Wedgwood, Innovation and Patent

Dr Deming Liu
Newcastle Law School
Demingliu@hotmail.com

The article explores the role of patent or lack thereof in Josiah Wedgwood's business. It first discusses the real motives behind his opposition of extension of Richard Champion's patent and behind his exploitation, though largely failed, of his own patent. It goes on to show that what motivated him to innovate was not patent but lack thereof. The article shows from the perspective of Wedgwood and his business that, contrary to blanket belief, patent did not universally serve as an incentive for innovation during the Industrial Revolution.

INTRODUCTION

The patent system is designed to grant inventors and innovators exclusivity over their inventions for a limited period in exchange for public disclosure of their inventions. The patent is "a way of maximizing social welfare by providing incentives for inventors to increase the stock of applied technical knowledge in society (through protection) and discouraging inefficient redundancy of inventive effort (through disclosure)."[1] The patent inducement to invent assumes that there would be no invention without patent inducement, or the stronger the patent protection, the more inventions would be made.[2] Further, the social benefit of an invention lies in its final use value and the patent inducement would result in more inventions; though the social cost of the patent is the exclusion of use by others of the patented invention for a limited period of time, it is assumed that the social benefit exceeds the social cost, thereby justifying the monopoly.[3]

The idea of patent as incentive to innovate originated in Venice when the Venetians put in place the patent system in the fifteenth century.[4] In England, it was "unusual" for the patent system to be put in the context of stimulating inventive activities before the mid-eighteenth century; rather, it was associated with court patronage and mainly taken as "instruments of the royal prerogative."[5] It was not until the late eighteenth century that the claim had emerged that the patent system serves as an incentive to invention and the monopoly granted is the

[1] Leibovitz, "Inventing a Nonexclusive Patent" (2002) 111 Yale L. J. 2251, 2256.
[2] Nelson & Mazzoleni, "Economic Theories About the Costs and Benefits of Patents" in Intellectual Property Rights and Research Tools in Molecular Biology (National Academy Press, Washington DC, 1997)
[3] Nelson & Mazzoleni, "Economic Theories About the Costs and Benefits of Patents" in Intellectual Property Rights and Research Tools in Molecular Biology (National Academy Press, Washington DC, 1997)
[4] Carlo Marco Belfanti, "Guilds, Patents and the Circulation of Technical Knowledge: Northern Italy during the Early Modern Age", Technology and Culture, vol.45 (2004), at 569. Further on the origins of the patent system, see Wegner, Patent Harmonization (Sweet & Maxwell, London, 1993).
[5] MacLeod, Inventing the Industrial Revolution, The English Patent System, 1660-1800 (Cambridge University Press, Cambridge, 1988) at 182. See also Richard Godson, A practical treatise on the law of Patents for Inventions and of Copyright (1832) at 15 ("It was under the auspices of Queen Elizabeth that the Huguenots settled in Norwich, Sandwich, Colchester and other places, where they carried on woollen and linen manufactories to the great benefit of the country. It was by her charter that the East India Company was established which grant, though a very great monopoly, has contributed very largely to the splendour and influence of England in the scale of nations.").

quid pro quo for disclosure of the invention to promote inventive efforts.[6] The system was carried through to the United States where Thomas Jefferson approved it to realize his ideal to protect innovative manufacture. Now it is embodied in the US Constitution which states that the purpose of patent law is "to promote the Progress of Science and useful Arts, by securing for limited Times to…inventors the exclusive Right to their… Discoveries."[7]

The issue of patent during the Industrial Revolution of England poses an interesting case for study on whether the above rationale for patent was borne out in that period. Indeed, patent is believed to be "a crucial ingredient" of the Industrial Revolution.[8] The question is, whether and to what extent did patent serve as an incentive for invention and innovation during the Industrial Revolution?

People disagree over the role of patent during the period. Mokyr argues that "Had there been no patent system altogether [during the Industrial Revolution], or had no one ever been able to get rich on 14 years of monopoly, the level of inventive activity may have been lower." [9] In contrast, Ashton believes that "The role of the patent system in Britain's Industrial Revolution is hard to examine."[10] Macleod goes further by arguing that the Industrial Revolution was a "patentless revolution".[11] Macleod believes that there was indeed a causal connection between patent and industrialisation, but the connection was not simply that patent promoted industrialisation, as commonly assumed.[12] Rather, "industrialisation promoted the patent system."[13] Patent was but "an instrument of competition that was growing in value in an increasingly capitalistic, manufacturing economy."[14] Similarly, others hold that "the Industrial Revolution was the age of patentless inventions and…patents were largely irrelevant as a means of inducing inventions."[15]

In fact, rather than an incentive, patent could serve as an artificial barrier to diffusion of invention by granting the inventor the right to monopolise the invention for a certain period of time.[16] During the Industrial Revolution, "had the system been more open and accessible, and had patents been more enforced, blocking patents and monopolies in rapidly changing

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[6] Id.
[7] U.S.CONST. art.1, 8, cl.8.
[8] Max Louis Kent, The British Enlightenment and the Spirit of the Industrial Revolution:The Society for the Encouragement of Arts, Manufactures and Commerce (1754-1815) at 227.
[9] Joel Mokyr, Intellectual Property Rights, the Industrial Revolution, and the Beginnings of Modern Economic Growth, American Economic Review: Papers & Proceedings 2009, 99:2, 349–355.
[10] Thomas Ashton, The Industrial Revolution (1760-1830) (Oxford University Press 1948) at 50.
[11] Christine Macleod, Inventing the Industrial Revolution: the English Patent System, 1660-1800 (Cambridge University Press, 1988)
[12] Christine MacLeod and Alessandro Nuvolari, An Historical Overview of the British Case, 1624-1907, A Report to the Strategic Advisory Board for Intellectual Property Policy (SABIP).
[13] Christine MacLeod and Alessandro Nuvolari, An Historical Overview of the British Case, 1624-1907, A Report to the Strategic Advisory Board for Intellectual Property Policy (SABIP).
[14] Christine MacLeod and Alessandro Nuvolari, An Historical Overview of the British Case, 1624-1907, A Report to the Strategic Advisory Board for Intellectual Property Policy (SABIP).
[15] Jonathan Liebenau, Patents and the Chemical industry: tools of business strategy, in Jonathan Liebenau, The Challenge of New Technology Innovation in British Business Since 1850 (Gower 1988) at 136 (internal quotes omitted)
[16] Jonathan Liebenau, Patents and the Chemical industry: tools of business strategy, in Jonathan Liebenau, The Challenge of New Technology Innovation in British Business Since 1850 (Gower 1988) at 136, quoting Joan Robinson, The Accumulation of Capital (London 1969) at 87.

industries may have slowed down the pace of progress."[17] It is believed that "As it was, it may just have been enough to help keep Britain as the Workshop of the World until deep into the nineteenth century."[18] However, patent had, in many instances, blocked progress and hindered productivity. Boldrin & Levine showed the hindering effect of James Watt's patent. Watt used his patent to sue to halt the production of "superior and independently designed Hornblower engine"; for fear of the same legal action, William Bull, Richard Trevithick, and Arthur Woolf had to keep their innovations idle.[19] As a result, only Boulton and Watt engines and the engines of the inefficient Newcommen design were in operation, and their combined installed horse power did not exceed 10,000.[20] When Watt's patents expired in 1800, the improved engines from others gradually became available; in the year of 1815, "210,000 horsepower was installed in England alone."[21] It must be noted that contrary to the idealised rationale for patent that it shall be immediately available to society for free use and production as soon as it expires, it is not always the case that upon expiration a patent can be put into immediate use and in Watt's case, it took a long time for others to exploit his invention after his patent expires. In his submission to the House of Commons, John Farey noted,

"…in fact the public were not put in possession of the invention by the specification; and in Messrs. Boulton and Watt's practice, they took every precaution to conceal the internal structure of their engines, and their means of making them, and succeeded so far in such concealment, that those who began to make Mr. Watt's engines after the expiration of the patent right in 1800, made very defective engines, for want of knowledge of the proper interior structure, and proportions of the parts; and although great numbers were made, no tolerable engines could be obtained, except from Messrs. Boulton and Watt, during several years; and not until persons who had been brought up in their factory, had set up in business for themselves."[22]

Uglow acknowledges the merit of the argument that "patents held back other inventors" and notes that Watt was "ruthless" in using his patent to block other inventors.[23] Before Watt took the umbrella patent in 1784 claiming any use of steam on wheeled carriages, William Murdoch had been experimenting with such carriage; "he was already running a little three-wheeled engine round his living room in Redruth; in 1776 he made another model 'Travil a Mile or two in a Circle' in the Assembly Rooms at the King's Head in Truro, carrying a fire shovel, poker and tongs; he even ran the small fiery monster down a lane at night, terrifying a

