

Rethinking the Distribution of Cultural Capital in the "Safety Lamp Controversy": Davy vs Stephenson in Letters to the Newcastle Press, 1816-17

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A little over two hundred years ago, on 5 December 1815, a well-attended meeting of the members of the Literary and Philosophical Society of Newcastle upon Tyne took place. The purpose of this meeting, in the first city of the British coal trade, was to display several examples of the recent invention of the miners' safety lamp. The various lamps presented were designed to provide a safe light in coal mines in the presence of "fire-damp": the naturally occurring, highly flammable mixture of gases that would explode when exposed to a naked flame, and which, in the first years of the nineteenth century, had caused several horrific mining disasters below ground, such as that at Felling Colliery on 25 May 1812, when ninety-two miners were killed. A detailed, and sobering, record of mining fatalities in the north-eastern coalfield is provided by the Durham Mining Museum; their online database of colliery disasters speaks of the scale of the human tragedy that unfolded between 1800 and 1815, and thus of the pressing need for an effective means of risk reduction. Present at the Newcastle meeting was the botanist Nathaniel Winch, who sent a report of it, signed "N.," to the *Philosophical Magazine* (James 223). Winch devotes a large section of his account to describing the lamp produced by George Stephenson, an "engine-wright at Killingworth Colliery," before concluding:

From what has been already said, together with the inclosed [sic] section, an invention nearly similar to Sir H. Davy's will be immediately recognised; but that it has not been pirated from that gentleman is a fact known to most of the mine owners here; ... Sir Humphry Davy's discovery flowed from science judiciously applied. Stephenson's discovery appears to have resulted from trials made below ground; for, though an excellent mechanic and acute man, he is unacquainted with the science of chemistry.
(N. 459-60)

Winch's comment on the emergence of two "nearly similar" inventions from the disparate worlds of the laboratory and the mine in the final months of 1815 is among the earliest in print. "Thus," as Frank A. J. L. James observes, "was set up, from the beginning, the dynamic for a priority dispute between knight and worker, chemist and engineer, savant and artisan, theory and practice, metropolis and province" (203).

By 1815, Davy had an exceptional list of scientific discoveries to his name. Between 1798 and 1800, at the Medical Pneumatic Institution in Clifton, he pursued a pioneering course of research on nitrous oxide. Davy was invited to take up a post at the recently founded Royal Institution (RI) in 1801, and quickly became a celebrated public lecturer, being promoted to the rank of Professor of Chemistry a little over a year later. Over the next decade at the RI, Davy conducted further important researches on tanning, agricultural chemistry, and electrochemistry. He isolated potassium, sodium, boron, magnesium, calcium, strontium, and barium, and, in 1810, demonstrated the elemental nature of chlorine. Around the time of receiving his knighthood in 1812, Davy retired from lecturing, and, in 1813, left London to tour the

Continent with his new wife, Jane (née Apreece), a wealthy heiress. Davy continued his researches in Europe, establishing the elemental status of iodine, conducting experiments on the combustion of diamond, and making two examinations of Vesuvius. Stephenson's life in 1815 was much different to Davy's. Stephenson's earliest colliery job was one of the lowliest: that of "picker," one who separates coal from stones by hand. He gradually progressed through a number of positions, including assistant fireman, engineman, and brakesman. When not working with engines during the day, Stephenson cleaned and repaired clocks and watches during the evening to supplement his income. Both occupations allowed Stephenson to develop his interests in mechanical engineering, and, by the time he took up his post at Killingworth, he was highly proficient in the running and repairing of engines. However, in spite of his mechanical expertise, his life, in common with most who depended on the colliery for their living, was still one of hard, dangerous work for relatively little reward. In applying his mechanical skill to the invention of a safety lamp, Stephenson was not merely responding to an abstract problem; he was attempting to put an end to the appalling destruction that caused deep and lasting injury to mining communities such as that at Felling, a mere six miles from Killingworth.

The dispute commonly referred to as the "safety lamp controversy" was as acrimonious as it was long-running. In August 1815, Davy was enlisted by the Reverend Dr. Robert Gray, Rector of Bishopwearmouth and an influential member of the Society for the Prevention of Accidents in Coal Mines (also known as the Sunderland Society), to come up with a practical solution to the continuing menace of fire-damp explosions in mines. Davy, having visited mines in the north-east, set to work in the basement laboratory of the RI in early October 1815. By the end of the month, he was writing to Gray, as well as the Reverend John Hodgson, another member of the Sunderland Society, with descriptions of four prototypes of lamp.¹ None of these four prototypes was the lamp for which Davy became truly famous; that lamp, which made use of wire gauze for its principle of safety, came shortly afterwards, in mid to late December of that year, which speaks of the intensity, and the rapid rate of development, of his work in the latter months of 1815.

By 5 December 1815, Davy had been publicly accused, in a letter from a J. H. H. Holmes published in the *Tyne Mercury*, of having "borrowed" elements of an early safety lamp designed by Dr. William Reid Clanny, a Sunderland-based physician who had published a description of his (rather unwieldy) invention in the *Philosophical Transactions of the Royal Society* in 1813. Later, in early 1816, supporters of Stephenson would also claim that their man should be recognized as the inventor of the safety lamp, as he had tested an early version of his own design below ground in late October 1815, more than two months before any lamp of Davy's was taken into a working mine. The controversy was played out over months, principally between advocates of Stephenson and Davy, in letters sent to the Newcastle newspapers, at public meetings, and in private correspondence, as claim and counter-claim issued from each opposing camp. As sensational terms such as "plagiarism," "piracy," and "libel" were aired and ill-feeling grew on both sides, the now generally accepted explanation of events – that Davy and Stephenson had both invented similar lamps at the same time; a case of, to use Robert K. Merton's term, "multiple independent discovery" (237) – was barely countenanced.

