

**‘A chain of invincible reasoning’?
Isaac Newton’s Writing Practices in the New College Manuscripts**

One of New College Library’s greatest treasures is its set of four volumes of research manuscripts from the desk of Sir Isaac Newton (1642–1727). While valuable objects in themselves, they are also highly significant for researchers hoping to piece together the complex research of Newton’s final decades, in which he sought to reset the timelines of ancient chronology. In addition, they provide compelling testimony for his embeddedness in the networks and environments of early eighteenth-century London. This article will demonstrate how these two arenas—ancient history and metropolitan life—were often creatively entangled, with important results for Newton’s historical and cultural imagination.

These manuscripts were not always considered valuable: indeed, they ended up at New College, rather than with collections elsewhere, because their contents were increasingly seen as an embarrassment. Although Newton’s executors searched them for publishable material after his death (the notes of his son-in-law John Conduitt weighing up their viability can still be found in the first volume), following the posthumous release of Newton’s historical research as the *Chronology of Ancient Kingdoms Amended* (1728) they passed from hand to hand, until their donation to New College in 1872.¹ Their anti-trinitarian heterodoxy was problematic when Newton was made a pillar of orthodox establishment science during the eighteenth century. Meanwhile, Newton’s insistence in his *Chronology* that scholars had made ancient history around three hundred years too old had little traction, and was frequently regarded as the work of an elderly and somewhat deranged natural philosopher, blundering through academic fields for which he had no qualification.²

Recent scholarship has begun to challenge this view, marshalling at its forefront the materials held by New College. They are core to the arguments of Jed Buchwald, Mordechai Feingold, and Cornelis Schilt, who have demonstrated the complexity of Newton’s historical research, its vibrancy, and how his thinking evolved over three decades of inquiry.³ While these studies have begun to embed Newton’s thinking in the broader context of his work for the Royal Mint, and have considered how approaches to evidence in one arena impacted his thought in another, there is still much work to be done to integrate Newton’s historical research during his 1696–1727 London residence with his interactions within its urban community.⁴ The New College manuscripts foreground how this can be done, because they preserve a fantastic vertical slice of Newton’s wider activities in London. When he wrote, he grabbed whatever papers were to hand for his note-taking. These include a motley collection of letters, calculations, and more: thanks to such recycling these extremely ephemeral documents are now bound and preserved alongside his research notes. Running up, over, and through each other across a thousand tattered pages, these jottings give us a strong visual representation of how these different writing worlds collided.

¹ For a full history of these manuscripts, see Jason Morgan, ‘[Seeing the Light: Being the story of Sir Isaac Newton’s prisms and papers and the means by which they came to New College](#)’, *New College Notes* 9 (2018); no. 10, and Sarah Dry, *The Newton Papers: The Strange and True Odyssey of Isaac Newton’s Manuscripts* (Oxford: Oxford University Press, 2014).

² William Warburton wrote that Newton had ‘suffered himself to be drawn away from the *Goshen* of MOSES into the thickest of the *Egyptian* Darkness, by lying little *Greek* mythologists and Story-tellers’, *The Divine Legation of Moses Demonstrated* (London: Fletcher Gyles, 1738), vol. 2, p. 205.

³ Jed Buchwald and Mordechai Feingold, *Newton and the Origin of Civilization* (Princeton: Princeton University Press, 2012); Cornelis Schilt, *Isaac Newton and the Study of Chronology: Prophecy, History, and Method* (Amsterdam: Amsterdam University Press, 2021).

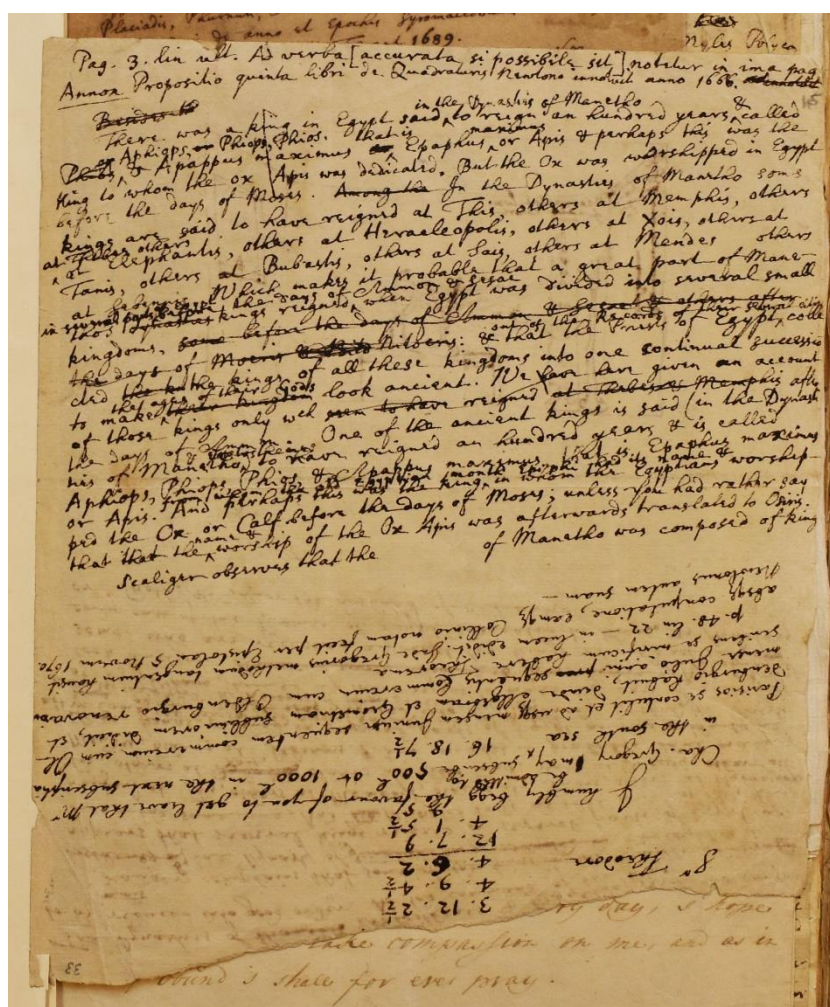
⁴ Buchwald and Feingold, *Newton and the Origin of Civilization*, pp. 239–43.

