

**Birkbeck ePrints: an open access repository of the
research output of Birkbeck College**

<http://eprints.bbk.ac.uk>

Cuomo, Serafina (2007) Measures for an emperor: Volusius Maecianus' monetary pamphlet for Marcus Aurelius. *In*: König, Jason and Whitmarsh, Tim *Ordering knowledge in the Roman Empire*. Cambridge: Cambridge University Press. pp.206-228.

This is an author-produced version of a chapter published by Cambridge University Press in 2007 (ISBN 9780521859691).

All articles available through Birkbeck ePrints are protected by intellectual property law, including copyright law. Any use made of the contents should comply with the relevant law. © Cambridge University Press 2007. Reprinted with permission.

Citation for this version:

Cuomo, Serafina (2007) Measures for an emperor: Volusius Maecianus' monetary pamphlet for Marcus Aurelius. *London: Birkbeck ePrints*. Available at: <http://eprints.bbk.ac.uk/631>

Citation for the publisher's version:

Cuomo, Serafina (2007) Measures for an emperor: Volusius Maecianus' monetary pamphlet for Marcus Aurelius. *In*: König, Jason and Whitmarsh, Tim *Ordering knowledge in the Roman Empire*. Cambridge: Cambridge University Press. pp.206-228.

Measures for an emperor:

Volusius Maecianus' monetary pamphlet for Marcus Aurelius

To the Greeks the Muse gave intellect
and well-rounded speech; they are greedy only for praise.
Roman children, with lengthy calculations, learn
to divide the *as* into a hundred parts.¹

Like many *clichés*, Horace's sour depiction of Roman pragmatism has some truth to it – except that the Greeks were just as interested as the Romans in correctly dividing currency into parts. Metrology, the knowledge of measures of weight, length, volume, and of money, was a major presence in ancient education and ancient life. The excavations of the Athenian *agora* have turned up some two hundred metrological objects.² A great many papyri from Hellenistic and Roman Egypt are accounts, bills, or contracts stipulating sizes or weights of things. Texts such as the so-called Athenian coinage decree³ or the bilingual tax decree from Palmyra⁴ are expressions of political and economic decisions variously translated into metrological policies.

The act of measuring creates a correspondence between things in the real world and symbols, be they numbers, units of measurement, or signs representing numbers or

¹ Horace, *Ars Poetica* (*Letters* 2.3), 323-6, mentioned in Dilke (1989) 50. Another *locus classicus* here is Cicero, *Tusculanae disputationes* 1.4. Translations are mine unless otherwise indicated.

² Lang & Crosby (1964).

³ Meiggs & Lewis (1969), 45 (450-446 BC). See D. Lewis's and H. Mattingly's articles in Carradice (1987).

⁴ *Corpus Inscriptionum Semiticarum* 2.3.3913 (AD 137, in Greek and Palmyrene). See Matthews (1984).

units of measurement. For instance, the Palmyra decree enforces a correspondence between, say, a sack of salt and two symbols: a number expressing its volume, expressed in terms of *modii* (units of measurement), and another number, tied by decree to the first one, expressing the tax tariff in terms of duty per *modius*. In the specific situation of the tax payment, the sack of salt ‘becomes’ its volume, that is, it exists in the form of a certain number – this translation is what makes the transaction possible.

Metrological documents are ‘inscription devices’, in a sense of the term which I adapt from Bruno Latour’s work.⁵ They are technologies that provide a representation of reality such that the representation becomes a necessary medium for interacting with that reality, because it (the translation, the ‘something standing for something else’) makes reality more manageable and more orderly. Examples of inscription devices include maps and graphs. Maps today can be said to have substituted landmarks as a means for orientation – in the case of the London Underground map, for instance, the coloured lines intersecting each other on paper are, for its users, by all accounts much more real than the real world of tunnels that ‘are’ London, underground. And graphs expressing, for instance, the outcome of a complex biochemical experiment substitute recourse to the mass of data produced by the various stages of the experiment. Once the graph is accepted by the scientific community, the reality it stands for, the mass of data, will in practice be obliterated. Inscription devices then write down (inscribe) reality in such a way that from now on we shall look at the inscription rather than at the reality it is

⁵ Especially Latour (1987) 68-78.

supposed to represent. Indeed, according to Latour, the representation ends up ‘being’ the reality.

In some contexts, once the device is in place, the process that produced it disappears, like scaffolding, to the point that reality is now seen as *always* having contained within itself the inscription or the representation, independently from the human agents that produced it in the first place. What originates as basically a matter of useful convention, of approximation, of educated guess, is transformed into a law of nature. In a metrological context, a sack of salt may ‘become’ a certain number of *modii* to such a deep extent that one talks of a ‘natural’ or ‘universal’ system of measures, as if the number of *modii* had somewhat been lurking within the apparently unordered mass of salt all along, waiting to be weighed and declared; just as Michelangelo’s statues were said by the artist to be imprisoned in their block of marble, waiting to be freed from the superfluous matter in order to reveal their true shape.

Thus metrological documents can be a powerful tool to create a certain ‘natural’ order, and to make knowledge of certain taxonomies, relations and systems indispensable for correctly accessing reality. Both the Palmyra decree and the Athenian coinage decree are good examples of how metrologies – in particular metrologies having to do with money – serve as political instruments, and, given their extension of a certain order from a centre issuing the metrology over to a periphery, as instruments of empire.⁶

A thorough exploration of how these issues are articulated in the ancient world would warrant much more time and space than I have at present. Nevertheless, I shall attempt to

at least whet the reader's appetite by focussing on one intriguing ancient metrological text, known in Latin as the *Distributio item vocabula ac notae partium in rebus quae constant pondere numero mensura* (*Division, as well as terms and signs of the parts in things which are reckoned by weight, number and measure*), which I shall henceforth refer to as the *Distributio*.⁷ Its author, Lucius Volusius Maecianus (AD 110?-166?) was a well-known and respected member of the Roman elite, widely appreciated for his expertise in the law. In addition to the *Distributio*, he wrote (as far as we know) sixteen books on legacies, fourteen books on criminal actions, and a treatise on the Rhodian law of the sea.⁸ We have several inscriptions relating to him, including a *cursus honorum* or account of his political career; we know that he was a patron of the corporation of ferrymen, auxiliaries and record-keepers; and that he was appointed to the post *a libellis* (in charge of juridical petitions and coordinating responses to them) in AD 138 under Hadrian, and to two posts in the imperial bureaucracy (*a studiis* and *a bibliothecis*) under Antoninus Pius in around 150.⁹ He taught law to Marcus Aurelius.¹⁰ Between AD 159 and 161 he was prefect of Egypt; in charge of the corn supply in Rome by 161; a consul

⁶ See again Latour (1987) chapter 6.

⁷ The main edition is by Hultsch (1866), vol. II vii, 17-22 and 61-71, also available in Seckel & Kübler (1908), 408-18, and based on Th. Mommsen's text in *Abhandlungen der sächsische Gesellschaft der Wissenschaften* III (1857) 281-5 (*non vidi*).

⁸ Rohden & Dessau (1898) 3.481-2; Seckel & Kübler (1908) 408; Casavola (1980) 328-32; Fanizza (1982) 105; Kunkel (2001) 174-6.

⁹ *CIL* 14.250=*ILS* 6174, found in a church wall at Ostia. See also *Scriptores Historiae Augustae. Antoninus Pius* 12.1. For similar examples of patronage of professional associations, see Clemente (1972); van Nijf (1997) 100-20.

¹⁰ *SHA. Marcus Antoninus* 3.6. Marcus Aurelius and Lucius Verus referred to Maecianus as 'our friend' in a rescript (AD 161-9), *Digesta* 37.14.17. Marcus Aurelius also mentions Maecianus as someone close to him in a letter to Fronto, dated to between AD 140-143, now in M. Cornelius Fronto, *Epistulae* 1.74-8 (Cambridge MA: Harvard University Press 1919 – corresponding to 2.4 Naber). Marcus Aurelius,

in 166, the year in which, according to some interpretations, he died. According to others, however, he was killed in 175, during an uprising in Alexandria.¹¹ It is abundantly clear from this that Maecianus' vicinity to three emperors, culminating in what appears to have been a direct and close relationship with Marcus Aurelius, puts him in a privileged position to comment on issues of order and knowledge, as indeed he appears to do in his work. We shall return to these points presently. I shall begin by describing the contents of the *Distributio*, and then tackling some of the issues arising from it.

I. The treatise

The *Distributio* was written for Marcus Aurelius, probably in AD 146 when he was not yet emperor. Maecianus starts:

I have often noticed, Caesar, that you are upset because you regard the subdivision of the *as*, which is necessary for inheritances and for many other things, as unknown. Thus, so that such a small thing does not impede your mind in any way, I have assessed how to set out both those parts and their names and signs. You can grasp then on the one hand the infinite subdivision of parts, on the other their utterly small names and signs.¹²

Meditations 1.6, mentions a philosopher Marcianus that he resolves to listen to – the manuscript tradition is problematic, and some scholars think that Marcianus could be emended to Maecianus.