[17] Joel Mokyr, Intellectual Property Rights, the Industrial Revolution, and the Beginnings of Modern Economic Growth, American Economic Review: Papers & Proceedings 2009, 99:2, 349–355.
[18] Joel Mokyr, Intellectual Property Rights, the Industrial Revolution, and the Beginnings of Modern Economic Growth, American Economic Review: Papers & Proceedings 2009, 99:2, 349–355.
[19] Michele Boldrin and David K. Levine, Against Intellectual Monopoly (2005) at p2.
[20] Id.
[21] Michele Boldrin and David K. Levine, Against Intellectual Monopoly (2005) at p2.
[22] John Farey, 8 June 1829, Appendix (B), Selection of Reports and Papers of the House of Commons: Arts Connected with Tradde, Volume 37 (1836).
[23] Jenny Uglow, Lunar Men the friends who made the future 1730-1810 (Faber and Faber 2002) at 396.

local vicar who thought it was the Devil."[24] Following Watt's patent, Murdoch had to stop any further development of his carriage.[25]

In the competitive market as during the Industrial Revolution, it should come as no surprise that merchants and manufactures used patents wherever possible to monopolise the market. As Lecky noted, "Scarcely a form of manufacturing industry had ever been practised in England that had not been fortified by restrictions or subsidised by bounties…the merchants and manufacturers of England had for generations steadily and successfully aimed at two great objects—to secure for themselves by restrictive laws an absolute monopoly of the home market, and to stimulate their foreign trade by bounties paid by the whole community."[26] Lowengard, however, notices that it was common occurrence that inventors in England in the eighteenth century generally abandoned their control of their inventions through the patent system.[27] It is unknown whether, as with the nineteenth century inventors, the level of skills required for working an invention, the ease of reverse engineering, and the level of secrecy in the relevant industry may have underscored the practice of abandoning control through patent in the eighteenth century.[28] Lowengard identifies one reason, which was altruistic, in respect of the colouring techniques in painting: people abandoned control of their inventions through patents in order to enable and induce others to try their hands in painting, practice their talents and eventually become masters in painting.[29] Mokyr notes that it was credit rather than anything else that many inventors wanted with respect to their significant inventions.[30] Humphry Davy was such a person in another area of invention; he invented a safety mining lamp but refused to take a patent on it as his "sole object was to serve the cause of humanity; and if I have succeeded, I am amply rewarded in the gratifying reflection of having done so."[31]

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[24] Uglow at 396-7.
[25] Id.
[26] William Edward Hartpole Lecky, A history of England in the eighteenth century, VOLUME VI.
[27] Sarah Lowengard, The Creation of Color in Eighteenth-Century Europe, http://www.gutenberg-e.org/lowengard/acknowledgments.html.
[28] Sarah Lowengard, The Creation of Color in Eighteenth-Century Europe, http://www.gutenberg-e.org/lowengard/acknowledgments.html.
[29] Robert Dossie, The handmaid to the arts (London 1764) 1:viii, as cited in Lowengard.
[30] Joel Mokyr, Modern Economic Growth, Max Weber Lecture, European University, March 27, 2007, note 27 at p23.
[31] Sargent noted that "Because of its significance for saving lives, Franklin did not patent his invention, but, in conformance with the useful knowledge tradition's ideal of the common good, he freely communicated the manner of its manufacture and use." She believed that "Humphry Davy was part of this tradition as well." Rose-Mary Sargent, Philosophy of Science in the Public Interest: Useful Knowledge and the Common Good. However, it is a matter for debate whether the sole pursuit of the common good did a disservice to humanity, and indeed to what extent the scientist inventors should have used patent to control the way their inventions are intended to be used (we leave out the invention of nuclear bomb) and the inventor's social responsibility in bringing about and controlling the exploitation of the invention. Note the regret for not having taken a patent to ensure consistent quality for the product and hence serve the purpose for which it was invented: "if a patent could have secured a uniform and correct construction of the safety lamp, it is to be regretted that he did not give his invention this advantage of such a protection against counterfeiters, merely with a view to the public good and for the sake of humanity; for I have been well informed that in too many instances, proprietors of collieries, intent on a miserable economy, have procured and employed cheap lamps, of doubtful safety, made by uninformed artists, ignorant on the true principle on which the safety of the lamp depends.[those lamps] attributed to accidents otherwise unaccounted for." The Collected Works Or Sir Humphry Davy. Part I: Memoirs of his life, John Davy (ed) (London: Smith, Elder and Co. Cornhill, 1839) at 211-2.

One particularly interesting character during the period was Josiah Wedgwood. He began his pottery business in 1759 and gradually transformed earthenwares in English history; he not only conquered the dominance and surpassed superiority of French and Dutch wares in England, but also made his reputation worldwide with the sale of his potteries.[32] Patent would apparently be important in the development of his business and in his rivalry with competitors. However, he publicly denounced patent for its restraining and deleterious effect on the local artisans and the community. He once made it clear to the court, "I am not surprised at your lordship's aversion to patents. They are bad, and deficient for the purpose intended in many respects, and as many foreigners may learn the discoveries for which the patents have been granted at the expense of a few shillings and practice them immediately in other countries whilst the hands of all British artists and manufacturers are bound during the term of the patent. Considered in this light, patents are highly pernicious to the community amongst whom the invention originated and a remedy is much wanted in the patent office for this evil."[33]

Given the influence of Wedgwood through his pottery business in the history of England, the personage presents an excellent case for testing the widely proclaimed incentivising role of patent, viz., precisely what sort of action he has taken in relation to patent and what role the patent has played in protecting or developing his pottery business. Further, did his public denouncement of patent actually prompt him to cede control of his own inventions through patent? As a tradesman, his priority was presumably to make profits and keep his business going. Where he made the point of blaming patent as an evil, we need to look beyond what he said by analysing what he did in an effort to find out the real motive behind.

If we premise that history directs the future course of action, historical knowledge is the starting point. If one accepts that 'progress in historical knowledge will come about not through the accumulation of knowledge of more events", [34] one may well accept that such progress would be made if historical events are put in the new, reflective and critical light. With those considerations in mind, the essay strives to examine Wedgwood from a different perspective than his autobiography and other literature do and to reflect critically his interrelationship between patent and innovation. We show the incongruence of words and deeds of a tradesman with respect to patent. We reveal that it is not that he willingly abandoned patent in his business; it is far less the case that altruism led him to make his invention accessible to others. We demonstrate that the claim of patent as an incentivising measure did not bear out as far as Wedgwood is concerned. Rather, lack of patent constitutes part of his reason for innovation in his pottery business. In deploying our debate, the essay first examines and evaluates the instance of Wedgwood opposing extension of Champion's patent and then it delves into the instance of his defending his own patent.

HIS PLEA AGAINST EXTENSION OF CHAMPION'S PATENT

[32] William Lecky, A history of England in the eighteenth century, VOLUME VI.
[33] H. I. Dutton, The Patent System and Inventive Activity During the Industrial Revolution, at 26-7.
[34] Marc Ferro, The Use and Abuse of History, or, How the Past is Taught after the Great Fire (London, Routledge, 2003) at 363.

