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FROM GREECE TO ROME VIA SOUTHERN ITALY:
MORE TRADE, MORE MONEY
AND MORE PROSPERITY?¹

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1. The rise of trade and of money in the Hellenistic and Roman periods

Recent discussion of the ancient economy has been dominated by the extraordinary influence of M. I. Finley's book, published as long ago as 1973.² The impact of the book had many facets. On the one hand, as is well known, Finley demolished the so-called 'modernising' tendencies of earlier writers, who had sought to apply aspects of contemporary economic analysis to the ancient world, and replaced it with a so-called 'minimalist' position which held that the ancient economy was under-developed, had little growth or technological development, and was more influenced by social factors than economic rationality. Some of this has been nuanced, but most of this vision is alive and well today.

A second impact of his book was to treat something called 'the ancient economy' as a single entity, both in time – stretching from early Greece to late Rome – and place; the only exception to the 'ancient economy' was provided by what he called the 'Oriental sector', the territories to the east of the Mediterranean which from time to time formed part of the Greek or Roman world.

Here there has been more of a reaction, one that can be seen most clearly in the publication of the conference held in Liverpool during 1998 to mark the 25th anniversary of the publication of Finley's book. The publication of the conference papers was entitled, with deliberate intention, *Hellenistic Economies*.³ It looks hopefully towards a future stage in research when both the geographical and chronological uniformity of the 'ancient economy' would be replaced by a series of regional and more time-specific models.

A case in point concerns chronological development. While recognising that the notion of a 'Hellenistic Age' is itself a construct of nineteenth-century ancient historians, the book advances the propositions that the economy of classical Greece was different from that of the period after Alexander the Great; and that the Roman economy too was also different. For one contributor, the Hellenistic period was one in which 'the local and regional economies ... came to interpenetrate and interact more than they had done previously'.⁴ For another, the Roman economy can be seen as something distinctive because the establishment of a single rule over such a large area of territory allowed for some modest growth.⁵ In this particular view, one aspect of such growth might be indicated by a 'growth' in population in late Republican Rome. This is, however, controversial, since it depends on the reliability and interpretation of Roman census figures. Population may also have increased in the Hellenistic period, but again the evidence is far from certain.⁶

However, if we are looking for growth, then there are two other areas, familiar enough, which seem to offer some possibilities. The first is shipwrecks. The potential significance of these was first highlighted by Hopkins more than 20 years ago, when he drew attention to the much greater number of shipwrecks recorded from the 2nd century BC to the 2nd century AD.⁷ The pattern has been reinforced by Parker's subsequent (1992) longer gazetteer of wrecks,⁸ and it is discussed in a qualitative rather than a quantitative way in the *Hellenistic Economies* volume, where suggestions are made about the number of recorded wrecks as an indicator of original sailings. If it is correct, as to some degree it surely must be, to think that the number of shipwrecks is in proportion to the number of voyages made, then the case for an increase in maritime trade during the 3rd century BC, reaching a peak in the 2nd century BC to the 2nd century AD, is clear.

This must in turn mean something for the growth in Hellenistic economic activity which saw 'many processes [which] ... were moving (absolutely or relatively) more goods and services and people, than had been the case in (say) the sixth or fifth century' that J. K. Davies was talking about.⁹ However we should not get over-excited by this evidence. In pre-industrial societies such as the Greek, Hellenistic and Roman worlds, the great majority of the population would have been occupied in agricultural activities, growing the food – in the Mediterranean primarily corn, wine and oil – necessary for society to subsist. So even if we can accept an 'economic growth' of sea-borne trade, it is hard to see that it represents an enormous growth in the overall economic activity taking place in the Mediterranean. Hence the cautious expressions of 'modest' growth.¹⁰

A second area where we could posit a growth is in the amount of cash, coined money, which was in circulation.¹¹ This is also a controversial question; however, there is a good overall case. One can use three different arguments, two based on the evidence of coins themselves and the third based on documentary sources.

First, coin hoards. We can say confidently that more hoards survive from the Hellenistic and Roman periods than from earlier periods.¹² And, while we must of course take care from saying 'there are more coin hoards' to asserting 'there were more coins in circulation', the difference is so enormous that some increase seems beyond doubt.

