Medieval Ceramics 22–23 (1998–1999) 139–143.

Minimum standards for quantifying pottery

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SUMMARY

This paper presents a summary of the results recently published of a national conference which was held in France, in Mont-Beuvray, in April 1998. The aim of this conference was to discuss the different methods used for quantitative studies of pottery and to confront the methods used in contemporary studies. We needed a common method which would be accepted by most archaeologists, which was scientifically as sound as possible, and which would also be the simplest, the most efficient, and the least time-consuming. This approach is not new. It is simply the adoption of minimum common standards to permit relevant comparisons between different regions, periods and settlements.

INTRODUCTION

This short paper presents the results recently published of a national conference which was held in France, in Mont-Beuvray, in April 1998 (Arcelin and Tuffreau-Libre, 1998). The aim of this conference attended by 25 researchers, was to discuss the different methods used for quantitative studies of pottery from different periods: Iron Age, Roman, Medieval. We wanted to confront the different methods used in contemporary studies, and from this, to find a common language, and to propose minimum standards for the recording of all archaeological ceramics.

This seemed to appear to be a real necessity. In fact, if we look at what has been done in the last twenty years, we can see that different methods have been used to count sherds of pottery, and above all to try to give an idea of the number of vessels in use in any distinct context. All are certainly interesting, but they are more or less efficient, and take more or less time. One of the biggest problems is the fact that there are nearly as many methods or adapted methods as archaeologists, so we are often unable to make real and relevant comparisons between results.

The next question was: are quantitative studies really useful or are they just ways to give the illusion of science to the work of archaeologists? It is clear that, as with any other method, the aim of quantitative studies must be to improve our approach to archaeological and historical problems.

It is clear also that, to achieve any synthesis, we need results which can be compared. The differences evident in the methods of quantification used in France, but also, in general in Europe, are the result of the immediate needs of archeologists, of their personal preferences, and of the lack of standardisation in this domain. The meeting in Mont-Beuvray showed the crucial need for a common method for the analysis of artefacts, as well as for the publication of results. So the importance of quantitative studies seemed obvious, if comparisons are to be made between different regions, periods, and settlements.

Another problem appeared to be the time taken to carry out quantitative studies. According to Greene, studying pottery, and especially coarse pottery is 'unglamorous and time consuming' (Greene, 1992, 31). More and more, the important excavations provide enormous amounts of pottery. There was a time when archaeologists did not care about pottery, and only some sherds were used for the chronology of the site; but now, even though the importance of careful and exhaustive studies of pottery has been demonstrated, it is not always possible to spend enough time or apply complex methods.

For all these reasons, we needed a common method which would be accepted by most archaeologists, which was scientifically as sound as possible, and which would also be the simplest, the most efficient, and the least time-consuming. The discussions we had at the conference in Mont-Beuvray have allowed us to choose such a method (Arcelin and Tuffreau-Libre, 1998). It is not new. It is simply the adoption of minimum common standards, even if individuals want to keep their own methods. The aim of the meeting was not to find a new method

				Basic methods: No. of sherds before joining ▽ NR			Basic methods: No. used for NMI after joining ▽ NMI			Possible additional methods: Weight, eves, other ▽ Weight (Kg)		eve	other
	Provenance	Type categories	Groups	Ex.	%/G.tot	%/cl.	Ind.	%/tot	%/cl.	Kg	%/tot		
Tableware			**Total TABLEWARE**	**5601**	**59,6**	**–**	**601**	**84,4**	**–**	**168,52**	**39,6**		
	S. Gaul (S.E.)	Not thrown	unknown	2900	30,8	51,8	392	55,1	65,2	87,12	20,5		
			Alpilles workshop	98	1,0	1,7	11	1,5	1,8	2,91	0,7		
		Thrown, calcareous	unknown	70	0,7	1,2	4	0,6	0,7	2,10	0,5		
			region of Marseille	1321	14,1	23,6	71	10,0	11,8	39,69	9,3		
			Arles workshop	57	0,6	1,0	2	0,3	0,3	1,54	0,4		
		Thrown grey	residual	12	0,1	0,2	1	0,1	0,1	0,37	0,1		
	Gaul non-Mediterranian	Unslipped	micaceous	22	0,2	0,4	3	0,4	0,5	0,71	0,2		
			dark grey	13	0,1	0,2	1	0,1	0,1	0,30	0,1		
		Slipped	micaceous	11	0,1	0,2	(1)	0,1	0,1	0,22	0,1		
			other	3	0,1	0,1	(1)	0,1	0,1	0,13	0,1		
	Mediterranian:												
	Italy	Thrown black slipped	Campanian A	392	4,2	7,0	19	2,7	3,2	11,88	2,8		
			Campanian group B	28	0,3	0,5	3	0,4	0,5	0,81	0,2		
			Campanian group C	6	0,1	0,1	1	0,1	0,1	0,12	0,1		
			unidentified light grey fabric	4	0,1	0,1	1	0,1	0,1	0,15	0,1		
		Thrown thin-walled	unknown	51	0,5	0,9	9	1,3	1,5	1,51	0,4		
		Thrown coarse-wares	various fabrics	8	0,1	0,1	1	0,1	0,1	0,22	0,1		
			volcanic fabrics	16	0,2	0,3	3	0,4	0,5	0,68	0,2		
	Unidentified	Thrown	open jar, cream	14	0,1	0,2	1	0,1	0,1	0,41	0,1		
			closed jar, yellow	11	0,1	0,2	(1)	0,1	0,1	0,36	0,1		
	etc.												
Transport			**Total TRANSPORT**	**2441**	**26,0**	**–**	**71**	**10,0**	**–**	**109,82**	**25,8**		
	S. Gaul, Italy	Amphorae	Marseille, micaceous	22	0,2	0,9	3	0,4	4,2	1,06	0,2		
		Amphorae	gréco-it. or Dr. 1	2,308	24,5	94,5	62	8,7	87,3	103,51	24,4		
	etc.												
Storage			**Total STORAGE**	**589**	**6,3**	**–**	**10**	**1,4**	**–**	**117,83**	**27,7**		
	S. Gaul	Doliums not thrown	unknown	532	5,6	90,3	7	1,0	–	106,47	25,1		
		Jars thrown	Marseille, calcareous	41	0,4	7,0	2	0,3	–	8,22	1,9		
	etc.												
			phase TOTAL . . .	*9,401*			*712*			*424,94*			