This article will argue against a naive, "face-value" reading of the safety lamp controversy as a contest in which the distribution of cultural capital, as conceptualized in the work of Pierre Bourdieu, was very unequally weighted in Davy's favour. It will

challenge the assumption that the "high," privileged, well-connected Davy triumphed with ease over the "low," disadvantaged, unconnected Stephenson, and demonstrate that such was not the case. Rather, supporters on both sides of the dispute employed forms of cultural capital against one another, and Stephenson's advocates proved an effective match for Davy's on numerous occasions. The concept of cultural capital manifests itself in several forms: evidence of another's possession of it may be found, for example, in their "verbal facility, general cultural awareness, aesthetic preferences, scientific knowledge, and educational credentials" (Swartz 43; this list is by no means exhaustive). The present article is concerned with cultural capital in its specifically literary and philosophical manifestations; in those contexts, one able to advance their cause by, for example, deploying an apt literary allusion, or making effective use of a classical mode of argument, possesses more in the way of cultural capital than one who is unable to do so.

For Bourdieu, the concept of capital is "what makes the games of society ... something other than simple games of chance" (241). Capital is something to be accumulated, and dictates the "structure and functioning of the social world" (242). Consequently, Bourdieu notes, capital and power effectively "amount to the same thing" (243). Writing on the specific case of cultural capital, David Swartz usefully observes that "[Bourdieu's] point is to suggest that culture (in the broadest sense of the term) can become a power resource" (43). In the context of a dispute or power struggle, then, cultural capital can be employed as a weapon: it can become a means of asserting power, authority, or status in the face of an opponent. By drawing upon several examples of the letters on the safety lamp controversy published in the Newcastle press in 1816-17, all of which have received only minimal critical attention to date, this article will argue that the pro-Stephensonian camp had more cultural capital at their disposal than the naive, face-value reading has historically accounted for, and thus the contest was not as one-sided as has been traditionally understood.

In the eighteenth century, Newcastle was a notable centre of printing in Britain. By the mid to late 1700s, the city's publishing infrastructure was such that it was able to produce several weekly newspapers concurrently, each aimed at different readerships. By 1815, the *Newcastle Courant*, first published in 1711, was firmly established as "the organ of the Tories in [the] district" (Mackenzie 1: 727). The *Newcastle Chronicle*, first published in 1764, was "a cool, moderate advocate of the Whig party" (Mackenzie 1: 728). The *Tyne Mercury*, first published in 1802, was "not distinguished by any particular set of principles, but advocate[d] the cause of reform generally" (Mackenzie 1: 729). In the first decades of the 1800s, Newcastle and London were strongly and exceptionally linked by the coal trade: during the years 1811-13, London imported almost ninety percent of its coal from Newcastle (Flinn 220). Although the flames of the safety lamp controversy were first kindled and then afterwards fuelled by means of the Newcastle press, this was, unequivocally, more than a merely local debate: items related to it appeared in the London newspapers too, including resolutions and reports of the various meetings held in Newcastle, where interested parties in the south, distant from the meeting places of the north, would likely see them. To be sure, though, the north-east, not London, was the primary battleground for the dispute: the former was *the* coal region in Britain in the early nineteenth century, a place where that most valuable resource lay underground in abundance, and where the necessity for a dependable means of lighting the mines in order to safely extract it, and profit from it, was greatest. The presence of a vibrant, established print culture in Newcastle, the regional capital, meant that the influence of the city's press on the dispute over the safety lamp was assured.

Before proceeding with readings of several key letters that will challenge the notion that there was little cultural capital on show on Stephenson's side of the argument, it will be illustrative to consider an example of an exchange that supports the notion that the distribution *was indeed* very unequally weighted, in Davy's favour. In August 1816, the north-eastern coal owners, "being fully sensible of the utility of the safety lamp to the coal trade of this country – of the great merit of its inventor in rendering it practically applicable to the working of coal mines where inflammable air prevails, and of the unwearied zeal and philanthropy with which he has pursued the investigation of the subject," decided to award Davy an expensive "present of plate" (*A Collection 1*; all of the letters examined in this article may be found in this collection, albeit in edited form). At a subsequent meeting on 11 October, during which plans for Davy's gift of gratitude were to be progressed, Robert William Brandling – a Northumberland-born lawyer, of a wealthy land and mine owning family, and son of a Tory MP – proposed that the session "do adjourn until, by a comparison of dates and an inquiry into facts, it shall be ascertained whether the merit of the invention of the safety lamp is due to Sir Humphrey [sic] Davy or George Stephenson" (*A Collection 2*). Although Brandling's proposal was rejected, the pro-Stephensonian side was not to be deterred. Just a few days after the meeting, on 15 October, a letter from Stephenson was published in the *Tyne Mercury*, in which Brandling, by means of an enclosure (also published), reaffirmed his support of Stephenson's claim to priority. In his letter, Stephenson is plain-spoken and polite, unassuming and non-confrontational:

[I]f it can be proved I took advantage in the formation of the safety lamp, of any suggestions, except the printed opinions of scientific men, I deserve to lose the confidence of my honourable employers, and the good opinion of my fellow men, which I feel an honest pride in declaring, even in my humble situation in life, is of more value in my estimation than any reward that generous but indiscriminating affluence can bestow.