A second, if equally difficult, way of looking at the question is through the modern calculations of the number of dies used to make coins in the period.¹³ There was an enormous increase in the amount of Roman silver minted between the 3rd and 2nd or 1st centuries BC, and, if we broaden out the question to cover Greek coins as well, we can be reasonably confident that more coins were made in the Greek and Roman world after 300 BC than before.¹⁴

The higher volume of coinage continued into the Roman period, since a study of the reign of Domitian has indicated that – speaking very broadly – as many dies were produced in his reign for the production of silver coins as they were in the Republic.¹⁵

The third indicator comes from the records of monetary transactions recorded on surviving papyri from Egypt. The papyri show the extensive penetration of economic activity by coins, a penetration that was made possible by the introduction of bronze coinage. They also reveal a sophisticated pattern of credit transfers which meant that settlement might sometimes take place on paper rather than with cash.¹⁶ A study of a later archive, from the imperial period, has suggested that such paper transactions might have accounted for some 40% of the total.¹⁷

I hope that, although the detail is controversial and hard to define, nevertheless the notions of some growth in economic activity and some growth in monetisation can be accepted. They seem to increase at the same time; equally interesting is the way that they seem to decline at the same time.

The evidence for this comes from a consideration of the gold coinage of the Roman empire. We can be reasonably confident that less of this was in circulation in the third century than had been the case in the two previous centuries. We can see this in several ways. Most telling is the pattern of stray losses of Roman gold coins from various regions of the Roman empire. These show that the annual loss of gold coins was less in the third century AD than it was in the first and second centuries.¹⁸ As there is no reason to suppose a different loss rate, this implies that there was less in circulation available to be lost.

Thus we appear to have a neat picture of an increase and decline of seaborne trade at the same time as an increase and decline in the amount of money. The fact that they occur at the same time – both rise and fall – might suggest that they are related, but we need to tread warily around the waiting Finley trap for a modernising view that might see a relationship between an expansion in the money supply and in economic activity.

Indeed, at one of the specific levels at which we have been discussing the question there can hardly be any link between the growth of seaborne trade and the greater monetisation of rural society, and even a hypothetical link between the greater volume of coinage in circulation and the hypothetical growth of economic activity is undermined by cases like the enormous Egyptian corn-trade with Rome, which took place with no exchange of cash.

Beyond that, the apparent relationship between the two seems to me, in fact, to be probably a fantasy. The pattern of money is actually different. Although precision is unattainable, the graph of the rise and fall of the amount of money does not really fit the pattern of shipwrecks. We can see this in two ways. First, the existence of an enormous Roman gold coinage during the early empire probably makes it likely that there was more money around in the first two centuries AD than there had been in the previous two centuries. The imperial gold coinage probably accounted for as much money as silver, if not more than twice as much again.¹⁹ If we wish to press figures this would actually imply a doubling or quadrupling of money in circulation. This fits the pattern we have of a gradual but steady increase in prices, and in wages (for example, military pay) during the period.

Secondly, if we return to the stray losses of coin in the Roman empire, we find that the pattern of loss, depressed in the third century, picks up again in the fourth so much that it can be asserted that 'if the stray finds are a reliable guide, the production of gold was higher in the fourth and fifth than it had been since the time of the Flavians'.²⁰ But there is no corresponding increase in the number of shipwrecks.

It seems to me most likely that the curves are actually very different, and that normally there is no clear relationship between the amount of coin and money in circulation and the amount of maritime trade.

But if we decouple the link between more/less money and more/less trade, then we have to consider if the increase in the number of wrecks at the same time as we have an increase in money is just a coincidence. That would be a bit surprising and, if we discount coincidence, then we could look for an alternative explanation; logically such an explanation would see the two aspects as both dependent on the same cause.

2. Money and prosperity in South Italy and Sicily

I want to look at this question by taking a narrower geographical area and chronological span, namely southern Italy in the 4th and 3rd centuries BC, the home of Trendall studies.