¹¹ A Maecianus is mentioned as having been killed by the army after conspiring against Marcus Aurelius in *SHA. Marcus Antoninus* 25.6 and *SHA. Avidius Cassius* 7.4, but not all scholars agree that he is the same as the jurist. For a death around AD 166, see Fanizza (1982) 114.

¹² *Distributio* 61.12-9: *Saepenumero, Caesar, animadverti aegre ferentem te, quod assis distributionem et in heredum institutione et in aliis multis necessariam ignotam haberes. Quare ne tam exigua res ingenium tuum ullo modo moraretur, cum partes ipsas tum vocabula et notas proponendas existimavi; et deprehendes distributionem quidem partium infinitam, oppido autem quam exigua vocabula et notas.*

The tone is familiar, and there is an assumption that Marcus Aurelius is aware of Maecianus' other field of expertise (inheritance law), which is here hinted at, as if to bolster his credentials.¹³ One of the main themes of the treatise is introduced: the relationship between various parts of the *as* (the piece of money), and their number and name and sign, small things that, amazingly, pin down the infinite.

Maecianus starts with the subdivision of the coin known as the *solidus*, also called *libra* or *as*. The three alternative nomenclatures are the prelude to a systematic taxonomy, where each part of the *as* is introduced in turn as a numerical fraction, a name (the formula is 'it is called' (*vocatur*) or 'its name is' (*nomen est*))¹⁴ and a sign ('its sign is' (*cuius nota*)).¹⁵ The *as* is subdivided into halves (*semisses*), thirds (*trientes*), fourths (*quadrantes*), sixths (*sextantes*), eighths (*sestunciae*), ninths (*unciae duae sextulae*) and twelfths (*unciae*) – the “elements, as it were” of the first division (*distributio*). Maecianus perhaps alludes here to Euclid's *Elements*, and hence to the fundamental, seminal nature of his present work. These elements, he says, ‘preserve equality’,¹⁶ unless they are added or subtracted to each other, in which case they sometimes produce equal, sometimes unequal parts. For example, if you add a *sextans* to a *quadrans*, you obtain a *quincunx*, equivalent to five *unciae*, i.e. 5/12; or, if you add a *semis* to a *sextans*, you obtain a *bes*,

¹³ Fanizza (1982) sees a link between the *Distributio* and Maecianus' work on *fideicommissa* (15), and between the *Distributio* and Maecianus' post as *praefectus annonae* (112). Indeed, *Digesta* 35.2.32.4 (Maecianus from book 9 of the *Fideicommissa*, commenting on the *lex Falcidia*) contemplates a proportional contribution on the part of heir and recipient of legacy, in case they owe money as a result of a case involving the deceased. According to *Vindius noster*, the contribution should be proportional to their respective inheritances. Maecianus finds this idea both fair and logical (*aequitatem et rationem* [...] habet).

¹⁴ On the importance of names for measures, see Heilbron (1990) 207-42, especially 214-5.

¹⁵ In Pliny the Elder's discussion of Roman coinage, *nota* is the design on the coin – see *Historia naturalis* 33.44-6.

i.e. $8/12$.¹⁷ Those are unequal parts. In general, the subdivisions of the *as* can be equal – a certain multiple of each subpart produces a whole *as*; for instance, six *sextantes* make an *as*, and so do two *semisses*, three *trientes*, and so on - or unequal. No multiple of a *quincunx* can produce a whole *as* – two will fall short of an *as* by a *sextans*, three will exceed an *as* by a *triens*.

The two parallel subdivisions are distinguished also by the fact that equal parts can only be characterized in one way, whereas unequal parts have several alternative definitions. For instance, a *semis* is, simply, one half, $1/2$, and is obtained by dividing the *as* into two. A *bes*, on the other hand, can be obtained by adding $1/12$ to $7/12$, or by adding $1/2$ to $1/6$, or $5/12$ to $1/4$, or $1/3$ to $1/3$, and can be defined as eight *unciae* or four *sextants* or two *trientes* or even an *as* minus a third.¹⁸ Even though unequal parts have a non-univocal nomenclature, and are characterized in a multiplicity of ways, their distinctive ‘signs’ (*notae*) remain the same. A *bes*, no matter how defined in terms of addition or multiplication of parts, is denoted by $S =$. The ‘signs’ of the unequal parts are in fact loaned from those of the equal ones: the sign of the *bes* reveals, and possibly privileges, one of its possible origins as the sum of a *semis* (denoted by S) and a *sextans* (denoted by $=$).

¹⁶ *Distributio* 62.13-5: *Haec velut elementa primae de asse distributionis aequalitatem servant.*

¹⁷ *Ibid.* 62.15-8 and 22-4, respectively.

¹⁸ *Ibid.* 62.22-4; 63.28-31.

After the *as*, Maecianus moves to a ‘less known, but not totally obscure’, monetary sphere: that of the *uncia* or ‘twelfth of an *as*’,¹⁹ which is posited as the mid-point between a tree of subdivisions upwards, towards the *as*, and an open-ended subdivision tree downwards, into ever smaller parts. The first subdivision of the *uncia* is along similar lines to that of the *as*: into halves (*semunciae*), thirds (*binae sextulae*), fourths (*sicilici*), sixths (*sextulae*), twelfths (*dimidiae sextulae*) and twenty-fourths (*scriptula*, also called *scripula*). In each case, as with the parts of the *as*, we are told what part of the *uncia* the unit is, what it is called and what its denoting sign is.²⁰

The apparently easy symmetry, however, is immediately shattered, as Maecianus points out the complete arbitrariness of his own systematization. ‘These parts’ he says, ‘can be further divided into however many parts you want, but below them you do not find signs or proper names apart from those’.²¹ The reason why some subdivisions have signs and names and others do not, is simply not given: Maecianus observes that, for instance, the *as* could be divided into eleven equal parts, but it is not. There are no name and no sign for elevenths or tenths, the way there are for ninths or sixths. In other words, the relationship between thing and name and symbol, which had seemed rather straightforward in the first subdivision and had acquired multiplicity in the second subdivision, has now been exploded – there are things that, although at some level they exist for us, do not have a name or a distinctive sign, unless they serve specific

¹⁹ *Ibid.* 64.12-7.

²⁰ *Ibid.* 64.18-28.

²¹ *Ibid.* 65.13-5: *Has quoque partes in quantum libet dividere possis; verum infra eas neque notas neque propria vocabula invenies praeter ea.*

purposes.²² Thus ‘some accountants call the half *scriptulum* a *simplium*’, or again a one-per-cent interest rate is endowed with a specific name.²³

From mentioning interest and capital, the account moves on to a sort of interlude. Maecianus comments: ‘The nomenclature of the *as* has to do with concrete things and bequests taken as a whole, while its division has to do with a description of the parts; it can also be applied to numbered wealth (*pecunia numerata*), which used to be in bronze, later started to be struck in silver, so that each silver coin had value depending on the quantity of bronze [it amounted to]’.²⁴ A historical dimension is thus introduced.²⁵ For instance, Maecianus says that the *libella*, i.e. a tenth of a *denarius*, used to have the same function as the *as*, but is now associated with the past and the ways of the ancients (*exemplo maiorum*).²⁶ The *victoriatus* was once a foreign coin, ‘as tetradrachma and drachma are today’: originally from Illyria and Thessaly, it started to be issued in Rome between the First and the Second Punic Wars, and gradually assimilated into ‘normal’

²² *Ibid.* 65.19-66.14. Similar questions arise in contemporary literature (Aulus Gellius, *Noctes Atticae* 2.26, on how there are more colours than there are names for them in either Greek or Latin) and jurisprudence (Neratius in *Digesta* 22.6.2 posits a contrast between the determinacy of law and the indeterminacy of facts subsumed under it, see discussion in Scarano Ussani (1979), 5-77).

²³ *Distributio* 65.15-6 (*Dimidium scriptulum audio quosdam ratiocinatores simplium vocare*) and 66.14-5, respectively.

²⁴ *Ibid.* 66.21-6: *Sicut autem assis appellatio ad rerum solidarum hereditatisque totius, divisio autem eius ad partium demonstrationem pertinet, ita etiam ad pecuniam numeratam refertur, quae olim in aere erat, postea in argento feriri coepit ita, ut omnis nummus argenteus ex numero aeris potestatem haberet.* I have translated *aes* throughout as ‘bronze’ for convenience, but in fact it could indifferently denote bronze or copper.

²⁵ Temporal adverbs abound; the Greeks and the Twelve Tables are mentioned at *Distributio* 67.5-9. Aulus Gellius, *Noctes Atticae* 20.1 features a discussion of the laws of the Twelve Tables, revolving around the changing value of the *as*: when the Tables were written, it was a remarkable sum, but no longer so in the second century AD. This sparks off the debate whether the ancestral laws were excessively cruel and are now outmoded. Historical awareness was a fundamental component of jurisprudence, see e.g. Casavola (1980) 9-12; Bretone (1982) 10.

²⁶ *Distributio* 70.16-30.

currency.²⁷ The parallels between appropriation of the coin and gradual incorporation of Illyria within the Roman state (effective by the early first century AD), sanctioned by the appropriation of the image of Victory, which gives the coin its name, are obvious.