For most part of the eighteenth century porcelain could not be made in England for lack of access to materials such as kaolin and "china stone".[35] They had to be imported from overseas at great expense which restrained their use and the production of porcelain.[36] In 1755, William Cookworthy discovered kaolin and "china stone" in Cornwall, namely, Growan stone and Growan clay, and obtained a patent giving him the sole use and exercise of them for making porcelain for 14 years.[37] He sold his patent to Richard Champion in 1774. With only seven years left of the patent, Champion petitioned to parliament for extension of the patent for a second term of 14 years in the following year.[38] He succeeded in the House of Commons, but received strong opposition from Wedgwood and others in the House of Lords.[39]

In his presentation to the House of Lords, Wedgwood attacked any monopoly over "natural products" and warned against setting any precedent for extending such monopoly; "a patent for the sole use of Raw Materials the natural products of this Kingdom, seems in itself a very singular monopoly and hardly to come within the Intention and Meaning of the Act under which patents are granted: but a parliamentary extension of such a monopoly, beyond the usual term of patents, in a case like this, where no new art is taught to the public… would be a precedent of the most dangerous nature, contrary to good policy, and of general inconvenience."[40] He attacked Champion who "has no public merit" and who is prolonging to himself "the monopoly of earth and stones that Nature has furnished this country with in immense quantities, which are necessary to the support and improvement of one of the most valuable manufactures in the kingdom."[41]

In furtherance of opposition, Wedgwood contrasted Richard Champion with James Watt who was also petitioning parliament for extending the term of his patent at almost the same time.[42] It was Wedgwood's contention that Watt was "the original Inventor of the Machine for which his patent was granted" whereas Champion was "the purchaser only of the unexpired term of a patent granted to another man, who does not appear to have any Interest in this Application."[43] Then, he invoked himself with respect to his principle for patent and his invention of the art of making Queen's ware. He argued that "when [I] discovered the art of making Queen's ware, which employs ten times more people than all the china works in the kingdom, [I] did not ask for a patent for this important discovery."[44] Rather, he had throughout his life "been concerned in the manufacture and improvement of various branches

[35] Robert Schofield, Josiah Wedgwood and a Propose Eighteenth-Century Industrial Research Organisation, Isis, vol 47, 1956 at 16.
[36] Id.
[37] Id. See also RM Barton, A History of the Cornish China-Clay Industry (D Bradford Barton Ltd 1966). See further NJG Pounds, The Discovery of China Clay, The Economic History Review, vol. 1, 1948, 20-33.
[38] Id.
[39] John Tearle (ed), Richard Champion Rawlins, An American Journal, 1839-40 (2002) at 11.
[40] Wedgwood parliamentary paper, at 244.
[41] Wedgwood's plea to parliament was reproduced in Llewellynn Jewitt, The Wedgwoods: Life of Josiah Wedgwood, Staffordshire (London: Virtue brothers and co, 1865) (hereafter "Wedgwood parliamentary paper") at 249.
[42] Champion petitioned for extension on 22 Feb 1775 which Burke supported; Watt did so almost simultaneously on 23 February 1775 which Burke opposed. See Pounds at 210.
[43] Wedgwood parliamentary paper at 244.
[44] Wedgwood parliamentary paper at 244.

of pottery and porcelain" and the carrying of "these manufactures to the highest pitch of perfection they will admit of."[45] Relying on the example of Queen's ware, he further pointed out the adverse effect of patent, "a patent would greatly have limited its public utility. Instead of one hundred manufactories of Queen's Ware, there would have been one; and instead of an exportation to all parts of the world, a few pretty things would have been made for the amusement of the people of fashion in England."[46] If Champion's patent were to be extended, it would only benefit "one trifling manufactory"; and serve no public good. Moreover, it would "lock up" the materials, and undermine the interests of the landowners and the manufacturers; it would have the effect of stopping "all the improvements in earthenware and porcelain in this kingdom but his own."[47] If the patent were not to be extended, hence, the materials were for free use by the public, "there is reason to expect a very large and extensive manufactory of porcelain will be established in various parts of the Kingdom, to the great benefit of the public."[48]

Edmund Burke, a friend of Champion, who presented the latter's petition to the House of Commons on 22 February 1775, doubted the good faith in Wedgwood's claim over the public good.[49] On 1 May 1775, he wrote to Adam Smith, asking for help with Champion's cause. Burke said that Wedgwood "does not so much as pretend to have ever had a manufacture of that kind and consequently can feel no injury except in his imagination of unmeasurable gain."[50] Burke noted that Wedgwood "pretends indeed that he is actuated by nothing but a desire of the publick good."[51] However, Burke was unequivocal in his doubt and indeed mistrust over Wedgwood: "I confess a declaration of the lowest species of any honest self interest, would have much greater weight with me, than from the mouth of a Tradesman."[52] Then he asked Smith to "apply to the Duke of Buccleugh that he may keep his mind open to the merits of this cause, in case we can get it through the House of Commons."[53] Burke asked for support from Smith not least because he must have known at that point in time of Smith's view over the necessity of temporary monopoly through patent to "spur self-interested innovation".[54] Adam Smith indeed believed that patents for new machinery and copyright over books were "the easiest and more natural way the state can recompense them for hazarding a dangerous and expensive experiment, of which the public is afterwards to reap

[45] Wedgwood parliamentary paper at 244.
[46] Wedgwood parliamentary paper at 244.
[47] Wedgwood parliamentary paper at 250.
[48] Wedgwood parliamentary paper at 244.
[49] "It is curious to find Burke on two different sides with regard to this patent extension and that of Watt: the cases seem exactly parallel." John Lord, Capital and Steam Power: 1750-1800 (Routledge 2006) at 142.
[50] Letter of Burke to Smith of 1 May 1775, in The Correspondence of Adam Smith (Indianapolis: Liberty Fund, 1987).
[51] Letter of Burke to Smith of 1 May 1775, in The Correspondence of Adam Smith (Indianapolis: Liberty Fund, 1987).
[52] Letter of Burke to Smith of 1 May 1775, in The Correspondence of Adam Smith (Indianapolis: Liberty Fund, 1987).
[53] Letter of Burke to Smith of 1 May 1775, in The Correspondence of Adam Smith (Indianapolis: Liberty Fund, 1987).
[54] Michael Frazer, "The Seductiveness of System: Edmund Burke's Aesthetic Embrace of Adam Smith's Philosophy" Draft Prepared for Presentation at the Brown University Political Philosophy Workshop February 1, 2007, http://www.brown.edu/Research/ppw/files/FrazerSeductivenessofSystem.pdf.

the benefit."[55] He praised the patent as harmless exclusive privilege: "It was probably the fairest reward for ingenuity that could be devised, since it was unlikely that the legislature would give pecuniary rewards, so precisely proportioned to the merit as it is. For here, if the invention be good and such as is profitable to mankind, he will probably make a fortune by it; but if it be of no value, he will also reap no benefit."[56] Another reason for Burke to solicit support from Smith must be that Burke's argument in his letter comports well with Smith's view over the claim by a merchant of the public good. Smith doubts "the good faith of any merchant who professes to trade for the public good, preferring them to confess honestly to self-interest."[57] In effect, Burke pushes the point when he talks about Wedgwood's claim of the public good that "the government should ignore the professions of public spiritedness by which merchants ask for government protection."[58] The reason why good faith in respect of the merchants claiming the public good should not be trusted is that, according to Smith, "all people know their own situations far better than they can ever know something as general as the public good...Practically all of us know far better how to help ourselves and our friends in our local situations than how to help our whole nation, or all of humankind."[59]

Wedgwood's claim for altruism was indeed doubtful. Champion expressed his surprise that "Mr. Wedgwood, who has never hitherto undertaken any similar manufacture, conceives himself likely to be injured by [my pleaded extension]."[60] In response, Wedgwood claimed that he did not have "any personal interest" in making his opposition to the extension. Rather, he felt "it a duty of moral obligation to take the sense of his neighbours upon the subject and to give up to the manufactory at large all advantages he might secure to himself."[61] Albeit "ostensibly on the behalf of the potters of Staffordshire", he in fact acted "at first alone" in opposing Champion's petition.[62] Only afterwards was he joined by John Turner and other potters from Staffordshire. As is to be seen, Wedgewood's self-interest in the cause was plain from his immediate action in procuring the white clay for his own profit following his success in restricting the scope of the patent.

In the whole affair, Wedgwood certainly lodged "convincing commercial reasons against renewal of the patent" at a time "when parliament was responding ad hoc to the legal conundrums thrown up by industrialisation."[63] The contention is apparently on the "commercial issues that concerned open access to raw materials."[64] However, the dispute over the extension of the patent was said to run "on strictly partisan line" with Rockingham, Portland and Burke supporting Champion on the one side and Earl Gower and the Bedford

[55] Smith, An Inquiry into the Nature and Causes of the Wealth of Nations, Campbell, Skinner and Todd (eds) (Oxford University Press, Oxford, 1976) at 754.
[56] Smith, Lectures on Jurisprudence, Meek, Raphael and Stein (eds) (Oxford University Press, Oxford, 1978) at 83.
[57] Samuel Fleischacker, On Adam Smith's "Wealth of Nations": A Philosophical Companion (Princeton University Press, 2005) at 97.
[58] Samuel Fleischacker, On Adam Smith's "Wealth of Nations": A Philosophical Companion at 97.
[59] Samuel Fleischacker, On Adam Smith's "Wealth of Nations": A Philosophical Companion at 97.
[60] Wedgwood parliamentary paper at 239.
[61] Wedgwood parliamentary paper at 244.
[62] Wedgwood parliamentary paper at 237.
[63] Sarah Richards, Eighteenth Century Ceramics: Products for a Civilised Society (1999) at 40.
[64] Sarah Richards, Eighteenth Century Ceramics: Products for a Civilised Society at 19.