We know that, just as has been suggested and already discussed more generally for other regions, there was an increase in minting and of coinage in circulation in the late fourth and early third centuries BC. Attention was drawn to this phenomenon many years ago. In the case of Sicily the minting of precious metals in Sicily dried up during the early fourth century, but starting in the 340s BC large numbers of silver 'pegasi' from Corinth and its colonies in western Greece flowed into Sicily, lasting until about 300 BC. To judge from hoards, the pegasi must have accounted for a very considerable proportion of the coinage in circulation.²¹ Moreover, the import of coinage was accompanied by a revival of minting, principally at Syracuse. Pegasi were minted there and elsewhere, such as at Leontini. Regular coinage in all metals was resumed by Agathocles (317–289 BC), and, from his reign, Syracusan coinage in gold and silver was continuously minted until at least the middle of the third century. In Italy pegasi did not enter very greatly into circulation, but they certainly arrived there and were extensively reminted at all the principal mints in about 340–330 BC.²² During this period, reminting may have accounted for a very considerable amount of output: as many as 75% of dies of this period are found on reminted specimens.²³ The output of all the principal mints in Italy continued at a much higher level than had been the case earlier in the century, as we can see from their representation in hoards or the number of dies used.

As well as there being more coinage available in these areas, we find – as more generally in the Hellenistic world – a greater use of money, both in terms of transactions and in terms of geographical penetration. As to the former, we find a great increase in smaller silver coins in the late fourth century, and bronze coinage was

produced on an increasing scale at places like Naples and Metapontum. These coinages penetrated new areas like inland Samnium, where the practice of making coins was also hesitatingly adopted.²⁴

In both southern Italy and in Sicily, there is also some evidence for what we might call a revival in prosperity. In the case of Sicily, this is mentioned in literary sources such as Diodorus and in the archaeological record.²⁵ It is possible too that there was also an increase in population, since the sources talk of an influx of settlers into Sicily with Timoleon. However, that is obviously anecdotal and we should not put too much weight on it. In the case of somewhere like Tarentum in southern Italy, the picture is more complicated, since the literary sources (Strabo) talk of the first part of the fourth century as a period of prosperity and military greatness, followed by decline. However Strabo's later picture has been questioned as an essentially moralising account, and the archaeological record points towards an increase in economic activity. Without getting into the finer details of areas that are not really my speciality, one can nevertheless point to increases in things like the volume of vase production – many more south Italian vases from Apulia date from the later fourth century than from the earlier part; an apparent increase in the incidence of finds of gold jewellery in both Greek and indigenous funerary contexts;²⁶ the splendour of tomb painting at Paestum; or the flourishing of rural settlement in places like the territory of Metapontum.²⁷ However, this is a controversial matter which has not been very fully investigated.²⁸

Many years ago the increase in coinage in Sicily was connected with mercenaries: those who arrived from Greece with Timoleon in 344 BC to help liberate Sicily from Punic rule, and those whom Agathocles hired for the same reason twenty years later.²⁹ A similar explanation has been suggested for southern Italy, where between the expeditions of Archidamus of Sparta in the 340s BC, and of Pyrrhus in 282 BC, a series of mercenary leaders and soldiers crossed to Italy to help the south Italian towns, first against the inland peoples of Italy and later against Rome.

However, reconsideration suggests that the mercenary explanation is not really sufficient on its own:³⁰ in the case of Sicily, Timoleon had few mercenary forces, and literary sources report that mercenaries were used earlier in the century, by Dionysus I and II. As for southern Italy, the involvement of mercenaries in the later fourth century was patchy rather than regular, unlike the increase in coinage.

Complementary explanations may be offered. As noted it was a period of warfare, and there was much spending on military matters. As well as mercenaries, there were ships and supplies. Inscribed bronze tablets from Locri show that most of the money borrowed by 'the King' (probably Pyrrhus) from the Temple of Zeus was for weapons and for building fortifications,³¹ and we know of a number of indigenous centres that began to develop nucleated, walled settlements.³² Elites, both Greek and non-Greek, represented themselves in a militaristic way. Habits were permeating throughout different communities of Italy, whatever their origin: be they living together, adopting militaristic practices, or using and making coins.