NEWTON AT WORK

As an example, these manuscripts are most famous for including the sole diagram of the prism experiment, demonstrating the refraction of white light, in Newton's hand. However, when viewed as a whole that same page reveals a very different and more complex intersection of interests. In fact, the prism diagram is something of a red herring: while there are stray notes and calculations in these manuscripts, they are predominantly unconcerned with the philosophical findings which made Newton's name. They are dominated much more by the other sorts of text found on this torn bit of stray paper.



Prism page (verso), New College Library, Oxford, MS 361/2, f. 45v
All images © Courtesy of the Warden and Scholars of New College, Oxford



Prism page (recto), New College Library, Oxford, MS 361/2, f. 45r

Overleaf the page has been recycled at least four times. Its original use was probably for a draft letter addressed to Sir Theodore Janssen, a paper baron and one of London's great financiers. Newton wrote to him because he was one of the South Sea Company's directors, and he wanted to ask Janssen to secure an investment for one Charles Gregory: 'I humbly begg the favour of you to get leave that M^r Cha. Gregory may \be admitted to/ subscribe 500^l or 1000^l in the next subscription' (361/2, f. 45r). The letter breaks off midway. At a later date, Newton wrote a table interlineally over the letter to add sums of money together, while beneath it he drafted a short Latin account of scientific disputes from the early 1670s.

Most conspicuously, a much larger block of heavily revised text yokes together a discussion of the Apis Bull—a favourite topic of Newton's—with criticism of the ancient Egyptian king list as passed down by the third-century BC historian Manetho. Newton deleted his initial argument that 'There was a king in Egypt said \in the Dynasties of Manetho/ to reign an hundred years . . . & perhaps this was the King to whom the ox Apis was dedicated'. Instead, he opted to take a few steps back and first explain how this king could only be a petty ruler: 'a great part of Manethos dynasties kings reigned \in several parts before the days of Ammon & Sesac/ when Egypt was divided into several small kingdoms'. The Egyptian priests had then put these reigns back to back 'to make their kingdom \the ages of their Gods/ look ancient' (361/2, f. 45r). These 'Gods' were, Newton explained elsewhere, the first rulers of Egypt (361/2, f. 190v). The eclectic nature of these papers appears to correlate with descriptions of Newton's writing practices given posthumously by friends. His amanuensis Humphrey Newton (no relation) described in a letter to John Conduitt how:

When he has sometimes taken a Turn or two [in the gardens near his laboratory], has made a sudden stand, turn'd himself about, run up y^e Stairs, and like another Alchimedes, with a Εὐρηκα, fall to write on his Desk standing, without giving himself the Leasure to draw a Chair to sit down in.⁵

The unabashed attempt to reimagine Newton as Archimedes (or, revealing, 'Alchimedes') warns us to be cautious about such an anecdote, but whatever its literal truth it nonetheless captures the erratic energy which characterizes the New College manuscripts. Notes, such as on this page, are abrupt, starting and stopping without ceremony and flowing excitedly across whatever stray bit of paper appears to have been to hand.

However, there is more to these notes than a raw stream of consciousness. Years later, Zachary Pearce (then Newton's local rector), also described encountering an elderly Newton in the act of writing:

I found him writing over his *Chronology of Ancient Kingdoms*, without the help of spectacles, at the greatest distance of the room from the windows, and with a parcel of books on the table, casting a shade upon the paper. Seeing this, on my entering the room, I said to him, 'Sir, you seem to be writing in a place where you cannot so well see.' His answer was, 'A little light serves me.' He then told me that he was preparing his *Chronology* for the press, and that he had written the greatest part of it over again for that purpose.⁶

This reclusive scholar, working minutely 'over' a text with a tall pile of tomes to hand, is a very different writer than Humphrey Newton's inspired genius. However, these practices are also evident in the New College manuscripts, from the shopping lists of titles which contributed to the 'parcel of books' surrounding Newton, to the obsessive revisions that he made again and again, often in a tiny hand, and which tended to obliterate almost every draft. On the side of the page including the prism diagram Newton continued his notes on the Egyptian kings, following the tear at the bottom of the page (and so evidently writing after it): ~~'Herodotus wrote above 200 years before & And perhaps some who are reckoned amongst the kings reigned not but had \were only eminent/ only one of the Names of Egypt dedicated to them, as Athothes or Thoth'~~ (361/2, f. 45v). Newton was taking great care to revise even scrap notes for clarity and precision.

Similar examples can be found throughout the New College volumes. These papers include drafts of his *Two Notable Corruptions of Scripture* (1690; published 1754), an epistolary study shared with John Locke which disputed scriptural authority for the Trinity; various drafts of the *Short Chronicle*, a manuscript timeline Newton published through scribal circles in the 1710s, and which was translated in an unauthorized French print edition in 1725; and research papers and drafts for what became Newton's posthumous *Chronology of Ancient Kingdoms Amended* (1728), which gave a longer justification of his revised chronology. Together, the four manuscripts give examples of every aspect of Newton's historical writing and research, from reading lists through note-taking and early stage drafts to heavily revised chapters, and even a scribal copy of the *Short Chronicle*, with corrections in Newton's hand. They therefore provide an invaluable insight into Newton's research practices over the course of three decades.⁷

⁵ King's College, Cambridge, Keynes MS. 135, p. 5.