A week later, on 22 October, the *Tyne Mercury* printed a reply to Stephenson's letter from a pseudonymous correspondent going by the nom de plume "Simple Wire Gauze." The name refers to Davy's invention, in late 1815, of the first safety lamp to incorporate a wire gauze cylinder to enclose the naked flame: the lamp for which he is popularly remembered today, and which, soon after its invention, was widely adopted in coal mines in Britain, Europe, and beyond. The choice of epithet is intended as a blatant snub to Stephenson, who had not, as Davy had, invented such a brilliantly elegant means of preventing explosions of fire-damp below ground. Also intended as a snub is the title under which the letter appears: "To George Stevenson [sic], the Capillary Tube Lamp Inventor." Early in their safety lamp endeavours, both Stephenson and Davy had discovered, in the mine and the laboratory respectively, that a lamp making use of a series of narrow ventilation tubes, within which fire-damp would not explode, could be used safely in the presence of the gas. Laying claim, in such an authoritative manner, to so definitive a title was precisely what Stephenson was trying to do. In meekly conceding that title to Stephenson in mocking fashion, Simple Wire Gauze is, of course, mocking Stephenson's claim to priority itself. Besides, by late 1816, when this letter was written, Davy had long moved on to a better means of providing safe light (using gauze instead of narrow ventilation tubes), rendering the victory of securing the title "the Capillary Tube Lamp Inventor" at that

time a rather hollow one, making Simple Wire Gauze's choice of moniker all the more galling for Stephenson.

In opening the letter with a mere "Dear George," Simple Wire Gauze begins in patronizing, overly familiar fashion. The pseudonymous correspondent continues to condescend:

In a letter which has your signature, addressed last week to the Editor of the *Tyne Mercury*, on the subject of Safety Lamps, you endeavour to hurt my fame, by *a most philosophical discrimination* between apertures of wire gauze and orifices of capillary tubes. (Emphasis added)

Simple Wire Gauze here refers to the obviously questionable claim made by Brandling, in his letter of support published below Stephenson's in the *Tyne Mercury*, that "Whether [the fire-damp] is admitted through capillary tubes, or the apertures of wire gauze, (*which may be considered as merely the orifices of capillary tubes,*) does not, I conceive, affect the principle [of safety]" (emphasis added). This is hardly "a most philosophical discrimination," and Simple Wire Gauze is, with obvious pleasure, belittling Stephenson's claim to priority through his use of irony. Simple Wire Gauze's main objection to Stephenson's letter is that the latter's lamp is not, as Stephenson had claimed, "a perfectly safe" one, and he invites Stephenson to supply a list of the mines in which his lamps have been successfully used. But this invitation is not a genuine one; it is, again mockingly, coupled with an instruction to remember the opening lines, quoted in the letter, of Charles Churchill's "An Epistle to William Hogarth" (1763):

Amongst the sons of men how few are known
Who dare be just to merit not their own;
Superior merit and superior sense,
To knaves and fools will always give offence: –
Nay – men of real worth can hardly bear,
So nice is jealousy, a rival there.

It is plain that, for Simple Wire Gauze, the "knave and fool" in this matter is Stephenson, and the "Superior merit and superior sense" belong to Davy. But the insult runs deeper than the sentiment of the lines. In closing his letter in reply to Stephenson with a piece of "high" poetry (in the sense that it owes much to Augustan poetry, a genre of intentionally conspicuous erudition and complexity) such as Churchill, Simple Wire Gauze is again mocking Stephenson: the latter, as his contemporaries were aware, was largely self-educated, and, according to his biographer, had not learned the rudiments of reading until he was eighteen years of age (Smiles 15). Simple Wire Gauze's "at the same time remember the following lines" has the air of a teacherly instruction, and closing the letter as he opened it, with "Dear George," merely compounds the overall sense of insult. Through the use of literary device, chiefly irony, and the employment of satirical poetry as a means of attacking, and asserting power, authority, and status over Stephenson, the balance of cultural capital in this exchange is clearly on the side of Simple Wire Gauze – and thus, in the context of the safety lamp controversy, on the side of Davy. As will become clear, though, Stephenson's supporters had more than enough cultural capital of their own to mount an effective counter-attack along similar lines.

John Hodgson, one of Davy's strongest allies in the north-east, was, like Simple Wire Gauze, moved to respond to Stephenson's letter of 15 October 1816.

Hodgson's letter, published in the *Newcastle Courant* on 26 October, provides a detailed chronology in support of Davy's claim to priority. Therein, Hodgson refers to both private and published sources in his advocacy of Davy: the former being a letter from Davy, dated 19 October 1815, in which the author makes the crucial observation that "explosive mixtures of [fire-damp] will not pass through small apertures or tubes" (*Davy Letters Project [DLP] website*), and the latter being a report from the *Morning Chronicle* celebrating Davy as one of the "homines centenarii," that is, one of the men "who exist but once in a century," for the invention of his lamp ("College of the London Institution"). In his letter to the *Courant*, Hodgson also addresses the serious "calumny upon [Davy's] character" that had been circulating among the pro-Stephensonians: that "hints respecting [Stephenson's] lamp were clandestinely smuggled to Sir H. Davy." For Hodgson, this amounts to an outrageous accusation:

The scientific world are highly indebted to [Davy] for his late discoveries respecting the nature and properties of flame; and the part of the population of this neighbourhood [High Heworth, near Gateshead], connected with the coal trade, owe him a mighty debt of gratitude for the successful application of these discoveries, to lighting the coal mines cheaply and securely. He has, I know, spent a year of great anxiety and labour in the service of the coal owners; it is, therefore, impossible to suppress one's indignation on hearing that doubts respecting his claims to these discoveries should have arisen among that body of men, especially when his enemies in the scientific world have been held in silence by their astonishment at the novelty and originality of the invention.