The fashion for warfare in art and life in Italy was attributed by Holloway to the pervasive influence of Macedonian culture.³³ The pursuit of conquest, the cultivation of the symbolism of Victory and the introduction of military themes are all derived from Macedonia, as was the penchant for magnificent display that we can see in the tombs of Aegae. That display could of course be realised by the wealth flowing into Macedonia, which allowed conspicuous display to be made. That spending, in turn, may have contributed to what we have been calling a rise in prosperity, and may also have stimulated an increased seaborne trade in turn, not least in luxuries. The same can apply to southern Italy and Sicily. We are dealing here with as much a community of taste as we are with an influx of money.

3. *The emergence of Rome*

We have already discussed something of the relationship between the Hellenistic and Roman economies, but now I want to ask how and when Rome joined this picture. My view is that it was very much at this period. This is not the place to describe in any detail how the Roman economy developed from its original condition in a small community to that of the dominant power of the Mediterranean; in this section, my aim is more modest, to describe how Rome itself shared in the changes that were transforming the Mediterranean world and its economies at the time of the transition from Classical to Hellenistic Greece.

We are reasonably sure that a unit of value in terms of a weight of metal was in use in Rome from, if not the 6th century, then at least from the 5th century BC.³⁴ We have money, though no monetary objects like coins, but it is hard to know what are the implications for our view of early Rome.

There is a familiar methodological problem, namely the nature of the evidence. The evidence for early Roman history is essentially derived from literary sources like Livy, who was writing hundreds of years after the events he described. As in the case of Strabo and Tarentum in the fourth century BC, the sources are relentlessly modernising and essentially moralising, and conjure up a romantic view of the way that a city-state of simple warrior-farmers had emerged as the dominant power of the world.

In fact the sources give us almost contradictory pictures. On occasion we get a picture of sophistication. The sources talk a lot about debt, and give a picture of an 'elaborate machinery of state loans to cope with indebtedness',³⁵ including the establishment in 352 BC of *quinqueviri mensarii* who have been interpreted as 5 public bankers appointed during a debt crisis to advance money to creditors and to value property of debtors for payment.³⁶ On the other hand, we also get a picture of Rome in the fourth century as an agrarian community with subsistence farming and little trade. This was accepted by Tenney Frank in his great *Economic Survey of Ancient Rome* (1933–40), but is not really compatible with a machinery to cope with debt. We hardly feel happy with accepting either picture; the modernising of the one seems unlikely, as we shall see in the light of a more plausible picture of Rome's financial development, while the primitivism of the other has an implausibly quaint romanticism.

In fact, it seems clear that Rome was no simple farming community in the fourth century.³⁷ The city was already well-developed, decorated with temples, and from the late 4th century had an aqueduct; it was already open to outside influence as its adoption of Italian forms of pottery makes clear (genucilia ware, black glaze). The Romans were always coy about their use of slave labour, but by the late fourth century there seems every reason to believe that the houses of the rich were run by slaves; that they were involved in trade and manufacture; and that they were also supporting a pattern of large land-holdings (*latifundia*), although such *latifundia* are usually thought to come along a hundred years later.³⁸ The picture of isolation, engendered by Polybius and Seneca, both of whom claimed the Romans had no interest in maritime matters before 264 is contradicted by other sources, which indicate that they had a fleet in the early third century.

We thus get a picture of Rome as reasonably developed by the late fourth century. Consequently we are more inclined to accept the growing development of some financial institutions in the later fourth century. Andreaeu discussed the origin of banking at Rome, and placed it before 310, because in that year the dictator L. Papirius decorated the Forum by distributing the golden shields taken from the Samnites *dominis argentariarum ad forum ornandum dividerentur*.³⁹ The passage was accepted as genuine by Andreaeu,⁴⁰ even though it has been dismissed by Crawford because the passage 'obviously refers to silversmiths' establishments and not to banks.⁴¹ But Andreaeu has pointed out that the Latin word *argentarius* never means 'silversmith' until the fourth century AD.

The point is not an idle one, since Andreaeu regards the appearance of deposit banks at Rome as a turning point in its economic and social evolution, since they in turn allowed the existence of small scale entrepreneurs;⁴² so it is an important element in the way we view the development of Rome at the time. It has the attraction of fitting quite well with other changes that were taking place at the time.

