De Geest. Cheltenham, 2000: 332-79.

death. As the dynasty progressed, the greater part of Egyptian soil fell into private hands. It was all registered and controlled by the state. The state determined the crop for every land holder, reserved the right to purchase whatever portion of it it wished at a specified price....¹⁹

In the end, Powelson concludes, "it became difficult to assign tenure to loyal people." In part the answer to the problem of assigning tenure lies in the incentive structures of the state, and to the conception and enforcement of property rights. The idea of a property rights *evolution* goes back at least as far as Taubenschlag's work, and it is something with which I disagree. Powelson, of course, as an Economist, had different concerns than papyrologists do with respect to the land tenure regime of Egypt, and he can be forgiven for some of his lack of detail. But his treatment of Egypt gives, I think, the wrong impression of the history of property rights in Egypt and of the role of the state with respect to private rights in real property. I simply raise the work of Powelson here to show that there are many scholars and even entire fields of which papyrologists may not be aware whose work touches on our own, and whose work would greatly benefit from contact with Papyrology no less than our own work can benefit with contact from the generalizing theories produced in the historical social sciences.

Even a cursory glance at demotic Egyptian conveyances shows that a well-defined concept of private property existed in the Ptolemaic period--the right to manage, the right to exclude, the right to convey (the main right of private property), specified boundaries-- are all elements of demotic conveyances of real property. There are of course, other elements such as inheritance patterns and transaction costs to consider. Transaction costs are the costs of exchange, and also, importantly, the cost of enforcement. This last element is an important aspect of private property rights, and it is crucial in understanding Ptolemaic developments, and, more importantly for arguments about the cause of growth, and Roman improvements in property law.

¹⁹ John P. Powelson, *The story of land. A world history of land tenure and agrarian reform*. Cambridge, MA., 1988:21.

Economists traditionally understand the form of land tenure as arrangements for the supply of labor. Either in Marxist terms of power and class struggle between landowners and peasants, or in terms of what is called the "principal-agent" problem--the principal in this case being the landowner the agent being, usually, the lessee, and the issue being the enforceability of contract.

Another approach to land tenure is to understand it as arrangements for finance.²⁰ There are three choices, all of them in evidence in Greco-Roman Egypt. These are the wage contract, the fixed-term contract and the share contract. Again, most of the theory has come out of analyzing Medieval and early modern European examples, but certainly the rich material from Ptolemaic and Roman Egypt can contribute enormously to the discussion, and the issue of finance and contractual arrangements is central for understanding legal developments and the performance of the economy. Once again I lack the space to develop arguments here, but I believe that study of contract type and the enforcement of contract may help explain important differences between the Ptolemaic and Roman periods.

The choice of contract produces well-known costs and benefits, and these, too, must have played themselves out along the Nile. Broadly speaking, there are some regional differences in the Ptolemaic period that are the result of historical circumstances, institutions and organizations (i.e. people making use of institutions). On state-controlled and new land, leases dominated tenure conditions. On temple land, predominant in the south of Egypt, there was another type of tenure, or at least, if we are not too misled by the documents themselves, the temple functioned as intermediaries, or agents, between the central state and agricultural production. The mediation of temples over land in the Thebaid had practical political and economic consequences for Ptolemaic exploitation. It explains well the fact that tax receipts were issued by the state for the private exploitation of land in the Thebaid, with its history of private property on temple estates, and not in the more directly state-controlled Fayyum. The difference between the "state" and the "temple" may not matter all that much except as it concerns service, and the flow of

²⁰ Meir Cohen, "A finance approach to understanding patterns of land tenure," Working Paper, Department of Economics, Dartmouth College, version of September 2001.

rents, as Katelijjn Vandorpe has recently suggested²¹ and with which I agree. How, or whom, one serves, of course, is a matter of loyalty, which is something of great concern in new state formation. In either case, as I have suggested, economic incentives are involved. It is a reason, no doubt, why the Fayyum remained quiet while the Thebaid followed its common pool incentives and broke away from the Ptolemaic state for a generation (207-186 BC) at the end of the third century BC.²²

