Pottery to the people. The production, distribution and consumption of decorated pottery in the Greek world in the Archaic period (650-480 BC)
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VII Signatures, attribution and the size and organisation of workshops
VII.1 Signatures, cooperation and specialisation

The signatures tell us something about more than only the personal backgrounds of potters and painters, individually or as a group. Considered in combination with attributions, they also provide insights into more abstract questions of scale and organisation.\(^{555}\) Thus the estimates of production figures and the total numbers of workshops in Athens given in chapter III are mostly based on lists of signed and/or attributed pottery. Indeed, the picture of very high productivity and the production figures presented in the rough and general overview of that section can easily be highlighted by more detailed individual cases, among others, Tleson (ca. 90 signatures, ca. 170 cups attributed to Tleson and/or the Tleson Painter),\(^{556}\) Nikosthenes (149 of at least 186 signed as maker, decorated by quite a few painters, possibly including himself)\(^{557}\) and Makron (611 vessels, mostly made by Hieron, who signed around 60 of them).\(^{558}\)

Likewise, the signatures with patronymics seem to confirm the widely held opinion that at least some potters' establishments were family businesses, passed on down the generations (section VI.4).\(^{559}\) The double signatures of potter and painter offer another glimpse into the organisation of workshops:\(^{560}\) the collaboration of the painter Kleitias and the 'maker' Ergotimos on the François krater and at least four, and probably nine, other vessels suggests that starting at an early date there was scope in Athens for a degree of specialisation and the association of two 'masters'.\(^{561}\) As discussed above (section VI.3), the two intriguing double 'ΕΠΙΟΙΕΣΕΝ'signatures even leave open the possibility that potters combined forces. Beside the relatively few paired signatures of different craftsmen, there are the equally rare instances of one man signing as both potter and painter, on either the same or different pots (section VI.3).\(^{562}\) Apparently, specialisation, although practised, was only one option.\(^{563}\)

The most common group of signers, however, are known from only one kind of signature: maker or painter. These signers may be emphasising their own specialisation by omitting the names of possible collaborators, but it is equally possible that especially makers' signatures refer to the entire manufacturing process: potter-painters who did everything themselves. As shown above (section VI.3), the latter seems to be supported by the evidence, however limited.

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555 See Scheibler 1979a.


557 Tosto 1999, esp. 1, 173-182; see also Immerwahr 1984, 342.

558 Kunisch 1997, esp. 6-7, 160-223. Of course these three examples form a selection of exceptionally prolific craftsmen who must have worked aside less productive colleagues.


561 See ABV, 76-79 (Kleitias), 79-80 (Ergotimos), addenda at 682; Brijder 2000, 551-557; see also Scheibler 1986, 789.


563 See Scheibler 1986, 803, n. 34.
Theoretically, attribution studies should enable us to answer most questions, but potters' hands – a difficult area often producing uncertain results – have received relatively little attention.\(^{564}\)

Another aspect of signatures creates further complications and needs to be accounted for: the individual names in double signatures often occur in different combinations with others. Thus, maker X signs together with painters Y or Z, while painter Y also signs with maker Q, etc. Equally complex criss-crossings can be inferred for unsigned but attributed pots. It is especially easy in the late 6\(^{th}\) and early 5\(^{th}\) centuries to discover many combinations which result in impressive networks comprising most major artisans of the period.\(^{565}\) For example, the painter Epiktetos is associated with the makers/potters Hischylos, Nikosthenes, Pampaios, Andokides, Python and Pistoxenos. Oltos also worked with Hischylos (probably), Nikosthenes and Pampaios, but with Chelis, Kachrylion and Euxitheos, and perhaps Sikanos and Tleson as well; moreover, he decorated cups together with the Chelis Painter and the Thalia Painter. Kachrylion and Euxitheos are the makers of work painted by Euphronios, who then as potter collaborated with Onesimos, Douris, Pistoxenos Painter, Colmar Painter, Antiphon Painter, Foundry Painter, Triptolemos Painter and several others. And so on.\(^{566}\)

The results are as pivotal as they are ambiguous. Conceivably, they would eventually allow us to build up a comprehensive view of the employment structures of many Athenian workshops, combining evidence for both scale and organisation on a very detailed level. However, the lack or uncertainty of additional information makes this a precarious undertaking, as it is difficult, if not impossible, to translate the basic individual data into a sufficiently credible picture of daily workshop practice.\(^{567}\) In other words: the relation between the stylistic links and the hypotheses about the collaboration of craftsmen is tenuous and, as a consequence, any reconstruction is largely dependent on a set of a priori assumptions which may or may not be accepted by others.

The problems posed by this limitation are illustrated by the two most explicit available reconstructions of the organisation of ancient Athenian potteries. Best known is that of Webster, who basically combined pottery with as many stylistic links as possible to identify the supposed production of very large operations:\(^{568}\) the combinations A-B and B-C are merged into a firm comprising A, B and C, etc. Further, he extended the combinations chronologically by making connections between senior 'masters' and junior 'apprentices' or assistants.\(^{569}\) The result is a series of 5 to 10 large workshops employing 10-20 potters and painters for each quarter century from 600 to the late 5\(^{th}\) century, most of which functioned continuously over (almost) the whole period.\(^{570}\)

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\(^{565}\) See Beazley 1944, 35-37; Webster 1972, 13; Robertson 1992, 136. See also the critical comment in Scheibler 1986, 789, 800; 1995, 115.


\(^{568}\) Webster 1972, XIV, 15-41.

\(^{569}\) See Webster 1972, 15-21.

\(^{570}\) Webster 1972, 15-41. For a comparable, far more cautious attempt at grouping workshops, see Beazley 1944, 35-37; also Scheibler 1986, 800.
The main objection is that Webster’s reconstruction contradicts current archaeological and historical ideas about the organisation of crafts in Archaic and Classical Athens, which, as seen above (section III.3) favour small-scale family enterprises as being the rule. However, firm evidence for this is meagre, and as argued above (chapter III, section V.3) there are some indications that the scale and organisation of workshops were less primitive than usually thought. It might be possible to accommodate Webster’s model, which is rather vague in its practical details, to the prevailing views or a revised version of them. In fact, a few scholars have evidently adopted his reasoning on a more reduced scale, concluding that smaller workshops existed beside larger ones.571

However, the foregoing conclusion overlooks the fact that not only Webster’s results, but also his approach to the evidence raise questions. Even if one disregards the many stylistic correspondences which may be open to doubt or discussion, it is extremely easy to establish a long-lasting line of cooperation between potters and painters over many years on the basis of very few attributions and/or their signatures. Moreover, these links can occur quite far apart in time, so that especially the indirect ones defined above - A-B and B-C make A-C - could be sequential rather than contemporaneous.572 In such a potentially more or less dynamic context, which could even be further enlivened by short-term or free-lance collaboration, little remains of Webster’s rather static schemes, which assume large and stable workshop units. In the absence of good chronological data or substantial information on the possible forms of collaboration, however, the hypothesis of continually changing workshops turns out to be hardly better founded than Webster’s proposal, even though such a dynamic alternative seems to involve less fancy.