Andreaeu also discusses the reason why bankers at Rome were called *argentarii* and not some other word like *mensarii* (cf. the Greek *trapezitae*). His suggestion was that they had this name because at first they spent most of their time changing foreign silver coins.⁴³ However that may be, this is indeed the period in which silver coins were first used at Rome. The evidence for this is partly the chronology of Rome's own silver coinage, which is now established as commencing some time around 300 BC; and also from some finds reported from the city of Rome, which suggest that foreign silver coins first appear in Rome at about the same time.⁴⁴

However, it would be a mistake to think of Rome as suddenly adopting the medium of coinage in a pervasive way, and becoming overnight the sort of highly monetised Hellenistic state that we have seen earlier. Coin use was very partial at first: coinage was produced only episodically, not regularly, and during the third century BC it was produced on a small scale, even compared with other Italian cities.⁴⁵ There is unlikely to have been enough even to meet the needs of paying the army, let alone all state payments. Its distribution pattern bears no relationship with

what we know of Roman trade, and, at first, there were few small denomination bronze coins for the needs of the retail trade. Thus a better model for Rome is, in fact, to think of it in the same way as we have described for the non-Greek indigenous communities in Italy, for whom the new fashions, including coinage, had a limited but growing appeal. Like these other communities, Rome was also adopting many other influences from across the Adriatic, and once more we may look to the Macedonian precedent.

This was a period of intense hellenisation in Rome: the decoration of the city, the adoption of Greek forms of pottery, the adoption of cultural fashions like shaving one's beard, or indeed the adoption of coinage, itself a characteristically Greek institution. So much so that it was possible for Rome to be described as a 'Greek city' at the time. But overlying this strong hellenisation lay the particular influence of Macedon.⁴⁶ Many years ago the establishment of many cults of Victory to Rome – Bellona (296), Jupiter Stator (294), Victoria (294), Jupiter Victor (295) – was explained as a response to Alexander the Great.⁴⁷

The direct influence of Alexander's iconography can be seen very clearly in third-century Rome. The first equestrian statue, based on Alexander on Bucephalus, was set up in 306 BC. His image perhaps survives from the Esquiline.⁴⁸ Appius Claudius supposedly spoke of his invincibility.⁴⁹ Contemporary Roman images of Hercules and Mars have his hairstyle, and even his diadem; the device of his seal ring, a lion with a broken sword, appears on a bronze coin. Military themes abound. Even more surprising, if more indirect, is the choice of a military model for the iconography of the goddess Roma. Because we are (retrospectively) so familiar with the similarity of Roma and Athena, we do not appreciate what an extraordinary choice it was at the time, around 300 BC. There was no precedent for modelling the personification of a city on an Olympian deity; and there was no particular *a priori* reason to choose a warlike goddess like Athena. A depiction as an ordinary woman⁵⁰ or as a city Tyche as is found in the Hellenistic world were more obvious choices.

The influence of Alexander can be seen more strongly at Rome than any other south Italian state or community, and fits in well with the picture already mentioned of an increasingly militarised fashion. In turn, this accords with the picture of Roman expansion outlined 20 years ago by W. V. Harris in his book on *War and Imperialism in the Roman Republic*.⁵¹ Harris questioned the traditional picture of Roman expansion as a form of self-defence, the sort of post-imperialist apologia much in vogue in English writing on Roman history in the earlier 20th century. In its place he offered a model of a Roman state dominated by warfare, and engaged in almost constant campaigning during the third century BC. The iconographic evidence for the dependency of the developing iconography of the goddess Roma on that of the great military conqueror Alexander the Great is entirely consistent with his picture. We can accept that Roman conquest was driven by expansionist aims, which brought much wealth in its train. The combination of that tendency with the adoption of

many Greek ways of fashion and behaviour explains the way that the monetised economy of Rome started to grow such that it gradually dominated first Italy and then the rest of the Mediterranean world.

