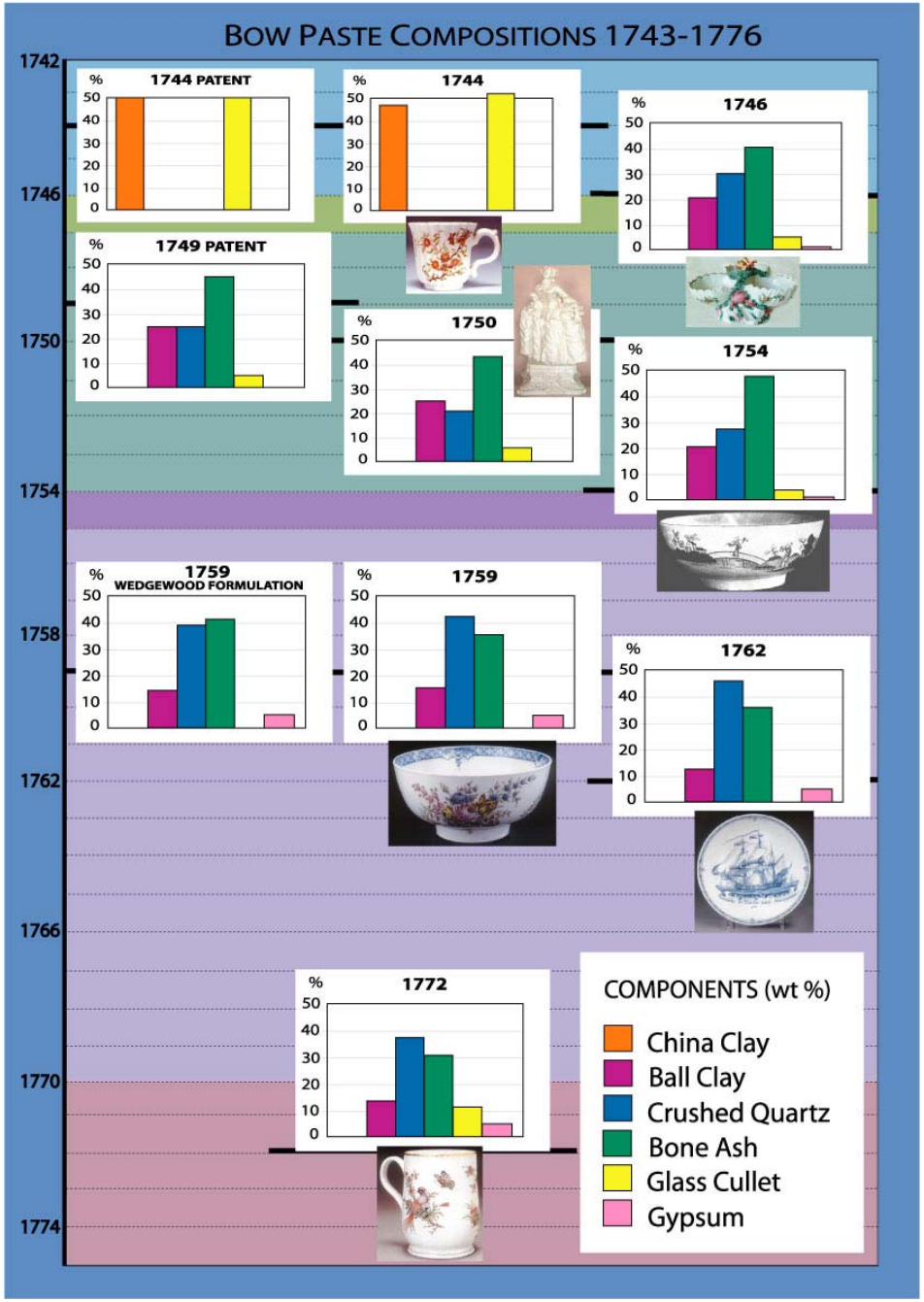

One of the problems in ceramic scholarship over many years is that in a number of instances ceramic composition is assumed not to inform the debate. Consequently the erroneous notion that all Bow output was phosphatic has dominated the thinking since Church (1881). Whilst an inordinate amount of discussion has been afforded decorative idioms, their changes through time, and their deduced origins – be they Asiatic, indigenous, of Continental – little enquiry has been given to changing paste and glaze compositions. These compositions can be shown to vary through time and underlie the concept of 'technology pathways' as initially voiced by Owen and Hillis (2003). Moreover composition can be shown to be a highly objective and rational means of attributing porcelain items.