Having gestured towards the potential infinity of micro-units lurking beneath the *as* and *uncia*, a whirlpool of nameless bits of money, a 'here be monsters' on the map of currency that he is drawing, and after the historical interlude, Maecianus continues his deliberate ordering. He launches into subdivisions of larger denominations, the *denarius* and the *sestertius*; the accounts are punctuated by direct appeals to the reader to denote each part with its sign and name.²⁸ The author declines to go into the subdivisions of the *victoriatus* or the *quinarius* because he does not know the Roman way of proceeding; he says, however, that the reader can work it out by analogy with other monetary units.²⁹

Finally, Maecianus turns to weight, liquid and grain measures, which are organized along lines similar to money. In fact, units for weight and for money often share names and values, because at least in origin each coin was denoted by its weight. This relation was loosened and partly broken down when financial circumstances required devaluation of the currency.

The conclusion is tantalizingly fragmentary: 'The natural cause of the parts and of number remains unchanged, however much they may differ in name with each nation. The size of weights and measures is unstable, because its weighing and measuring

²⁷ *Distributio* 66.29-67.2: *Victoriatus enim nunc tantundem valet quantum quinarius; olim ut peregrinus nummus loco mercis, ut nunc tetradrachmum et drachma, habebatur.* Cf. Mattingly (1928) 13-7.

²⁸ *Distributio* 67.12-68.24, e.g. 67.14-5, 17-8, 19-20, *passim*.

²⁹ *Distributio* 69.1-6 (*Ad quinarium et victoriatum rationem Romae confici nescio*).

out...'³⁰. It would seem that Maecianus was commenting, perhaps as a conclusion to his survey, on the complex relationship between the thing and its stand-ins (number that expresses its measure, coin that expresses its value and is also represented by a number, sign that denotes the coin that expresses the value of a certain quantity of a thing), and on the permanence and variability of these various classifications and correspondences - issues that have already emerged at several points in the text.

Using a coin is ultimately an act of trust in the correspondence established between the piece of metal and the thing one wants to buy, a correspondence represented by an equivalence of value between the price of the merchandise and the amount the coin is worth.³¹ Money is in fact the prime example of a metrological object which has turned from representation of reality into reality – an inscription device where the signs meant to depict a thing are now taken as the thing itself. The Latin word for ‘money’, *pecunia*, is semantically multi-layered: fundamentally, and originally, it denotes sheep; it also comes to signify wealth in general, because those who owned a large number of sheep were wealthy; and hence also money, the translation of a certain number of sheep into a quantity of metal which can travel and be stored and exchanged in a way that sheep cannot. Money is quantified value, sheep or other bodies that have become a number:

³⁰ *Distributio* 71.23-6: *Partium et numeri naturalis causa durat, quamvis nominibus apud quasque gentes different. Ponderis et mensurarum modus incertus est; nam eius dispensio ac dimensio...*

³¹ Cf. Aristotle, *Ethica ad Nicomachum* 1133a20-b15.. For assessments of the cultural and political background to classical Greek monetary economies, see von Reden (1997); Kurke (1999); Seaford (2004) (*non vidi*).

pecunia numerata, or ‘reckoned *pecunia*’.³² Of course the sheep are no longer important – what used to stand in for the object of value is now the object itself. In fact, money now signifies on the basis of other money rather than of things outside: the value of coins is expressed in terms of other coins, their universe of reference is self-contained and independent of its original meaning.

The story of Rome could be narrated as that of the changing relations between things and the inscription devices which stand in for them: a metrological story.³³ It is in parallel with the development of the empire, the accumulation of riches and various devaluations, regulations and deregulations, that *pecunia*, the substance for which coins stand in, becomes ‘reckoned’ (*numerata*) – it becomes inscribed and entangled in an intricate network of correspondences. The network pictured in Maecianus’ short treatise is revealing of wider webs and ramifications, and it gives rise to several questions. How does the *Distributio* relate to contemporary metrological literature? How does it relate to jurisprudence, which was Maecianus’ main field of expertise? And, finally, why should the emperor know about the subdivisions of the *as*?

II. The treatise in a metrological context

In many respects, the *Distributio* is quite unique in ancient metrology. The closest comparable account is a passage from the fifth book of Varro’s *On the Latin Language*

³² *Digesta* 50.16.178 (Ulpian): ‘The word *pecunia* consists of not only counted money (*pecunia numerata*), but absolutely all money, that is, all bodies: for nobody will doubt that ‘bodies’ are included in the designation of money’.

³³ See Nicolet (1991).

(47-45 BCE), where the author performs a sort of naming ceremony for all aspects of reality, including public offices and elements of religious ritual, bestowing Latin names upon them.³⁴ One of the underlying issues is, on what basis is this naming operation performed: what makes a certain name go with a certain thing? The section on money ('stamped (*signata*) *pecunia*') starts rationally enough: *as* comes from *aes*, the metal it is made of; *dupondius* from its 'double weights' (*duo pondera*), and so on. But by the time we get to a hundred *asses*, the stable, almost natural, connection between thing and name breaks down: '*ducenti* (two hundred) and higher numbers which are made by analogy do not indicate *asses* any more than they do *denarii* or any other thing'.³⁵ What this brings home, once again, is the ambiguous nature of money and of its relationship with reality.

For Pliny the Elder, the creation of money is just another of the crimes committed in the name of greed. In the section of his *Natural History* (published in CE 77) devoted to precious metals, he tells us that initially the Romans used raw metal, then king Servius introduced stamped bronze, and then 'stamped silver' (*argentum signatum*) came after the victory over king Pyrrhus. Pliny points out the original relation between coins and 'stuff', reminding the reader of some weight-linked etymology: 'expenditure' derives from *expensa*, sums weighed out, and *pecunia* from the design stamped on the metal, which was an ox or a sheep.³⁶ Whereas Varro's order is, one could say, linguistic, trying to show that the relation between name and thing has a rationale, and Maecianus' account

³⁴ Varro, *De lingua latina* 5.36 (169-74), excerpted in Hultsch (1866) II 49-51. Unsurprisingly, given the time gap between them, Varro's and Maecianus' subdivisions overlap but do not coincide.

³⁵ Varro, *op. cit.* 5.170, Engl. tr. R.G. Kent with my modifications (Cambridge, MA: Harvard University Press 1951).

is anchored to simple arithmetic, Pliny's monetary map is shaped like a historical and moral narrative, where the explanation of various currency values, signs, and names, is to be found in the circumstances of Roman history, down to the present.³⁷ Take this passage: 'Next according to a law of Papirius *asses* of half an ounce were made. When Livius Drusus was tribune of the plebs he mixed the silver with an eighth of bronze. The coin now called *victoriatius* was struck under the Clodian law; but previously this coin imported from Illyria was used as an article of trade. It is in fact stamped with a Victory, hence the name'.³⁸ The value and composition of coins are often changed by deed of Roman officers – the stability of the original relation between 'real' thing and monetary value, in its turn signified by the stable relation between the name of the coin and its composition or weight, both grow weaker with time, and are more and more subject to the vicissitudes and even whims of power. 'The emperors gradually made the gold *denarius* smaller, and most recently Nero had forty-five *denarii* stamped from a pound of gold'.³⁹

The third 'metrological' work I shall discuss is Columella's *On agriculture*. While he does not talk about currency specifically, Columella discusses measures of land; his work begs comparison with Varro's treatise on the same subject, both being repositories of useful knowledge and at the same time of ethical guidelines for the estate-owning members of the upper orders. Showing an attitude quite at odds with Maecianus,

³⁶ Pliny the Elder, *Historia naturalis* 33.42-45. Crawford (1985) 19-20; Burnett (1987) 15, and Savio (2001) 109-10 think Pliny's testimony is not to be taken literally.

³⁷ Pliny the Elder, *Historia naturalis* 33.44-7.

³⁸ Pliny the Elder, *op. cit.* 33.46, my translation.

Columella states that metrological matters do not really pertain to him, but are rather the job of surveyors. He compares his role as a farmer to that of an architect, who plans the building project, but delegates measuring and cost-calculating to other people.

Nevertheless, he proceeds to provide a discussion of measurements for the benefit of his reader and friend Silvinus – even architects, after all, have to be acquainted with the ‘account of measurements’ (*ratio mensurarum*).⁴⁰ Columella thus lists units of land measurement, drawing on Varro on a couple of occasions, and, like Varro, occasionally providing etymologies and local variations in nomenclature and subdivisions. In a manner analogous to that of Varro’s piece on money, the temporal dimension sneaks in, as a factor that loosens the relation between thing and ‘stand-in’ for the thing:

“‘[F]ormerly the *centuria* was so called because it contained 100 *iugera* [approximately 2/3 of an acre], but afterwards when it was doubled it retained the same name, just as the tribes were so called because the people were divided into three parts but now, though many times more numerous, still keep their old name’.⁴¹

After a further disclaimer, in which Columella says that the smaller fractions of the *iugerum* are superfluous because no transaction depends on them, he goes on to list subdivisions of the *iugerum* anyway, from its smallest fraction, the half-*scripulum*, to the *iugerum* itself, which is explicitly compared to an *as*.⁴² The next section applies these

³⁹ Pliny the Elder, *op. cit.* 33.47, my translation.