Table 1: Minimum Standards for quantifying pottery, the elementary level: Number of sherds (Rests) and Minimum Number of Vessels. After Arcelin & Tuffreau-libre 1998, VIII, IX and X.

but to agree on quantifying methods in use which would be adopted by everyone for any site in any archaeological period. We are not going to rehearse here all the details of the publication; we will present the main points around three themes — the selection of samples, the quantitative methods, and, finally, tables to present the results.

THE SELECTION OF SAMPLES

The elementary level for analysis is the stratigraphic unit, defined on the archaeological site. Any analysis must take into account the historical context and the homogeneity of the assemblage. This will be very important for establishing comparisons between different sites. It is clear for example that a series of

Form	Category		cream, pompeian red-slipware		orange, mica dusted		black burnished glossy late *terra nigra*		grey burnished		grey, surface rough		white, surface rough	
	Class	Sub-class	NTI	%	NTI	%	NTI	%	NTI	%	NTI	%	NTI	%
platter	rounded	1a			2	0,5								
	simple	IIIa	18	4,9										
		IIIb	4	1,1										
	carinated	IIa									7	1,9		
bowl	rounded	Ia					7	1,9			73	19,9		
		Va									9	2,4		
		VIIIb									2	0,5		
		XIIIa									3	0,8		
	carinated	VIIIa									3	0,8		
		XIc									22	6,0		
		XVIc									7	1,9		
	collared	Va									6	1,6		
mortaria													4	1,1
marmite	carinated	IIa									3	0,8		
beaker	folded	IVh							4	1,1				
	conical	IIIi					5	1,4						
jar	folded	Ia					3	0,8						
		Ib					3	0,8	14	3,8				
		Ih					13	3,5						
	conical	IIa					4	1,1						
		IId							3	0,8	7	1,9		
		IIf									11	3,0		
	rounded	XIa									52	14,2		
	carinated	IVa											3	0,8
		IVd											4	1,1
	lobed	IIa					34	9,3						
		IIc									3	0,8		
	pedestal	XVIIb									4	1,1		
dolium	rounded	Ia									3	0,8		
bottle	rounded	IIb									7	1,9		
	conical	Ia					3	0,8						
flagon	pinched neck	IIb									5	1,6		
	rounded	IIIa											10	2,7
TOTAL		366												

Table 2: Minimum Standards for quantifying pottery, the detailed level: Typological Number of Vessels. After Arcelin & Tuffreau-Libre 1998, XIII.

stratified levels from a continuous settlement will bring less accurate information than a range of closed pits of different periods. We must also be careful when we make comparisons between contexts of different types. For example, if we compare the results of studies on graves, kilns, and houses, it will highlight their inherent differences.

For the publication, the results obtained from stratigraphic units will be collated by chronological periods or topographic assemblages. These choices must be clearly explained to avoid any confusion in the final interpretation.