Whigs supporting Wedgwood on the other.[65] Undoubtedly, huge interests were generated in the House of Lords.[66] Upon many readings of the bill, the House of Lords approved it but required Champion, on the pain of avoiding the act for failure to comply within four months after its passage, to enrol "a specification of the mixture and proportions of the Raw Materials of what his porcelain is composed and likewise the mixture and proportions of the Raw Materials which compose the glaze of the same."[67] Further, the House of Lords directed that "nothing in this act contained shall be construed to hinder or prevent any potter or potters…from making use of any such Raw Materials, or any mixture or mixtures thereof (except such mixture of Raw Materials in such proportions as are described in the specification herein before directed)."[68] Later in May 1775, despite the announcement of prorogation of parliament, the session was resumed through the consultation of Lord North with Lord Mansfield to pass the bill for the extension of the patent.[69] Eventually, an Act granting the extension was passed into law.[70]

Though Champion successfully renewed his patent, the Act was "hedged around with restrictions";[71] the scope of the patent was, as said above, specifically restricted.[72] The formal success brought no substantive benefit to Champion; "The patent struggle was prolonged, bitter and expensive for Champion" and contributed to his bankruptcy later on.[73] In contrast, the above restriction was a success to Wedgwood. The modified patent would enable him to acquire the raw materials except for making porcelain. Wedgwood was said to be "gloated" and stated to Bentley in a letter on 24 August 1778 that "Poor Champion…is quite demolished…I suppose we might buy some Growan stone and Growan clay now upon easy terms, for they prepared a large quantity last year". Together with John Turner and Thomas Griffiths, Wedgwood shortly thereafter travelled to Cornwall in search for the material and obtained the mining right by renting some land for the extraction of kaolin and Growan stone.[74] They formed a cooperative and shipped the materials to Staffordshire for sale.[75] In

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[65] George Herbert Guttridge, English Whiggism and the American Revolution, at note 100, p. 71. See also Hugh Owen, two centuries of ceramic art in Bristol: Being the History of the Manufacture of "The True porcelain" by Richard Champion with an Account of the Delft, Earthenware and Enamel Glass Works from Original Sources (1873).
[66] The Spectator Archive, 30 AUGUST 1873, Page 10. See also Journals of the House of Commons, vol. 35.
[67] Journals of the House of Commons, vol. 35, November 29, 1774 to October 15, 1776 at 393.
[68] Id at 394.
[69] The Spectator Archive, 30 AUGUST 1873, Page 10.
[70] 15 Geo. III. Cap. 52. "an Act for enlarging the term of letters patent granted by his present majesty to William Cookworthy, of Plymouth, Chymist, *for the sole use and exercise of a discovery of certain materials for making Porcelain*, in order to enable Richard Champion, of Bristol, merchant (to whom the said letters patent have been assigned), to carry the said discovery into effectual execution for the benefit of the public." (emphasis added)
[71] John Tearle at 11.
[72] W. E. Minchinton(ed), The Letterbooks of Richard Champion 1760-1775, British records relating to America in microform, BRRAM Series Booklet No. 35, Microform Academic Publishers (1986)
[73] W. E. Minchinton(ed), The Letterbooks of Richard Champion 1760-1775, British records relating to America in microform, BRRAM Series Booklet No. 35, Microform Academic Publishers (1986). See also Elizabeth R. Lambert, Edmund Burke of Beaconsfield (Associated University Presses 2002) at 112 ("The struggle weakened his resources and the American war further cut into his market.")
[74] Sarah Richards, Eighteenth Century Ceramics: Products for a Civilised Society (Manchester University Press 1999) at 40.

the following years, he made several trips there; in 1781,"Mr. Wedgwood has been here in this country some days hunting clays and soap rocks, cobalts, etc."[76]

As from the above, Wedgwood opposed the extension of Champion's patent so as to make the material freely available. Though he claimed that his opposition was based on the promotion of the public good, the validity of such claim was doubtful and indeed his self-interest could not be denied. His personal gains from the opposition certainly belie his avowed action for the public good. Indeed, had he had no vested interest in the matter, he might not have involved himself in his opposition to such an extent; and it would be hard to imagine that the public interest alone would have carried a tradesman that far in freeing the materials from the hands of Champion.

In the ensuing discussion, we discuss Wedgwood's patent and his defence for the patent. We have two aims in mind. First, we aim to continue to show the incongruence between his words and deed by discussing his strategy toward the exploitation of his own patent. Secondly and more importantly, we examine the role of patent in his business in order to find out what had prompted or incentivised him to innovate, and indeed what role if at all the patent had played in the process of innovation.

WEDGWOOD'S DEFENCE OVER HIS OWN PATENT

There was widespread and systematic piracy over Wedgwood's products. For example, his potteries and works in heads and cameos were pirated in Birmingham and London: "In Birmingham some of the mounters, for the sake of a small bribe, permitted casts to be taken of the heads and cameos intrusted to them; and in the Potteries the thieves had organised a perfect system. Here a room was kept and a journeyman modeller employed by some persons in London or Birmingham, who engaged to supply any manufacturer with casts of the finest things made at Etruria. Bas-reliefs and cameos were alike the same, and even casts of the Barberini Vase were promised, as soon as any copies were made public."[77] In combating those piracies, the issue of patent did not arise simply because Wedgwood could not secure any patent protection. For example, he did not, indeed could not, take patent for "the black basaltes body, or black composition" for his vases because "apart from his own modifications or improvements, it had been commonly used by the potters for nearly a century."[78]

The patent he did successfully secure was for the Portland vase. In reproducing Sir William Hamilton's Portland vase, Wedgwood discovered a way of applying colours to the vase. The colours were unique, it is said, "the colours he made for this purpose…never spread in the

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[75] George L. Miller and Robert Hunter, How Creamware Got the Blues: The Origins of China Glaze and Pearlware Ceramics in America, edited by Robert Hunter (Hanover, NH: University Press of New England for the Chipstone Foundation, 2001).
[76] Letter of Watt to Boulton dated October 18, 1781 as cited in John Lord, Capital and Steam Power: 1750-1800 (Routledge 1923) at 143.
[77] Eliza Meteyard, The Life of Josiah Wedgwood: From His Private Correspondence and Family Papers ... with an Introductory Sketch of the Art of Pottery in England (London: Hurst and Blackett, 1866).
[78] Id.

fire, or ran out of the drawing as other enamels must necessarily do, in a greater or less degree, in consequence of their vitrifying and melting upon the piece."[79] He made an application and a patent was granted for "his invention of ornamenting earthen and porcelain ware with an encaustic gold bronze, together with encaustic painting in various colours."[80] His specification describes various processes in colouring.[81]The patent was "apparently of little value"[82] but gave him much difficulty.

Soon after he took out the patent, he discovered that Palmer and his partner Neale copied his vases and produced cheap Etruscan vases. He wrote on 13 October 1770 to Bentley asking him to gather evidence for a lawsuit, "I expect no less than you have written respecting the invasion of our patent, and I apprehend they will persist in it to the utmost so that a trial seems inevitable, and if so, the sooner the better. I think we should stand a much better chance to have it tried in London rather than in the country and shall more easily prove the invasion of the patent against Neale and Palmer…therefore we should in my opinion purchase a teapot from Neale, and afterwards to leave an attested copy of the patent with him by someone who can evidence it for us. This should be done immediately as I must have the patent sent me here that I may deliver another to Palmer."[83]

He subsequently successfully obtained an injunction, but a couple of issues would put Wedgwood's case in jeopardy if it proceeded to a full trial with the jury. Palmer pleaded that his vases were not copied directly from Wedgwood's patented vases. Rather, they were copied from the prints in Sir William Hamilton's publication.[84] But, Sir William Hamilton's book with the pictures of the vase was for the public benefit; it was against the wish of "the public spirited author" for anyone to claim a monopoly over it.[85] Furthermore, Captain Warburton, Wedgwood's referee and Dr. Middleton, Palmer's referee formed the view that regardless of the modifications and improvement made by Wedgwood, the black body of the vase had been in the public domain and further the designs published by Sir Hamilton "for the improvement of art and artists in general" could not be unjustifiably monopolised by one manufacturer. [86] Though the improvements and modifications may well transform the black body into a new body or his unique way of burning the enamel colours into the unglazed body may result in "a new branch of decorative art", they believed that the jury would not take cognisance of those points but find against the patent.[87] Therefore, they recommended settlement.[88] In fact, Wedgwood himself somewhat left open the possibility that Palmer may have circumvented his patent by a different method. In a letter of Wedgwood to Bentley