⁶ *The Lives of Dr. Edward Pocock [...] of Dr. Zachary Pearce [...] of Dr. Thomas Newton [...] and of the Rev. Philip Skelton* (London: F. C. and J. Rivington, 1816), vol. 1, pp. 434–5.

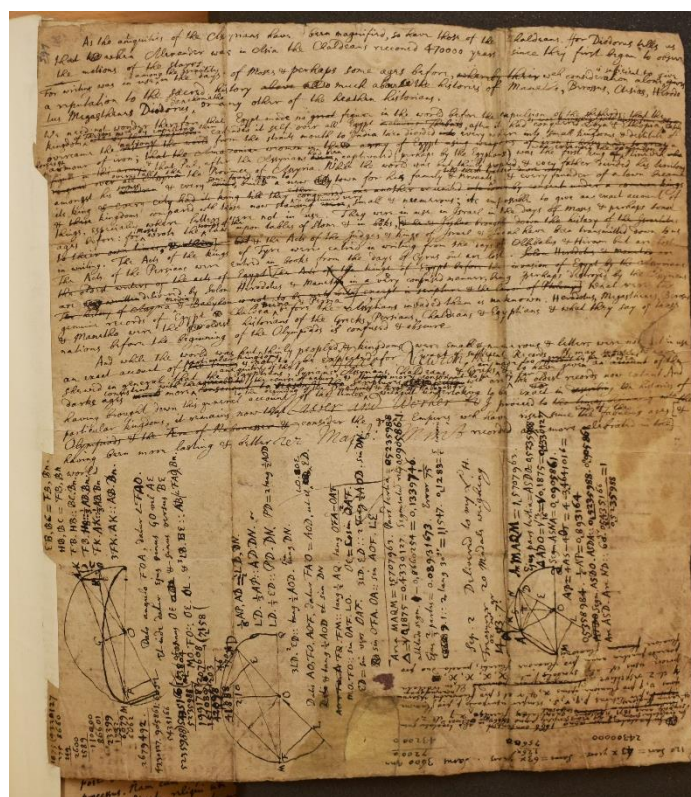
⁷ New College Library also contains the printed edition of Newton's *The Chronology of Ancient Kingdoms Amended* (London: J. Tonson, and J. Osborn and T. Longman, 1728), New College Library, Oxford, BT3.182.8, and Samuel Horsley's edition of Newton's works, *Isaaci Newtoni opera quæ exstant omnia* (London: John Nichols, 1779–85), New College Library, Oxford, NB.181.15–19, featuring the *Short Chronicle* and the *Chronology*. Horsley's footnotes betray his growing exasperation with Newton's historical methodology.

That said, it is the recycled paper which remains the most visually striking feature of these manuscripts. Frank Manuel's 1963 assessment still applies:

The chance juxtaposition of ideas is delightfully surrealistic . . . The subjects run into each other, and one must be wary lest Chiron the Centaur appear as a worker at the Mint for whom a raise (delayed sixty years) is being requested by the new Master.⁸

For Manuel, this was a reason to focus on more complete manuscripts elsewhere. It is only recently that scholars are returning to the challenge of these papers, bolstered by digitisation efforts such as the Newton Project, which have provided transcripts of much needed clarity.⁹ This eclecticism is not consistent across the four volumes. MS 361/1 and 361/4 are generally late-stage drafts made in folio booklets (albeit with some heavy corrections), while volumes MS 361/2 and 361/3 are the most disorderly. They offer the widest sample of Newton's working practices, cutting down through layers of Mint paperwork, calculations, receipts, community organisation, charitable petitions, financial affairs, Royal Society paperwork, and more. They vary from a note apportioning game to friends—Conduitt did best with a swan, a duck and four teal—to draft evidences about coin clippers, and desperate pleas for help (361/2, f. 251r). On one occasion, Newton wholly overwrote a note begging that 'If I goe into y^e Compter [the jail for debtors and coiners] it will kill me seeing so many dye of the spotted ffeauour' (361/2, f. 94r).

Newton was equally unphased by papers which were already heavily damaged: his writing followed the edges of tears, and hyphenated words to jump over holes in the middles of pages (e.g. 'Peloponne- sus') (361/2, f. 81r-v). When recycling a page, Newton might turn it upside down or ninety degrees to use whatever space was left, or even write directly over previous drafts. For example, one large enclosure,

