

The potter's wheel; a product of function or tradition

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Photography by Jan Scrivener

ANY CLASSIFICATORY system which uses only one criterion to distinguish one class from another is likely to be inaccurate in the groups it suggests, as well as misleadingly limited in the information it imparts. Scholars trying to classify the various rotary devices used in potting, failing to realise this, have often taken appearance alone as a basis for their descriptions. While this may be necessary in order to form a loose framework, it should not be done without consideration of the way the object works, what it was used for and how it can be explained in terms of the environment in which it was used.

Foster's system¹, based on mechanical principles as well as appearance, does include a discussion of functional, cultural and evolutionary factors to explain the use of different types of wheel in different areas. While I do not agree with his theory that the devices he describes are merely stages of evolution, it is useful in delineating broad categories of rotary devices used in potting. He makes the distinction between turntables (unpivoted and pivoted) and wheels (single and double), according to whether they could be used for throwing and turning. The wheel is distinguished from the turntable by being capable of the speed and momentum necessary to produce enough centrifugal force to actually throw a vessel. The speed is accomplished either by rotating the wheel head itself (the single wheel) or by rotating a flywheel (the double wheel).

In this paper I shall use Foster's descriptions when looking at the types of potters' wheels (as opposed to turntables) thought to have been used between the 12th and 16th centuries in Europe, and the reasons for their adoption.

The evidence comes from four sources;

1. archaeological evidence of wheels and associated artefacts

1. George M. Foster 'The potters wheel: an analysis of idea and artefact in invention' *Southwestern Journal of Anthropology* 15 No. 2 (1959).
2. D. P. S. Peacock *Pottery in the Roman world: an ethno-archaeological approach* (1982) 25.

2. manuscript illustrations and documents
3. hypotheses based on present day practices
4. pottery from excavations and museum collections.

Wheels and associated artefacts

Evidence of potters' wheels from this period is scant, consisting of a few pivot stones found at kiln sites, e.g. at the 13th century potters' workshop at Limpsfield, Surrey, and does not make clear what sort of wheel was in use.

Excavated kilns, for example those of Kingston, Mill Green and Cheam, are all assumed to go hand in hand with the use of the potter's wheel in a workshop industry, where the potter's livelihood depended on speed and efficiency². It is logical to assume that the permanent kiln structures would be accompanied by permanent manufacturing tools, but it is necessary to study the product before one can determine the type of wheel used.

Descriptions of potter's wheels from manuscript illustrations

Although there may be relevant information in documentary sources I shall not go into it here. Descriptions of the types of wheel in use in this period have all come from illustrations. Three separate types can be distinguished;

- a. the cartwheel or *tour au baton* (Foster's single wheel) Fig. 1
- b. the strutted wheel (double wheel) Fig. 2
- c. the kick wheel (Foster's double wheel) Fig. 3.

The 'cartwheel' is a single wheel with a central circular head on which the pot is formed. It is rotated by the potter, who pulls it round with a stick or *baton*; the pot being formed with two hands once enough momentum has been built up. It would not be possible to turn the wheel with one hand while fashioning a pot with the other, despite Jope's

3. E. M. Jope in C. Singer *A history of technology: The Mediterranean civilisation and the middle ages II* (1957) 288.
4. Paris Bibliothèque Nationale M.S. 11560, fol. 174.
5. Musée national des arts et traditions populaires *Potiers de Saintonge; huit siècles d'artisanat rural* (1975) 34 No. 28.

suggestion³. He assumed that Fig. 1 could be interpreted literally without allowing for artistic licence, which can make it impossible to rely on the accuracy of this sort of detail.

The cartwheel must have been in use in the 13th century when it was illustrated in a French manuscript called *le bible moralisee*⁴. It was still in use in the 15th century when it was illustrated by Jean Fouquet in a painting called *Agathocles à son tour*⁵, and was common amongst rural potters in Normandy and Brittany at least until the beginning of this century. I have not come across any documentary or illustrated evidence for its use in Britain, though it is likely to have been used in the 13th century when ceramics such as London-type Rouen copies were made, as the name suggests, in imitation of French ceramics⁶.

The strutted wheel consists of the central shaft, head and flywheel of the kick wheel, but has a number of vertical struts joining the two together around their circumferences. It can be seen illustrated on a 15th century playing card (see Fig. 2) and on the details from two 16th century potter's signs and a tile of the same date from Czechoslovakia⁷. In these instances it appears to be used for the production of ceramics for domestic consumption, but another illustration⁸ shows a similar wheel in use, in Germany in the 16th century, to make industrial wares. Current evidence limits the geographical distribution of this type of wheel to Germany, Poland and Czechoslovakia.