[79] Llewellynn Jewitt at 199.
[80] The Repertory of Patent Inventions, and Other Discoveries etc, Volume 7 (London 1797) at 309-314 (recording the specification of the patent).
[81] Id.
[82] Mark Dodgson, Exploring new combinations in innovation and entrepreneurship: social networks, Schumpeter, and the case of Josiah Wedgwood (1730–1795), Industrial and Corporate Change 20(4):1119-51.
[83] As cited in Gordon Elliott, Aspects of Ceramic History: A Series of Papers Focusing on the Ceramic Artifact As Evidence of Cultural and Technical Developments, Volume 1(GWE Publications 2006) at 35.
[84] Letter, Wedgwood to Bentley, August 6, 1770.
[85] Letter, Wedgwood to Bentley, August 6, 1770.
[86] Eliza Meteyard at 256.
[87] Id.
[88] Id.

dated 13 June 1771, Wedgwood discussed his meeting with Palmer in Newcastle during which Palmer asserted that "the same effect had been produced by different means[than the patented method]." [89] Wedgwood was apparently unable to accept such an assertion because he or others he had spoken with had not been aware of it before he took out the patent, but he did say, "if we had committed such a blunder as to take out a patent for an invention which was then in practice, we must abide by the consequences." [90]

On the one hand, he urged his partner Bentley to "to pay a visit to Lord Mansfield, and to seek the aid of various powerful friends amongst the aristocracy."[91] This was no surprise as Lord Mansfield was his patron.[92] On the other hand, he had a low opinion of Lord Mansfield and did not believe the latter as impartial; in his letter to Bentley, Wedgwood said, "I have not the least doubt but that if Lord Mansfield had happened to interest himself in your case[which Bentley lost], as he did in your antagonists, you would have come off victorious with as little trouble as they did. To be hasty, partial and overbearing is perfectly characteristic of your judge, at least they are attributes which are almost universally given to him & I am very apt to believe the vox populi to just in most cases; this & many other instances I have of late had an opportunity of knowing confirms me in the belief, & I shall not easily depart from it."[93] Furthermore, he must have been aware of Lord Mansfield's antagonism to patent. Lord Mansfield's view of patent reflected lack of uniform judicial attitude toward patent. For example, Chief Justice, Lord Kenyon said: "I am not one of those who greatly favour patents; for though in many instances (and particularly in this) the public are benefited by them, yet on striking the balance, I think great oppression is thereby practised on inferior mechanics, by those who are more opulent."[94] In contrast, Mr. Justice Ashurst held a different view: "Every new invention is of importance to the wealth and convenience of the public; and when they are enjoying the fruits of a useful discovery, it would be hard on the inventor to deprive him of his reward. The jury have found that the patentee has particularly described his invention, and I think he is in law, as well as in justice, entitled to the benefit which the patent and the Act of Parliament intended to confer on him."[95] Lord Mansfield probably belonged in the former camp.[96]

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[89] Katherine Eufemia Farrer(ed) (2011), Correspondence of Josiah Wedgwood, Volume 1: Letters of Josiah Wedgwood 1762 to 1772 at 419-20.
[90] Katherine Eufemia Farrer(ed) (2011), Correspondence of Josiah Wedgwood, Volume 1: Letters of Josiah Wedgwood 1762 to 1772 at 419-20.
[91] Meteyard at 202.
[92] Id.
[93] Eliza Meteyard, The Life of Josiah Wedgwood: From His Private Correspondence and Family Papers ... with an Introductory Sketch of the Art of Pottery in England, at 101-2.
[94] Hornblower and Maberley v Boulton & Watt, the King's Bench against a plea given in the Common Pleas for the patentee: Selection of Reports and Papers of the House of Commons: Arts Connected with Tradde, Volume 37 (1836) at 190.
[95] Hornblower and Maberley v Boulton & Watt, the King's Bench against a plea given in the Common Pleas for the patentee: Selection of Reports and Papers of the House of Commons: Arts Connected with Tradde, Volume 37 (1836) at 190.
[96] Lord Mansfield's patent cases resulted in either nonsuit or nominal damages, which led some to believe that he was against patent, not least because he strongly believed in free trade and opposed protectionist legislation. However, he never expressed his disapproval of patent law in explicit terms, though he insisted that the law

Lord Mansfield was "a committed free trader" and opposed "restrictions on market practices."[97] Though he approved copyright for authors and even went so far as to hold that authors' common law right over their writings was perpetual and was not taken away by the Statute of Anne 1710 in Millar v Taylor, his stance toward patent was somewhat different.[98] In a sense, he accepted patent as "advantageous to the economy".[99] Poser believed that Lord Mansfield was influenced by John Locke that "by living in a community, individuals give up some of their natural rights in exchange for the civil rights that the community provides."[100] In applying Locke, temporary patent monopoly right was only given in return for disclosure of his invention – a "bargain" made by the inventor with the society.[101] However, Lord Mansfield insisted that patent law must "adapt to more sophisticated technological times"; and he carried through his belief through "subtle changes in legal principles and by careful jury guidance on damage awards."[102] In Liardet v Johnson, the patent was for a composition or stucco called Adam's Oil Cement for covering the walls of houses.[103] Lord Mansfield developed the principle of what evidence could be admitted in a jury trial; in considering whether an invention is new hence patent shall subsist, the opinions of the experts in the relevant field play a determinative role.[104] In the case, the witnesses, namely, "architects, plasterers and builders", determined that the patented invention, stucco, was not new and hence the patent was set aside.[105]

As far as Wedgwood's case is concerned, in balancing the views of experts against the assertion of Wedgwood creating "a new branch of decorative art", Mansfield's instruction would be probably in favour of the views of the experts should the case proceed to be tried and be heard by him; even if not heard by Lord Mansfield himself, other judges would likely adopt Lord Mansfield's principle on evidence.

It should also be noted that Wedgwood's patent claims the process of the colouring technique, but it was not certain at the time whether patent law covers the process or method;

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should adapt to technological changes. See James Oldham, English Common Law in the Age of Mansfield (The University of North Carolina Press 2004).

[97] James Oldham, 'Murray, William, first earl of Mansfield (1705–1793)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004; http://www.oxforddnb.com/templates/article.jsp?articleid=19655&back=

[98] James Oldham, 'Murray, William, first earl of Mansfield (1705–1793)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004; http://www.oxforddnb.com/templates/article.jsp?articleid=19655&back=

[99] Id.

[100] Id

[101] Norman S. Poser, Lord Mansfield: Justice in the Age of Reason (2013)

[102] Oldham.

[103] John Farey.

[104] Norman S. Poser, Lord Mansfield: Justice in the Age of Reason (2013) (Lord Mansfield "studies the practices of merchants and industrialists and incorporated these practices into the common law. His patent law decisions were characteristically pragmatic."); "The meaning of the specification is, that others may be taught to do the thing for which the patent is granted; and if the specification is false, the patent is void, for after the term the public ought to have the benefit of the discovery." Lord Mansfield's instruction to the jury in Liardet v. Johnson, (1778) 1 Carpmael's Patent Cases 35, 37 (K.B.)

[105] Poser. See also Oldham ("the defendant in this case applied the patented stucco to the exterior of Lord Mansfield's country house, Kenwood, in the same year as the Liardet trial, and Lord Mansfield complained that it had cost more to have his house faced in stucco than if he had used Parian marble.") (internal quotes omitted.)

the patent law, the Statute 21 James I only protects a new manufacture, but it was uncertain whether a new method or process is a new manufacture. Even decades later, the issue was not settled. In the 1795 case of Boulton & Watt v Bull, judges' opinions were equally divided and no judgment delivered on the issue. Indeed, Mr Justice Buller made a strong judgment against such patent: "A principle is the first ground and rule for arts and sciences, the elements and rudiments of them. A patent must be for some new production from those elements, not for the elements themselves. If the principle alone be the foundation of this patent, it cannot stand, though the addition may be a great improvement."[106]

Given all the above factors, it is no surprise that Wedgwood agreed to settle the dispute with Palmer. But he did so grudgingly. In his letter to Bentley, he complained that the manufacturers "declare that they are certain whatever the Law may determine the Country will universally give the invention of Etruscan painting to me, & I might have what number of Potters I pleas'd to evidence that they never saw or heard of any such thing before I made it."[107]