That radical alternatives to Webster’s approach are possible is demonstrated by a second proposal regarding the organisation of Athenian potteries, put forward by Axel Seeberg.573 It is founded on two observations in different fields of research. He first considers an outcome of Alan Johnston’s research on trademarks. Johnston notices, but cannot explain, that trademarks on some large late 6th-century pots tend to group according to painters rather than potters, which is surprising in a context generally regarded as ‘potter-oriented’.574 Seeberg’s second point is that, contrary to what many would expect, potters’ signatures greatly outnumber those of painters (sections VI.2-3).575 He then tries to resolve both points by supposing that painters were independent craftsmen who hired potters and who traded their wares themselves, perhaps seasonally. Therefore the signatures of potters are attempts on their part to get some recognition from purchasers to whom they would otherwise have remained entirely anonymous.576

Although Seeberg draws wide-ranging conclusions from only two small observations, the picture he sketches seems more firmly based on verifiable evidence than Webster’s, and meets with fewer methodological objections. Nevertheless, it does not offer a satisfactory solution. Even if the transport of unfired pottery to the painters’ workshops posed no problems or was avoided by the

571 Harrison 1979, 5, 32; Immerwahr 1984, 345-347; see also Boegehold 1985, 28, much closer to Webster.


573 Seeberg 1994, esp. 162-163.

574 Seeberg 1994, 163, referring to Johnston 1979, 45, n. 13.


576 Seeberg 1994, 163-164.
painters going to the potters, Seeberg’s hypothesis ignores a major practical consideration: after being decorated, pots must be fired. It seems very difficult to keep the work of different painters or, for that matter, potters apart in this phase, and sorting afterwards may prove very tedious, especially if pots differed only in small details. Obviously, an independently run kiln could fire the work of one painter at the time, but this seems impractical in view of the probable capacities of kilns (at least several hundred medium-sized vessels), which exceed the estimated production figures of individual painters (barely more than three or four kiln loads a year according to the highest current calculations, although somewhat more according to those made in chapter III).

Moreover, if firing was a separate, specialised task at all, the stoker or firing supervisor was doubtless most closely associated not with the painter but with the potter, because firing is directly linked to the quality of the potter’s product (and vice versa) rather than to the contribution of the painter. But presumably the potter would usually have operated the kiln himself. In fact, excavated workshops, most ethnographical evidence and probably the Penteskouphia plaques (see sections IV.5, V.2.f, V.3) all seem to indicate that the whole process from shaping to firing took place in a single establishment. It is hard to envisage that the potter would not be in control of production and sales, also because he is dependent on and connected to the actual workshop, with its necessary materials and all its installations like a stock of clay, basins, potter’s wheel, etc., while the painter could do with some clay-paint, a little working space, something to sit on and, obviously, a supply of pots which needed to be decorated. Indeed, it would be strange if precisely the craftsman who needed so few facilities and had such a small role in the production process would be in control of selling the products, even if only for short periods, as Seeberg proposes.

However improbable Seeberg’s hypotheses are, in absence of any certain information about workshop organisation, they are as difficult to refute as Webster’s. That does not alter the significant fact, though, that most organisational problems met in the reconstructions of Seeberg and Webster are absent from the current view of the average Athenian pottery workshop as controlled by a potter or a potter-painter, possibly assisted by a few other ‘shapers’ and one or more (subordinate) painters. This typically traditional set-up, found in many places, also accounts for the prominence of the potters’ signatures, as explained above (section VI.3).

The supposed groups of painter-oriented trademarks must yet be considered. At least some of the trademarks are inscribed on pots which, despite stylistic connections with a large group of related vessels, cannot be placed in definite workshop contexts and might instead be the work of a variety of potter-painters or two-men establishments. Other painter-oriented trademarks can perhaps be explained as a chronological phenomenon reflecting a relatively rapid succession of painters and traders connected with a workshop. In this hypothesis, identifiable combinations consist of batches or series of batches which closely follow each other. More detailed stylistic and chronological studies will possibly further clarify the situation. But trademarks are a rare phenomenon, and the painter-oriented trademarks form a small, exceptional category apparently

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580 Tosto 1999, 203, n. 898 remarks that the ‘Nikosthenic’ pots with supposed painter-oriented trademarks include some decorated by the BMN Painter who, in his view, probably worked mostly in a workshop of his own, i.e., separate from that of Nikosthenes. To this can be added that the Leagros Group, which also offers many painter-oriented trademarks, is not necessarily the product of one workshop.
limited to a few workshops – possibly enough to build a theory on, but too few to disprove another one.

VII.2 Problems and possibilities in reconstructing workshop organisation and size from signatures and attributions

The test cases presented by Webster and Seeberg neatly show how uncertain and subjective estimates of workshop size and organisation are. They also clearly reveal where potential pitfalls may appear and the matters which need to be considered in any alternative, more convincing proposal. Three essential points must be examined.

First of all, it is necessary, insofar as possible, to begin by relying on positive evidence when ‘translating’ stylistic phenomena or connections into workshop practice or professional links between craftsmen. The hypotheses about the succession of masters in a workshop, for instance, should be based on more than incidental stylistic influences in pot-painting alone. Similarly, a few ties between painters and/or potters are not automatically enough to identify a workshop. Preferably, a combination of factors are taken into account – styles of both potting and painting, use of ornaments, iconography, if possible supplemented, in future, by scientific analysis on the use of particular clays and clay mixes by individual workshops (section X.2). At any rate, conclusions need to be based on more than occasional and therefore, despite low survival rates, perhaps incidental links.

This leads to a second fundamental combination of factors: chronology and the dynamics of workshop employment. Even in manufacturing environments clinging to tradition, which the Greek kerameikoi presumably were, organisational units probably could change quickly. This seems all the more likely in the light of the rapid succession of shapes and styles of Greek pottery and its many producers supplying often changing groups of consumers over a long period. The changes in demand and reception very likely interacted with dynamics among producers or may even have been caused by them. This potential instability or variation of the organisation of production must be accounted for in workshop reconstructions. One consequence of such a fluid situation may be that many of the single or occasional links that are translated into workshops by Webster, among others, simply echo short-term associations, which could have been occasional or seasonal. More insight into chronological detail would help determine whether the different professional connections of individual artisans were contemporaneous or, as often seems most likely, sequential. A concrete illustration of the possible relevance of chronological developments to workshop dynamics is offered by Euphronios’s career. As remarked (section VI.3), his potter’s signatures seem to occur after most of his painting, and seem to indicate his takeover of a workshop.

Euphronios’s development would also be specifically relevant to a third important factor in the reconstruction of workshop organisation: a hypothesis must accord with the basic, necessary conditions for producing pottery. This is realised by Robertson, who in his treatment of Euphronios recognises that much of the organisation of potteries is closely bound to practical


582 See Scheibler 1979a, 22.


This aspect is missing from Webster's proposal, derived from purely stylistic considerations, and Seeberg's, which ultimately founders mainly because it cannot convincingly be combined with both a reasonable organisational hierarchy and the required conditions and sequences of work in pottery production.

The theories of Webster and Seeberg further demonstrate how difficult such matters are to judge. Yet, even though very little is known about many basic aspects of the production and the division of labour within workshops, the explicit inclusion of practical matters in a reconstruction of their organisation at least opens the way to answering questions within a defined context. Moreover, despite the obstacles sketched, enough evidence from attribution studies seems to be available to warrant an exploration of possible workshop organisation. Many recent monographs on individual painters furnish detailed and thorough information about stylistic links in painting and potting, internal chronology and sometimes practical and organisational matters. The individual results can be combined with each other and with information obtained from signatures, supplemented by less elaborate, but equally fundamental studies and arguments, among many others, by Beazley. By combining all these sources, we may succeed in surpassing the anecdotal approach which marks most previous attempts to reconstruct workshop practice from attributions. In addition, such a combined picture will probably also make once again clear that the workshops of the Athenian Kerameikos formed a varied lot, which altered over time.