⁴⁰ Columella, *De agricultura* 5.1.2-4. Engl. tr. E. Heffner (London/Cambridge, MA: Heinemann & Harvard University Press 1954).

⁴¹ Columella, *op. cit.* 5.1.7,

⁴² Columella, *op. cit.* 5.1.8-12.

measurements to pieces of land of different shape, used as *formulae*.⁴³ In other words, a further level is inserted between thing and measure: the geometrical representation of a field. A piece of land becomes a geometrical figure, becomes a certain quantity of *iugera*; and from there it can come to represent a certain quantity of any other units of measurement, even non-Roman ones, even those no longer in use, provided one can establish a relation between those and the *iugera*. The well-established, solidified, inscription device allows connections and comparability across time and space.

The surveyors Columella refers to often feel it necessary to impart some metrological knowledge onto the readers of their treatises. The authors in the collection we now call the ‘Roman field-surveyors’ (*Corpus Agrimensorum Romanorum*) frequently and explicitly equate measure and order in a wider political sense, and their closeness to the centres of power can be argued from their biography, as in the case of Frontinus, or from their own statements, as in the case of Balbus. The job of the surveyor consisted to a great extent in negotiating the metrology of a territory: converting un-measured pieces of land into measured ones, converting non-Roman or pre-Roman measures into Roman ones, or juxtaposing them to Roman ones, and making sure that the relation between measure and thing remained stable through the use of boundary stones, indeed making it stable by producing maps.⁴⁴

⁴³ Columella, *op. cit.* 5.1.13-2.10.

⁴⁴ E.g. Frontinus, *De limitibus* 10.16-25 (ed. and Engl. tr. Campbell (2000)); Hyginus 1, *De condicionibus agrorum* 88.22-90.9 (Campbell); Hyginus 2, *Constitutio limitum* 136.28-38 (Campbell); Balbus, *Expositio et ratio omnium formarum* 204.19 (Campbell); *Deformatio* 240.15-22 (Campbell); *De mensuris agrorum* 270.10-34 (Campbell); *De agris* 272.22-5 (Campbell); Marcus Nipsus, *Podismus* 296.4-26 (eds. F. Blume, K. Lachmann, A. Rudorff, *Gromatici veteres*, Berlin: Reimer 1848-52); *Mensurarum genera* 339.1-340.8 (Blume); *De mensuris* 371.1-376.13 (Blume); [Boethius], *Demonstratio artis geometricae* 407.1-408.2 (Blume). *De mensuris agrorum*, *Mensurarum genera*, *De mensuris* and the pseudo-Boethius would warrant

A Roman surveyor from probably the first century AD states that official measurements should be given both in Roman and in local units. But ‘if there was a dispute whether a *versus* [a Dalmatian unit of measurement] had 8,640 feet, confidence (*fides*) could nevertheless be placed in the *iugera*. [...] When the *iugera* have been recorded, even if something can be <done> using local terminology, a system involving *iugera* will be inherently reliable for us’.⁴⁵ The desire for stability and systematization of measures unsurprisingly tends to privilege Roman standards, but is compounded with the recognition of local realities and local networks of consensus: ‘[e]ach region follows its own practice so that a trustworthy method can be agreed upon’.⁴⁶ In general, ‘[w]e must watch out <for the practices of> different regions in case we seem to be doing something unusual. For our profession will retain its integrity if we also conduct our investigations principally according to the practice of the region’.⁴⁷

Sometimes the similarities with Maecianus’ small treatise are striking, for example when Siculus Flaccus talks about subdivision of the main Roman unit of measurement for land areas: ‘*Centuriae* do not contain 200 *iugera* in all regions. For in some we find 210, in others 240. So this matter also will have to be carefully examined, since it follows that *limites* will not be of an equal length between the boundary stones if

further study, but, given their late date, not as part of this paper. All quotations from Campbell’s edition reproduce his translation. For Frontinus, see A. Weeks’s paper in this volume.

⁴⁵ Hyginus 1, *De condicionibus agrorum* 88.23-90.12, especially 88.25-32. Cf. also *ibid.* 96.23-24 (Campbell).

⁴⁶ Hyginus 1, *De generibus controversiarum* 92.24-25. See also *Ordines finitionum. Latinus et Mysrontius togati Augustorum auctores. De locis suburbanis vel diversis itineribus pergentium in suas regiones* 254.13: “In many lands trust (*fides*) is required in different markers” (Campbell).

centuriae have more than 200 *iugera*. For example, if a *centuria* has 240 *iugera*, it follows that there will be 24 *actus* from stone to stone along one *limes*, [...] and 20 *actus* along the other. [...] I have discovered that in some lands that had been divided, although the *centuriae* contained 200 *iugera*, they had not been given equal lengths of 20 *actus* between the marker stones, along the *limites*. In the territory of Beneventum there are 25 *actus* along the *decumani*, and 16 along the *kardines*. Nevertheless, 200 *iugera* are enclosed by this type of measurement, but square *centuriae* are not thereby produced'.⁴⁸

As in the case of the *as*, there can be various subdivisions, and they can be related to the passage of time or political events in certain regions: the surveyor, the administrator and, by extension, the emperor have to be aware of these fluctuations in the relations between things and measures.

Balbus' treatise *The description and account for all shapes (Expositio et ratio omnium formarum)* is again a foil to the *Distributio*. Its declared aim is to set out the basics of the surveying profession, starting from measurements, i.e. 'anything that is defined by weight, capacity or by judgement', although Balbus is thinking essentially of measures of length.⁴⁹ He proceeds to expound the twelve names of the measurements in use, and some of their subdivisions: for instance, a *sextans*, also called *dodrans*, encompasses three *palmi*, nine *unciae* and twelve *digiti*. The objects of Balbus' account start in a two-dimensional world, as it were, and expand into further dimensions: the

⁴⁷ Hyginus 1, *De generibus controversiarum* 94.25-27. Cf. also Siculus Flaccus, *De condicionibus agrorum* 104.34-106.13, 17-18, 108.20-21, 26-27, 114.34; Agennius Urbicus, *De controversiis agrorum* 20.16-21, 30.31-33, 34.19-21, 36.11-12, 40.4-6, 42.10-13 (Campbell).

⁴⁸ Siculus Flaccus, *De condicionibus agrorum* 126.6-17 (Campbell).

⁴⁹ Balbus, *Expositio* 206.5-6 (Campbell).

‘concave square foot’ (*pes quadratus concavus*), for instance, ‘has the capacity of an amphora of three *modii*’.⁵⁰ In fact, it is when explaining this expansion that he invokes the real world behind the intricate web of names, equivalences and subdivisions:

‘Measurements are taken in three ways, by length, by breadth, and by height. That is, a straight line, a plane figure, and a solid figure. A straight (line) is where we measure the length without the breadth, for example, lines, porticos, running-tracks, length in miles, the length of rivers, and similar things. A plane (*planum*) is what the Greeks call *epipedon*; we refer to ‘level feet’ (*pedes constrati*)’.⁵¹ A correspondence is established between a thing (a river), the geometrical representation of that thing (a straight line) and what we call that representation (the name of the measurement, in Latin or Greek).

Whereas we cannot really manipulate the real thing at will, we can operate on its representations, especially on the measurement, which can be further ordered according to divisions and correspondences. This aspect becomes crucial in the ‘taming’ of wild territories, which are subsumed, if only in an imperfect and approximate way, under a geometrical representation – are inscribed in the various senses we have given this word – and thus domesticated and made part of the empire.

Finally, we have archaeological and epigraphic evidence on the regulation of weights and measures.⁵² One of the duties of the official known as an aedile was to

⁵⁰ Balbus, *Expositio* 206.8-27, in particular 27 (Campbell).

⁵¹ Balbus, *Expositio* 206.34-7 (Campbell).

⁵² A further category of metrological texts is papyri dealing with units of measurement, including monetary units. E.g. *PSI* 763 (first century BC, provenance unknown); *P. Lond.* 2.265 (first century AD, ed. F.G. Kenyon, London: British Museum Publications 1898); *P. Oxy.* 9 verso, 669, 3455-3460 (ranging from the first to the fourth century AD); *P. Ryl.* 64, 538 (second to fourth century AD); *P. Vindob.* G 26012 (third to fourth century AD) in Sijpesteijn (1980). See also Boyaval (1971) and Pintaudi & Sijpesteijn (1989), 114-5,

inspect weights and measures in use in a market to prevent frauds, and it is well known that officially approved weights and measures had to be used in cities across the Empire: this is testified by archaeological finds of measuring tables (*mensae ponderariae*) in many marketplaces,⁵³ by inscriptions⁵⁴ and by legal rescripts such as the following: ‘If a seller or a buyer tampers with the publicly approved measures of wine, corn, or any other thing, or commits a deception with malicious intent, he is sentenced to a fine of double the value of the thing concerned; and it was laid down by decree of the deified Hadrian that those who had falsified weights or measures should be relegated to an island’.⁵⁵

In sum, the *Distributio* can be seen against a wider background of metrological texts and indeed objects: it is part of a strong interest in standardisation, which I take to

relative to Ammonios’ notebook, Louvre MNE 911, probably sixth-century. The *Distributio* often shares with them a didactic approach, the familiar tone, the frequent direct appeals to the reader in the second person singular, the exhortations to ‘say’ or ‘write’, as a sort of exercise after the author has shown the reader how to do something. Interestingly, some of the techniques of subdivision found in the *Distributio* had been in use since ancient Egyptian times. As is well known, Egyptian arithmetic used parts (what we would today call fractions) of the type $1/2$, $1/3$, $1/4$ and so on, the only exception being $2/3$. This also meant that each part which was not $2/3$ and did not have one as a denominator had to be expressed in terms of the sum of ‘recognized’ fractions. For instance, $3/5$ was denoted by $1/2$ plus $1/10$, but could also be denoted by $1/5$ plus $1/5$ plus $1/5$. As in the case of Maecianus’ ‘unequal’ subdivision of the *as*, there were several alternative sequences for each fraction, some of which seem to have been preferred to others. Part of the calculator’s skill, and thus of the training he received, consisted in doing these sums and in choosing from among the many alternatives the one best suited to the purpose, see Gillings (1972) 45-50; Harrauer & Sijpesteijn (1985) 151-64.