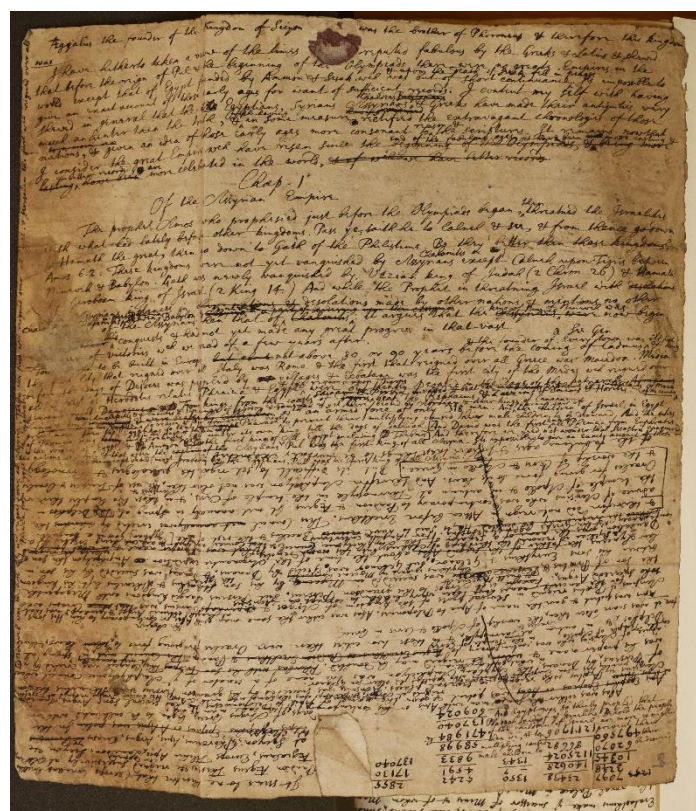


Big draft sheet (recto), New College Library, Oxford, MS 361/3, f. 188r

⁸ Frank Manuel, *Isaac Newton, Historian* (Cambridge, Mass: Harvard University Press, 1963), p. 15.

⁹ Schilt, *Isaac Newton*, p. 130.

addressed to 'Sir Isaac Newton Master and Worker of her Maj:^{es} Mint', has been used for all sorts of congested notes. Diagrams and geometrical calculations have been written under the address, alongside Latin writing on calculus and Mint notes: 'Sep. 2. Delivered to my L. H. Treasurer 20 Medals weighing 14^{oz} 13^{dwt} 7^{gr}' (361/3, f. 188r). Over the address Newton drafted a history of literacy explaining the privileged status of scripture, 'w^{ch} are \by far/ the oldest records now extant'. On the verso, various chapter drafts clash into each other.



Big draft sheet (verso), New College Library, Oxford, MS 361/3, f. 188v

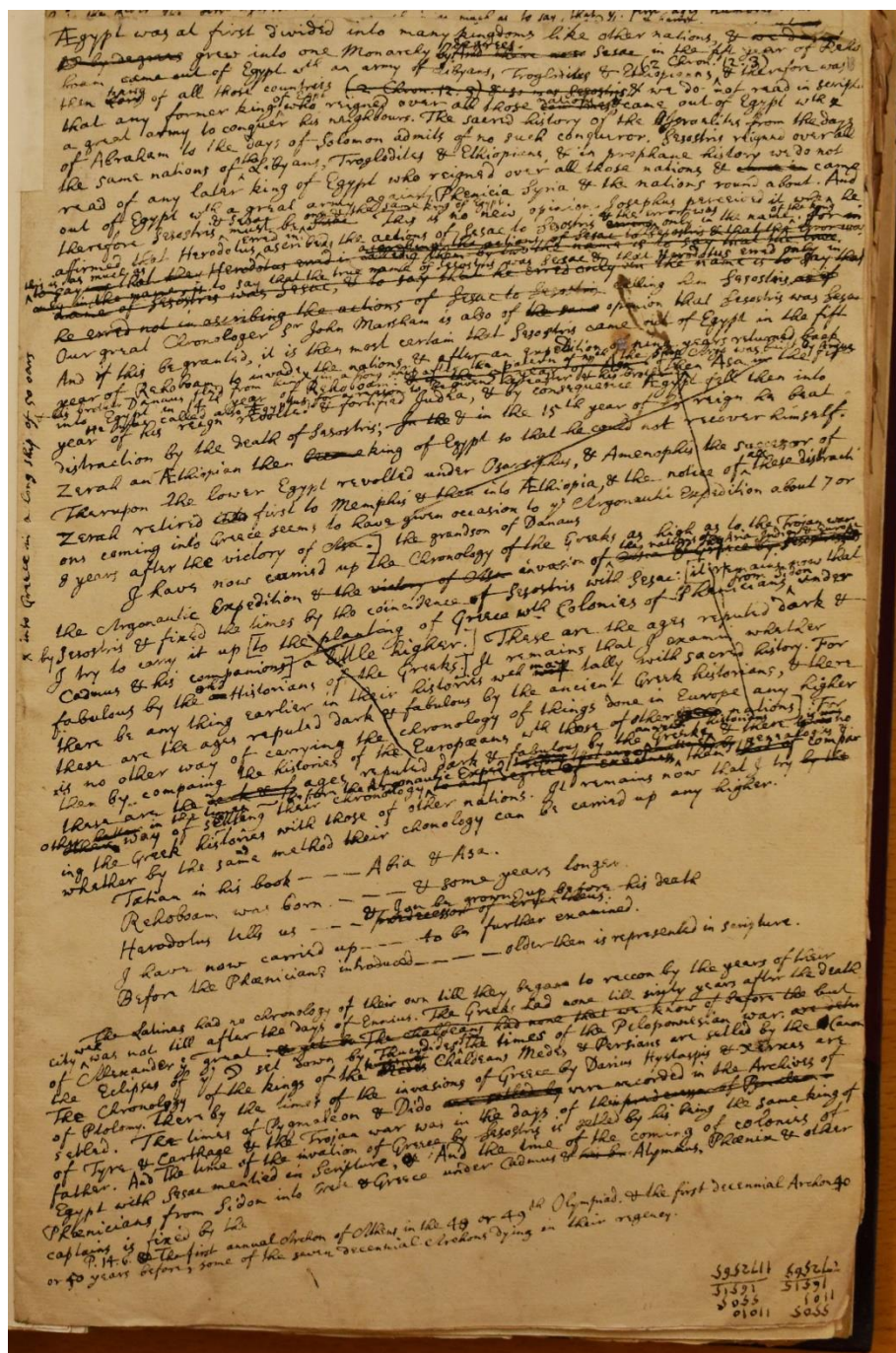
He even began 'Chap 1. Of the Assyrian Empire', the first paragraph of which quickly collides into an upside-down draft on Greek royal genealogies moving up the page. That these notes avoided his calculations indicates that Newton had already recycled this page several times, while his attempt to add chapter divisions shows that he was nonetheless thinking about how the text could be organised into formal drafts. This is a highly fluid document, caught between a variety of writing contexts, and where unstable texts break apart and are remade.