The kick wheel, which consists of a wooden head, an axle and a flywheel, was described in great detail by Piccolpasso (see Fig. 3) in the 16th century, and is still used by modern studio potters. A number of illustrations of the constituent parts, as well as the contexts in which it was used, demonstrate that the kick wheel was quite sophisticated and of vital importance in the manufacture of domestic vessels, such as plates and dishes, in a thriving workshop.

Hypotheses based on present day practices

After studying the literature on present day practices I suggest the following theories for the use of different wheels:-

- a. evolution over time from simple to more sophisticated equipment.
- b. different traditions within different areas.
- c. a function of the specific product required. Fashion may determine the techniques the potter learns and therefore act as a catalyst for change.

6. K. J. Barton 'Medieval pottery at Rouen' *Archaeol J* 122 (1965) 73-85.

7. Vaclav Husa *Traditional crafts and skills* (1967) Nos. 99-101.



Fig. 1: a 'cartwheel' type potter's wheel, from C. Singer A *history of technology II* (1957), 288 Fig. 270.

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the importance of pottery production in the domestic economy, e.g. if pottery was only produced seasonally, the wheel used may have differed from that of a permanent potter.

- e. competition and demand, i.e. whether for household consumption or the market. If for a market, speed and therefore a fast wheel may be an important consideration.

I have concentrated on (b) tradition and (c) function as factors affecting the adoption and adherence to each type of wheel.

Time alone is unlikely to be a reason for adopting one particular wheel as opposed to another, as it takes many years to become proficient on any one wheel. In Pakistan and India, the same types of wheel have been used for centuries; Hindu potters use a single wheel and Muslim potters use a kick wheel⁹. Fashion has changed little and the wheels used are adequate for the job. If the circumstances in which the wheel was used changed, for example if the type of ceramics required changed, they might act as a catalyst for a change in techniques and equipment.

The type of wheel used may well depend on the type of product the potter wishes to make. The

8. Georgius Agricola *De re metallica* Book III. 277 (1556) Translated by H. C. Hoover and L. H. Hoover (1950).

9. Owen S. Rye 'Traditional pottery techniques of Pakistan. Field and laboratory studies' *Smithsonian contributions to anthropology* 21 (1976).

Indian single wheel, which consists of a heavy wheel head and pivot, is difficult to stop and start and oscillates at low speeds. It is therefore better suited to the manufacture of small dishes and bowls, which are thrown 'off the hump', i.e. thrown one after the other from a large lump of wedged clay, without stopping the wheel. To form a larger vessel would require more pressure from the hands, which would slow this type of wheel down, making it necessary for the potter to repeatedly stop throwing in order to get enough momentum to start again. The Pakistani kick wheel, which is placed in a pit with the head at ground level, is better suited to the making of larger forms, as the speed can be kept up by rotating the flywheel with the feet, regardless of the pressure exerted by the hands. The head of this wheel is also low and stable enough to throw large forms.

This example shows two groups of potters from different cultural/religious backgrounds making different types of pottery on different types of wheel. What is the reason for the adoption and adherence to each – the suitability of the wheel to the task or the fact that it was handed down as a tradition? I suggest that at some time a functional decision was made and as it remained successful for a considerable length of time it became a tradition. If it had become unsuccessful due to a change in fashion, for instance, a change might have been necessary in order to make the new product.

I decided that this hypothesis could be applied to potters in the past and looked at the evidence to see if I could determine whether traditional or functional factors were most likely to explain the adoption of the three types of wheel mentioned here.

First it is necessary to define the terms used. The term 'function' refers to the potter making his choice of equipment based on the sort of pot he wishes to make. The state of the market, the economy, and the type of industry (whether for domestic consumption or the market), are all related to the decisions the potter makes. The term 'tradition' refers to different practices carried out by different groups of potters as a result of living and working in an area where certain methods are accepted as the correct way to work.

I looked at some 12th to 16th century ceramics found in the City of London, to see which type of wheel was used for which type of pottery, and then assessed them to see whether the wheel used was chosen for 'functional' or 'traditional' reasons.

10. J. E. Pearce *et al* 'A dated type-series of London medieval pottery Part 2: London-type ware' *London Middlesex Archaeol Soc Special paper* No. 6 (1985).

11. S. E. Van der Leeuw 'Medieval pottery from Haarlem: a model' *Rotterdam Papers II* (1975) 67-87.-

The product

In the City of London ceramics were not commonly wheel thrown until the 12th century. The London-type ware jugs, for instance, have the characteristic symmetry and horizontal grooves of the wheel thrown vessel. Whether the wheel was of the strutted, cartwheel or kick variety is less easy to determine. Nevertheless I suggest the cartwheel, as the kick wheel does not appear to be used in Britain until the 16th century. The strutted wheel, common in 15th century illustrations, is also a later type. The cartwheel, however, is known from illustrations to have been in use in the 13th century in France, when imports from Rouen and Northern France were arriving in London, and the local potters were using similar decorative schemes¹⁰. It is possible that French potters emigrated in order to carry on their traditional craft in Britain, and perhaps brought with them their wheels, or at least the knowledge of how to make them. When French ceramics became fashionable in Britain, local potters may have adopted the wheel best suited to the product they wanted to copy.