⁵³ See Frayn (1993) 108-14, 123; Corti (2001), both with further references. Particularly interesting is the *mensa ponderaria* from Pompeii (*CIL* 10.793), which is inscribed with Latin indications of measures and weights but still shows traces of the previous, Oscan, measures, which have been erased.

⁵⁴ E.g. *CIL* 9.2854 (from Histonium in Puglia, no date given); *CIL* 10.6017 (Minturno, ca. AD 40); *CIL* 11.6375 (Pesaro, no date given) – all three refer to the supervision of metrological standards in terms of *aequitas*. For an example from the Greek world cf. *IG* 5.1.1156 (from Gythium in Laconia, second century AD).

⁵⁵ Modestinus (third century AD) in *Digesta* 48.10.32, Engl. tr. ed. by A. Watson (Philadelphia PN: University of Pennsylvania Press 1985). See also Paul (early third century AD) in *Digesta* 4.3.3 and Ulpian (early third century AD) in *Digesta* 19.1.32, on using false weights.

mean establishing a stable connection between thing and measure. Once a standard is set in place, the universe of inscription devices can be considered self-sufficient and self-referential, reality with its messiness and disorder can be black-boxed, information can be effectively stored, communicated and transported. The process is not simple, and is never completely successful: it always appears to be the fruit of negotiations between Rome's present and her eventful past, and between the different cultures present within the empire and the allegedly dominant one.

III. The treatise in a legal context

Another interesting context for the *Distributio* is offered by contemporary legal literature. Hadrian and Antoninus Pius gave great importance to overhauling the bureaucracy, and reorganizing jurisprudence. Maecianus' experience both as administrator and as jurist puts him in a privileged position as observer and participant in this process. Unfortunately, his own contributions to the law are no longer extant in their original form, having been selected and collected in Justinian's *Digest*.⁵⁶ Some fragments are, however, rather revealing. In one of them, Maecianus refers to the rationale (*ratio*) underlying a decision: 'Slaves who are pre-adolescent are excepted [...]. But the legate Trebius Germanus ordered even a pre-adolescent to be executed, and yet not without reason'. This has been seen as an appeal to the common 'principle' or even 'rationality' at the basis of law and administration, which is held to be more cogent than rules

⁵⁶ See e.g. *Digesta* 29.5.14; 32.9; 32.11.2; 32.11.15; 32.13; 32.15; 32.17; 35.1.86; 35.1.91; 35.2.28; 35.2.30; 35.2.32; 37.14.17; 40.5.42.

explicitly laid down.⁵⁷ Again, Maecianus wrote on the *lex Falcidia*, which granted free power to dispose by bequest of up to three quarters of one's substance, thus: 'Suppose that Titus's share is reduced in a legacy of twenty through the Falcidian law, Titius himself being charged to give five to Seius; [...] a proportional reduction is to be made in Seius's five comparable to that in Titius's twenty. This decision is both more just and more reasonable'.⁵⁸ A slightly different approach is revealed in another fragment, on the Rhodian law of jettison: 'Volusius Maecianus, *From the Rhodian Law*: Petition of Eudaemon of Nicomedia to the Emperor Antoninus: "Antoninus, King and Lord, we were shipwrecked in Icaria and robbed by the people of the Cyclades". Antoninus replied to Eudaemon: "I am master of the world, but the law of the sea must be judged by the sea law of the Rhodians where our own law does not conflict with it".'⁵⁹ Finally, on the topic of money, Maecianus, again commenting on the Falcidian law, deals with the complications of legacies and bequests in cases where a bequest has been specified in kind or in weight, number or measurement (as in, three talents of silver, rather than 'the silver which I have in the warehouse'), and what happens when the goods become damaged before the heirs come into them. The question, indirectly, is again about the dialectic between *pecunia*, a valuable body, and counted ('numerata') *pecunia* : not just

⁵⁷ *Digesta* 29.5.14, Engl. tr. *cit.*, with modifications. See Fanizza (1982) 115-7. Scarano Ussani (1987) 34-5, 114, sees a foreshadowing of Salvio Giuliano's teachings, in their turn based on the notion of common interest and aimed at maintaining social and political order.

⁵⁸ *Digesta* 35.2.32, especially 4, Engl. tr. *cit.*, with modifications.

⁵⁹ *Digesta* 14.2.9, Engl. tr. *cit.* The central passage can also be translated: 'I am master of the world, but the law is mistress of the sea', cf. Manfredini (1983).

‘coined’ money but (to stretch the sense) valuables that have been expressed ‘by weight, number and measuring’ (*pondere numero mensura*).⁶⁰

Maecianus’ fragments encapsulate a number of questions that were being debated in second-century law. One is the ontological status of money, and how that affects everyday transactions. For example, Gaius considers the case of whether, in a sale, the price agreed must be in counted money (*pecunia numerata*) or can be in other items, such as a slave, a piece of land or a toga. Gaius’ teachers thought that it could, because they thought that since time immemorial (and Homer is quoted in Greek to this effect) an exchange (*permutatio*) is a sale. The authorities of Proculus say, however, that exchange and sale are different: ‘In particular, they think it impossible in an exchange of goods to settle which thing has been sold and which given as price; they hold it absurd, again, that each thing be regarded as both sold and paid as the price’.⁶¹ The question, it seems to me, revolves around whether counted *pecunia*’ is the only stable way to effect a transaction. According to the second opinion, the lack of a measure throws the whole process into confusion. *Pecunia* by itself is disorderly and difficult to manage; its numerical stand-in has in a sense become more real than the real thing. But we should not forget that there are contrasting opinions here.

A remarkable passage by Paul (late second to early third century CE) states the terms of the question even more explicitly: ‘Buying and selling started from exchange. Once in fact there was no coined money (*nummus*) and it did not happen that one thing

⁶⁰ *Digesta* 35.2.30.3-5, from book 8 of Maecianus’ *Fideicommissa*.

⁶¹ Gaius, *Institutiones* 3.141, Engl. tr. W.M. Gordon & O.F. Robinson (London: Duckworth 1988).

was called “wares” and the other “price” [...] But since it did not always and easily happen that when you had something which I wanted, I, for my part, had something that you were willing to accept, a material was chosen, the official and permanent assessment of whose value would remedy the problems in exchanges thanks to the uniformity of quantity. That material, struck with an official figure, demonstrates its utility and dominion *not so much on the basis of its substance as of its quantity*, so that no longer are the things exchanged both called wares but one of them is termed the price’.⁶² The fact that money now has a value that depends not on its substance, but on a convention, ratified by the official figure struck on it, is the result of what we have called an inscription process. *Pecunia numerata* has almost become *the* reality by this time, and the jurists, including Maecianus, are engaged in reconstructing the genealogy of their present situation.

In practice, a lot of the money that the *Distributio* discusses only existed in the form of signs and names. It has been observed that small units of currency would have been little used in antiquity because the *as* ‘would have been adequate for many of the purchases of everyday life’.⁶³ A cursory look at what we know of actual prices from the Roman Empire reveals, in the East, figures of 1/24 of a *denarius* and 1/48 of a *denarius* for bread.⁶⁴ The graffiti in Pompeii mention *uncia* and *semiuncia*, even though the

⁶² *Digesta* 18.1.1 (Paul, *Edict* 33), Engl. tr. *cit.* with modifications, italics mine. Paul continues with a discussion which is almost identical to the one in Gaius, *Institutiones* 3.141, and ends up siding with Proculus’ school.

⁶³ Howgego (1992) 19.