Newton also used blank sheets folded into two-page folio booklets to draft letters and documents for the Mint, and these were frequently recycled for his historical notes. They often began *in medias res*, continuing on from previous pages and arguments, and open with statements including 'And thus you see the truth' (361/2, f. 106v), 'I have hitherto taken a view of the times reputed fabulous by the Greeks' (361/3, f. 188r), and 'We may recon therefore' (361/2, f. 95r). These booklets could be arranged in sequence or sewn together.¹⁰ One gets a sense of Newton trying to string together these booklets, each of which may contain a discrete part of the argument, into what Andrew Reid, the author of *An Abstract of Sir Isaac Newton's Chronology* (1732), called his 'chain of invincible reasoning'.¹¹ Indeed, Reid's modular image was remarkably accurate. It was

¹⁰ Dry, *The Newton Papers*, p. 21.

¹¹ Andrew Reid, *An Abstract of Sir Isaac Newton's Chronology of Ancient Kingdoms*, 2nd edn. (London: William Innys, 1732), p. 25.

rare for Newton to complete drafts to his satisfaction, and there is evidence that he hedged against disruptive habits, such as his tendency to get easily distracted when copying out drafts: he used a series of dashes to mark out paragraphs and pages which should be transposed in from other papers, creating a 'chain' of statements strung together from separate papers (361/2, f. 18r).



Chain of statements, New College Library, Oxford, MS 361/2, f. 18r

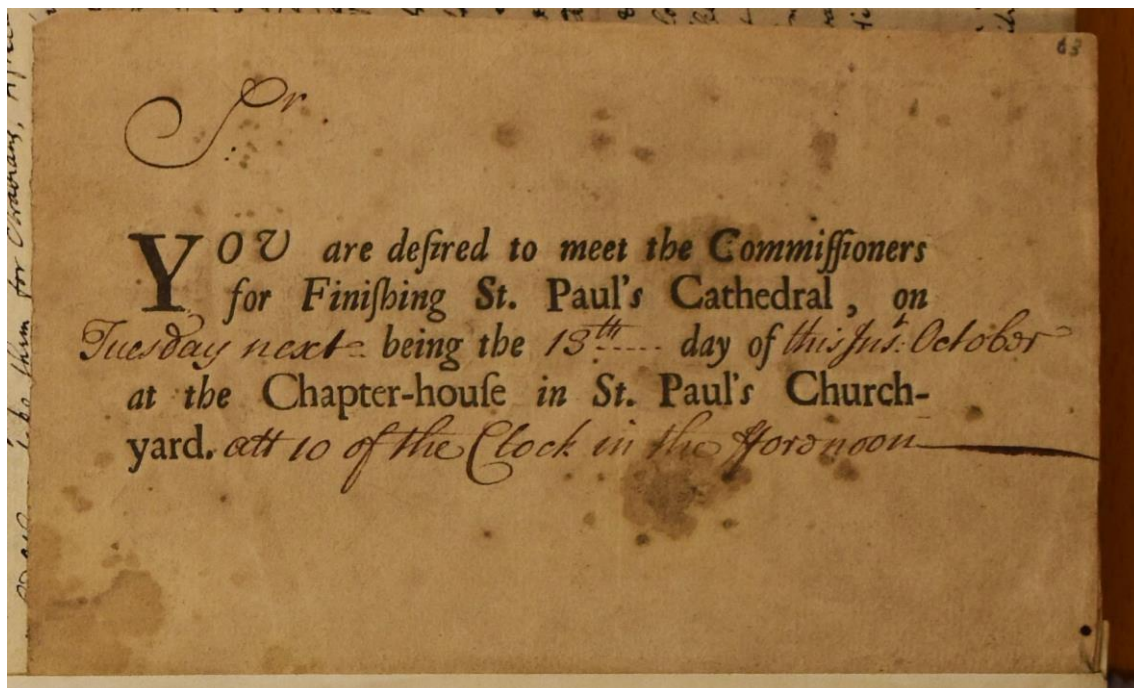
When he came to assemble these ‘chains’ into full drafts in his folio booklets, Newton sought to emulate the *mis-en-page* of an academic publication, with a wide outer margin providing space for references and notes. As his work reached this stage, Newton was thinking about how to present it as a work of erudite learning, and about how it would look to be published, scribally or otherwise. The verso pages were left blank: in clean copies, this channels the conspicuous prestige attached to empty space, but it also granted Newton significant flexibility as a writer. These

spaces could be used for longer notes and corrections spilling over from the recto. This is even the case in the fairest copies in the fourth volume (361/4, f. 35v). Equally, if the original draft had gone poorly Newton might flip the folio booklet upside-down and back-to-front, and begin a new chapter draft on the verso (now recto) pages. There is a continual sense of opportunism which bears out Humphrey Newton's testimony, and which indicates his haste to get ideas and expressions onto the page—any page. Margins were not always ruled in advance, and might be added later, as squiggly lines justified to the end of each word (361/3, f. 182r). Boxes are inserted to contain references which are never completed, and Newton habitually left gaps for information such as names and dates which had slipped his mind, and which he aimed to come back and fill in later. Newton thus optimised his layouts for flexibility: successful drafts already bore all the features of an authoritative academic manuscript, while failures could be productively recycled into something more promising.