VII.3 Attic workshops of the 6th and 5th centuries

The evidence available from the earliest Attic signers points to rather small establishments. Even before Kleitias and Ergotimos (ca. 570-560), we have Sophilos (ca. 600/590-570s). In his monograph on Sophilos, Güven Bakır concludes that there is not enough evidence to establish whether he also potted the vessels he painted. On the other hand, there is no evident indication that Sophilos worked with one or more potters, and, more specifically, a partial maker's signature may be his. The simplest explanation, however speculative, is that he potted as well as painted. In any case, the fact that his extant production, like that of his predecessors including Kleitias and Ergotimos, is much less than that of most later 'major' Attic producers, would suggest that his establishment was relatively small. Neither Ergotimos nor Sophilos (or his potter) appear to have specialised in particular pot-forms, although each had his favourites.

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585 Robertson 1972, 182. See also Scheibler 1986, 800-801; Williams 1990, 33-37; Huber 1992, who, however, goes little way in putting her ideas into practice.


587 *ABV*, 76-79 (Kleitias), 79-80 (Ergotimos), addenda at 682 and *Para* 29-30.

588 Bakır 1981; see also *ABV*, 37-42; *Para*, 18-19.


590 Bakır 1981, 6-7.

591 Bakır 1981, 78-80, lists at most 45 pots or fragments by Sophilos and a maximum of 34 related pieces. *ABV*, 37-42 gives Kleitias and Ergotimos 40 vessels or fragments, and 13 related items. Brijder 2000, 556 adds two more. Of course, a comparison of these numbers to those of later painters may be affected by changing distribution patterns and biases of excavation.
A puzzling feature of the attributions to Kleitias and Sophilos is their accompaniment by shorter lists of related works, apparently not made by the painter himself, but stylistically connected. It is not easy to relate this phenomenon to a real working situation. Very possibly, these ‘masters’ were surrounded by one or more assistants who painted only more or less occasionally. This explanation, however, becomes doubtful when the related work increases abundantly, like the 34 items attached to the 45 attributed to Sophilos, or the Manner of the Gorgon Painter (600-580), comprising at least 47 pots or fragments against only 29 assigned to the master himself.\(^{592}\) Perhaps the limitations of stylistic attribution are blurring these figures, but it could be that Sophilos and the Gorgon Painter collaborated with a second fully active artisan. Whatever the case, the fewer related pieces surrounding Kleitias and most earlier black figure painters\(^{593}\) suggest that such dependence on a central craftsman was at first a limited phenomenon, and further confirm the impression that early Attic potteries were small and simply organised.

A stronger grip on the elusive world surrounding the ‘masters’ is provided by what seems to be the first group of more specialised workshops, operating on a much larger scale: those of the painters of Siana cups, which have been extensively collected and analysed by Herman Brijder.\(^{594}\) The C Painter (575-560/50), the Heidelberg Painter (late 560s-late 540s) and the Griffin-bird Painter (560-535/30) appear to be pivotal potter-painters in workshops employing several other ‘minor’ painters who, it seems, were relatively unproductive and mostly active for only short periods of the workshop’s existence.\(^{595}\) The circle of the C Painter, however, also comprises two painters who, instead, apparently turned out numerous cups: the Taras Painter and, to a lesser extent, the Malibu Painter. They were possibly staff members with relatively higher positions in the hierarchy; and since much of their output is later than that of the C Painter, they may have taken over his workshop.

The few Siana cups potted by one artisan and painted by another\(^{596}\) strongly suggest that the stylistic links between ‘masters’ and ‘associates’ among the Siana painters are indeed most likely to derive from workshop cooperation. Much more often, however, each painter appears to have also fashioned the pots he decorated, which makes the role of the secondary artisans even more puzzling: If they potted and painted so infrequently, what other kinds of work would they have done? And if the Siana masters hired them only occasionally, one might expect to find other work of theirs which was made in other contexts. Perhaps, however, the chronologies deceive us because often they all too easily place the work of a craftsman active for a single, very short period in a convenient compartment of five or ten years. Another possibility is that the minor artisans were more all-round (but experienced) permanent staff members who potted and/or painted only when needed, or who made plain or non-figured wares, which must have been produced also in some of these same workshops. In addition, the ‘minor’ employees could, as potters, also be responsible for some of the relatively few items other than cups which the Siana ‘masters’ decorated. Whatever their tasks, it remains a mystery why the ‘minor’ artisans mostly

\(^{592}\) Bakir 1981, 78-80 (Sophilos); ABV, 8-13, Para, 6-9 (Gorgon Painter and Manner).

\(^{593}\) See ABV, 4-7 (Nettos Painter); 18-20 (Ceramicus Painter); 21-23 (Painter and Group of the Dresden Lekanis); 23-28 (KX Painter and Manner); 31-33 (KY Painter and Manner); 33-34 (Falmouth Painter); 43-50 (Polos Painter and Companion); 76-79 (Kleitias); 85-88 (Painter of London B76). More references to works of all these painters can be found in Para, 1-32, 524.

\(^{594}\) Brijder 1983; 1991; 2000; see also ABV, 50-75, 681-682.


\(^{596}\) Brijder 1983, 24.
disappear so quickly – surely mortality, which would equally have effected the ‘masters’, can only partly account for their rapid turnover.

The impressions of workshop size and organisation based on Sophilos and the major Siana painters are repeated by many other black figure workshops of the 6th century. Although, of course, variation occurs, many of them apparently fall within the same range of scale and specialisation, with often a clear division between cup producers, like the Siana workshops, and makers of large or closed vessels. Both these groups could either provide a mixed output, like Sophilos, or a very specialised one, like most makers of cups. In contrast, establishments like that of Kleitias and Ergotimos, manufacturing both cups and large symposion vessels or oil flasks, become rare.

An intriguing, early instance of specialised production is presented by the so-called Tyrrhenian amphorai, decorated by eight painters between ca. 570/565 and 545. Jeroen Kluiver convincingly argues that the Tyrrhenian painters, like the painters of Siana cups, also potted their own products. To an even greater degree, however, the Tyrrhenian painters specialised in one shape, a particular kind of neck-amphora accounting for no less than 248 of their 260 preserved pots. But the similarity ends there: 260 vessels potted and painted by 8 men, 17-62 each, is nothing compared to the far greater totals for the individual Siana cup producers. The numbers for Sophilos and Kleitias and Ergotimos, on the other hand, are rather comparable; and apart from two possible ornament painters documented by only a few Tyrrhenian pots, there is also hardly any trace of a group of assistants or closely related ‘minor’ painters. Conceivably, therefore, the organisation of the Tyrrhenian craftsmen was equally uncomplicated. Since each of them seems to be a clear stylistic persona within the distinctive and obviously interrelated Tyrrhenian canon, it is attractive to follow Kluiver and consider them individual artisans who intensively cooperated, perhaps working closely together in the same part of the Kerameikos, even sharing a kiln.