4. Conclusion

If the general direction of this paper can be accepted, we are left with the conclusion that the rise of the Macedonia kingdom and the conquests of Alexander created a defining moment in the ancient Mediterranean world. This is perhaps hardly surprising, but their potential effect on the economic and monetary life of the region is underappreciated. More particularly, their impact beyond the areas of direct conquest also needs more emphasis, as is shown by the examples of the way that their influence was felt so strongly in areas such as southern Italy and Sicily and that they provided a desirable cultural model for Rome to embrace. The ideology of Alexander as the prime military conqueror came to the west, especially to Rome; and the Macedonian fashion for the display of wealth came to the west, more generally.

But we must be careful not to overstate the importance of Macedonian influence. Local factors were also important. Other concerns and changes affected Magna Graecia, for example, in the late fourth and third centuries. These changes included the continuing hellenisation of alien peoples, like the indigenous populations of inland Italy or indeed the Romans; they included a growing urbanisation, where coinage might develop a greater role; and they included the need to pay for military activity undertaken both for self-defence and for the acquisition of glory. All these other factors were – of course – related and combined together they help explain the phenomena we have just examined. Alexander and the ideology of Macedonia played an important part in this process, but they were not the only factors.

Most curiously of all, it seems that the example of Macedonia was embraced most actively at, of all places, Rome. It may well be that one of the decisive factors behind the aggressive and successful expansion of the Roman state, was that Rome – more so than any of the other states of leaders of Magna Graecia – saw itself as the real successor to (or competitor with) Alexander the Great. It was, ironically, this influence that began the process by which Rome became the dominant power in the Mediterranean and led to the emergence of a Roman economy.

More trade, more money and more prosperity? Yes, more trade; but it was a small part of the ancient economy. Yes, more money; an increase in scale and social penetration which increased further from the Hellenistic to the Roman period. More prosperity? More display of wealth, certainly, but – as with trade, though *a fortiori* – that gives little indication of any impact on the Roman world as a whole, as opposed to its elite. But the apparently implicit progressive link between the three concepts is, as I have suggested, misleading and the Finley picture of the dominance of social and cultural factors may have been nuanced, but survives.

Endnotes

- 1 It was a great pleasure to be invited to give the Trendall lecture. I first met Dale Trendall over 30 years ago, when I was in Italy, and his particular enthusiasm for south Italian archaeology was infectious.
- 2 M. I. Finley, *The Ancient Economy* (London, 1973).
- 3 Z. Archibald et al. (eds.), *Hellenistic Economies* (London, 2001).
- 4 J. K. Davies, in *Hellenistic Economies*, p. 19.
- 5 J. J. Patterson, in *Hellenistic Economies*, p. 375.
- 6 Ibid.
- 7 K. Hopkins, 'Taxes and trade in the Roman empire', *Journal of Roman Studies* 70, 1980, pp. 101–25. See also his later version, 'Rome, taxes, rents and trade', in W. Scheidel and S. von Reden (eds), *The Ancient Economy* (Edinburgh, 2002), pp. 190–230.
- 8 A. J. Parker, *Ancient Shipwrecks of the Mediterranean and the Roman Provinces* (Oxford, 1992).
- 9 J. K. Davies, *Cambridge Ancient History* VII.1 (Cambridge, 1989), p. 19.
- 10 Patterson, in *Hellenistic Economies*, p. 375.
- 11 The view was put forward by Davies, *Cambridge Ancient History*, pp. 277–9 (though not repeated in *Hellenistic Economies*).
- 12 To take some crude figures: *An Inventory of Greek Coin Hoards* (eds M. Thompson, C. M. Kraay and O. Mørkholm, New York, 1973) published in 1973 recorded 2,387 hoards, of which about 80% date to the Hellenistic period. M. H. Crawford, *Roman Republican Coin Hoards* (London, 1969), published a few years earlier, would add another 549 hoards to the same period from the Roman world (to avoid overlap, we would use only the Roman hoards dating from about 210 BC). When we add the figures together, the total moves up from about 80% to about 85%.
- 13 There is a large literature on the controversy: see F. de Callatäy, 'Calculating ancient coin production: seeking a balance', *NC* 155, 1995, pp. 289–301 (replying to T. V. Buttrey's position); and Hopkins' remarks in 'Rome, taxes, rents and trade.'
- 14 For the volume of Roman Republican coinage, see M. H. Crawford, *Roman Republican Coinage* (Cambridge, 1974). Although his detailed estimations of the volume of Republican denarii have often been questioned (see, e.g., the articles cited by de Callatäy, 'Calculating ancient coin production,' p. 306 note 105), there is little doubt of the overall quantitative increase: from a coinage at first produced from a handful of dies in the third century to one that, by the first century, was using several hundreds (or even thousands) every year. For the Hellenistic coinage, de Callatäy has provided statistics which, although their interpretation is controversial (see previous note), point towards a total of many tens of thousands of dies used to produce coins in the Hellenistic period, thereby implying a very great volume of coins. F. de Callatäy, *Recueil quantitativ des émissions monétaires hellénistiques* (Wetteren, 1997). He gives a summary on p. 309, where his study of only 329 coin issues of the period reveals over 11,700 dies. In an earlier study by F. de Callatäy, G. Depeyrot, L. Villaronga, *L'argent monnayé d'Alexandre le Grand à Auguste* (Bruxelles, 1993), the attempt was made to estimate the amount of silver that was coined. See also F. de Callatäy, 'Quelques estimations relatives au nombre de monnaies grecques: les collections publiques et privées, le commerce et les trésors,' *Revue Belge de Numismatique et de Sigillographie* Tome CXLIII, 1997, pp. [21]–94; F. de Callatäy, 'Le volume des émissions monétaires