Patterns emerge in the case of early modern Europe and the same general patterns, I believe, would be seen if we were to examine the choice of contract in Greco-Roman Egypt.²³ In early modern Europe, share contracts are associated with those who had little capital, and with certain types of crops: vines, olives, fruit trees, and with absentee urban landowners. Share-cropping has been associated with viticulture because of the problem of asset-stripping. In short-term leases (and in Egypt we are usually dealing with the very short-term) the lessee has the incentive to increase current income at the expense of residual value of the land. There are safeguards to prevent this--reputational issues are important. This generates what Economists call relational contracts (i.e. you do business with those whom you know). Another response to the tendency toward asset-stripping is to spell out carefully in the lease contract the rights and responsibilities of the lessee. Share contracts also prevent asset-stripping, but there is also the incentive for the lessee to under-report, and to keep the best part of the harvest. So share leases are better suited to crops that are easily measured. The manner in which crops are measured becomes an important part of institutional analysis, as does the enforcement and collection of rent and taxes.

If lease contracts are fairly well understood in Ptolemaic and Roman Egypt, they are on the whole less well explained in terms of regional variation or in terms of state

²¹ Paper presented at the International Congress of Papyrology, Helsinki, August 2004.

²² On the Theban revolt in general, see Anne-Emmanuelle Véisse, *Les "Revoltes égyptiennes." Recherches sur les Troubles intérieurs en Égypte du regne de Ptolémée III Éuergete à la Conquête romaine*. Studia Hellenistica, vol. 41. Leuven, 2004. For the suggestion that the Theban revolt may be understood as an illustration of a region following its common pool incentives, see J.G. Manning, "Property rights and contracting in Ptolemaic Egypt (332 BC- 30 BC)," in *Journal of Institutional and theoretical economics* 160/4 (2004):758-64.

²³ For Roman period contracts, see Dennis P. Kehoe, *Management and investment on estates in Roman Egypt during the early empire*. Bonn, 1992.

finance. Access to land by other means is not altogether clear, at least under the Ptolemies. Of course those who served within temple estates were granted land, and landholding within temple estates remained an important mode of land tenure throughout the Ptolemaic period. There was also the possibility of acquiring land by public auction, a Greek institution introduced by the Ptolemies to assign property rights.²⁴ How extensively this institution was used to acquire land is difficult to know, but it appears to have been fairly restricted and not a regular feature of Ptolemaic land tenure. It is significant, though, that priests acquired temple land by this process, and normally assumed that auctions show the dominance of the state even over ancient institutions like temple land tenure. The public auction of land appears to have been particularly an important tool of the state in gaining (better?) control of land in the Thebaid after the major revolt there 207-186 BC.

Here I will just note that people shifted to the new institutional game of the Ptolemaic state not out of coercion, although coercion played a role (historically people do not like to change land tenure rules²⁵) but out of trust and incentives, in a similar way that the Ptolemaic economy became monetized. Egyptians must have opted in to the system, but there is also much evidence to suggest that individuals were not always loyal to the state. We note from Willy Clarysse's recent study of the Milon archive from Edfu how it was possible for an individual to function within a local social network to the detriment of state revenue, shunning the clearly defined rules of the public auction process (P. Eleph. 14)-- a good example of the phenomenon of "decoupling" that I explained above.²⁶ On the other hand, new Ptolemaic institutions may have served to override local tensions, disputes and enforcement issues. It seems clear, for example, that Ptolemy II's "legislation" was an effort to incorporate Egyptian legal institutions and traditions into the new state system, and that the Ptolemaic state was committed to enforcing existing property rights. The success of the comprehensive Ptolemaic

²⁴ J.G. Manning, "The Auction of Pharaoh," in John Larsen & Emily Teeter, eds., *Gold of praise. Studies in Honor of Edward F. Wente*. Chicago, 1999:277-84.

²⁵ See Robert C. Ellickson, "Property in land," *Yale Law Journal* 102 (1993):1315-1400 for an overview.