⁶⁴ Sperber (1974) 118-9.

context seems jocular,⁶⁵ more frequently *semisses*⁶⁶ and most frequently of all *asses*. Often there are numbers, or even itemized bills, with no indication of what unit is being referred to. A couple of inscriptions⁶⁷ might have the symbol for *scrupulus*. There are also occurrences of what could be a *sicilicus*, and perhaps of *quadrans*. One could debate how representative these scattered testimonies are, and how tentative our reading of currency symbols, but overall there does seem to be a mismatch between the small bronze that may have been in circulation in antiquity and our finds of small bronze, a gap wider than in the case of silver and gold coinage. This is hardly surprising, if we consider that smaller coins are found as isolated and casual finds rather than as part of hoards. Their lesser value means that they would not have been treasured, and not actively sought if lost.⁶⁸

Even providing for these accidents of survival, if one examines the distribution of Roman bronze coins in the Western Empire from AD 81 to AD 192, the presence of ‘small bronze’ (anything smaller than *asses*, mostly *quadrantes* and a few *semisses*) is negligible. The *quadrans* has been found rather sporadically, more on Italian sites than in the northern provinces. The only surviving examples of *semuncia*, *quartuncia*, *sextans*, *triens*, *quincunx*, and *bes* coins date from the third or second century BC.⁶⁹ Overall, the production of *asses* declines and that of sesterces increases from the first to the second

⁶⁵ *CIL* 4.4227.

⁶⁶ E.g. *CIL* 4.8561, 4.8565, 4.8566, 4.8789, 4.8968 (in Greek with price in Latin).

⁶⁷ *CIL* 4.2029, 4.2030.

⁶⁸ Savio (2001) 160, 186.

century AD. By Trajan's time, the smaller coins (nothing smaller than *quadrantes* in any case) may have disappeared because of inflation. In the Eastern coinage, there are more often smaller coins (obol and smaller, down to *chalkos*), but even then, at least in the case of Egypt, the frequency of the smaller bronze coins seems to decline from around the time of Hadrian.⁷⁰ The obol seems to have been the smallest unit actually used in tax receipts and private accounts in Egypt, but there is also second-century evidence from Karanis that a very small unit, the *dichalcon*, was in use in tax receipts and ledgers, probably as an accounting device.⁷¹

At least in the case of the subdivisions of the *uncia* Maecianus is therefore talking about 'symbolic', accountant money, used in calculations, not about 'real' money.⁷²

IV Money, measure and the emperor

There is a practical aspect to measured wealth: if one agrees on standard weights or lengths, or at least on exchange systems, transactions and translations are made possible. Metrology allows control, a certain degree of order and centralisation. On the other hand, the significance of measures lies in the fact that they are symbols. Because

⁶⁹ Mattingly (1928); Hopley (1998), esp. 12-4. For money units smaller than the *as*, see Crawford (1985), 60-5; Burnett (1987) 95-7. On the problems of calculating coinage output, see Howgego (1992); Duncan-Jones (1994) part III; Savio (2001) 50, 303-8. Also useful are Strack (1937); Sear (2000).

⁷⁰ West & Johnson (1967) 18-20.

⁷¹ West & Johnson (1967) 17-8, 20-1. Rathbone (1991) 318-30 describes a system (Egypt, third century AD) which is basically monetised without necessarily using actual coins.

⁷² Mrozek (2001) 9, 94-101 argues that the 'abstractness' of money was evident since at least late Republican times, because people invested and made debts, sometimes debts so huge that they could not possibly be paid back. A potentially infinite debt cannot correspond to actual, material, amounts of money.

the relation between things and their representation is not immediate or univocal, any decision concerning that relation is invested with a special authority,⁷³ which can be religious and/or political. For instance, in the Middle Ages in parts of Europe measures of grain were established by the king, supported by his God-given power, and they acquired a sacred character; breaking them was akin to sacrilege.⁷⁴ Alternatively, decisions about measures can be based on science, and justified as reflecting nature itself: Hyginus, a probably first-century AD land-surveyor, argued that the *kardo* and *decumanus*, two perpendicular lines which were the main reference points when laying out a land-division grid, were grounded in nothing less than the heavens and the *ratio* of the universe.⁷⁵ Or again, expediency or utility can be invoked in the choice of one metrological network over another: this seems to have partly motivated Frontinus' decision to use the *quinaria* as standard over the many other possibilities, because it was the best known, and its subdivisions the most accurate.⁷⁶ The difference between recourse to utility and recourse to science is that the former tends to acknowledge the man-made, artificial or conventional aspect of the decision, which is presented as preferable given the circumstances, hence somewhat arbitrary, rather than as the most true or rational thing to do.

There was the idea, thanks to debit, interest and profit (*faenus*) that money, even when expressed in the language of money units, does not necessarily exist in the form of coins.

⁷³ See Kula (1986); Hocquet (1992); Porter (1995); Pedroni (1996); Grimaudo (1998); Ercolani Cocchi (2001).

⁷⁴ See Kula (1986).

⁷⁵ Hyginus 2, *Constitutio limitum* 134.5-6 (Campbell). This kind of position is very common in modern (post-1800) times: see e.g. Mirowski (1992); Alder (1995); Schaffer (1995).

⁷⁶ Frontinus, *De aquis urbis Romae* 1.26-37. See A. Weeks in this volume.

We can try to reconstruct what Maecianus may have thought on the issue. Perhaps his position was contained in the missing part of the treatise. In the extant text, he does not seem to take a stand on the question of whose authority is behind the money system he describes. He points out historical dimensions, the presence of economic interests, hints at local differences, but the fact that, for instance, the *as* is divided one way rather than another is not justified on the basis of nature or even of expediency: it is just given as a fact. Then again, Maecianus reveals the tentativeness of his arrangement at more than one point: the treatise is the result of his assessment or opinion (*existimavi*, 61.17), and his system is one of several possibilities. The particular order imposed on money may well be a convention, the result of a choice, a human decision.

Analogous issues were being debated in the legal literature of the second century AD. The epistemic status of jurisprudence itself was questioned: was it *ars* or *scientia*? Consequently, could it aim at certainty, or was it bound to approximation; were its practitioners technical experts or did they have to derive their authority from their political clout? Crucially, what did the law rest on?⁷⁷ Various possibilities were mooted. Tradition was one ground for justification, and one that seems to have been quite powerful in various areas of Roman culture, although it was far from being unquestioned, especially in the period we are talking about. The notion of ‘use value’ (*utilitas*), often invoked in extant decisions, was far from self-explanatory: the common good was not pellucid, but had to be determined by someone with some sort of authority. The existence of a rationality internal to the law, ultimately congruent with human rationality, and

reflecting, if imperfectly, the orderliness of the universe, was also a possibility. We have looked at Maecianus' own mentions of *ratio* (reason, 'rationale'). In fact, attempts to define a *ratio* for law (a *ratio iuris*), and to use it as an underlying, unifying principle have been traced in Roman jurists from at least Pomponius, a contemporary of Maecianus, to the third century CE. Especially in Gaius' work, there is often a juxtaposition of two *rationes*, a natural one and a civic, political one, which ideally should work together.⁷⁸ When that is not possible, it is suggested that nature should prevail.⁷⁹ Celsus clearly states: '[Testaments] which are forbidden by nature are not endorsed by any law'.⁸⁰ Underlying this distinction is the notion of a 'law common to all peoples' (*ius gentium*). Its identification with a sort of 'natural law' (*ius naturale*) is debatable, but, even if the 'law common to all peoples' is the product of convention, then it is a more natural and universal convention than that at the basis of the 'civil law' (*ius civile*), which only binds a specific community.

A good example of the debate is the case of the entitlements of the head of the household (*pater familias*). Jurists of the second and third centuries CE were very aware

⁷⁷ Casavola (1980) 54-7; Bretone (1982) 42-3, 268-70; Scarano Ussani (1987) 21-5 and (1997) parts 1 and 3; Ducos (1994).

⁷⁸ As they do in *Digesta* 3.5.38, by Gaius (mid- to late second century AD). Cf. also Gaius, *Institutiones* 1.1; 1.89; 2.66; *Digesta* 8.2.8; 9.4; 13.6.18.2; 41.1.3; 41.1.7.7; 44.7.1.9 (all mentioning *naturalis ratio*, all by Gaius).

⁷⁹ See e.g. Gaius, *Institutiones* 1.158, *ratio civilis* and *civilia iura v. naturalia iura*; *Digesta* 4.5.8, *civilis ratio v. naturalia iura*; *Digesta* 7.5.2, *naturalis ratio v. the authority of the senate*; *Digesta* 41.1.1, where the *ius gentium*, based on *naturalis ratio*, is declared older than the *ius civile*, "being the product of human nature itself.", Engl. tr. *cit.* All the *Digesta* texts mentioned are by Gaius.

⁸⁰ *Digesta* 50.17.188.1, Engl. tr. *cit.*, with modifications. Celsus also lived in the second century AD. See also Nocera (1962); Levy (1963); Stein (1974); Archi (1981); Scarano Ussani (1979) 198-9, 200-5 and (1987) 17-20; Bretone (1982) 32-3 and (1989), esp. 323-51; Ducos (1994) 5160-6. For contemporary discussions on whether words are the product of nature or convention, see e.g. Aulus Gellius, *Noctes Atticae* 10.4.

that the power exerted by the father in a Roman household was a peculiarity of Roman law, i.e. part of their 'civil law', but it was not found among other peoples, i.e. not in the 'law common to all peoples', and thus arguably it was not based on nature. Its main strength was tradition, but in the course of the second century emperors like Hadrian seemed increasingly willing to put tradition on the side in the name of a different conception of what was legally the right thing to do. On the imperial scene, the sphere of application of any civil law to peoples other than the one that created it required some sort of justification: in metrological terms, in a situation where different units of measure exist, in order to establish a standard, appeal has to be made to something, be it practicality or the claim that the chosen standard is more rational or more natural than the others.