Reflecting on the case, Meteyard regarded patent as mere "concisions to the imperfection of human nature, and to defective education" and as based on "vicious principle": "the sooner they are swept from the statute books, the better for all concerned, not only as to facility of invention, but as a test of private morality and the advance of true culture." [108] In analogising to the natural world where "the finest organic forms are most liable to parasitical growth", he did not find it surprising that "originators should be beset by imitators", and that "men willing to profit by the exuberant bounty of other men's natural gifts." [109] It is not a patent law that will restrain "evils of the kind": "Tie up the pirate's right hand, and he will rob you with his left." [110] Rather, the solution lies in superiority in form and design which ultimately leads the market to settle the matter: "inferiority both of form and design [of Palmer's Etruscan vases] soon brought them to their true level in the market."[111]

In reacting to lack of usefulness of the patent, Wedgwood becomes more innovative, and comes up with better designs to ensure that he always stays ahead of his competitors.[112] Smiles argues that Wedgwood's "object was to go ahead, and keep in advance of the pirates by his new improvements and discoveries."[113] MacLeod notes that "Josiah Wedgwood, after one troublesome experience, repudiated patents. He could afford to: as a manufacturer, he was well placed to implement his inventions directly; through consistent technical ingenuity alone he could expect to outdistance his rivals."[114] Then, this may well show that, as was befitting that stage of the Industrial Revolution, it was "capability power" rather than patent

[106] Farey at 188.
[107] Cited in Eliza Meteyard at 245.
[108] The Life of Josiah Wedgwood: From His Private Correspondence and Family Papers (Nabu Press, 2010).
[109] The Life of Josiah Wedgwood: From His Private Correspondence and Family Papers (Nabu Press, 2010).
[110] The Life of Josiah Wedgwood: From His Private Correspondence and Family Papers (Nabu Press, 2010).
[111] The Life of Josiah Wedgwood: From His Private Correspondence and Family Papers (Nabu Press, 2010).
[112] Brian Dolan, Josiah Wedgwood: Entrepreneur to the Enlightenment (HarperCollins 2004), at 264.
[113] Samuel Smiles, JOSIAH WEDGWOOD, F.R.S.HIS PEKSONAL HISTOEY(NEW YORK: HARPER & BROTHERS PUBLISHERS, 1895) at 151.
[114] MacLeod, The Springs of Invention and British Industrialisation: Refresh 20 (Spring 1995).

that enabled Wedgwood to effectually protect his market and outrun his competitors.[115] The path of Wedgwood's success is not peculiar and probably represents the general picture of lack of causal or determinative connection between money and patent. Farey compared three inventors of spinning, Hargrave, Arkwright and Crumpton, with respect to the utility of their patents to them, and noted that Hargrave "died in the greatest poverty" and that Crumpton was "ruined in his circumstances, and languished in poverty during a long life, in the very towns which had grown up from insignificance to wealthy importance by the practice of his invention."[116] Arkwright succeeded only after his patent expired; "Arkwright, possessed a vigour of mind to command, control and instruct workpeople, far beyond the talent of a mere artist or inventor, and succeeded in realizing a princely fortune by his manufactory; but his money was not gained by virtue of his inventions, for the bulk of it was acquired after his patent was set aside."[117]

It is argued that Wedgwood succeeded in his business because of "his deep appreciation of the nature of the social and cultural change occurring at the time and using them to his advantage."[118] Then no less so, Wedgwood's success also stemmed from his perceptive knowledge of his customers and his market.[119] His business acumen was no better reflected elsewhere than in his strategy over "secur[ing] the goodwill of his best customers and of the public."[120] In his letter to his partner Bentley, he said, "Make all the good, fine, and new things we can immediately, and so far from being afraid of other people getting our patterns, we should glory in it, throw out all the hints we can, and if possible have all the artists in Europe working after our models. This would be noble, and suit both our dispositions and sentiments much better than all the narrow, mercenary, selfish trammels-the coats of mail we are forging for our reluctant hearts, to case and hamper them in their journey through life, and prevent all benevolent overflowing for the good of their fellow-citizens…when the public are witnesses to our bestowing so much paints and expense in the improvement of a capital manufacture-nay, in creating a new one-and that not for our particular emolument only, but that we generously lay our works open to be imitated by other artists and manufacturers for the good of the community at large, this would certainly place us in a very advantageous light in the public eye."[121]

As far as patent is concerned, it may well stand in the way of achieving the goodwill from the public. But in that era of the Industrial Revolution, it was enmeshed in a web of various

[115] Roger Cullis, Patents, Inventions and the Dynamics of Innovation: A Multidisciplinary Study (2007) at 29.
[116] Farey at 186.
[117] Farey at 186.
[118] Mark Dodgson, David M. Gann, Nelson Phillips (eds), The Oxford Handbook of Innovation Management (2014) at 275.
[119] It is perceptible that many other factors contributed to his success. For example, he was a member of the lunar society where a group of industrialists and scientists met to share scientific discovery, see Uglow. Industrial process and experiments test scientific theories which acted to theorise solutions to practical problems, mutually beneficial and mutually facilitating, see Joel Mokyr, Thinking about Technology and Institutions, *Macalester International Vol. 13 at 48.*
[120] Robert Cochrane(ed), The Romance of Industry and Invention (PHILADELPHIA: J. B. LIPPINCOTT COMPANY, 1897) at p61.
[121] Letter of Wedgwood, as cited in Smiles at 139-40.

ingredients that industrialists leveraged against one another to fulfil their curiosity and achieve success in the market.[122] However, the weight of patent in the pottery business if at all may not be as strong as in other businesses. Possibly, patent is not suitable for the business of pottery where evolution rather than revolution is the mode of creation, and every improvement is based on vast and rich commons which in turn determines the extent to which improvement would be possible. Indeed, Wedgwood's most celebrated work of Etruscan vase lies in its precision in replicating the Portland vase.[123] Wedgwood built his business upon pre-existing works which he had collected from home and abroad for free use; he "was indefatigable in his efforts to obtain the best specimens of eastern and continental ware, as models for imitation, as well as to improve their form and ornamentation."[124] In facilitating their designs, Wedgwood & his partner Bentley even built a small-scale museum of all sorts of plaster casts, models and collections of antiquities and "a small library of antiquarian books and engravings which could be used as source material in their factory library."[125] As discussed above, he was plagued by piracy. But, in such an industry where the demarcation of innovation and imitation was not clear-cut, piracy was possibly the norm rather than the exception. In fact, Wedgwood himself was, directly and indirectly, involved in some of those sorts of piracy he would have been eager to prevent if that had been of his own design or product. John Flaxman senior (1726-95) often supplied relief works based on others' designs; in 1775, he supplied Wedgwood and Bentley the wine and water ewers copied from the model of the French modeller Clodion.[126] Furthermore, in a letter to his partner Bentley in 31 October 1768, Wedgwood stated the fear of his piracy being discovered by the owner of a London plaster shop:

"What shall I do – I dare not write to her, Mrs. Landre, from hence and in my own name, Voyez [a freelance modeller who once worked for Wedgwood] says she is the D…l [devil] at finding out pirates, and if she once finds me out, I shall never be able to get a cast from her."[127]

In contrast, patent may be more useful in a truly new and groundbreaking field of invention. Take James Watt's steam engine for example, no one would doubt the groundbreaking inventiveness inhering in it.[128] Given such nature of the invention, it enabled him to claim in

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[122] Gerald Newman, Leslie Ellen Brown(eds), Britain in the Hanoverian Age, 1714-1837: An Encyclopedia 1714-1837 (New York Garland Publishing 1997) at 626.

[123] Laurence Machet, The Portland Vase and the Wedgwood copies: the story of a scientific and aesthetic challenge, *Miranda*, (7) 2012, URL : http://miranda.revues.org/4406("Wedgwood's finest copies of the Portland vase marked the climax of his career and remain even now great technical achievements. They were not, however, works of art but copies, in a fabricated material, of a work of art which was itself imperfect in shape.") Further, see Bernard Ashmole, A New Interpretation of the Portland Vase. *The Journal of Hellenic Studies*. vol. 87 (1967): 1-17.

[124] Smiles at 54

[125] David Irwin, John Flaxman 1755-1826 (1797) at 11.

[126] Timothy Clifford, The Plaster Shops of the Rococo and Neo-Classical Era in Britain J Hist Collections (1992) 4 (1): 39-65 at 42.

[127] As cited by T Clifford, The Plaster Shops of the Rococo and Neo-Classical Era in Britain J Hist Collections (1992) 4 (1): 39-65 at 44.