²⁶ Willy Clarysse, "The archive of the *praktor* Milon," in *Edfu, an Egyptian provincial capital in the Ptolemaic period*. Ed. Katelijn Vandorpe and Willy Clarysse. Brussels, 2003:17-27.

legislation is observed, for example, in the famous second century BC family probate dispute from Asyut, and in other legal disputes between Egyptian parties.²⁷

There is a related issue involved in the relationship between the Ptolemaic state and the ancient Egyptian institutional structure, and this is the concept of path dependence. In other words, institutions once created tend to follow a certain path. This issue is important in understanding Ptolemaic state development, and the regional differences between the Fayyum and the Thebaid. Concerning the issue of property rights, path dependence is certainly involved in the Thebaid land tenure regime in contrast to new areas like the Fayyum in which there is less interference from old institutions. I don't see a property evolution, as Powelson and many papyrologists have argued for, but rather a continuation of the ancient system linking the holding of land to state finance, expanded by new populations, not by new land tenure rules, or by conceptual shifts in property rights. It was in the early Roman period when the important change in the property rights regime occurred, and this had major implications for economic performance. Other institutions such as accountancy are equally important in understanding economic change.²⁸

Archaeology, or where we should go

Until recently, the archaeology of Greco-Roman Egypt was largely confined to papyrus-hunting and to Fayyum towns.²⁹ Because of this hunting for papyrus, the archaeology was often an afterthought at best. This has given rise to “museum archaeology,” and important results in establishing the archaeological context of earlier papyrus finds previously without precise context have been made in the last decade or so.³⁰ Recent

²⁷ Herbert Thompson, *A family archive from Siut from papyri in the British Museum*. Oxford, 1934. Cf. P. Tebt. III 780 (171 BC, Fayyum). On this “legislation,” see Hans-Julius Wolff, “Plurality of laws in Ptolemaic Egypt,” *RIDA* 3 (1960): 191-223; Méléze-Modrzejewski 2001:190-93.

²⁸ Rathbone, *Economic rationalism*, pp. 331-387.

²⁹ Discussed in the paper of Gagos, Gates and Wilburn at this session. Summarized in the briefest of terms by Murray C. McClellan, “The economy of Hellenistic Egypt and Syria. An archaeological perspective, in *Ancient Economic Thought*. Vol. 1 Ed. B.B. Price. London, 1997:172-87. Even in the Fayyum, however, only a few town sites have been adequately excavated.

³⁰ Katelijjn Vandorpe, “Museum archaeology or how to reconstruct Pathyris archives,” in *Acta Demotica. Acts of the Fifth International Conference for Demotists. Pisa, 4th-8th September 1993. Egitto e Vicino*

archaeological work has concentrated on the eastern and western deserts, about which we are now much better informed, but as is often the case in Egypt, there are major gaps in our knowledge of the Nile valley and the Delta. Indeed, there is little work in the archaeology of settlement patterns for the whole of the first millennium BC, and that limits our ability to understand changes from the Saite and Persian periods to the Ptolemaic. This might be improved, although the usual problem of settlement site archaeology in the Nile valley remains. The issue of regionalism is an important one in understanding the development of the Ptolemaic state. Even if, as I have suggested, the legislation of Ptolemy II had a wide impact on the countryside, the process of “ptolemaicizing” Egypt may have occurred at different rates in different parts of the country because of regional institutional differences. The pattern of Greek settlement throughout Egypt, therefore, is important and must be better understood.

The exception to the lack of regional survey is, of course, the Fayyum, where Dominic Rathbone’s work is the best example of what can be accomplished. The settlement history of the Fayyum, has, from the result of this recent work, been considerably revised, and Jim Keenan’s work on el-Nabulsi is sure to give us a better perspective of the *longue durée*. Many of the towns in the Fayyum require further excavation. The Thebaid, in contrast, has been even more neglected. To be sure, the archaeology of the Nile valley presents severe challenges, not in the least ameliorated by the historically poor attitude that Egyptology has had toward the period. More than one site has been stripped of its later archaeological layers to get to pharaonic material. There are of course more practical problems among which are the water table (in the Delta especially but the problem exists throughout Egypt), and the continued occupation of ancient town sites (as at the southern capital Ptolemais, mod. el-Manshah). Until recently, we knew less about the Ptolemaic capital than we did about the town of Tebtunis, but the underwater work at Alexandria has allowed us the hope of an improved understanding of this great city, its construction, the volume of trade, and a firmer grasp of the city’s

Oriente, vol. 17. Pisa:Giardini Editori e Stampatori in Pisa, 1994: 289-300; Peter van Minnen, “House to house enquiries: an interdisciplinary approach to Roman Karanis,” *ZPE* 100 (1994): 227-51. D. Hobson, “House and household in Roman Egypt,” *YCS* 28 (1985):211-29; G. Husson, *Oikia. Le Vocabulaire de la maison privée en Égypte d’après les Papyrus grecs*. Paris, 1983; R. Alston, *The city in Roman and Byzantine Egypt*. London, 2002:44-127 surveys the post-Ptolemaic evidence but does not specifically address comparative median house sizes, or correlations with family size.

population among other things. The intriguing possibility that we have texts from the late Ptolemaic palace in Alexandria has attracted a good deal of attention, and justifiably so.³¹ (How the texts made it upriver to become cartonnage in the Herakleopolite is another story entirely.) As van Minnen has stressed, there is also good documentary material that concerns Alexandria found at other places in Egypt that may enhance the current archaeological work.