There is an assumed authority in evidence here. Hodgson not only takes the liberty of speaking for "this neighbourhood," but also, more boldly, for "[t]he scientific world," and his letter, taken in entirety and read in direct response to Stephenson's, has the distinct pervading air of a corrective from on high. Although Stephenson, Hodgson is prepared to concede, is "a very modest and a very ingenious man; and ... the *first* ideas he had of his lamp, were the effect of his own reflections on the subject," the facts and opinions presented in Hodgson's letter point towards a sure conclusion: lowly "Mr. Stephenson" ought not to challenge such a benefactor of mankind as the illustrious "Sir H. Davy."

There is nothing at all "modest" about the pro-Stephensonian reply that Hodgson's letter attracted from the pen of a certain "Aladdin." In fact, in terms of the cultural capital on show, Aladdin's letter of 9 November 1816, also published in the *Newcastle Courant*, where Hodgson was sure to see it, puts Simple Wire Gauze's of 22 October rather in the shade. Aladdin's is a richly satirical letter, which takes aim firstly at Hodgson, then at "the God of Mr. Hodgson's idolatry": Davy himself. Aladdin gives Hodgson rough treatment from the outset:

Chemistry may be a curious and interesting study, but certainly it is an alarming one; for, mixed up with patience, and meekness, and benevolence, which doubtless were the only atoms it would meet with in the mental alembic of a Christian minister, we see what a terrible explosion takes place, and what latent heat is given out.

Clearly, these are the words of one not only versed in the fundamentals of the science of chemistry ("alembic," "latent heat"), but also in the art of rhetoric. Moreover, this needling use of metaphor is merely one of several literary strategies of ridicule on

display in this letter. Aladdin, it becomes clear, is more than a match for Hodgson, referred to, with mock deference, as "the Rev. Gentleman" throughout. Aladdin counters Hodgson's forensic approach to the dispute (providing key dates, quotations, and suchlike) with a similar strategy of his own – in effect, one of close reading:

Nothing remains for the most ardent friend of truth and justice to hope, but that the committee appointed to prepare the offering to Sir H. Davy ... will not allow themselves to be fettered by the resolutions of the first meeting, which declared the plate was to be given to Sir H. Davy, for *the* invention of *his* Safety Lamp, and which was ingeniously altered by the second meeting, into *his* invention of *the* Safety Lamp.

Aladdin also seizes with glee upon some of the more purple passages of Hodgson's letter, such as his repetition of the conspicuously grandiloquent phrase "homines centenarii" (originally used to refer to Davy, as the *Morning Chronicle* article attests, by Charles Butler, Counsel of the London Institution):

Above all things let us hope, that [the committee] will not, in imitation of the Rev. Gentleman, put Sir Humphrey [sic] to the blush, by any mention of the Homines Centenarii. God preserve me from my friends; I can protect myself from my enemies, the worthy knight may exclaim; for little could we expect to see the fulsome nonsense with which the weary lecturer is tempted to fill up his appointed hour, to suit the refined taste of the gaping idlers at a chemical lecture, gravely published by a reverend divine as a rational panegyric on a man of science.

The paraphrase of the aphorism attributed to arch-satirist Voltaire ("God protect me from my friends – I can deal with my enemies myself" [qtd. in Miller 30]) recalls Simple Wire Gauze's use of another satirist, Churchill; but, of course, this time the erudite hostility is emanating from the opposing camp. The attack of the passage above is not merely a direct one on Hodgson, but also an indirect one on Davy: during his time at the RI, the latter was renowned for his popular chemical lectures, which attracted many a (as Aladdin would have it) "gaping idler." And Aladdin is not quite finished with Davy yet:

We fondly imagined, that the honoured chemist had pursued his fascinating and delightful study in affluence and in ease, cheered by the smiles of the fair, the encouragement of the great, and the approbation of the wise; – but we are assured by his solemn eulogist, that he is surrounded by scientific enemies, (*Risum teneatis?*) and passes whole years of labour and anxiety. From this we are induced to suppose that the field of chemistry is too confined for his mighty mind, and are tempted to feel for him in the same way as we do for poor Johnson, when chained to his dictionary – toiling at a work which he compares to the labours of the anvil and the mine, amidst inconvenience and distraction, in sickness and in sorrow.

In satirizing Davy here, Aladdin has sufficient cultural capital at his disposal to marshal material ranging from Horace ("*risum teneatis?*"; 'could you refrain from laughing?'; from *Ars Poetica* [circa 19 BCE] [line 5]) to Johnson's Preface to his *Dictionary of the English Language* (1755) (18: 111), and his effective use of irony is sustained. The most damning criticism of Davy by allusion comes shortly after, when

Aladdin makes reference to "the ingenious apology of the great Mr. Puff, whose character [Hodgson] seems to emulate when found in the same predicament in which Sir H. Davy seems to be placed." The "ingenious apology" comes in Richard Brinsley Sheridan's dramatic farce *The Critic; or, a Tragedy Rehearsed* (1779). The character of a Beefeater, delivering his opening line in a rehearsal of a comically chaotic play of Puff's entitled *The Spanish Armada*, prompts the offstage exchange between Sneer, Puff, and Dangle to which Aladdin refers:

BEEFEATER. *Perdition catch my soul, but I do love thee.*

SNEER. Haven't I heard that line before?

PUFF. No, I fancy not. Where, pray?

DANGLE. Yes, I think there is something like it in *Othello*.

PUFF. Gad! Now you put me in mind on't, I believe there is. But that's of no consequence! All that can be said is, that two people happened to hit on the same thought; and Shakespeare made use of it first. That's all.