Kluiver’s arguments for separate, one-man Tyrrhenian workshops are not particularly strong, however. His first point is that a single Tyrrhenian workshop would have comprised seven potter-painters between ca. 555 and 550, but yet no trace has emerged of a division of work in which some members specialised in potting and others in painting, as Kluiver would expect. But such a scenario corresponds precisely to the Siana painters, apart from their very few ‘shared’ cups. Kluiver’s second point is that hardly any trace of shared painting on single Tyrrhenian pots is discernible. In fact, as will become clear below, shared painting on the same piece of pottery remains exceptional, even in large workshops, until well into the red figure period, and never becomes truly regular practice. It therefore seems perfectly possible that the Tyrrhenian painters formed one or perhaps a few large and specialised workshops, in which most or all the work was executed by the masters themselves, so that the total production remained relatively limited. In my view, one large workshop offers a better explanation for the close iconographic and stylistic links

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597 Kluiver 1997, esp. 28-32; see also ABV, 94-106, 683-684; Para, 34-43.
600 Kluiver 1997, 7, 30.
within the Tyrrhenian ‘group’ and a potentially better reason for sharing a kiln than individual establishments working in close proximity to each other.\textsuperscript{602}

The Tyrrhenian amphorai form a unique and relatively problematical case, whereas other black figure potters and painters as a rule match the model of the individual master who received some assistance. The particular situation, however, is not always straightforward. Good illustrations are furnished by Lydos (560-535) and Exekias (545-530) as appraised by Beazley in \textit{ABV}.\textsuperscript{603} Both of them have a varied production of mostly large vessels and cups and are surrounded by ‘companions’ (Exekias)\textsuperscript{604} or a ‘group’ (Lydos, already starting around 560) as well as by large numbers of less directly related painters. Their situations might therefore be regarded as a hybrid between the models of the Siana cup manufacturers and Sophilos. The details are vague, however. How must we place Lydos’ companions like the Painter of Louvre F6, Painter of Vatican 309 or Camel Painter?\textsuperscript{605} What are the implications of the fact that some pots related to Lydos are said by Beazley to have ‘pure Lydos’ parts?\textsuperscript{606} And the connection between Group E, ‘from which Exekias issues and of which he is the flower’,\textsuperscript{607} and the master himself remains even more enigmatic. Another interesting, elusive point is that the painters surrounding Exekias and particularly Lydos are often comparatively more specialised, usually in amphorai and hydriai.

Their signatures throw light on the matter, too: Exekias usually signs in his early period as maker only, but on three or four later pots he adds a painter’s signature, thus confirming what is obvious from stylistic attributions (even on pots he signs as maker only).\textsuperscript{608} Lydos, instead, signs as painter only, but collaborates with at least two signing potters: Nikosthenes (ca. 545-540) and Kolchos (ca. 540-535), neither of whom seems to be his regular companion.\textsuperscript{609} This perhaps indicates that not all workshop masters were potters or closely associated with a potter, but only further research on the potterwork of vessels decorated by Lydos could possibly confirm this possibility.

\textsuperscript{602} Two other, rather subjective arguments against Kluiver’s hypothesis are: (1) it fails to explain why precisely the Tyrrhenians formed such a close-knit stylistic group when the Kerameikos must have been full of workshops operating closely together; (2) the general similarity between Tyrrhenian pots may be judged as too close for products issuing from different workshops in view of the strong individuality of most producers and products of the Kerameikos. The latter is disputable, however, as Siana and Little Master cups and kyathoi, among other specific types with characteristic decorative schemes, were apparently produced by several workshops. Are the pots of each of these categories equally closely related to one another as the Tyrrhenian amphorai? The judgement can only be personal.

\textsuperscript{603} Lydos and related: \textit{ABV}, 107-123, 683-685, 714; \textit{Para}, 43-50; see also Tiverios 1976; Exekias and related: \textit{ABV}, 143-149, 686-687, 714; \textit{Para}, 59-62; see also Stähler 1971; Mackay 1988; Mommsen forthcoming.

\textsuperscript{604} See Tiverios 1976, 77, 87-92.

\textsuperscript{605} See \textit{ABV}, 114; Tiverios 1976, 48, 51-52, 91-92.

\textsuperscript{606} \textit{ABV}, 114, 120.

\textsuperscript{607} \textit{ABV}, 143.

\textsuperscript{608} Mommsen forthcoming; see also, unconvincing, Stähler 1971.

\textsuperscript{609} \textit{ABV}, 107; see also Tiverios 1976, 68, 77, who adds two signatures by the potter Epitimos on cups related to Lydos, perhaps by him; Tosto 1999, 7, 150.
Amasis (560-525 traditionally, 550/45-515 in Isler’s new chronology, if the same as the Amasis Painter) is another difficult instance, although the extensive attention recently given to his work, including potters’ attributions, has clarified much. Although some scholars remain unconvinced, most now agree that the Amasis Painter is actually the potter Amasis himself, so that he too neatly falls into the category of the potting and painting master. His production (more than 130 preserved items) is again varied, predominantly large vessels, to a lesser extent cups and lekythoi, like Lydos and Exekias. Yet unlike them, Amasis is not surrounded by a group of related painters. There is, however, one lekythos attributed to the Taleides Painter signed by Amasis as maker, but it has been questioned whether he indeed fashioned it. Somewhat less problematical is a small group of fragmentary red figure cups, two of which bear parts of probable Amasean signatures; neither appears to be painted by the Amasis Painter himself, one has been attributed to Skythes. These two cups remind us that many professional links between potters and painters escape us. As a manufacturer of red figure cups, Amasis would seem to conform to the model of a master with assistants, who in this case may have specialised and catered for customers who were looking for a new product.

Later black figure artisans – the Affecter (540-520), Swing Painter (540-520) and Antimenes Painter (530/25-after 515/10) – also warrant mention, as they are not only more or less contemporary, but also have a closely comparable preserved output. Each of them has left us about 130-150 large pots, mainly amphorai and hydriai. Yet their workshop operations appear to have been quite different.

Heide Mommsen, who has thoroughly studied the Affecter, considers him a potter-painter. Apparently, his style, though related to that of Elbows Out (550-530 or, in Isler’s new chronology, 540-525), is not associated with any large workshop or group of workshops. As the pots ‘near the Affecter’ are also few, he seems to have run a small and specialised, but productive workshop. That one amphora shaped by the Affecter and adorned with the typical

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610 Isler 1994, esp. 106, 109; see section VI.4.

611 Von Bothmer 1985a; 1985b; Boardman 1987a; True 1987; Isler 1994; Mommsen 1997; see ABV, 150-158, 687-688, 714; Para, 62-67.

612 Von Bothmer 1985b, 34, 38.


614 Mommsen 1997, 17-18; see also Frel 1994, 14. Isler 1994, 95, 106-107 has no doubts about Amasis really being the maker of this vessel. Mommsen 1997, 23-32, also treats some other possibly doubtful attributions to the potter Amasis.

615 Isler 1994, 95; Mommsen 1997, 18.

616 Affecter: 129 pots (Mommsen 1975, 114-115); Swing Painter: ca. 150 pots (Böhr 1982, 1, 56-57); Antimenes Painter: 132 certain and 16 possible pots (Burow 1989, 20). It can also be noted that the Amasis Painter’s preserved output totals 132 items (Von Bothmer 1985a). Can such general uniformity be coincidental?

617 Mommsen 1975, esp. 40, 55; see ABV, 238-248, 690-691, 715; Para, 110, 412, 524; see also Scheibler 1984, 132; Tosto 1999, 53, 193.

618 See ABV, 238, where the Affecter is described as the ‘companion’ of Elbows Out. For the new dates: Isler 1994, 107-108.
ornaments of his amphorai has figurework by another painter, confirms the impression got from the related pottery that his workshop was not an entirely one-man affair.\textsuperscript{619}

The Swing Painter presents a slightly different picture. Although Elke Böhr, who studied him, cannot rule out the possibility of a steady partnership with a potter, it seems most likely to her that the potter and the painter were the same man.\textsuperscript{620} The context of the Swing Painter’s oeuvre is richer and more complex than that of the Affecter. In addition to a relatively large group of related pots (23 items)\textsuperscript{621} he shows clear stylistic links to other painters, notably the Painter of Munich 1410, the Painter of Vatican 365 and especially the Princeton Painter, who, according to Böhr, may also be connected with the Swing Painter through his potter, i.e. probably Wechekleides.\textsuperscript{622} Although it is not possible to infer workshop links from these correspondences, it is probable that, at least for part of his career, the Swing Painter operated less solitarily than the Affecter, either within his own workshop or in cooperation with others.