- dans l'antiquité: bref état de la question et présentation de deux ouvrages récents relatifs à l'époque hellénistique', *Istituto Italiano di Numismatica. Annali* 44, 1997, pp. 53–62.
- 15 The figures given by I. Carradice, *Coinage and Finances in the Reign of Domitian* (Oxford, 1987), p. 86 range up to about a thousand a year. This is broadly the same as the figures one can find for Republican moneyers: see Crawford, *Roman Republican Coinage*, p. 531.
 - 16 S. von Reden, 'The politics of monetization in third century BC Egypt', in A. Meadows and K. Shipton (eds), *Money and its uses in the ancient world* (Oxford, 2001), pp. 65–76, and J. Rowlandson, 'Money use among the peasantry of Ptolemaic and Roman Egypt,' in *Money and its uses*, pp. 145–55.
 - 17 D. W. Rathbone, *Economic rationalism and rural society in third-century A.D. Egypt: the Heroninos archive and the Aprianus estate* (Cambridge, 1991).
 - 18 See the tables given by R. Bland, 'The changing patterns of hoards of precious-metal coins in the late empire', *Antiquité Tardive* 5, 1997, pp. 29–55, at pp. 32–4.
 - 19 R. P. Duncan-Jones, *Money and Government in the Roman World* (Cambridge, 1994), pp. 71, 111, suggests that gold accounted for 70% of money by value.
 - 20 Bland, 'The changing patterns,' p. 32.
 - 21 See R. J. A. Talbert, 'Corinthian silver and the Sicilian economy', *NC*, 1971, pp. 53–66; R. J. A. Talbert, *Timoleon and the Rise of Greek Sicily* (London, 1974); C. M. Kraay in *INC (Washington) Transactions*, pp. 99–105; C. M. Kraay, *Greek coins and history: some current problems* (London, 1969), pp. 54–63.
 - 22 A. Burnett, 'Naples and South Italy: coinage and prosperity, ca. 300 BC', in A. Stazio and M. Taliario Mensitieri (eds), *La monetazione di Neapolis nella Campania antica (Atti del VII Convegno del Centro Internazionale di Studi Numismatici, Napoli 20–24 Aprile 1980)* (Naples, 1986) pp. 23–43.
 - 23 A. E. M. Johnston, *The Coinage of Metapontum III* (New York, 1990), pp. 34–5.
 - 24 M. H. Crawford, *Coinage and Money under the Roman Republic* (London, 1985), pp. 36–8; *Sannio. Penri e Frentani del VI al I sec. a.C.* (exhibition catalogue, Rome, 1980), *passim*.
 - 25 Diodorus 16.83.1; Talbert, 'Corinthian silver and the Sicilian economy,' pp. 56–7; Kraay, *Greek coins and history*, p. 59.
 - 26 The pattern is clear from D. Williams and J. Ogden, *Greek Gold. Jewellery of the Classical World* (London, 1994), pp. 199–221.
 - 27 J. C. Carter, 'Metapontum – Land, Wealth and Population', in J.-P. Descoudres (ed.), *Greek Colonies and Native Populations* (Oxford, 1990), pp. 405–41.
 - 28 Note the contrasting interventi by A. G. Pontrandolfo and W. Johannowsky in *La monetazione di Neapolis*, pp. 44–6.
 - 29 Kraay, *Greek coins and history*, p. 59.
 - 30 Some of these points are made by J. H. C. Williams and A. Burnett, 'Alexander the Great and the Coinages of Western Greece', in R. Ashton and S. Hurter (eds), *Studies in Greek Numismatics in memory of Martin Jessop Price* (London, 1998), pp. 380–93, at pp. 388–9.
 - 31 A. De Franciscis, *Stato e Società in Locri. L'archivio dell'Olimpieion locrese* (Naples, 1972), pp. 75–9; Burnett, 'Naples and South Italy,' p. 39.
 - 32 N. Purcell, *Cambridge Ancient History VI* (Cambridge, 1989), pp. 397–8.
 - 33 R. R. Holloway, in *La monetazione di Neapolis*, pp. 47–8.