(Sheridan, *The Critic* 3.1.80-87)

As entertaining a correspondent as Aladdin plainly is, Davy would not have been even remotely amused by this: the former is, after all, using his reading not only to ridicule the latter, which is bad enough, but also to make a much more serious charge of plagiarism. Recalling Aladdin's earlier comment on "gaping idlers at a chemical lecture," a final satirical-poetical allusion, this time to Pope's "An Epistle to Dr. Arbuthnot" (1735), reveals a distaste on Aladdin's part for the new "Dilettanti societies" of organized science which, for him, apparently amount to little more than gatherings for self-congratulation: "Where Cato gives his little senate laws, / And sits attentive to his own applause" (lines 209-10).

Aladdin's reply to Hodgson, rich in allusion to sources ranging from ancient poetry to late-eighteenth-century drama, and complex, not to mention effective, in discursive strategy, is not the product of one lacking in cultural capital. In fact, the author's use of pseudonym enables an intellectual grandstanding of a kind rarely seen without the protection afforded by the use of a pen name – Aladdin's recommendation that Hodgson "lay[s] aside Parke's Chemical Catechism," the popular scientific primer aimed at child readers, being a case in point. Naturally, the Davy versus Stephenson debate continued in letters sent to the Newcastle press, which afforded both sides further opportunities to promote the cause of their own man, and to attack the cause of the other. Again, though, in terms of the cultural capital on show, in the face of "the Establishment" the pro-Stephensonian camp was by no means lacking.

John Buddle was, like Hodgson, another of Davy's strongest allies in the north-east. Buddle had been involved in Davy's work on the safety lamp from a very early point. As a prominent "viewer" (a senior mine worker with a range of duties, being "a mixture of manager, engineer, surveyor, accountant, and agent" [Flinn 59]) at several collieries, it was Buddle on whom Davy called at Wallsend, near Newcastle, when making his earliest field studies of the nature and cause of fire-damp explosions, and with whom Davy "had a great deal of conversation" at the time before declaring, with a smile, "Do not despair; I think I can do something for you in a very short time" (*Report from the Select Committee* 153). So firm would Buddle's advocacy of Davy's lamps over any others become, that in the portrait of him painted by Thomas Carrick, later engraved by Edward MacInnes in 1838 (Latimer 177), he is pictured, in advanced years, holding a wire gauze "Davy" in his hand (Figure 1).



Fig. 1. John Buddle, painted by Thomas Carrick. Reproduced by kind permission of the Laing Art Gallery, Newcastle upon Tyne (Tyne and Wear Archives and Museums).

Buddle provides a spirited defence of Davy, of distinctly moralistic tone in parts, in his letter published in the *Newcastle Courant* on 25 January 1817. Buddle, noting with an air of weary resignation that “It is not to be expected that any great discovery should be brought to light without subjecting its author to the envy and insult of dabblers in science,” makes disapproving comment on the public “rancour and spleen” that the controversy has so far provoked, before moving, as Hodgson had before him, to correct the “calumny” which had by this time become persistent: that he had secretly communicated details of Stephenson’s lamp to Davy. “[T]here never was a grosser, a more unfounded, or more malignant lie circulated,” he states, firmly. Buddle, writing of the superiority of Davy’s wire gauze lamp (“extensively employed in all the collieries under my inspection”), claims, rather affectedly:

The colliers never hesitate a moment to take it into any respirable part of a mine, however much it may be charged with fire-damp; for, whenever it appears that the air, either from discharges of gas, or from casual interruptions of the circulating current, becomes explosive, only give the collier his *Davy*, and he goes to his occupation with the same confidence in this impure atmosphere, that he would do in any other situation, with a candle.

The mention, several lines previous to this, of “all my professional brethren” is similarly high-flown. Indeed, as Buddle’s letter goes on, and he mounts towards his conclusion, his style becomes more grandiloquent, all in defence of Davy:

Great pains have been taken to impress the public mind, that certain viewers of this neighbourhood [Wallsend] bruited about the excellency of Sir H. Davy's lamp, and brought it into use in preference to others of some pretended superior merit. The falsehood of this calumny is only equalled by its absurdity. Is it likely, in the name of common sense, that those to whose care the lives of so many of their fellow-creatures are entrusted, and who also risk their own existence daily on the wire gauze lamp, should have adopted it from any other consideration, than that of a thorough conviction of its exceeding every other description of lamp, in safety, simplicity, and utility? It would certainly be expecting too much of human nature to suppose that such a compliment could be paid to any one, let his rank in society or his eminence in science be what they may. Such an idea could only have sprung from the conceited opinions of those closet and fireside viewers, who know little more of a coal mine than its name, and who cannot be supposed to be competent to sit in judgment on matters in which they are wholly devoid of experience: and it is only from such, that we have ever heard of any objections to the wire gauze lamp.

No one that has actually the charge of a fiery colliery, has hitherto denied the safety of this lamp, or set it on a level with any that have been constructed on modifications of its principles.

Alongside conspicuously flamboyant turns of phrase such as the poeticism "bruited," a usage of Shakespeare, Milton, and Byron, seldom seen on the pages of a regional newspaper, Buddle's general bombast is apparent: "those to whose care the lives of so many of their fellow-creatures are entrusted, and who also risk their own existence daily," "fiery colliery." So too is his use of persuasive strategy, as in his appeal to "common sense" phrased in the form of a rhetorical question, which makes effective use of the rule of three.