In the work of the Antimenes Painter we encounter yet another pattern.\textsuperscript{623} Variations in the shapes of the pots decorated by the Antimenes Painter suggested to Johannes Burow, who wrote a monograph on him, that he painted pots by different potters.\textsuperscript{624} Moreover, Beazley places some pottery by the Antimenes Painter in a class (i.e. a group of pots probably made by one potter) which also comprises pieces in the manner of the Antimenes Painter and by Psiax; and he lists twelve different groups or painters as related to the Antimenes Painter.\textsuperscript{625} Doubtless, the Antimenes Painter was a chief painter in a relatively large workshop. Burow, partly following Bloesch’s attributions of potterwork, concludes that the workshop must be Andokides’s, which also included the Lysippides Painter, the red-figure Andokides Painter and, for at least part of his career, Psiax, who painted in both black and red figure.\textsuperscript{626} The conclusion seems to find corroboration in the fact that it is not easy to keep apart the many painters related to the Lysippides Painter and the Andokides Painter (who may well be one and the same, perhaps Andokides himself)\textsuperscript{627} or to Psiax from the many followers of the Antimenes Painter. Although a precise reconstruction of the workshop relations is still beyond reach, one gets the impression that the potter Andokides, probably with some assistants or a second potter, steadily worked together with these three or four painters and also employed some ‘minor’ painters and perhaps potters on

\textsuperscript{619} ABV, 259, 26; see Tosto 1999, 53, 193.

\textsuperscript{620} Böhr 1982, esp. 57; see ABV, 304-310, 693; Para, 132-135.

\textsuperscript{621} Böhr 1982, 57.

\textsuperscript{622} Böhr 1982, 53-55.

\textsuperscript{623} Burow 1989; see ABV 266-282, 691, 715; Para, 117-127.

\textsuperscript{624} Burow 1989, 20.

\textsuperscript{625} ABV, 276-295.

\textsuperscript{626} Burow 1989, 20, 52-55; see Bloesch 1940, 12-15; 1951, 29-31, 35. See for Andokides’s workshop ABV, 253-265, 691; ARV\textsuperscript{2}, 1-5; Para, 320-321; Cohen 1991, 59-63; for Psiax, ABV, 292-295, 692; ARV\textsuperscript{2}, 6-9 Para, 321. Three of Psiax’s red figure pieces are signed by other makers than Andokides: once Menon, twice Hilinos.

\textsuperscript{627} See Burow 1989, 52-53; Boardman 1991, 105. Beazley hesitated: see ABV, 254; ARV\textsuperscript{2}, 2.
a less permanent basis. The Antimenes Painter was apparently the most productive decorator in the workshop, perhaps because Andokides was a potter-painter, whereas Psiax probably stayed with the workshop (or in the circle) for a shorter time than the others.

The configuration around the Antimenes Painter appears to be similar to that of the painters of Siana cups, especially the C Painter, and may well offer a model for explaining the rather indistinct circle of craftsmen surrounding Lydos and Exekias. Yet, the (partial?) separation of potting and painting would be an important new development in pottery production. Equally new, though less far-reaching, is that the concentration on a more or less limited range of pot-forms, as seen from Sophilos onwards, is now combined with specialisation in the manner of the Tyrrhenian artisans and the Siana cups. While all the workshop’s painters concentrate on amphorai, each one has secondary preferences: the Lysippides Painter, cups; Psiax, plates, kyathoi, small closed forms; the Antimenes Painter, hydriai. On the one hand, this suggests that their large, specialised workshop(s?) attempted some differentiation of the output. On the other hand, each painter seems to be largely responsible for a distinct category within the whole.

This combination might indicate that the general production of these artisans as a whole, i.e. as a workshop, was dependent on their individual specialisation, but it cannot be ruled out that some chronological development distorts the picture: part of the Antimenes Painter’s work is early, some of Psiax’s might be late. Another possibility, which parallels the Siana painters, could be that the potterwork of some of the ‘additional’ shapes was executed by the painter himself or occasional ‘secondary’ potters. In Psiax’s case, different workshops may also come into play. Obviously, there is much room for speculation here, and urgent need for more research, especially on the potterwork. Nevertheless, it is difficult to escape the conclusion that both the level of organisation of some workshops and the pace of change steadily increase towards the end of the 6th century.

The impression is fully confirmed by the best-studied black and red figure workshops of the later 6th and early 5th centuries: those of Nikosthenes (545-510), Pamphaios (530-early 5th century) and Euphrionios (520-470). As to Nikosthenes, little can be added to the conclusions in Tosto’s exhaustive monograph based on the exceptional number of vessels with Nikosthenic signatures. Tosto convincingly demonstrates that Nikosthenes’s workshop was not the large ‘industrial’ organisation most scholars envisage, but much smaller, comparable to the operations of contemporaneous potters. The apparently 30-50 painters, working with at least three potters, employed by the workshop during the 35 years of its existence, were, it seems, engaged for short

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628 See Burow 1989, 20, 52-55.

629 See, for a different view of the workshop, Burow 1989, 53; also, for the Andokides-Psiax-connection, Cohen 1991, 59-63.

630 See Burow 1989, 53, interpreting the phenomenon in a different way.


632 Tosto 1999; see ABV, 216-235, 690; ARV², 122-127; Para, 104-109; see also Eisman 1974b.

633 Immerwahr 1984; see ABV, 235-237, 690; ARV², 123-135; Para, 109; see also Tosto 1999.


635 Tosto 1999, 9-13, 195-200; see also Scheibler 1984, 132-133. See also, for the traditional view, Cook 1971, 137; Eisman 1974b; Immerwahr 1984, 342; Robertson 1992, 132.
periods only. The actual staff at a given moment may usually have comprised 5-6 artisans, with probably slightly fewer in the early years and often a few more during the peak period between 530-510.636

Following the familiar pattern, Nikosthenes’s workshop specialised in amphorai and cups, but also produced other shapes in smaller quantities.637 The organisation of the work seems equally conventional: Nikosthenes himself clearly was the main potter and painter (Beazley’s Painter N), who surrounded himself with assistants and other employees who have left few stylistic traces.638 Most of the ‘secondary hands’ can be recognised on one pot only.639 Some of them were probably employed only occasionally and also worked elsewhere; in a few cases, according to Tosto, they even had their own workshops, like the BMN-painter (560/50-530).640 Others may have had more steady positions, while yet others, probably Pamphaios for instance,641 who is most usually regarded as Nikosthenes’s junior partner and successor,642 left after a short period and started an independent establishment.

Although all these patterns of organisation are quite common, Nikosthenes’s workshop also has its extraordinary features. As far as can be judged, both the total number of painters employed and the rate of change in the staff are relatively high compared to those of the workshops treated above.643 This might be related, at least in part, to the large number of signed pieces from the Nikosthenic workshop, which allows a very detailed analysis, extending even to vessels which we would probably never have linked to Nikosthenes if they were not signed.644 However, the same pattern, curiously enough, is repeated by Pamphaios, who signs relatively less, and has a smaller, more specialised output:645 he seems to have employed more than 40 painters over a span of about 30 years, including Oltos, Epiktetos and the Nikosthenes Painter.646 Again, by far most of the painters are documented by just one pot, and only a few are more consistently linked to the master.

636 Tosto 1999, 7-9, 12-13, 198-200; Scheibler 1984, 132-134; 1986, 803, n. 34; 1995, 115-116, arrives at similar conclusions based on somewhat different premises.

637 See, in addition to Tosto’s catalogue, Scheibler 1984, 133.

638 See Tosto 1999, 4-9, 53, 87-88, 91, 96-97, 118-119, 148, 156-158; see also, for a different view Immerwahr 1984, 342, 345, 347.