DATING NEWTON'S MANUSCRIPTS

At first glance the datable letters Newton recycled as note papers appear to offer some relief for scholars looking to fix his chronological research to specific periods. Trying to date Newton's historical writing is fundamental to understanding the progression of his ideas, but, as Schilt has shown, dating from research alone poses difficult problems.¹² It seems reasonable to suggest that Newton recycled his ephemeral papers quickly, while they were still to hand. He was not in the habit of preserving absolutely everything, so those used for his chronological notes surely correspond to an opportunistic writing event close to their creation date. However, the actual picture is more complicated. This is well demonstrated by one scrap, where we have a rare opportunity to pinpoint both the dates of the initial document, and the notes written over it.

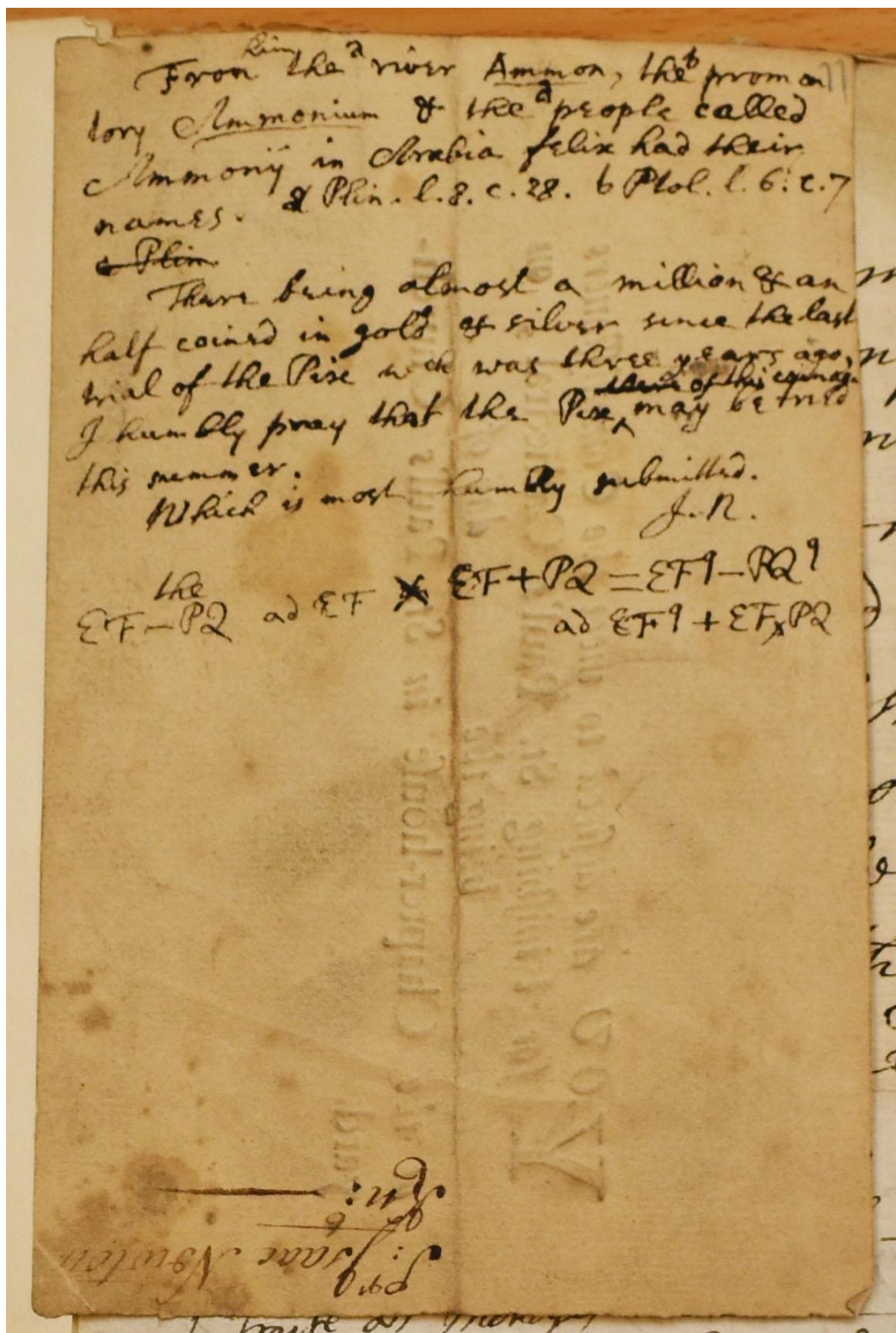
This is a printed form inviting Newton to attend a meeting of the 'Commissioners for Finishing St. Paul's Cathedral', which had been under construction since the 1670s following the Great Fire. The form was a printed template, with blank spaces for name and date filled in by hand.



St Paul's Cathedral slip (recto), New College Library, Oxford, MS 361/2, f. 77r

¹² Schilt, *Isaac Newton*, p. 60.

A fold is still visible on the reverse alongside the address, indicating how the invitation was delivered (361/2, f. 77r). On the verso Newton jotted, one after the other, a sentence fragment complete with references on the naming of 'the river Ammon, the promontory Ammonium & the people called Ammonij in Arabia Felix' after the Egyptian ruler Ammon; a short draft of a memo for the Mint arranging a new Trial of the Pyx (the highly ceremonial process through which the integrity of coinage had been checked for centuries), and a mathematical calculation.