Van de Leeuw¹¹, when examining the pottery from Haarlem, compared products from both the kick and cartwheel, and suggested that vessels made on the cartwheel would have been knife-trimmed rather than turned. The cartwheel is very heavy and difficult to stop and start, making it more efficient for the potter to throw one pot after another without stopping the wheel, while an apprentice does the knife trimming. The fact that London-type ware forms, and most of the locally made pottery in the 13th century, are knife-trimmed rather than wheel-turned when any finishing is apparent, may be further evidence for the use of the cartwheel.

The cartwheel may have been better suited to the making of the tall baluster jugs of the 14th century, such as the one from Mill Green¹², which most modern potters admit to being unable to fashion on a kick wheel. The height of the wheel is particularly relevant in this case, as the height of the vessel is limited by the height to which the potter can raise his arms while reaching down into the inside of the vessel to pull up the sides (*S. Lang pers comm*).

The cartwheel can be seen as a traditional French implement used for the manufacture of the tall baluster jugs which became fashionable in Britain in the 13th and 14th centuries. A likely sequence of events is that the initial functional decision by the French potters was successful, became a tradition,

12.E. Pearce *et al* 'A dated type series of London medieval pottery Part 1: Mill Green ware' *London Middlesex Archaeol Soc* 33 (1982) 280 Fig. 7 no. 13.

13. *op cit* fn. 7, no. 101.



Fig. 2: a strutted wheel, from Singer *ibid* 289 Fig. 271.
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the product became fashionable in Britain and local potters copied the tradition.

This chain of events can also be seen when English potters of the 16th century started to copy the Italian maiolica and Dutch delft wares which had become very popular in Britain. Biscuit delft ware, found at Holy Trinity Priory in the City of London, has the characteristic marks of pottery which has been turned on a kickwheel. Turning is a process which requires a light wheel which can be stopped and started easily. The kick wheel illustrated here (Fig. 3) is also better suited to the manufacture of shallow or short forms as, unlike the modern Pakistani wheel, the wheelhead is not placed low enough for the manufacture of very tall vessels.

The strutted wheel is a type of kick wheel, as it too is rotated by foot. One illustration (Fig. 2) shows a woman using a bone tool to make the characteristic striations round the body of a Siegburg stoneware jug on a strutted wheel. Close inspection of identical Siegburg jugs, in the reserve collection of the Museum of London shows that in most cases an extra strip of thumbled clay was added to the base to

make the pot stand up on a flat surface. As the vessel shown has this piece already attached, it has probably been thrown and is now being turned.

Although Fig. 2 shows a tall jug, most stoneware vessels of this type are shorter than the earlier locally-made jugs. Many of the Siegburg jugs in the reserve collection of the Museum of London have diagonal stretch marks and folds on their bodies, suggesting that it was not easy to obtain this height: the height of a vessel depended not only on the height of the wheelhead but also on the elasticity of the clay and the skill of the potter. Certainly many of these jugs are made from very poorly wedged clay as a small number of large inclusions can often be seen in an otherwise fine matrix. The cartwheel used by the French potters may have been more suitable for producing jugs of this type, due to its height relative to the potter. However, if the vessel was to be turned, a wheel which could be stopped and started easily may have been more useful.

It is possible that the uprights which hold the wheelhead and the flywheel together on the strutted wheel may have been additions to a kick wheel whose head slipped on the axle. Joining the head and flywheel together would minimise any oscillations. This would be vital if pots were to be turned, or a template used to form uniformly shaped vessels. An illustration of a woman making a pot¹³ on a strutted wheel shows a possible template hanging in the background. As a template can also be used on a kick wheel, there does not seem to be any functional advantage in using the strutted variety. It is my opinion that this wheel was just a local variation on the kick wheel, which was not necessarily chosen for a functional quality but was handed down as a tradition.

Conclusion

The cartwheel, which appears in 13th century illustrations, seems to be the earliest of the three wheels mentioned here; the strutted and kick varieties are not apparent until the 15th and 16th centuries respectively. All types appear to be limited to certain geographical regions; the cartwheel to France and later Britain, the kick wheel to Italy and Holland and then Britain and the strutted wheel to Poland, Germany and Czechoslovakia, but may have been used in other areas at different times.