In sum, I would argue that Maecianus' approach to the subdivisions of money reflects contemporary legal debates. Jurists were concerned with the ambiguous nature of money; they, and Maecianus as one of them, reflect a situation where at least to some extent the link between thing and symbol has been problematised, weakened or even severed. Again, jurists were trying to put order in the law, and ground it firmly on a basis of nature, rationality or convention, creating standards, mapping out relations, cases and subcases; Maecianus was trying to do the same in the domain of money. In both cases, history and individual circumstances often got in the way; in both cases, the presence of a supreme authority loomed large in the background: the emperor.

Where did the emperor stand in relation to the law: was he himself subject to it? The question had been discussed throughout the first century and seemed to be more or less settled in the second century AD, with the emperor emerging as the ultimate legal

expert.⁸¹ Complications remained, however, as showed by a deliberation process about the inheritance rights of patrons towards freedmen reported by Ulpian and involving Marcus Aurelius and Lucius Verus, Maecianus himself and other jurist friends: ‘We [...] followed this opinion (*sententiam*) when we dispatched a rescript in answer to the petition of Caesidia Longina; but likewise, our friend Volusius Maecianus, careful custodian of the civil law, apart from his long and well-grounded expertise in it, was induced by respect for our rescript to declare in our presence that he did not think he ought to say otherwise. But when we discussed the matter more fully with Maecianus himself and other legal experts also friends of ours, who had been summoned, it seemed rather that neither the words nor the meaning (*sententia*) of the law nor the praetor’s edict excluded the grandson from the property of his grandfather’s freedman; and that such was the view of several legal authorities too, but that it had also been the opinion (*sententia*) of our friend, the most honourable Salvius Julianus’.⁸²

Several factors are in play here: legal expertise on the part of various individuals, all reassuringly denoted as ‘ours’ (*noster* or *nostrum*); the literal and not strictly literal interpretation of the law; the edict of a praetor who would have been a member of the Senate and possibly the representative of a political authority other than that of the emperor; the emperors’ own opinion. There has been some debate about Maecianus’ demeanour in this case: for some, he was being too subservient to the decision of the emperors, for others, he was just being professional, the perfect lawyer-bureaucrat with

⁸¹ Bretone (1989) 234-7.

⁸² *Digesta* 37.14.17, Engl. tr. *cit.* with modifications. Cf. Bretone (1989) 219.

no political identity, since the imperial will was in fact legally binding.⁸³ In any case, it is clear that behind the amicable appearances, ever since Augustus the emperor was the gatekeeper on legal expertise: without his sanction, no expert had the authority to express binding legal opinions.⁸⁴ In the passage above, the emperors mediate the various sources of authority. *Their* expertise consists in eventually choosing whose expertise ought to be applied to the case in hand.

Rather than having the debate about the origin and justification of legal or metrological order, nature (*physis*) vs. culture (*nomos*), explicitly transferred onto himself, then, the emperor emerges as a figure who stands above others. Take the case of Maecianus' fragment on the Rhodian law: *because* Antoninus Pius is the acknowledged master of the universe, he can sanction the application of a legal order, the law of the sea, other than the normal one. Again, some legislation introduced by Hadrian and Antoninus Pius seems to point in the direction of greater humanity towards women, children oppressed by paternal right (*patria potestas*) and slaves. This has been seen as a reflection of the greater attention they paid to non-Roman laws and customs, which in its turn would be the reflection of a lesser role for Rome as a city in the empire and a greater awareness of the multiculturalism of the empire. The flip side is, in advocating power of interpretation over the law common to all peoples (*ius gentium*) rather than just over civil law (*ius civile*), the emperor was reaffirming his power over the extended domain of the

⁸³ Cf. Amarelli (1983) 88-9; Scarano Ussani, (1987) 75-6 and note 86, with further references.

⁸⁴ Bretone, (1989) 198, 200, 211-3. Bauman (1989) 236-7, 301-2 thinks that part of the story behind Hadrian's emphasis on juridical administration, reform and greater role for the *consilium principis* is the fact that he wanted to weaken the role of the praetor, and through that indirectly of the senate and of the *senatus consulta*.

entire world.⁸⁵ To put it in metrological terms, while acknowledging the existence and utility of other standards, the emperor posited himself as the supreme measure, to which the others were required to refer in case of conflict or when mediation was needed. The process itself by which the emperor became a super-standard can be seen as a kind of inscription device that began with Augustus himself. Even at the level of ritual - through his visage on coins, and the presence of his name and the events of his individual life within the official calendar - the emperor was originally officially a figurehead for the senate and the people of Rome. This link between imperial power and 'real' sources of authority was gradually erased, until the emperor could stand outside debates on rationality, nature or convention because he was not standing in for any further source of authority. From a sort of stand-in he became the ultimate reality of authority.

From this perspective, the fact that the coinage for the Western part of the Empire was in this period and until CE 192 issued from a single centre, the mint of Rome, acquires some significance.⁸⁶ Indeed, in mere economic terms Maecianus implies a situation (and this will become more and more the case in late antiquity) where the coin is valuable not so much because of its 'real' value (gold or silver or bronze), but because it is inscribed in a complex trust system, ultimately guaranteed by the state, i.e. the

⁸⁵ Echoes of some of these issues in Dio Chrysostom, *Oratio* 15.20 (mid- to late first century AD); Plutarch, *De sera numinis vindicta* 550b (late first century to early second century AD); Aelius Aristides, *Ad Romam* 102-3 (AD 155). Casavola (1980) 215, 222, 226; Marotta (1988) 73-9; Vander Waerdt (1994); Amarelli (1996); De Giovanni (1996); Scarano Ussani (1997). Scarano Ussani (1979) 134, 154-5, 200, describes 'a critical attitude' towards traditional Roman legal institutions on the part of members of the ruling class.

⁸⁶ Hobley (1998) 1. Cf. also Cassius Dio, *Historia* 52.30.9.

emperor.⁸⁷ Or at least it should be. The grounding of order in economics as in law was ultimately contested, subject to recalcitrant money-lenders,⁸⁸ the vicissitudes of history and the contingencies of geography. Conflicts ensued which had to be solved: in fact, in land-surveying as in law, most of the administration from the late first century CE seems to be negotiating disputes on the interpretation of previous land-divisions or previous legal decisions.⁸⁹ It was in order to measure up to alternative sources of expertise or authority that Marcus Aurelius had to know about the law, and he had to know about money: so that he could afford, like Columella and like the architect described by Columella, not to be an expert, and thus supersede jurists and accountants (*ratiocinatores*) alike.

Conclusion

Different peoples will have different measures: some Italic populations used a ten-unit based system for the *as*, which was abandoned by the Romans and is mentioned by Maecianus as a possible subdivision which is not in use.⁹⁰ Analogously, land-surveyors report that different people will measure, count and divide up land differently.⁹¹ The imperial administration through its officers had to come to terms with

⁸⁷ Cf. Savio (2001) 21.

⁸⁸ *P. Oxy.* 1411 (AD 260).

⁸⁹ Salvius Julianus manifests awareness of a conflict between some imperial decisions and the *ratio iuris* according to Scarano Ussani (1987) 150-2.

⁹⁰ See Pedroni (1996), especially 25, 67-8.

⁹¹ Hyginus 1, *De condicionibus agrorum* 80.9, 92.21-22; Hyginus 1, *De generibus controversiarum* 98.11-12; Hyginus 2, *Constitutio limitum* 138.1-28 (Campbell).

this diversity by finding either a unified system or a way of managing the diversity while partially retaining it. If Frontinus represents an empire where order in the form of measures and standards is being formulated, perhaps Maecianus speaks for a situation where one can, at best, acquire the knowledge to understand an order which is already in place, the result of an ultimately unresolved dialectic between systematising efforts, convention, regional variations, different sedimentations of history, and the manifestation of disparate interest groups.

The role of the reader of the *Distributio* (and the emperor is one of the intended readers)⁹² is not so much to express an order of one's own, as to grasp and maintain – administer - what is already in place. It is an active role, reinforced by the imperatives and the 'constructive' verbs through which the subdivisions of money are in turn made, the names called out, the signs written down, the account given. Yet, it is not a creative role. The author is almost resigned to the fact that the world is in a certain way, that fringes of deregulation will always be present, that we have the stand-in; in fact, more than one system of stand-ins, but we cannot retrieve with certainty the 'things' behind them and with that, the real cause of the present order(s) of things. The *Distributio*, like many of the legal texts it seems germane to, does not aspire to retrieve the absolute foundations; it does not aim to go back to level zero, as it were, but to create a meta-level from which the others can be adjudicated and regulated. Sheep, if ever they were the 'real' *pecunia*, are not important any more: all that counts, and all that effectively exists,

⁹² Addressing technical books to emperors is not uncommon (see e.g. Vitruvius, Balbus, Pliny Sr.), but that to me does not exclude the possibility to take the dedication at face value *as well*, especially in cases, like Maecianus', where the author was well acquainted with the dedicatee.

are stand-ins, *pecunia numerata*, and it is this reality that one must try to grasp. Marcus Aurelius may have craved the well-rounded speech that Greek *paideia* could provide, but Maecianus reminds him of the necessity to know what is appropriate for an emperor. The Roman children who learn to divide the *as* into a hundred parts in Horace's vignette may indeed have been training for higher and more momentous imperial tasks.