St Paul's Cathedral slip (verso), New College Library, Oxford, MS 361/2, f. 77v

Neither the original invitation nor the middle note on the Trial of the Pyx mentions the year in which they were written, but they should be datable to external events. This is easy enough in the latter example: as is often the case for the drafts of Newton's Mint letters, a clean copy survives at the National Archives, and this letter is dated 'Mint Office Iune 18th 1724'.¹³ The notes about Arabian history above the Mint draft must therefore have been made before this date.

The invitation to the meeting of the commissioners will provide the earliest date for this document (the rebuilding of St Pauls continued beyond 1724), but its author only noted the day, not the year, issuing it for 'Tuesday next being the 18th day of this Ins^t: October . . . att 10 of the Clock'. However, the only nearby year on which 18 October fell on a Tuesday with the Julian calendar was 1720. This means that Newton received the invitation between Tuesday 11 and Monday 17 October 1720. At some point over the next four years he used it to write a note on the river Ammon. Then, immediately beneath that sometime around the 18 June 1724, he drafted his letter to the Treasury. At another unclear later point, he recycled the scrap for maths.

This piece of ephemera had a surprisingly long shelf-life, and this begs further questions. Did Newton keep hold of the invitation only because he had already used it, say at the end of 1720, to write his note about the river Ammon, and it then proved handy several years later? Or was the invitation lying about unused for several years until he finally seized on it? Either answer would indicate a very different attitude towards ephemera, and how Newton organized his papers. It also raises wider problems for any attempt to use the letters to reliably date Newton's notes. If several years could elapse between the initial invitation and one of the notes on the back of it, and especially on a true piece of ephemera which would usually be thrown away, how are we to gauge the possible distances in time between letters (say, concerning more important matters such as financial or legal affairs) and the notes written on them? All considered, it is probable that Newton made the chronological note relatively soon after receiving the invitation, and kept it as a result. However, we must still ask why he then used it four years later to draft a Mint letter: where was it being kept, and how did it come to hand? Why was he referring back to it around that time?

NEWTON'S 'POETICAL FICTIONS'

A process of extreme revision characterizes the personal and Mint papers as well as Newton's historical research. However, in the vast majority of these cases Newton's corrections did not redirect an argument, introduce radically new evidence, or change his conclusions: instead, he feverishly reworked the expression of ideas which remained relatively stable—or rather, which developed at a much slower pace.

Several reasons encouraged Newton to be careful about expression. Despite his personal distain for publication and controversy, he was writing for an academic field which had a reputation, even by early modern standards, for extreme toxicity. The doyen of early seventeenth-century chronology, Joseph Scaliger, was notorious for his pettiness—'Renowned *Scaliger*, in the worlds Eye, / Was the Refiner of Chronologie . . . The Man / That will correct the Manners; finde who can'—and set the standard for his successors in the field.¹⁴ Pedantic disputes easily boiled over into exactly the sort of sustained and heated arguments that Newton claimed to despise. In addition, Newton wrote his chronology in English. It therefore had a wide potential readership in the vernacular who could be influenced by its radical claims: claims which were ultimately written for the improvement of biblical exegesis. Explaining his reasoning correctly was imperative for his academic reputation, and also the moral mission of his work.

There was a more important reason for Newton to be exceptionally careful with expression, and it meant that he heavily revised all his documents, even those not destined for academic publication. Newton had a deep distrust of the ability of the written word to

¹³ TNA, MINT 19/1/233.

¹⁴ Thomas Pecke, *Parnassi Puerperium: or, Some Well-wishes to Ingenuity* (London: by J. Cottrel, for Tho. Bassett, 1659), p. 4.

communicate information. His obsessive focus on his chronological inquiries, in which he identified the weakness of writing as a key factor obscuring the retrieval of accurate data about the past, ensured that this distrust remained at the forefront of his thinking throughout his London residence. Newton foregrounded this problem at the opening of his *Short Chronicle*: 'The Greek Antiquities are full of Poetical fictions because they wrote nothing in Prose before the conquest of Asia by Cyrus' (361/1, f. 8r), and his notes continually return to the problem of 'feigning' and forgery in the ancient histories of all nations. Newton believed in two universal constants which his chronological research was based on, and which applied to all human communities. First, that communities will seek to exaggerate the length of their existence, usually by artfully manipulating existing records: 'the Priests of Egypt . . . corrupted their antiquities' (361/2, f. 85r) and 'multiplied the names [of Kings] by corruption or fiction' (361/2, f. 178r). Second, that communities and 'whole/ Cities Deified & worshipped their dead Kings & Heros' (362/1, f. 188r), eventually forgetting their mortal origins. Note that in both cases Newton believed original, true information had been corrupted and mixed with 'fiction', but that these stories were not plucked from thin air. This meant that a capable scholar could reverse engineer ancient mythology and king lists to still arrive at the truth. Years trying to extract nuggets of historical information from such sources (including the poetry of Homer and Hesiod) meant that Newton was highly conscious of the potential for language to embed all sorts of suggestions.