640 Tosto 1999, 7, 107-109, 195-196; see also Immerwahr 1984, 347.


642 E.g. Bloesch 1940, 62; ARV², 124; Immerwahr 1984, 342, 347; Boardman 1991, 64.

643 See Immerwahr 1984, 345, 347; Scheibler 1984, 132, 134; Tosto 1999, 195, 197, is more cautious.

644 Tosto 1999, 347.


One painter employed by Pamphaios, Oltos (530-500), 647 offers a good illustration of the apparently very dynamic situation in some Athenian workshops during the early red-figure period. His painter’s signatures also mark pots signed by the potters Nikosthenes, Kachrylion, Euxitheos, Chelis and perhaps Sikanos and Tleson; and attributed potterwork adds Hischylos. On two of Chelis’s cups Oltos shared the painting alternately with the Chelis Painter and the Thalia Painter; the latter also worked with Kachrylion. 648 It is tempting to view all these links as evidence of an advanced, well-organised kerameikos consisting of large workshops with teams of potters employing continuously changing groups of free-lance painters who went wherever they were needed. 649 However, Tosto’s treatment of Nikosthenes shows that it is easy to over-exaggerate the scale and organisational level of any such cluster.

Euphronios may furnish another case in point. At first glance, the list of artisans more or less directly connected to Euphronios by signatures or attributions is impressive: two potters (Kachrylion, Euxitheos) and at least seven painters (Onesimos, Colmar Painter, Antiphon Painter, Foundry Painter, Pisto xenos Painter, Douris, Triptolemos Painter). 650 If one starts filling in chronological details, though, the picture sharpens. Euphronios seems to have started his career as a painter in Kachrylion’s workshop, which is quickly succeeded by that of Euxitheos. When Euxitheos disappears from our view, shortly after 510, Euphronios suddenly starts signing as a potter himself, apparently taking over the former’s workshop. Many of the painters working for the potter Euphronios in the following years are strongly interrelated, but there are also chronological shifts, with new painters coming in, like the Pisto xenos Painter, and others vanishing, going to other workshops or starting out on their own, like Douris and the Tri ptolem os Painter. 651 Moreover, there are links with the older Nikosthenes-Pamphaios sequence, indirectly through Epiktetos (520-490), who first worked with them and later with Pisto xenos and Douris’s potter Python, and more directly through Oltos, as sketched above. 652

Returning to Oltos, one can now note that his numerous associations with individual artisans appear less widely dispersed if they are regarded as first centring on a circle surrounding Nikosthenes and Pamphaios (with Epiktetos and perhaps the Nikosthenes Painter) and then on an Euphonian circle (with Epiktetos, the Chelis Painter, the Thalia Painter and the potters Hischylos, Kachrylion, Euxitheos and Chelis). 653 Even so, it remains difficult, if not impossible, to

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648 See Bloesch 1940, 35, 44; Immerwahr 1984, 346; Scheibler 1986, 789, n. 6; Harnecker 1992, 190, 196.


652 See Bloesch 1940, 35, 44; Immerwahr 1984, 346; Villard 1990, 26; Harnecker 1992, 190, 196; Williams 1992b, 79; Tosto 1999, 194. It should be noted that both Oltos (probably) and Epiktetos worked with the potter Hischylos.

653 See Bloesch 1940, 35, 44; Harnecker 1992, 190; Robertson 1992, 134-135; Williams 1992b, 79-81, 85, 87; Tosto 1999, 3, 194. Perhaps the potter Euergides and the Euergides Painter (515-500) should also be named here: the Euergides Painter decorated one cup in collaboration with Epiktetos and worked with Chelis
translate these largely stylistic groupings, which conceal various chronological overlaps, into defined workshops. Especially the many occasional links remain enigmatic. It could indeed be that the painters moved between workshops according to the potters' changing demands, but we might simply be overlooking other connections, and the imprecision of our chronology combined with low survival rates probably distort matters as well. Many links may simply relate to associations within small and stable groups of artisans rather than between large and flexible ones.

With regard to the main painters and potters, the problems of interpretation chiefly concern the exact definition of workshops. It is, for example, not easy to make out whether artisans who give the impression of being independently employed at some point, like Pamphaios or Euphronios, actually left their earlier establishments to open separate ones or remained instead and only worked more independently within the old organisation (as Onesimos may at some point have done) or actually took over the workshop. If the details of individual cases are left aside, however, the picture becomes quite consistent, even in the very dynamic decades around 500. Evidently, the greatest pace of change mainly affected the ‘minor’ potters and painters, who are so difficult to grasp. The workshops that can be discerned with any certainty at all seem to have a distinct, stable core of a few artisans, precisely like their predecessors.

A striking development is that some early red figure painters, especially Euphronios, Psiax and Phintias, decorate a variety of shapes; in this respect they resemble the early black figure painters, a crucial difference being of course that now a distinct artisan is often responsible for the potterwork. It is difficult to account for this apparent despecialisation. It may have to do with the movement of painters from potter to potter or with the (slightly) increasing size of workshops, which could have brought together potters and painters with various specialisations. An early example is perhaps Andokides’s workshop, which beside its black figure line was one of the first manufacturers of red figure.

In the meantime, the makers of the latest black figure, from the last decade of the 6th century onwards, exhibit precisely an opposite tendency, so far as the rather messy body of evidence can be trusted. The long lists in the relevant chapters of ABV are mainly arranged by shape and contain many large and undifferentiated groups and classes, suggesting that Beazley had trouble ordering the pottery. The producers concentrated on a limited number of shapes, mainly lekythoi, cups and skyphoi, while also making some amphorai and other closed shapes; each shape was potted and painted by distinct specialists. Over the years, the decoration – as a rule cursory – becomes increasingly coarse and gradually all the competent painters vanish, some of them perhaps switching to red figure. In addition to the limitations imposed by the low quality of the painting, the absence of signatures and the rarity of other kinds of inscriptions and iconographic content make it hard to envisage the workshop environment of these artisans.

in addition to Euergides. See Boardman 1975a, 60-61.


656 See Williams 1992b, 87.

657 ARV², 22-25; Para, 323, 509. Although few of his works are preserved, Euthymides (ARV², 26-29, 1620-1621; Para, 323-324, 509) may offer another example.

658 See ARV², 1-10; Para, 320-321.

659 ABV, 418-663; partly also the Leagros Group, ABV, 354-391. See also ABL.
Two conclusions seem warranted, though. To judge from the large groups comprising hundreds of very similar pots, like the Haimon Group, Leafless Group and Class of Athens 581 (with its subdivisions), much late black figure issued from large workshops employing several stylistically related painters who were linked to one or more specialised potters or potter-painters. Secondly, however, a few distinctive hands, like the Gela Painter (510-480s) and the Edinburgh Painter (505-480s), seem to operate more or less autonomously, sometimes surrounded by a group of related artisans. Similarly, the Sappho Painter (500-after 480) and the Diosphos Painter (495-after 480) apparently formed a single workshop which included one or two potters, perhaps the painters themselves, who shaped the lekythoi of the Little Lion Class.

The Theseus Painter (515/510-470s) is more enigmatic. Stemming obviously from the large Krokotos Group (530-510), he starts as a specialised skyphos painter and in mid-career switches mainly to lekythoi. In addition, he is considered to be related to the Athena Painter, who concentrated on lekythoi and oinochoai and probably painted in red figure as well. Although some potters’ hands can be discerned in relation to the Athena Painter, their workshop context and their connections to the Theseus Painter remain unclear. The Theseus Painter can therefore be seen either as an artisan who moved from one workshop to another or as a member of a small workshop which at some point partly changed the nature of its output. Late black figure, despite its rather particular features of shape specialisation and decorative simplification, might share at least one general tendency with red figure from the same time: the years around 500 are marked by dynamic changes in the compositions of workshops in combination with increasing variation in the organisation of production.