It is unsurprising that Buddle's rather florid, and overly worthy ("I feel myself called upon to do an act of justice to the merit of [Davy's] invention, in a public statement..."), intervention in the dispute attracted several hostile replies. The first overtly pro-Stephensonian reply came from a correspondent signing himself "Fairplay." This choice of nom de plume is intended, as Simple Wire Gauze's was for Stephenson, to be galling for Davy and his advocates: in signing himself "Fairplay" in support of Stephenson, the implication is that there has been something *unfair* in Davy's account of the invention of his safety lamp; this quickly invites a leap to the notion of plagiarism. Fairplay's letter, published in the *Newcastle Courant* on 1 February 1817, speaks of the author's possession of no small measure of cultural capital from the outset, bearing as it does the Latin epigraph "Davius Non Oedipus": an allusion to Terence's comedy *The Woman of Andros* (166 BCE). In this play, Davus, slave of Simo, speaks the line "Davius sum, non Oedipus" ("I'm Davus, not Oedipus") (line 194). In Greek mythology, Oedipus solved the riddle of the Sphinx guarding the entrance to the city of Thebes (see: Sophocles, *Oedipus Tyrannus*), so, in speaking his line, Davus is drawing a distinction between the genius of Oedipus, who "thus became proverbial as a riddle solver" (Terence 68 n.), and his own lack of the same. Fairplay's epigraph may be taken in two ways: firstly, Buddle is Davus, and lacks the genius to solve the "riddle" of who should be credited for the invention of the safety lamp; secondly, Davy is Davus, and lacks the genius to solve the larger "riddle" of fire-damp explosions, so must resort to "unfair" play. The potential punning on Davy's name invites the second interpretation, but either reading is

possible. In either case, this is an allegation of a lack of genius directed towards the pro-Davyan camp.

Fairplay's first attack on Buddle is on philosophical grounds, by criticizing, quite reasonably, his form of argument. Referring to the, in Buddle's words, "vile report, ... a libel upon the honour and integrity of Sir H. Davy, as well as myself" (that is, that Buddle had secretly communicated details of Stephenson's lamp to Davy), Fairplay states, beginning in a slightly hollow strain of innocence:

Of this report I know nothing, but from the gentleman's own statement; but it would have been more prudent, methinks, not to have called the attention of the public to the subject, unless he could have explained it more satisfactorily. Mr. Buddle, in refutation of this report, assures us that there never was a *grosser, a more unfounded, or more malignant lie circulated*. This elegant mode of argument might probably be more convincing at the mess table of a rifle corps than in the school of philosophy.

It is indeed true that Buddle offers no more of a refutation than, in Fairplay's words, "bare assertion." But not only does Fairplay reject, with distinct irony, Buddle's "elegant mode of argument," he also makes an attack on the grounds of social status. Although viewers, such as Buddle, were of a notably higher station than "common" colliers, the occupation was, nevertheless, not one of a gentleman; neither, of course, was that of rifleman. Only those with a good formal education, such as Fairplay himself,² would be acquainted with "the school of philosophy," the language of Latin, and the plays of Terence. Fairplay puts the point again, this time more cuttingly, in his concluding paragraph:

Mr. Buddle may conscientiously use either of the two lamps [Davy's or Stephenson's] in their present state of improvement, without feeling any responsibility to decide upon the merit of the original invention, nor do I suppose him necessarily acquainted with the subject. An expert practical viewer, who regulates the ventilation of a mine, who lines off the workings, and accurately measures his own and his neighbour's barrier, will make use of the inventions applicable to his art, without bewildering himself with theoretical speculations. He may know as little of the discovery of the Safety Lamp as a mariner who sails round the world does of the philosophy of the magnet.

Fairplay's point is plain: no viewer, however competent, should "bewilder himself" with subjects as arcane as philosophy, or hope to aspire to the effective argument of one of the "school." There is, of course, a clear parallel between the treatment that Buddle receives at the hands of Fairplay, and that that Stephenson received from Simple Wire Gauze: in both cases, one correspondent pours scorn on the other from an assumed position of power. Crucially, though, Fairplay's attack comes from the opposing side of the dispute.

Unfortunately for Buddle, the attack he received on 1 February was double-pronged. The same page of the *Newcastle Courant* also features a reply to Buddle's letter of 25 January from Aladdin, later branded "Assassin" by a clearly irritated Davy, "for he endeavours to stab in the dark" (letter from Davy to Buddle, dated 8 February 1817, *DLP* website).³ In his letter of 1 February 1817, Aladdin is just as ruthlessly critical of Buddle as he was of Hodgson on 9 November 1816. This letter, like the one in reply to Hodgson, is richly satirical; it is also a powerful display of the

abundance of cultural capital in the author's possession. After beginning with, in the context of the letter as a whole, relatively gentle ironic barbs (such as referring to Buddle's letter as an "elegant production" and Buddle himself as Davy's "enlightened advocate"), Aladdin proceeds to attack, as Fairplay did in the previous letter examined, Buddle's weak "mode of argument":

The flattering attentions of great men have often overturned the puny intellects of little ones, and Sir Humphrey [sic] Davy has no more reason to complain of any injury that has been done him by his purblind admirer, than the Captain, who, having intoxicated his crew, finds his ship fairly run aground. We were just flattering ourselves that the discussion upon the subject of the Safety Lamp was drawing to a close; it was proceeding in a way gratifying to all the friends of truth and justice. Mr. Stephenson's candid and plain statement was before the public, and Sir Humphrey [sic] Davy's might soon be expected; when up jumps a redoubted Knight and exclaims, "If any body says I told Sir Humphrey [sic] Davy of Stephenson's invention, he is a liar." – Oh, valiant Don John! Oh, prudent and polished disputant!

Leaving aside the certain reference to Spenser ("some redoubted knight" [*The Faerie Queene* 2.4.38]) and the probable one to Alexandre Exquemelin ("the noble and valiant Don John" [109]), in *his* mode of argument, which takes in the use of metaphor, the editorial "we," and, again, the rule of three, Aladdin is plainly a more accomplished "disputant" than Buddle. There is a little more of Fairplay's "the school of philosophy" to Aladdin's subsequent point, which draws attention to an implicit non sequitur on Buddle's part:

[N]othing in this fuming production [Buddle's letter] would have drawn any answer from me, had he not pompously stated, that the Lamps upon the construction adopted by Sir Humphrey [sic] Davy, are in general use in the concerns with which he is entrusted, from which, I have no doubt, he would have us come to the fair conclusion, that *therefore*, Sir Humphrey [sic] Davy must have discovered the principle, and ought to have the honour of that discovery.