One of the questions discussed about samples was to know when one might consider a sample of ceramics to be representative, and how many sherds are needed to give a reliable result. In fact, it seemed that it was not necessary to fix a minimum number of samples to carry out quantitative studies; this

Form	Category	not thrown		thrown			
		surface black,rough	surface smooth	surface red (*terra rubra*)	surrface black glossy polished (*terra nigra*)	surface orange micadusted	grey, surface rough
	Class						
platter	rounded carinated simple						
bowl	rounded carinated conical collared tripod						
mortaria	drooping lip hooked lip						
cooking pot	rounded carinated tripod						
jar	rounded oval carinated conical pedestal						
beaker	ovoid cylindrical carinated						
bottle	pear-shaped						
jug/flagon	rounded two-handled pinched neck						

Table 3: Minimum Standards for quantifying pottery, an example of organised classification of Roman pottery. After Arcelin Tuffreau-Libre 1998, p. 124, VI

can vary according to the origin of the assemblages. The problem lies in the interpretation of the results. For example, it is clear that it is not desirable to compare the results of the analysis of 10,000 sherds with a result obtained from 100 sherds.

QUANTITATIVE METHODS

The quantification process has two levels, an elementary level and an evolved level.

The elementary level

This is the level of direct counting of sherds and their equivalent in number of vessels. Two methods met with a certain consensus:

— The Number of Sherds (Nombre de Restes = NR).
— The Minimum Number of Vessels (Nombre Minimum d'Individus = NMI)

The number of sherds must be expressed in absolute terms and also as a percentage. It represents the number of sherds before sticking or joining. This can be useful to show large categories, as fabrics for example. It is clear that this first evaluation will make some categories appear more important than they really are, as for example, jugs, while others such as thin walled beakers will not be well represented.

The Minimum Number of Vessels (NMI, in French) is calculated by taking into account the greater number of representative elements of forms (complete forms, rims, bases, handles, or others) after sticking and careful joining (Table 1). This method can give us a better picture than NR. It can be applied to technological categories (fabrics) and functional categories (forms), and within them, to typological categories.

The question of weighting arises; how to take account of a category which is represented only by sherds. Adjustment (correction) of the Minimum Number of Vessels is needed when any category of pottery is represented only by featureless sherds

Other methods in use did not seem efficient: to weigh sherds is time-consuming and does not give enough information. The **eve** (Estimated Vessel Equivalent) is not often correctly used by archaeologists in France and above all does not allow the

inclusion of significant sherds (what we call *ponderation* [weighting]). So these two methods (NR and NMI) seemed to be accepted by everybody at the conference as the minimum standards, the basis for comparisons between results, even if other methods such as weighing the sherds, eve, and so on, were also used and included in tables (Table 1).

The detailed level

The second level of quantitative analysis concerns typological categories: the Typological Number of Vessels (in French, Nombre Typologique d' Individus NTI). Here, all the elements from a precise type of pottery would be counted: rims, bases, and decorated sherds (Table 2). This is useful within a category of pottery, where it is possible to link a well-defined sherd to a form accurately, after careful bringing together of sherd families. Of course, this Typological Number of Vessels can be used for quantitative comparisons between two subsets of pottery from the same category.

We are now used to seeing the results of quantitative studies presented in tables, but this also presents methodological problems. It became apparent at the conference that quantitative methods were closely linked with methods of classifying different categories of ceramics. Too often the tables which present the results are a real mess with mixed, typological categories, technological categories, function and origin. It seemed to us that organised tables should give better and clearer information. It was decided not to mix different categories (origin, function and so on), and not to mix the different levels of the quantitative study (Minimum Number of Vessels and Typological Number of Vessels must be separate on different tables). It is often clearer to use several tables to give the information than to mix all in one (Table 3).

CONCLUSION

In conclusion, we would like to stress the following point. It is clear now that typological studies must be systematically complemented by studies in quantification, and also in relationships, but this is another story. This will be fruitful for the scientific community only if we have minimum standards, even if they are not perfect. We are well aware of the fragility of those methods, but nevertheless, a common language will help us to move closer to a better picture of the past.

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Résumé

Cet article présente les résultats d'une table ronde nationale qui s'est tenue en France en avril 1998, et qui a été recemment publiée. Le but de cette réunion était de discuter des différentes méthodes de quantification en usage pour la céramique et de les confronter. S'imposait en effet de plus en plus la nécessité de posséder une méthode commune, la plus solide possible, Ia plus efficace également, et la moins coûteuse en temps passé. La méthode que nous avons préconisé n'est pas nouvelle. II s'agit simplement d'adopter des standards communs minimum, afin de permettre des comparaisons pertinentes entre les différentes régions, périodes et sites.

Zusammenfassung

Dieser Artikel behandelt die jüngst veröffentlichten Ergebnisse eines nationalen Round Table Gesprächs in Mont-Beuvray, Frankreich, im April 1998. Das Ziel war, die verschiedenen Methoden quantitativer Untersuchung von Töpferwaren zu diskutieren und ihre Verwendung in heutigen Untersuchungen zu vergleichen. Die meisten Archäologen stimmten darin überein, dass eine gemeinsame Methode so wissenschaftlich wie möglich, aber auch einfach, effizient und zeitsparend sein müsse. Dieses ist nichts Neues, sondern nur die Vereinbarung gemeinsamer Mindestanforderungen, um Vergleiche zwischen verschiedenen Gegenden, Zeiten und Siedlungsgebieten zu ermöglichen.