In red figure, however, the familiar patterns of most of the 6th century quickly return during the first decades of the 5th century. Most often, each of the major cup painters and one potter form a simple, stable pair; and the potter usually produced large amounts of vessels of a limited range of shapes (apart from the occasional exception). Hieron and Makron (500-after 480) or Douris and Python (500-470, perhaps slightly later) are the classic examples. All of them made a few pots in other partnerships as well, but many of these fall outside the main periods which clearly

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660 ABV, 538-583; 632-653; 487-506, respectively. See also ABL, 130-141, 241-249, 368 (Haimon Group) and 89-94, 221-225, 369 (Class of Athens 581).

661 ABV, 473-486. See also ABL, 78-89, 205-221.


663 ABV, 518-521; pers. comm., Olaf Borgers. I wish to thank Olaf Borgers for allowing me to read parts of the dissertation he is preparing on the Theseus Painter and for discussing the problematical issue of the painter’s workshop context with me. See also ABL, 141-156, 249-254.

664 ABV, 522-537; ARV², 677-690, 1665-1666, 1706 (as Bowdoin Painter). See also ABL 157-160, 254-262; Para, 405-407, 514.


667 Buitron-Oliver 1995.
define the cores of their careers and production.\textsuperscript{668} In addition, potter-painters seem to become rarer than before,\textsuperscript{669} although Brygos and the Brygos Painter,\textsuperscript{670} Sosias and the Sosias Painter,\textsuperscript{671} Euergides and the Euergides Painter\textsuperscript{672} and possibly Pistoxenos and the Pistoxenos Painter suggest that they continued to exist, as is further indicated by the few instances of one craftsman signing as both maker and painter on the same pot (Epiktetos, Myson, Douris, one or more of whom possibly potted only rarely; see section VI.3)\textsuperscript{673} and by Phintias who signed as potter and as painter on different pots.\textsuperscript{674}

Although the potterwork of kraters and large closed shapes from the first half of the 5\textsuperscript{th} century has received less attention than that of contemporaneous cups, the existing studies suggest that similar patterns of production prevailed. The Kleophrades Painter (505-after 475) might be the same as the potter Kleophrades,\textsuperscript{675} and the workshop of the Berlin Painter (500-after 470)\textsuperscript{676} possibly centred on one main potter,\textsuperscript{677} and in the next generation the Providence Painter (480-460/55) is strongly linked to the Berlin Painter’s workshop\textsuperscript{678} and the Niobid Painter (470-450/40), who worked together with the slightly older Altamura Painter (475/70-460/55), is assumed by Matthias Prange, who studied him, to be a potter-painter.\textsuperscript{679} Just as before, these central artisans of workshops, who may have worked in pairs, are surrounded by ‘minor’ craftsmen who can only be traced for short periods.\textsuperscript{680} Hans Euwe’s study of details of the potterwork of Nolan amphorai would indicate that many of these secondary artisans were potter-painters, some of whom also potted for their painting masters.\textsuperscript{681}

\begin{footnotes}
\textsuperscript{668} See Immerwahr 1984, 341; Buitron-Oliver 1995, 8-10, 56-61; Kunisch 1997, 10, 21.
\textsuperscript{669} See Cohen 1991, 76.
\textsuperscript{670} See Buitron-Oliver 1995, 60.
\textsuperscript{671} Von Bothmer 1990, 17.
\textsuperscript{672} See Bloesch 1940, 51-53; Williams 1992b, 87.
\textsuperscript{673} See Buitron-Oliver 1995, 1-2.
\textsuperscript{674} See Scheibler 1986, 803, n. 34; Von Bothmer 1990, 17; Williams 1990, 36-37.
\textsuperscript{675} \textit{ABV}, 404-406; \textit{ARV\textsuperscript{e}}, 181-195, 1632; \textit{Para}, 340-341.
\textsuperscript{676} \textit{ABV}, 407-409; \textit{ARV\textsuperscript{e}}, 196-220, 1633-1635; \textit{Para}, 341-345.
\textsuperscript{677} Papoutsaki-Serbeti 1983, 224.
\textsuperscript{678} Papoutsaki-Serbeti 1983, esp. 225-226.
\textsuperscript{679} Prange 1989, esp. 125.
\textsuperscript{680} See Papoutsaki-Serbeti 1983, 224-226; Prange 1989, 116-121, 125-126.
\textsuperscript{681} Euwe 1993. This is only a small part of Euwe’s conclusions. I have less faith in his classifications in general, however, which results in a series of potters who are each assigned a few pots only. For example, the spread of 15 Nolan amphorai by the Berlin Painter over 8 potters (133) is incompatible with all earlier and later evidence collected in this section. More importantly, Euwe’s scatter of ‘hands’ would imply an improbably quick succession of apparently short-lived potters in each workshop. Some of them may be explained away as assistants, like the ‘minor’ painters, but one surely would expect cores of masters who were
\end{footnotes}
Another correspondence with black figure is the sharp division of shapes between workshops or rather artisans. Although all painters and probably potters as well occasionally diverge from their usual range, most seem to specialise either in one or two shapes, like cups or lekythoi, or in one clearly defined group of shapes, like large closed vessels.682 As happened in earlier workshops, the main distinctions are apparently between cups and, on the other hand, large symposion vessels (kraters, amphorai, hydriai); the skyphoi and plates seem generally the work of the makers of cups and small jugs (oinochoai, olpai), whereas the lekythoi are more closely linked with the symposion vessels. In turn, each broad group of specialists has its own subdivisions, with differences in emphasis within and between the workshops and, as said, instances of more one-sided specialisation too.

An interesting detail, which may be revealing with respect to workshop organisation, is the high degree of continuity in the division of shape categories between the leading workshops for much of the 5th century. Many well-known cup-producers like Hieron and Makron, Python and Douris, Onesimos, Brygos with the Brygos Painter and Pistoxenos with the Pistoxenos Painter seem to emerge out of Euphronios's surroundings.683 In contrast, the major manufacturers of large symposion pots, starting with Kleophrades (a son of Amasis, who shows similar preferences) and the Berlin Painter, stem from Phintias and Euthymides.684

Within this general division, which is also very clear in relation to the followers of the Berlin Painter (Providence Painter, Achilles Painter, Sabouroff Painter, Niobid Painter, Altamura Painter),685 the recurring individual pattern is that of dynamic formative years, sometimes apparently within different workshops, followed by a long, stable period and then, quite often, a rather diffuse end.686 The pattern strongly suggests the well-known traditional sequence of young artisans learning their trade as apprentices or assistants, then either succeeding or joining their masters or fathers (or other relatives) or starting a new workshop (on their own or with one or more companions), and finally passing on the business to the next generation.687 The same sequence, partly regarding the same protagonists, can again be followed by means of the symbols on the shields of Athena on Panathenaic amphorai which appear to be workshop-related signs, sometimes transmitted from generation to generation.688 However, these shield-marks and some active for longer periods, around which the other potters were grouped, as revealed by signed pottery. All in all, I have the strong impression that Euwe's analysis, if reliable, is too refined: the more substantial work of individual potters, especially those linked to one major painter, is probably split up into that of various personalities.