Again, this is a reasonable objection: there is, after all, nothing in Buddle's letter that is offered as explicit proof of Davy's priority in the invention of the safety lamp, so, on philosophical grounds, Aladdin's refutation of Buddle is robust enough. In his attack on Hodgson of 9 November 1816, Aladdin demonstrated the effective use of literary allusion (to Horace, Voltaire, Sheridan, et al.) in argument; he does so again in the present example. Having opened his letter with an epigraph from *Hamlet* ("[I]t started like a guilty thing / Upon a fearful summons" [1.1.153-54]), seemingly in reference to the embarrassment to Davy that, the author imagines, Buddle's letter will have caused, Aladdin continues to damage Buddle's credibility by the use of allusion, again drawing on the writings of the satirists: firstly, Voltaire, and, secondly, Swift.

The allusion to Voltaire comes as Aladdin seizes upon Buddle's use of the word "bruided":

A few words more with the Viewer. I returned good for evil to his Rev. Friend [Hodgson], and I will not be less generous to him. If he is as emulous of the character of an Author as of a Philosopher, it would be

better if he struck out such uncommon fine words as *bruited*; they only serve (I must borrow an idea of Voltaire's) to point out the Laundress who has had the pleasant task of washing his dirty rags, which, after all the pains that have been taken, make but a sorry appearance, though, I have no doubt, that pains-taking and sober old lady bestows quite as much labour upon them, and with quite as much success, as upon her own frippery.

In a letter of 24 July 1752, Voltaire reports that Pierre-Louis Moreau de Maupertuis, who had been made Director of the Berlin Academy of Sciences by Frederick the Great in 1745, had been spreading the rumour that when the King had sent Voltaire his poems to correct, the latter had complained: "Ne se lassera-t-il point de m'envoyer son linge sale à blanchir?" ("Will he never tire of sending me his dirty linen to wash?"; Voltaire 20: 390-91). Aladdin's suggestion, then, is that another has acted as Buddle's "buckwasher," that is, corrector of his writing (Carlyle 444). Not only is this patronizing towards Buddle, it also suggests murky, collusive dealings (in this specific case, with Hodgson, Aladdin seems to imply) among the pro-Davyans: precisely the type of allegation that Buddle described as "a libel upon the honour and integrity" of both himself and Davy in his letter to the *Newcastle Courant*. Aladdin similarly manages to smear both Buddle and Davy's other advocates in his closing reference to Swift:

If at any future period he [Buddle] finds himself at a loss for an argument, in a bad cause, it will save him a great deal of trouble, and be quite as convincing as any thing I have yet heard advanced by the friends of Sir Humphrey [sic] Davy, if he adopts the thundering proofs of the renowned Lord Peter, who, when endeavouring to persuade his brothers to swallow his brown crusts, exclaims "Look ye, gentlemen, to convince you what a couple of blind, positive, ignorant puppies you are, I will use but this *plain argument*, – By God it is true good natural mutton as any in Leadenhall-market, and God confound you both eternally if you offer to believe otherwise."

The mischief Aladdin intends by quoting this "proof," from Swift's *A Tale of a Tub* (1704), is obvious, but there is also an additional, subtextual element of roguishness in his choosing to quote the character of Peter specifically. As *A Tale of a Tub* proceeds, Peter, originally referred to as "Mister Peter," insists that the others refer to him in increasingly grandiose terms: firstly "Father Peter" (Swift's satire takes aim at organized religion, with Peter representing the Roman Catholic Church), then "Lord Peter." Davy, knighted by the Prince Regent in 1812, had made a quite astonishing, and highly visible, rise through the social echelons in his lifetime, and any provocateur, especially one as effective as Aladdin, would, of course, seek to impute a Peterian pomposity to that rise, however unfair that may be. Additionally, Swift's Peter, according to the narrator of *A Tale of a Tub*, "had an abominable Faculty of telling huge palpable *Lies* upon all Occasions: and swearing, not only to the Truth, but cursing the whole Company to Hell, if they pretended to make the least Scruple of believing Him" (52). An ardent pro-Stephensonian such as Aladdin would obviously relish the opportunity to level the damaging accusation of "telling huge palpable *Lies*" at Davy. Whether Davy's distinct prickliness and, at times, downright hostility towards his disputants in the safety lamp controversy (see: Knight 113, for example, where Davy's reaction to Stephenson is described as being "heavyweight" and

"overdone") would have been apparent to Aladdin et al. in early 1817 is moot, but present-day readers, with the privileged insight afforded by access to Davy's private letters, may indeed see something of him in the latter part of Swift's description of Peter.

To return to Buddle and his original letter of 25 January, the replies of Fairplay and Aladdin should leave the reader in little doubt that the pro-Stephensonian side were capable not only of holding their own in the realm of public discourse, but, in fact, of pushing the pendulum of controversy away from Stephenson and towards Davy: such was the damage done to Buddle's (and, by extension, to Davy's) case on 1 February that the pro-Davyans simply had to respond convincingly, in order to recover credibility. In large part, the strategy of attack employed by Fairplay and Aladdin depended on using the cultural as a power resource, on using the literary and the philosophical as weapons. And, in both cases, this strategy proved effective.