[128] See the invention itself and the process whereby it was made, James Watts's letter dated 24 October 1796 as reproduced in Rosemary Goring, Scotland: The Autobiography: 2,000 Years of Scottish History by Those Who Saw it Happen (Penguin 2007).

the patent for "a new method of lessening the consumption of steam and fuel in fire engines"; effectively that patent covered "all new steam developments – even those involving expansive steam, which he never intended to use."[129] Watt later relied on this patent to extract enough royalties by merely threatening legal action, and after the challenge on its validity was thrown out by the court, he collected even more royalties.[130] Moreover, the patent was successfully extended to last until 1800,[131] thereby showing the level of inventiveness which had not been and indeed could never have been paralleled by any invention in the pottery industry.[132]

Wedgwood's difficulty in enforcing his only patent may have helped to shape his apparent anti-patent stance.[133] But, his apparent stance does not necessarily comport with his action in attempting to use patent to protect his interest and monopolise the market. He seriously considered deploying patent to monopolise his business and fend off competitors in 1766 when he explored the possibility of obtaining a patent over the American "Cherokee" clay with the Duke of Bridgwater. The Duke, however, "does not think a patent will stand for an exclusive right to the Cherokees"[134]. Further, the Duke was of opinion that, though he could ask the Chancellor of the Exchequer for alleviation of the import duty for Wedgwood only, it was unlikely that parliament would grant duty free for his imports of the Cherokees and impose a duty on imports by others. A further complexity is that Wedgwood would have to wait till another session of parliament, but with the lapse of time, that would "inevitably lay the whole affair open".[135] Following the Duke's advice, Wedgwood gave up the idea of a patent over the clay when he realised the difficulty in obtaining the legislative help and thereby the risk in disclosing the clay to "a whole swarm of competitors".[136] Then, in truth, his hope for patent never appears to go away even in the settlement of his only patent with Palmer; Mr. Wedgwood writes to Bentley, "I think Mr. P— 's buy a share of the patent is the only ground for a compromise without a submission, that could have been hit upon. They will never do us much harm, & will be *a support in any future tryal*. I rather feel myself inclined to this measure."[137] (emphasis added).

He was undoubtedly frustrated by the complexity in defending the patent; he claimed, "There is nothing relating to business. I so much wish for as being released from these degrading

[129] Uglow at 243.
[130] Id.
[131] Roger Osborne, Iron, Steam & Money: The Making of the Industrial Revolution (The Bodley Head 2013) at 79.
[132] For the history of the extension, see Eric Robinson, Matthew Boulton and the Art of Parliamentary Lobbying, The Historical Journal, vol. 7, 1964, 209-229.
[133] It may be no surprise that whilst industrialists and entrepreneurs claimed patent monopoly to protect their interests, the courts at the time did not treat patent monopoly whole-heartedly: "Though the State continued to grant monopolies and trading privileges up to the very time of the publication of Adam Smith's Wealth of Nations in 1776 and beyond, there was always a tendency on the part of judges to disallow the practice of such favoritism." JOHN CHAMBERLAIN, THE ROOTS OF CAPITALISM (D. VAN NOSTRAND COMPANY, INC. 1965) at 150.
[134] Josiah Wedgwood, Correspondence of Josiah Wedgwood, Volume 1, at 146.
[135] Josiah Wedgwood, Correspondence of Josiah Wedgwood, Volume 1, at 146.
[136] Brian Dolan, Josiah Wedgwood: Entrepreneur to the Enlightenment (2004) at 276. Josiah Wedgwood, Correspondence of Josiah Wedgwood, Volume 1, at 146.
[137] Letter, Wedgwood to Bentley, August 6, 1770.

slavish chains, these mean selfish fear of other people copying my works."[138] The difficulty with enforcement forces Wedgwood to resort to other means for protection and for keeping ahead of his competitors. Innovation is one such means, as said before. He also resorts to secrecy for protection which method is indeed an institution dating back to antiquity.[139] Cochrane notes that "As the sale of painted Etruscan ware declined, his Jasper porcelain---so called from its resemblance to the stone of that name---became popular. The secret of its manufacture was kept for many years. It was composed of flint, potter's clay, carbonate of barytes, and terra ponderosa. This and the Jasper-dip are in several tones and hues of blue; also yellow, lilac, and green."[140] In his letter to Bentley, Wedgwood said, "I have tried my new mixing of Jasper, and find it very good…Sell what quantity you please. I would as readily engage to furnish you with this, as any pottery I make. We have only now to push it forward with the world and keep our secret."[141] They managed to keep the secret for twelve years.[142]

Maybe here it raises the question of whether patent, if free of the accompanying difficulty such as enforcement,[143] would have induced him to resort to it and whether he would have been comfortable with the trade-off between his private interest and the public interest in that, in exchange for the 14-year patent monopoly, he must sufficiently disclose the invention to enable people skilled in the art to practice the invention when the patent expires.[144] Generally, patent is a poor inducement for disclosure of an invention; where secrecy is possible, patent probably would not be enough inducement for disclosure. As Lemley suggests, "companies primarily rely on patent protection to protect self-disclosing inventions: those that the inventor could not maintain as a trade secret after putting it into commercial practice. If an invention can be kept secret, inventors are more likely to forego patent protection and keep it secret."[145] Secrecy has its limits in the pottery business where most inventions are "self-disclosing" and copying is not difficult. Wedgwood only managed to keep the above secret for 12 years, a lesser duration than the 14 years of patent monopoly. Given his desire of protecting his invention from free ride by competitors through secrecy, it is likely that he might have embraced patents more than he did, had enforcement not been an issue, whereupon it is debatable whether he would have been as innovative as he was.

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[138] Brian Dolan, Josiah Wedgwood: Entrepreneur to the Enlightenment (2004) at 263.

[139] For the extensive use of secrecy in protecting inventions, see, e.g., Rochelle's salts at 337, balloons at 247-8, gilding at 97, Zinc at 388 in Johann Beckmann, A concise history of ancient institutions, inventions, and discoveries in science and mechanic arts, Volume 2 (London: G and WB Whittaker 1823) at 337. For the employment of secrecy in the wider sense, see Karen King, Mystery and secrecy in Christian H. Bull, Liv Lied, John D. Turner (eds), The Secret Revelation of John in Mystery and Secrecy in the Nag Hammadi Collection and Other Ancient literature: Ideas and Practices (2012) at 69-72.

[140] Robert Cochrane at p30.

[141] Letter of Wedgwood, as cited in Smiles at 201-2.

[142] Smiles at 154.

[143] Lord Mansfield's judgment using default of specification to set aside a patent in Arkwright v Nightingale (1785), for example, has led James Watt to "begin to have little faith in patents". G. W. Daniels, The Early English Cotton Industry (1920) at 104, note 4.

[144] MacLeod, Inventing the Industrial Revolution, The English Patent System, 1660-1800 (Cambridge University Press, Cambridge, 1988) at 182.

[145] Mark A. Lemley, The Myth of the Sole Inventor, (2012) 110 Michigan Law Review 709 at 747-8.

Smiles gave two reasons why Wedgwood disliked patent. First, defending a patent was costly and the cost exceeded its worth. Second, "in most case, while they tied up the hands of our own countrymen, they laid the discovery open to any foreigners who might think it worth their while to take them up, and propagate them to their own advantage and to our loss."[146] Undeniably, the element of patriotism is present, but it may push too far to say that he is altruistic in forgoing patent for the sake of his countrymen's interest; his stance would probably have been different had the patent's worth far exceeded the cost in obtaining and defending it, as with Watt's patent. In truth, he did not consider his own countrymen when he resorted to secrecy to protect his inventions on many an occasion. Indeed, as seen above, Burke expressed as much distrust over such claim by a tradesman as Adam Smith did. Moreover, as Lecky noted before, it was typical of the Industrial Revolution that merchants employed all sorts of restrictive measures to protect their self-interest to the exclusion of others.[147] Similarly, Adam Smith argued that "Merchants and manufacturers being collected into towns, and accustomed to that exclusive corporation spirit which prevails in them, naturally endeavour to obtain against all their countrymen the same exclusive privileges which they generally possess against the inhabitants of their respective towns."[148] Merchants and manufacturers in Birmingham formed various organisations to deal collectively with commercial affairs.[149] They even set out to oppose the abolition of the law banning the importation of brass. Wedgwood led the effort, with bare success, to prevent the free trade Treaty between England and Ireland.[150]