There are very good examples from recent work that combine archaeology and documentary finds. The French work in the Kharga oasis, for example, using the demotic ostraca found at a site known as Ain Manawir, has been decisive in dating the Persian underwater irrigation networks (*qanawats*) to the fifth century BC. Other sites promise great results combining text and artifact: Tebtunis, Karanis, Kellis, Mons Claudianus to name just the most obvious. Work in the eastern desert has revealed much new information on trade, mining and quarrying activities and the specific connections of this region to the Nile valley.

Basic excavation continues, and it is to be hoped that as more gets published from the Delta, we may yet begin to understand this important part of Ptolemaic and Roman Egypt. Despite the fact that the carbonized rolls from Boubastis appear to be mostly anepigraphic,³² there are texts found at other places, as Bagnall points out, that document the Delta and there is hope that we can know more than we think here. And we must never forget the longer-term issues. While Egypt was historically oriented southward and toward the Red Sea, the shift northward and to the Mediterranean began not with the Ptolemies but in the Ramesside period ca. 1200 BC, a reminder that the Ptolemaic regime built on earlier trends. But it seems to me that the most important part that archaeological research can contribute to the history of Ptolemaic and Roman Egypt comes in the realm of understanding change over time, i.e. in quantification.³³ For economic history, more specifically, measuring the standard of living and the performance of the economy over

³¹ Peter van Minnen, "Further thoughts on the Cleopatra papyrus," *AJP* 47 (2001):74-80.

³² So Didier Devauchelle, personal communication.

³³ Cf. Roger Bagnall, in *Reading papyri. Writing ancient history*, 73-79.

time are the main concerns, and neither has been addressed adequately for Ptolemaic Egypt.

Quantifying the Ptolemaic (or Roman) economy, and establishing the connections between demographic/climatic trends and institutions, which I believe to be crucial, can only be established by archaeological work, whether it is done retrospectively (examining past work) or prospectively (in designing new research agendas). Three items come immediately to mind that I mention only in passing. First is that of house size.³⁴ A comparison between Ptolemaic and Roman house size *might* yield a fair proxy measure of economic performance, and we might be able to confirm the thesis that there was real (*per capita*) economic growth only in early Roman Egypt. Since I am not an archaeologist, I will leave it to further discussion to see whether we have enough good archaeological data on Ptolemaic houses to distinguish Ptolemaic from Roman houses to make this comparison. It seems to me worth trying, and Bakchias and Tebtunis are the obvious places to start. Another seriously underexploited data set comes in the form of the human mummy, that emblem of ancient Egypt. Despite the hype, the valley of the golden mummies in the Bahariya oasis is potentially among the most important archaeological finds in recent years, not because of gold mummy masks, but because of the potential it creates for studying a population across the Hellenistic/Roman divide. Indeed the Ptolemaic and Roman period mummies as a corpus, as it were, strikes me as potentially the most important area of research in the Greco-Roman economy, and one that, at least initially, would require little excavation. Art historical analysis combined with the field of sociobiology, and the study of nutrition, diet, mortality and morbidity, i.e. the coordinated study of the physical remains already recovered from many sites could be expected to produce results of the utmost importance in understanding economic performance and living standards.