Bibliography

Alder, K. (1995) 'A revolution to measure: the political economy of the metric system in France' in Wise, M.N. ed. *The values of precision*, Princeton: 39-71.

Amarelli, F. (1983) *Consilia principum*, Naples.

Amarelli, F. (1996) 'Giuristi e principe da Augusto agli Antonini. Conflitti compromessi collaborazioni', in Mantovani, D. ed. *Per la storia del pensiero giuridico romano. Da Augusto agli Antonini*, Turin: 183-97

Archi, G.G. (1981) '*Lex and natura* nelle istituzioni di Gaio', in *id.*, *Scritti di diritto romano I*, Milan: 139-71 (1st publ. 1978).

Bauman, R.A. (1989) *Lawyers and politics in the early Roman empire: a study of relations between the Roman jurists and the emperors from Augustus to Hadrian*, Munich.

Boyaval, B. (1971) 'Le P. Ifao 88: problemes de conversion monetaire' *ZPE* 7: 165-8.

Bretone, M. (1982) *Tecniche e ideologie dei giuristi romani*, Naples.

Bretone, M. (1989) *Storia del diritto romano*, 3rd ed., Rome.

- Burnett, A. (1987) *Coinage in the Roman world*, London.
- Campbell, B. (2000) *The writings of the Roman land surveyors. Introduction, text, translation and commentary*, London.
- Carradice I. ed. (1987) *Coinage and administration in the Athenian and Persian empires*, Oxford.
- Casavola, F. (1980) *Giuristi adrianei*, Naples.
- Clemente, G. (1972) 'Il patronato nei collegia dell'impero romano', *SCO* 21: 142-229.
- Corti, C. (2001) 'Le misure di capacità', in C. Corti & N. Giordani eds. *Pondera. Pesi e misure nell'antichità*, Modena: 219-25.
- Crawford, M.H. (1985) *Coinage and money under the Roman republic*, London.
- Giovanni, L. de 'Giuristi e principe da Augusto agli Antonini. Aspetti e problemi', in D. Mantovani ed. *Per la storia del pensiero giuridico romano. Da Augusto agli Antonini*, Turin: 199-214.
- Dilke, O.A.W. (1989) *Mathematics and measurement*, 2nd ed., London.
- Ducos, M. 'Philosophie, literature et droit à Rome sous le Principat"', in W. Haase & H. Temporini eds *Aufstieg und Niedergang der römischen Welt* II.36.7, Berlin: 5134-80
- Duncan-Jones, R. (1994) *Money and government in the Roman empire*, Cambridge.
- Ercolani Cocchi, E. (2001) 'Misurare e valutare: amministrazione, economia e politica nel mondo romano', in C. Corti & N. Giordani eds *Pondera. Pesi e misure nell'antichità*, Modena: 113-41.
- Fanizza, L. (1982) *Giuristi, crimini, leggi nell'età degli Antonini*, Naples.

- Frayn, J.M. (1993) *Markets and fairs in Roman Italy*, Oxford
- Gillings, R.J. (1972) *Mathematics in the time of the Pharaohs*, Cambridge MA.
- Grimaudo, S. (1998) *Misurare e pesare nella Grecia antica: teorie, storia, ideologie*, Palermo.
- Harrauer H. & Sijpesteijn, P.J. (1985) *Neue Texte aus dem antiken Unterricht*, Vienna.
- Heilbron, J.L. (1990) 'The measure of enlightenment', in T. Frängsmyr *et al.* eds *The quantifying spirit in the eighteenth century*, Berkeley: 1-25
- Hobley, A.S. (1998) *An examination of Roman bronze coin distribution in the western empire A.D. 81-192*, Oxford.
- Hocquet, J.-C. (1992) *Anciens systèmes de poids et mesures en Occident*, Aldershot.
- Howgego, C. (1992) 'The supply and use of money in the Roman world, 200 BC to AD 300', *JRS* 82: 1-31
- Hultsch, F. (1866) *Metrologicorum scriptorum reliquiae*, Leipzig.
- Kula, W. (1970) *Miary i ludzie*, Warsaw; Engl. tr. R. Szeleter as *Measures and Men*, Princeton: 1986.
- Kunkel, W. (2001) *Die römischen Juristen: Herkunft und soziale Stellung*, Cologne (1st publ. 1967).
- Kurke, L. (1999) *Bodies, games, coins, and gold: the politics of meaning in archaic Greece*, Princeton.
- Lang M. & Crosby, M. (1964) *The Athenian agora. Vol. X: Weights, measures and tokens*, Princeton.

- Latour, B. (1987) *Science in action: How to follow scientists and engineers through society*, Milton Keynes.
- Levy, E. (1963) 'Natural law in Roman thought', in *id.*, *Gesammelte Schriften*, Cologne: I 3-19 (written in 1948).
- Manfredini, A.D. (1983) 'Il naufragio di Eudemone (D. 14.2.9)', *Studia et Documenta Historiae et Iuris* 49: 375-94.
- Marotta, V. (1988) *Multa de iure sanxit: aspetti della politica del diritto di Antonino Pio*, Milan.
- Matthews, J.F. 'The tax law of Palmyra: evidence for economic history in a city of the Roman East', *JRS* 74: 157-80.
- Mattingly, H. (1928) *Roman coins*, London.
- Meiggs R. & Lewis D. eds *A selection of Greek historical inscriptions to the end of the fifth century B.C.*, Oxford.
- Mirowski, P. (1992) 'Looking for those natural numbers: dimensionless constants and the idea of natural measurement', *Science in Context* 5: 165-88.
- Mrozek, S. (2001) *Faenus: Studien zu Zinsproblemen zur Zeit des Prinzipats*.
- Nicolet, C. (1988) *L'inventaire du monde: géographie et politique aux origines de l'empire romain* Paris; Engl. tr. by H. Leclerc, *Space, geography, and politics in the early Roman empire*, Ann Arbor 1991.
- Nocera, G. (1962) *Jus naturale nella esperienza giuridica romana*, Milan.

- Pedroni, L. (1996) *Asse romano e asse italico: momenti di un'integrazione difficile*, Naples.
- Pintaudi R. & Sijpestijn, J.P. (1989) *Tavolette lignee e cerate da varie collezioni*, Florence.
- Porter, T. (1995) *Trust in numbers: The pursuit of objectivity in science and public life*, Princeton.
- Rathbone, D. (1991) *Economic rationalism and rural society in third-century A.D. Egypt*, Cambridge.
- Rohden, P. & Dessau, H. (1898) *Prosopographia imperii romani*, Berlin.
- Savio, A. (2001) *Monete romane*, Rome.
- Scarano Ussani, V. (1979) *Valori e storia nella cultura giuridica fra Nerva e Adriano: studi su Nerazio e Celso*, Naples.
- Scarano Ussani, V. (1987) *L'utilità e la certezza: compiti e modelli del sapere giuridico in Salvio Giuliano*, Milan.
- Scarano Ussani, V. (1997) *L'ars dei giuristi: considerazioni sullo statuto epistemologico della giurisprudenza romana*, Turin.
- Schaffer, S. (1995) 'Accurate measurement is an English science', in M. Norton Wise ed. *The values of precision*, Princeton: 135-72.
- Seaford, R. (2004) *Money and the early Greek mind: Homer, philosophy, tragedy*, Cambridge.
- Sear, D.S. (2000) *Roman coins and their values*, London, 2 vols.

Seckel, E. & Kübler, B. eds (1908) *Iurisprudentiae anteiustinianae reliquiae*, Leipzig

Sijpesteijn, P.J. 'Wiener Mélanges', *ZPE* 40: 98-9.

Sperber, D. (1974) *Roman Palestine: money and prices*, Ramat-Gan.

Stein, P. (1974) 'The development of the notion of *naturalis ratio*', in A. Watson ed.

Daube noster: Essays in legal history for David Daube, Edinburgh: 305-16.

Strack, P.L. (1937) *Untersuchungen zur römischen Reichsprägung des zweiten*

Jahrhunderts, Stuttgart, 3 vols.

Van der Waerdt, P.A. (1994) 'Philosophical influence on Roman jurisprudence? The case

of Stoicism and natural law', in W. Haase & H. Temporini eds *Aufstieg und Niedergang*

der römischen Welt II.36.7, Berlin: 4851-900

Van Nijf, O. (1997) *The civic world of professional associations in the Roman East*,

Amsterdam.

Reden, S. von (1997) 'Money, law and exchange: coinage in the Greek polis', *JHS* 117:

154-176.

West, L.C. & Johnson, A.C. (1967) *Currency in Roman and Byzantine Egypt*,

Amsterdam (1st publ. 1944).