This also raises the question over the credibility of the statement that Wedgwood was no monopolist. Jewitt highly regards Wedgwood, almost in lyrical terms, "So liberal-minded, so open in disposition, so devoid of selfish feelings, and so ready to impart to others the knowledge he had gained, was Josiah Wedgwood, that in his 'Queen's' or 'cream-coloured ware,' as in most other matters, he did not secure to himself by patent, as almost every other person would have done, his improvements in the manufacture of earthenware; and thus all the potters in the district immediately, to the utmost of their skill, imitated his ware and his patterns."[151] Smiles similarly states that Wedgwood refused patent because "he was content with the advantage he had already acquired, and was better pleased to see thousands made happy by following him in the same career of industry than he could be by any exclusive enjoyment for himself."[152] However, Wedgwood kept his inventions away from the "thousands" wherever possible. In fact, Wedgwood himself did not treat his followers with such magnanimity as to see them happily reap the same success as he did. After settling his patent dispute with Palmer, he said, "With respect to rivalship, we will cast all dread of that behind our back, treat it as a base and vanquished enemy, and not bestow another serious

[146] Smiles at 151.
[147] Lecky Id.
[148] Adam Smith, An Inquiry into the Nature and Causes of the Wealth of Nations (London: Methuen & Co., Ltd. 1904) 5th ed. IV.2.21.
[149] See Schofield at 351.
[150] See Schofield at 352.
[151] Jewitt at 67.
[152] Samuel Smiles, Josiah Wedgwood, FRS, His personal History (New York: Harper & Bos, 1895) at 151.

thought upon it."[153] Some of his autobiographers should be treated with caution; indeed, Ronald Lightbrown noted Meteyard's "idealisation" of Wedgwood, "a comical discrepancy between Wedgwood's own words and Miss Meteyard's high-flown interpretation of them" and her "exaggeration of Wedgwood as a designer into a lofty creative artist."[154]

The proclaimed lack of selfishness in Queen's Ware should also be put in the critical light. It is likely that he had already known that a patent for Queen's Ware would be challenged for lack of enough inventiveness and hence it would not be worth the effort to pursue a patent for it. Indeed, he did not take patent for his black bas-relief vases not because he would not have wanted to - given his frustration over pirates, he probably would - but because no patent would have been granted: "apart from his own modifications or improvements, it had been commonly used by the potters for nearly a century."[155] In fact, Miller's research shows that Queen's Ware "was no more than his own version of a ware already being produced as early as 1775 by other Staffordshire potters."[156] If that was indeed the case, for the sake of his reputation, taking a patent over Queen's Ware would be too risky and would probably receive, in modern terms, adverse "PR", which consideration may also reveal his uneasiness with his only patent of a colouring technique. In fact, in his town of Burslem, there were instances where patent monopolists ruined their reputation by their avarice. In 1733, for example, Ralph Shaw of Burslem took a patent for using various earthly materials for making a curious ware with unique colours both inside and outside, and he was vigorous in enforcing his patent and objected to any improvement as infringement. [157] Eventually when he sued a potter called J Mitchell, many potters supported Mitchell, and even bore the expenses to have the patent annulled.[158] The trial was of great significance, "all the manufacturers being interested in the decision, those most respectable were in the court." [159] When the judge nullified the patent on the ground of prior use and asked the audience to "Go home, potters, and make whatever kinds of pots you please," "the hall re-echoed with acclamations and the strongest ebullitions of satisfaction from the potters".[160] Shaw and his family were so ashamed that they moved to France afterwards.[161]

CONCLUSION

Wedgwood is in fact inconsistent in respect of his words and deed. His plea on the ground of the public interest when opposing Champion's extension of patent hardly shows his lack of self-interest despite his denial of it. His denouncement of patent does not bear out with himself having a patent. Though it was the only patent he ever applied for and owned, he vigorously defended it and only when his chance of success was far from certain did he yield

[153] As cited in Smiles at 139-40.
[154] Introduction to the Life of Josiah Wedgwood (Oxford reprint 1970) at 26.
[155] Eliza Meteyard, The Life of Josiah Wedgwood: From His Private Correspondence and Family Papers ... with an Introductory Sketch of the Art of Pottery in England (London: Hurst and Blackett, 1866).
[156] George L. Miller, "Origins of Josiah Wedgwood's 'Pearlware'," Northeast Historical Archaeology (1987) Vol. 16 16: Iss. 1, at 83.
[157] Jewitt at 62-3.
[158] Id.
[159] Id.
[160] Id.
[161] Id.

to settlement. The settlement was made with a full view to the "support for any future trial" he would secure from Palmer, rather than risking annulment of his patent. Though he opposed Champion's patent over natural materials, he eagerly explored the possibility of monopolising the importation of the Cherokee clay. He only abandoned the idea when the prospect of getting one from parliament was slim. He extensively relied on secrecy in protecting his inventions, which did not sit well with the argument of him serving the public interest by encouraging competition and sharing his inventions with others.

Some insist that the flourishing of the arts of making Queen's ware "was altogether the effect of the inventive genius of the proprietor, and the encouragement, which the policy and the laws of England afford to the authors of new and useful inventions."[162] No one can deny the inventive genius of Wedgwood as a contributing factor; but as Wedgwood himself made it clear in this submission to the House of Lords in opposing the extension of Champion's patent term, it was not because of patent that Queen's ware flourished; rather it was lack of patent that resulted in competition and thousands of companies engaged in the production of the ware. The benefit accrued to the public was clear where patent was not used. With no patent for his Queen's ware, competition was encouraged. In the result, his Queen's ware originally intended for the consumption of the high-class became affordable to the ordinary people. In this sense, no patent is salutary as far as the interest of the general public goes. On the reverse side, patent is indeed an evil. As Wedgwood put it, patent helps one company to hold back thousands of other companies. With one company producing goods of prohibitively high prices to meet the demands of the elite and wealthy, the ordinary people would have no option but to wait until the patent expires to enjoy those goods at an affordable price consequent on free competition.

The claim of patent as an incentive for invention did not bear out. Wedgwood innovated not because of the inducement of patent monopoly. He invented the colouring technique not because of the patent incentive but because of his curiosity with the ancient vase and his innate urge to resolve the problem of making an exact copy of it.[163] Possibly that was also to establish esteem amongst peers, as was the common motive for innovation during the period.[164] Further, Wedgwood became more innovative when he had no prospect of relying on patent for protection. He resorted to innovation to stay ahead of his competitors.[165] That does not deviate from the case in modern times; as Pearce recently argues, "without the shelter of an IP monopoly, innovation would be a necessity for a company to survive." [166] It is

[162] Thomas Green Fessenden, An Essay on the Law of Patents for New Inventions (C. Ewer, 1822) at xxiv-xxv.
[163] Some regard Wedgwood's innovative incentives as coming from his "commitment to the culture of improvement through the application of useful knowledge to issues in manufacturing", see Ralf R. Meisenzahl and Joel Mokyr, The Rate and Direction of Invention in the British Industrial Revolution: Incentives and Institutions, conference paper, August 2010, at 12.
[164] Adam Smith, The Theory of Moral Sentiments (1759) at 53.
[165] It is neither patent law nor secrecy that made him succeed in his business; rather, "his greater taste and skill in the production of vases which were in all senses artistic, served his purpose far more effectually in retaining their manufacture in his own hands than secrecy and patent laws." Eliza Meteyard, TheWedgwood Handbook: A manual for Collectors(London: George Bell and Sons, 1875) at 272.
[166] Joshua M. Pearce, Physics: Make nanotechnology research open-source, Nature, 491, 519–521, (22 November 2012).

certain that innovation promotes progress and prosperity of society.[167] As reflected through the prism of Wedgwood and his business, innovation undoubtedly promoted the Industrial Revolution and the society benefited. However, the relationship between patent and innovation is far from clear.[168] For Wedgwood and his pottery business, patent had no clear role in incentivising innovation. On the contrary, it was lack of patent that had facilitated such innovation; further, had patent been extensively and effectively used in the pottery business, it is doubtful whether Wedgwood would have achieved the level of superiority he had achieved.

[167]See Adam B. Jaffe and Josh Lerner, Innovation and Its Discontents: How Our Broken Patent System is Endangering Innovation and Progress, and What to Do About It (Princeton University Press, 2006); Josh Lerner, Boulevard of Broken Dreams, Why Public Efforts to Boost Entrepreneurship and Venture Capital Have Failed - and What to Do About It (Princeton University Press, 2009).

[168] Roger Cullis, Patents, Inventions and the Dynamics of Innovation: A Multidisciplinary Study (2007) ("Whilst it may be argued that some form of monopoly is a pre-requisite for innovation, possession of a monopoly is not necessarily an incentive to innovate" at 28.)