- 34 As seems clear from the XII Tables of 451–0 BC: see M. H. Crawford, (ed.), *Roman Statutes* (London, 1996), no. 40: I, 11, has amounts of 50, 500 and 1000 [reconstruction]; I, 14–16 have fines (poenae) in amounts of 25, 150, 300. The word ‘as’ is restored.
- 35 Crawford, *Coinage and Money*, pp.17–24, at p.18. His approach is generally sceptical.
- 36 J. Andreau, *Banking and Business in the Roman World* (Cambridge, 1999), p. 116 citing Livy 7.16.1, 7.19.5, 7.21.5–7; J. Andreau, *La vie financière dans le monde romain* (Rome, 1987), pp. 230–3.
- 37 C. G. Starr, *The Beginnings of Imperial Rome* (Ann Arbor, 1981), pp. 15–26.
- 38 T. J. Cornell, *Cambridge Ancient History* VII.2 (1989), p. 413.
- 39 Livy 9.40.16. J. Andreau, *La vie financière dans le monde romain* (Rome, 1987), p. 337.
- 40 Because 1) of association with triumph (reliable tradition); 2) a related passage of Varro discussing its appearance is in a text which deals with late 4th century and early 3rd century.
- 41 Crawford, *Coinage and Money*, p. 17, n.2.
- 42 Andreau, *Banking and Business*, ch. 1.
- 43 Andreau, *La vie financière*, pp. 344–6
- 44 The finds from the Roman forum (R. Reece, PBSR 1982, pp. 117–45) include a didrachm of Neapolis, with the head on the obverse surrounded by dolphins, datable to about 300 BC, and probably not in circulation after about 250 BC. The hoard from the Capitoline included 7 coins of Naples (*RRCH* 60), though its date of deposit is much later, about 220 BC.
- 45 A. Burnett, *Coinage in the Roman World* (London, 1987), pp. 11–16; A. Burnett, ‘La documentazione numismatica’, *Ati del XLIV Convegno di Studi di Magna Grecia* (Taranto, forthcoming).
- 46 A. Burnett, ‘The iconography of Roman coin types of the third century BC’, *NC*, 1986, pp. 67–75.
- 47 S. Weinstock, *Harvard Theological Review*, 55, 1957, pp. 211–47; Crawford, *The Roman Republic*, p. 51.
- 48 *Roma Medio-Repubblicana* (exhibition catalogue) (Rome, 1973), p. 282: a terracotta head from the Esquiline with the features of Alexander, from about 300 BC.
- 49 Plutarch, *Pyrrhus* 19.1.
- 50 As occurs on the coins of Locri from about 280 BC.
- 51 W. V. Harris, *War and Imperialism in the Roman Republic* (Oxford, 1979), esp pp. 175–99.