Above all, what I am arguing for here is quantification and large-scale comparisons between the Ptolemaic and the Roman period- usually an uncrossed divide. It is instructive (and indeed humbling), however, to see that this is precisely the direction

³⁴ Cf. Ian Morris in J.G. Manning and Ian Morris, eds., *The Ancient economy. Evidence and models*. Stanford University Press, 2005:91-126.

that Claire Préaux's work was heading.³⁵ Plus ça change. The last item that I simply raise as an issue that requires further elucidation is the extent of technological innovation and improvement and its relationship to economic performance. Rostovtzeff believed that this was a major factor in the Ptolemaic economy, but there seems to me little in the way of *extensive* evidence to justify this. Unless proven otherwise, water-lifting technology, principally via the *saqiya* that is certainly known in the Ptolemaic period, was not decisive until the Roman.³⁶

Conclusions

The issues I have raised in this short paper, the role of the state, property rights, contracts, transaction costs, agency and decoupling, path dependence, regional analysis, standards of living, are all crucial in developing a dynamic model of the Ptolemaic economy. But in thinking about the state as an economic actor, we must also think about institutions and the incentive structures and how these enabled or constrained individual behavior. As I have suggested, archaeological research can help us understand the diachronic development of settlement sites and the performance of the economy. Another issue, hardly raised up to now in any detailed way, is the institutional contrast between the Ptolemaic and Roman periods and how this affected economic performance. My own conviction is that this is a major frontier of Graeco-Roman research, and one that can only be crossed by close collaboration.

There is another important element in this kind of research, and that is linking what we do to social theory. Papyrology, both Greek and demotic, and we should of course include Coptic and Arabic texts as Jim Keenan's paper at this conference elegantly pleads, together with archaeological research that supplements, clarifies and fills in some of the large gaps left by the haphazards of documentary survival, is not only

³⁵ Claire Préaux, "L'attache à la Terre: continuités de l'Égypte ptolémaïque à l'Égypte romaine," in G. Grimm et al., eds., *Das Römisch-Byzantinische Ägypten. Akten des internationalen Symposions 26.-30. September 1978 in Trier*. Mainz, 1983:1-5.

³⁶ Andrew Wilson, "Machines, power and the ancient economy," *Journal of Roman Studies* 92 (2002):1-32, expresses a different view on new technology in the Ptolemaic period. The archaeological evidence, however, suggests, at the moment at least, that the new machines were not used widely until the third century AD. Cf. Dominic Rathbone's remarks on Roman Egypt in the *Cambridge Economic History of the Greco-Roman World*. Forthcoming.

relevant but crucial to the historical social sciences for two major reasons. The rich documentation of the Egyptian state forms during the millennium from the Ptolemies to the Arab Conquest offers much detail to social science theory, since much of this theory has been built up from historical case studies of modern nation-states, and very much from the point of view of modernity. I hope that it is not too much to suggest that Graeco-Roman Egypt adds both to deepen social theory and a valuable perspective on the meaning of modernity. And secondly, this period of Egyptian history offers economic historians one of the very best chances to study exactly why and how institutions matter. The general assumption of the Ptolemaic period, based largely on literary accounts, is that there was steady economic decline in the last two centuries BC. An examination of Ptolemaic institutions, however, suggests continual development, and the tax receipts also suggest relative success of the state in the Thebaid over the long term. Only archaeological investigation can help us with a quantitative measure of living standards.

The demotic Egyptian land tenure contracts from the Ptolemaic period are an important historical source for the study of the history of real property, and the Greek papyri offer us the only view of a functioning ancient bureaucracy with the exception of China. Both corpora must be understood within the larger framework of the historical development of the Ptolemaic state and its economy. The contrast between Ptolemaic and Roman Egypt is an important one for reasons that I have already suggested—we can assess the impact that Greek and Roman institutions had on the Egyptian economy. In my view the bureaucratization process that was set in motion by the Ptolemies altered the economic environment substantially, but property rights and enforcement of these rights were on a different institutional basis under Roman rule, and this must have made a measurable impact on economic performance.

The careful specification of the historical institutions in the economic development of Greco-Roman Egypt offers the ancient historian the opportunity to ask better questions of the papyri, and to explain change over time, but we need archaeologists, and better archaeology, if we are going to quantify performance over time. We have more hope of getting good answers from Greco-Roman Egypt than of any other single pre-modern economy in the world. In order to get good answers, we need to ask better questions, we need better coordination between scholarly disciplines, and we

need more synthetic work. The main subtext of this work involves not only the coordination of Papyrology with archaeological investigation, but also, as Bagnall concludes, the solution to a host of pragmatic problems in Egypt itself not the least of which is the adequate publication of results, and closer work with our Egyptian colleagues.³⁷ While there should be a sense of urgency in what we do, we also need patience, and we need to change how we train the next generation of scholars. But that is a subject for another day.

³⁷ Bagnall, "Archaeological work," p. 240.