The cartwheel can be seen as better suited to the manufacture of tall baluster jugs, which are knife-trimmed off the wheel. The kick wheel, illustrated here, is too high in relation to the potter's body for tall vessels to be thrown with ease, but it is better suited to the process of turning than the cartwheel. The strutted wheel does not appear to have any functional advantage over the other two and could

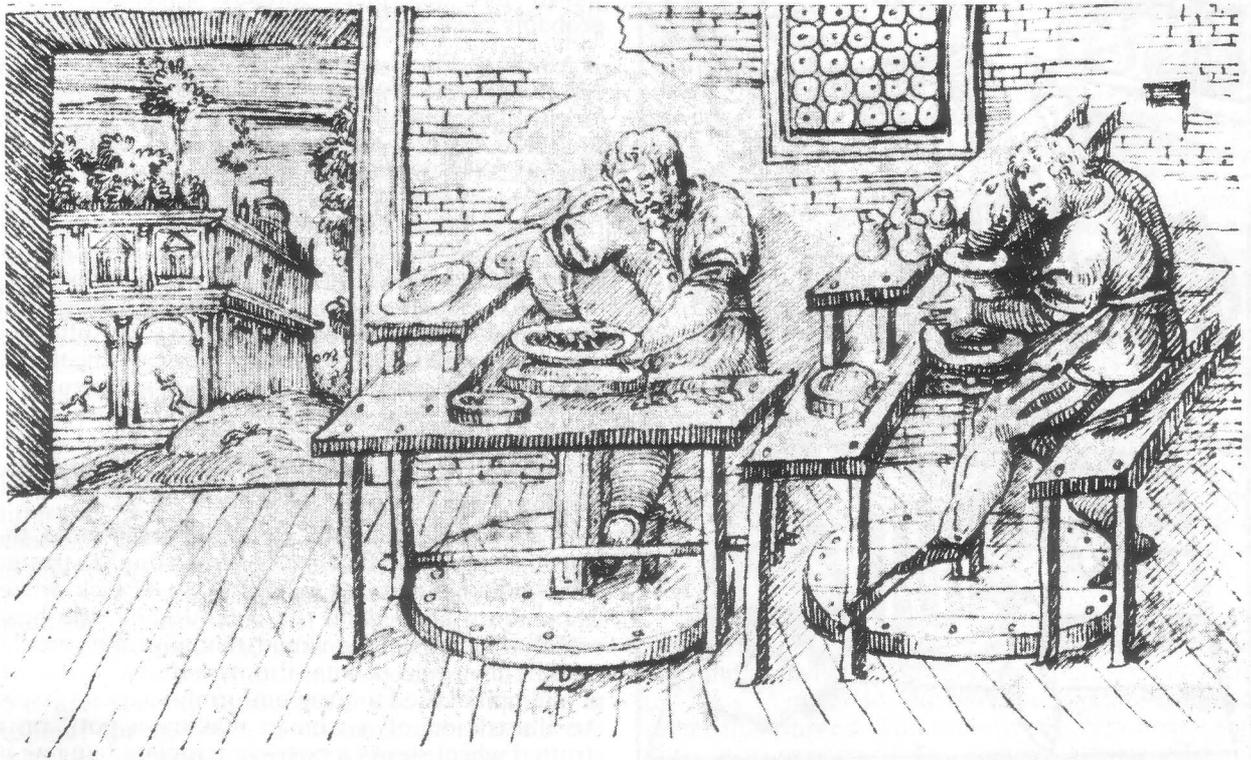


Fig. 3: a kick wheel, from 'Three books of the potter's art by Cavaliere Cipriano Piccolpasso of Castel Durante, written circa 1556-59' (1934) 41 Fig. 33.

(By permission of the Victoria and Albert Museum)

perhaps be best seen as a local variation of the kick wheel.

I have stressed the functional relationship of the wheel to the desired product, the ceramics, and suggested that a functional decision might have been made initially and then, if the result was successful in market terms, a tradition would be formed and passed down through generations of potters. If the result was unsuccessful and no-one wanted to buy the product, the potter may have had to change his approach in order to survive.

It is difficult to distinguish between functional choices – selecting the equipment most suited to the job in hand – and the over-riding by tradition of the necessity to make such choices. It probably depends on a range of influences affecting what the people actually buying the product wanted. I suggest that one such influence is fashion, which may be seen as a catalyst for a change to the manufacture of delft ware plates and dishes for display in Britain.

However, alongside this change in fashion was a change to a more industrialised attitude to production and therefore a desire for a kick wheel which is efficient and fast.

Many factors affect the potter and the methods he chooses or has passed on to him. It is not useful to look at the wheel in terms of a single factor, without looking at it in a wider context. A more extensive survey of the areas of evidence suggested above for the use of potters' wheels is necessary before we can hope to be more dogmatic about the choices open to the potter, let alone the reasons for his decisions.

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