682 See e.g. Papoutsaki-Serbeti 1983, 281-288; Oakley 1990, 7; Prange 1992, 125; Buitron-Oliver 1995, 62; Kunisch 1997.


684 See Bloesch 1951, 31-35; ARV², 181, 196.


687 See Lezzi-Hafer 1976, 22.

688 See Bentz 1998, 48-51, 204-207. Especially interesting is the sequence Euphiletos Painter-Painter of the Samian Price Amphorai-Berlin Painter-Achilles Painter-Group of Compiègne 985, which lasts from 520 to 420.
patronymic in signatures (like Kleophrades, son of Amasis) strikingly reveal that much continuity may not be traceable in stylistic links.

Similar limitations of stylistic research perhaps help explain why the continuing successions of workshops mostly appear to end towards the last quarter of the 5th century, when signatures become rarer, iconography tends to standardise, and personal styles of painting are less distinctive than before. The Berlin Painter’s workshop evidently died out with the disappearance of the Achilles Painter (ca. 430) and his younger companion, the Phiale Painter (ca. 425), and with the simultaneous blurring of the followers of Polygnotos, who stems from the Niobid Painter. Similarly, during the same period the Euphronian tradition comes to an end in the remnants of the large workshop of the Penthesileia Painter.

Provided that this fading-away is not entirely owing to the absence of stylistic visibility, the very productive Penthesileia Workshop (460s-420s) perhaps offers an additional explanation for the demise of the old workshop traditions. The Penthesileia Workshop, which seems to have employed more than 20 painters who have left around 1,500 pieces, mostly cups, is often cited after that of Nikosthenes as another example of a large scale enterprise. Again, it is likely that many of the ‘minor’ hands are not contemporaneous, but the difference in comparison to earlier practice is, that many cups were decorated by two painters, as in a relatively impersonal mode of production. In contrast to the occasional, earlier examples, however, the practice became nowhere so regular as among the Penthesileians. But even in this workshop no more than a few percent of the extant output consists of pieces in which the painting was shared, and the pairs of painters change continually. Apparently, sharing painting, which has no affect on production time anyway, was not a goal in itself, but a consequence of a manner of working which placed less value on individual input. Interestingly, the Penthesileia Painter himself, who is responsible for the establishment’s ‘best’ work, is only once known to have collaborated with another painter. Altogether, the set-up of the Penthesileia Painter’s ‘industrial’ operation may not have differed much from that of other earlier and contemporaneous large workshops, regardless of its unusually high output and the lesser interest in the ‘minor’ artisans’ individual contributions. Only further research, with a view to examining the potterwork, may fill in the details of organisation, and so perhaps uncover something of the hierarchy and working structure within the Penthesileia Workshop.

Adrienne Lezzi-Hafter has shown that some other workshops of the third quarter of the 5th century may also have abandoned traditional ways of working. Especially the EKDN workshop (440-415), comprising the Eretria Painter (440-415), Kalliope Painter (445-420), Disney Painter...
(435–420) and Painter of the Naples hydrikoi (440–420), presents an interesting set-up.\(^{697}\) The core is formed by two combinations: a team of the four main painters (hence EKDN)\(^{698}\) who mainly decorated cups made by three potters; and a team of three (KDN)\(^{699}\) who painted small closed shapes thrown by one or perhaps two potters, apparently different from those who fashioned the cups.\(^{700}\) The main potters and painters, who also manufactured other shapes in small quantities,\(^{701}\) are accompanied by at least five, perhaps nine, ornament-painters and a few ‘minor’ hands.\(^{702}\) In addition, some painters who also worked elsewhere or had their own workshops, like Aison and the Meidias Painter, occasionally come in; simultaneously, particularly the Eretria Painter was sometimes employed in or somehow connected to the Shuvalov Painter’s workshop.\(^{703}\) Apparently, painters, as we have seen before, occasionally switched from one workshop to another or perhaps divided their time more regularly for longer periods between workshops.

As to the scale and organisation of the EKDN workshop, it remains unclear whether the four main painters, the three to five main potters and the at least five ornament-painters were in fact an equal number of individuals or whether they were fewer, for instance, two of the identified hands in different occupations representing, in fact, the same man, with the result that the workshop’s size decreases. Lezzi-Hafter prefers the first possibility, apparently because there are no chronological links between the different hands, which seem to start and end without connection to each other, and because parallel stylistic developments cannot be discerned.\(^{704}\) Yet, some links appear to exist between the painters and the hands identified among the ornaments, and even clearer correspondences between the ornament makers and the potters.\(^{705}\) Since, moreover, the productivity of each artisan varies considerably, it seems, in my view, probable that some hands need to be merged. At any rate, even if any required reduction in number turns out to be minimal, it seems highly likely that the EKDN workshop never comprised more than 10 artisans at a time, which is not exceptionally many. The chief particularity of the workshop, therefore, is not the size of its staff, but the way the work was organised and divided. This special set-up might also explain the apparently limited number of ‘minor’ craftsmen and related works connected to it. However, it must be stressed that since comparably detailed studies of other 5\(^{th}\)-century workshops hardly exist, some contemporaneous workshops which possibly operated similarly may elude us. Two examples can be cited, however.

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\(^{697}\) Lezzi-Hafter 1988.

\(^{698}\) Lezzi-Hafter 1988, 95-164.


\(^{701}\) Lezzi-Hafter 1988, 238-309.


\(^{703}\) Lezzi-Hafter 1988, 39, 44, 182, 184, 190-236, 276, 277.


Another exceptionally well-studied workshop of the period is that of the Shuvalov Painter. Its treatment, also by Lezzi-Hafter, shows it to be a slightly simpler and smaller equivalent of the EKDN workshop. The number of potters is limited to two main artisans, the M Potter (465-435, associated with the Mannheim Painter) and the S Potter (440-410, associated with the Shuvalov Painter), who worked together for a short period only (440-435), and a few ‘minor’ hands, perhaps including a third potter taking over from the S Potter. A dozen hands have been recognised in the figurework and three among the ornaments. Once again, we see craftsmen coming in from their own workshops, like Aison and the Eretria Painter, and staff, probably including the Shuvalov Painter himself, working as ‘minor’ hands in other workshops. In addition, the Eretria Painter, Aison and the young Meidias Painter evidently formed a short-lived special branch (known as the EAM workshop), producing choai in close connection with the S Potter and some of his ornament-painters. The stable core of the Shuvalov Painter’s workshop, however, seems to have always consisted of one potter only, a main painter (who might be the same as the potter) and some ‘minor’ artisans, including an ornament-painter.

A similar structure apparently occurs in the workshop of the Achilles Painter (460-430) and the Phiale Painter (450-425). These two main painters cooperate with at least one central potter, a few other potters and a score of ‘minor’ painters, with again some artisans occasionally coming in or leaving, though an ornament-painter is not among them.

Although these three examples are probably not representative of all contemporaneous Athenian pottery manufacturers, they and the surely exceptional Penthesileia Workshop strongly indicate that the organisation of production and the division of labour evolved during the 5th century, reaching an unprecedented level of sophistication. This development might result from changing social and economical patterns, like the increasing availability of paid employees or even slaves, but it could also be related to changes in the way artisans perceived their work and their products. Possibly, pressure to increase production and/or decreasing margins also played a part, but all these factors can hardly be investigated by means of archaeological evidence alone.

However that may be, two basic aspects of workshop organisation remain largely unchanged from the beginning of Attic black figure: the scale of the operation is somewhat variable, but stays small, although it may on average increase slightly over the years; and, apart from the early red figure period, the workshops were always more or less specialised in specific shapes or groups of shapes. In sum, Athens has left no trace of either large-scale pottery establishments or of very simple all-round producers.

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706 Lezzi-Hafter 1976; see Scheibler 1986, 803, n.34..


708 Lezzi-Hafter 1988, 190, 208-211, 236.


710 Oakley 1990, esp. 56-57, 63-64.