Quite predictably for such a hard-fought, and at times distinctly unedifying, contest, the dispute over the miners' safety lamp did not proceed to a neat conclusion, and further letters such as those by Simple Wire Gauze, Aladdin, and Fairplay, along with more temperate ones from the likes of Hodgson and Stephenson, were published on both sides. Even as Davy was being celebrated at a dinner in his honour, at the Queen's Head public house in Newcastle on 11 October 1817, as one of "brilliant genius, which has been so long employed in an unparalleled manner, in extending the boundaries of chemical knowledge, [and which] never accomplished a higher object, nor obtained a nobler triumph" (Paris 2: 121)⁴ than the invention of the safety lamp, a committee of advocates on Stephenson's part were preparing to reaffirm their case that their man, not Davy, should be recognized as the inventor, which they did at a meeting on 1 November. To be sure, Davy enjoyed real, material advantages that were simply beyond Stephenson. But in terms of the distribution of cultural capital in this dispute, things were, as this article has argued, much less clear cut. Stephenson was no mere "ignorant mechanic" (letter from Davy to Hodgson, dated 27 October 1816, *DLP* website), and, in terms of cultural advantages, the pro-Stephensonian camp were capable of staging public displays of power, authority, and status potent enough to cause extreme consternation among those on the other side of the priority dispute, especially in Davy himself.

In disputes over scientific priority, the use of the cultural as a power resource has its role to play, as this article has also demonstrated. So too does the use of pseudonymous writing in periodical publications, more typically associated, in the first decades of the nineteenth century, with literary review culture.⁵ In 1817, when "Z." was ridiculing Leigh Hunt, "chief Doctor and Professor" of "The Cockney School," in *Blackwood's Edinburgh Magazine* ("a man ... of extravagant pretensions both in wit, poetry, and politics, and withal of exquisitely bad taste, and extremely vulgar modes of thinking and manners in all respects ... a paltry cockney newspaper scribbler" [38-41]), so too was Simple Wire Gauze mocking Stephenson, and Aladdin and Fairplay deriding Davy and his allies. The reviews, chief among them *Blackwood's*, the *Quarterly Review*, and the *Edinburgh Review*, thrived on satirical, often adversarial prose; their readers expected it, and, of course, were willing to pay for it. The publication of writing in a similar mode by the editors of the *Newcastle Courant*, *Tyne Mercury*, and *Newcastle Chronicle* was a far less calculated affair, but, clearly, they still found a place for it in their respective publications. This represents a distinct point of overlap between early-nineteenth-century review and newspaper culture. The letters examined in this article also speak of the "common intellectual context" (Young 127) of public discourse in early-nineteenth-century Britain, which

was reflected in periodical literature of the period. The Newcastle newspapers were resolutely "generalist" publications, distinct in many ways from the emerging field of more "specialist" publications squarely aimed at those with scientific interests (such as the *Philosophical Transactions*, the *Philosophical Magazine*, and *Annals of Philosophy*), yet they still carried scientific communications regarding the invention of the safety lamp, and still played a key role in the scientific priority dispute that followed. The safety lamp controversy offers a clear example of a scientific (or at least partly scientific) debate being shaped by a "general" or "popular" print medium.

As the safety lamp controversy began to peter out, Davy's and Stephenson's lives continued much along the same lines as they had done prior to the dispute. Davy was awarded his handsome service of plate, for which £2,500 was raised (*Report from the Select Committee* 169), by the north-eastern coal owners; Stephenson was given much less. Davy went on to receive a baronetcy in 1818, adopting a coat of arms featuring a fire bound by chains and the motto "Igne constricto, vita securo" ("Fire confined, our lives are safe"), at least partly in recognition of his efforts; Stephenson received no comparable accolade, and carried on working, for several years, above ground at Killingworth. But for a time, at least, when the opposing sides of "knight and worker, chemist and engineer, savant and artisan, theory and practice, metropolis and province" (James 203) went to war in the press, the contest was by no means as one-sided as the difference in Davy's and Stephenson's respective rewards may suggest.

Notes

1. See letters from Davy to Robert Gray and John Hodgson, both dated 30 October 1815. *Davy Letters Project (DLP)* website, <http://www.davy-letters.org.uk>. This resource will be superseded by *The Collected Letters of Sir Humphry Davy*, edited by Tim Fulford and Sharon Ruston, advisory editors, Jan Golinski, Frank A. J. L. James, and David Knight, Oxford: Oxford UP, forthcoming 2018. 4 vols.

2. There are suggestions in other letters on the safety lamp controversy in the Newcastle press as to Fairplay's true identity. Simple Wire Gauze ("Letter to the Editor." *Tyne Mercury*, 4 Feb. 1817) refers, perhaps revealingly, to "[Stephenson's] very *discriminating* friend ... Mr. Fairplay"; the same correspondent used notably similar terminology ("very *discriminating* gentleman") in his earlier letter of 22 October 1816 to refer to Robert William Brandling. In the same month, Hodgson ("Letter to the Editor, dated 3 Feb. 1817." *Newcastle Courant*, 15 Feb. 1817) mentions "a supercilious writer, who signs himself Aladdin (in allusion no doubt to the wonderful lamp of his friend, Mr. Fairplay)"; Brandling had himself invented a safety lamp, which was displayed at the meeting of the Literary and Philosophical Society mentioned in the introduction to this article. As a Cambridge-educated barrister, Brandling's educational background keeps him firmly in the frame.

3. A letter from Buddle to Hodgson, dated 10 November 1816 (in Hodgson's letter book held at Northumberland Archives [SANT/BEQ/18/11/13/479-82]), identifies Aladdin, rather than Fairplay (see: note 2 above), as Robert William Brandling.

4. The words are those of John George Lambton, radical Whig MP for Durham and pro-Davyan coal-owner.

5. Although most reviews of the period favoured anonymous publication, some, such as *Blackwood's Edinburgh Magazine*, allowed pseudonymous publication.

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