The above chart (Ramsay and Ramsay, 2007) represents the first detailed attempt to gauge composition through time with regard to one factory output. This chart deals with two of the body compositions produced by Bow. One of these is the Si:Al:Ca body with variable Al:Ca ratios (Bow first patent porcelains). The second body type falls in the system P_2O_5-10xSO_4-10xPbO having P_2O_5 > 5wt% (Bow second patent porcelains). Here there is a wide range of compositions, which can now be linked to dates in the Bow output although a caution should be sounded in that based on joint work with Pat Daniels (see an account on this web site) coupled with her own work (Daniels, 2007) there is now good evidence that Bow was referred to as Bow and in operation producing porcelain of sorts during the 1730's. This would mean that some of the early Bow phosphatic output may be dated too late. An initial trend to the recognition of this notion may be seen in the Bonhams sale of the *Susi and Ian Sutherland collection*, October 3rd, 2007: Lot 11, which is dated *C.* 1745-1748. A third compositional type falls in the MgO-SiO_2-Al_2O_3 +/- PbO +/- S system. There is also some suspicion that Bow, possibly during the 1730's, may have been experimenting with a glassy body in the manner of the French and work in this direction is progressing. The overall conclusion is that the assumption as to the primacy of the artistic pursuit (Fisher, 1947) at the expense of other legitimate means of attribution (composition, contemporary documents) has meant that a denial regarding the highly important 1744 Heylyn and Frye ceramic patent and the failure to attribute correctly the iconic products of this patent has dominated ceramic thinking for a half century or more. Such has been the overwhelming stature of potting, form, and decoration within the realm of connoisseurship that there have been concerted attempts over many years to give away England's most significant, if not most important porcelains, of the 18th C to the Italians and even the Scots! It is our contention that connoisseurship based essentially on the notion of the primacy of the artistic pursuit will not sustain ceramic scholarship through the 21st century.

Classification		Date	Recipe	Visual Appearance	Translucency	Notes
First Patent		1743 - ~1746	The patent specifies a range of compositions ranging from 1 Cherokee clay:1 alkali glass to 4 clay:1glass. The non-lead glaze comprises clay and glass. Both magnesian-alkali and lime-alkali glass frits were used	Hard dense body with partial conchoidal fracture (hard-paste porcelain). Typically white, finely granular to glassy paste. Glaze tight fitting matt to wet looking. Wares often thinly potted with preference for slip-casting.	High translucency varying from cold white to white with an icy-greenish tinge	A relatively uniform group with characteristic decoration involving ghosting and sgraffito.Characteristic palette with artist/s as yet unrecognised. Arguably the most significant group of 18th century Anglo-American porcelains made in response to Meissen and Chinese hard-paste.
Second Patent	***Develop-mental period***	~1746	The broad composition conforms to the 1749 patent with ~25% crushed quartz, ~25% ball-clay, and ~50% 'virgin earth', which comprises variable amounts of bone ash, cullet, and +/- gypsum or possibly alum	Superbly to thickly potted enamelled and blue and white examples. The enamelling is vibrant whilst the blue is typically of the early bright blue. A feature of many in this group is a drab-mushroom appearance	Greenish-grey	A somewhat composite group representing the earliest phosphatic wares recognised. The drab hue probably represents variations in kiln-firing conditions - a feature possibly regarded as unacceptable by the Bow proprietors. Considerable variation in potting from thick to more gracile variants
	Early or ***New Canton period***	~1747 - 1753	Conforms to the 1749 patent (quartz 25%, ball clay 25%, 'virgin earth' 50% - comprising bone-ash ~45% and cullet ~5%). Both alkali and lead glass used, consequently may appear heavy	The body used for the early wares is white, finely granular, dense, and tough. The body is less inclined to stain.The presence of lead glass cullet may impart a heavy feel	Greenish-grey to greyish white	Porcelain of this period is characterised by a high quality body, good translucency, and at times a creamish appearance commencing around ca.1750. Analyses demonstrate that *virgin earth* comprises 90%wt bone ash and 10% glass cullet
	Transitional or ***Target period***	1754	A transitional phase conforming to the earlier 1747-1753 period recipe but with the addition of 1% gypsum	Vibrant bright underglaze blue extends to this period (Pether jug, dated 10th May 1754)	What Frank Tilley describes as 'Bow brown'	This transitional phase has been identified from sampling of the Thomas Target bowl held by the British Museum
	Middle or ***Bowcock period***	1755 - ~1769	A significant change in recipe with ~35% bone-ash, ~44% quartz, 15% ball-clay, and 6% gypsum. Composition is more uniform with cullet now deleted	A marked deterioration in the body becoming more porous or chalky and lighter in weight. Unglazed portions tend to stain brown. The glaze is generally duller.	Translucency is prominent to reduced and varies from warm pale yellowish brown, to darker hues, to reddish, and non-existant in more thickly potted examples	This period represents a major change in paste composition with a reduction in both bone ash and ball clay and an increase in crushed silica. Gypsum is now a small but significant component through to the closure of the concern
	Late or ***Tidswell period***	~1770 - 1774	15% ball-clay, 33% bone-ash, ~6% cullet, 6% gypsum, and 40% quartz. Cullet now reappears	A further deterioration with ceramic examples at times likely to be confused with pottery	Poor to non-existant	This period still conforms to the recipe for the 1755-1769 period but with the marked addition of cullet. The pottery-like appearance of the body suggests underfiring

The above chart summarises our work (Ramsay and Ramsay, 2007b). This classification embodies composition, documentary wares, form, decoration, and translucency in relation to two of the broad paste types recognised by us as representing part of the Bow output. Of note is that this compilation shows good accord with one of the classificatory constructions developed by Adams and Redstone (1981)