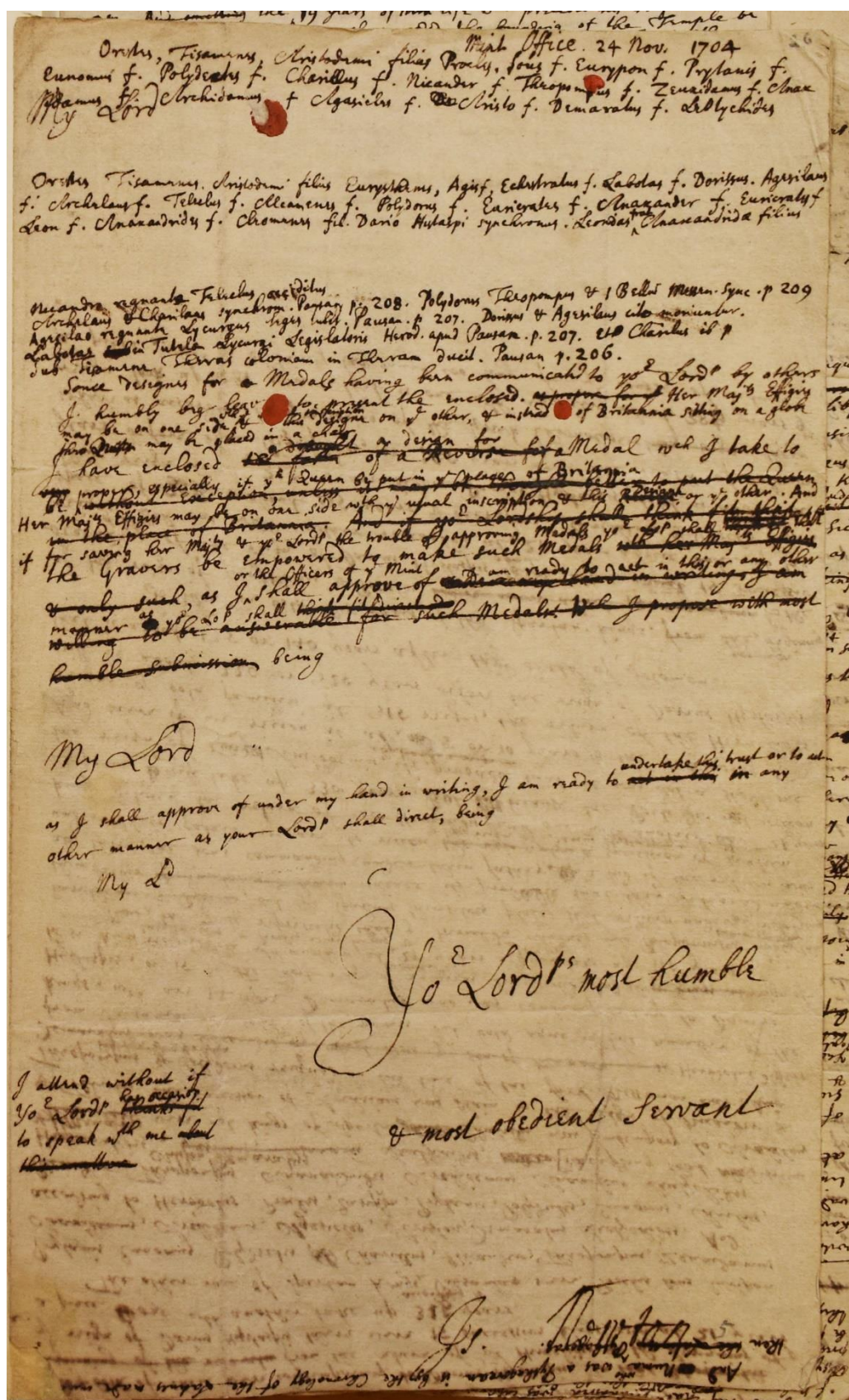
This sensitivity to language is evident in Newton's wider papers. In draft memos written for the Mint we can see him recognize how it could simultaneously endanger and protect him. In one of these papers Newton proposed the design of a medal to commemorate Queen Anne's Bounty, her 1704 redistribution of the first fruits and tenths to the struggling lower clergy. These proposals were dated to November 1704, a highly politically sensitive time for medal making. Joseph Hone has recently shown the pressure Newton's office came under when making military medals following the distribution of a controversial medal commemorating the surrender of Bon, Huy, and Limburg (1704). It remains to be recognised how this controversy extended to domestic medals. The controversial medal portrayed a crowned female suppliant surrendering the keys of the three cities to a male rider, with the motto 'SINE. CLADE. VICTOR' [a conqueror without slaughter]. This was modelled on a French medal of 1694, but caused a storm when commentators identified the rider as the Duke of Marlborough, and the medal as an intolerable usurpation of royal iconography. One writer complained that 'we now Dearly want [a General] who did not use to return from the War *Sine Clade Victor*, and then Ride in Triumph over his Queen on a Medal'.¹⁵ Hone identifies this as a watershed moment, where 'medal designs moved away from the emblems and symbols' to 'unambiguous' battle scenes, and with 'increased ministerial supervision' of medal production.¹⁶ Rather than restrict his work, this was a system which actually empowered Newton to work more closely with ministers such as Robert Harley. Nonetheless, the recent controversy showed how dangerously politicised medals could become, and how much they might be the subject of public debate.

This lingering tension is evident in Newton's draft for the Bounty medal. As well as this heavily revised draft, a clean copy exists among the Mint papers at the National Archives, and thus allows us to identify what changes were carried forward.¹⁷ Newton was writing with a design in mind, 'Since designs for a Medals having been communicated to yo^r Lord^p by others I humbly beg leave to present the enclosed' (361/2, f. 36v).

¹⁵ *The Observer* 3 (15) (10–13 May 1704).

¹⁶ Joseph Hone, 'Isaac Newton and the Medals for Queen Anne', *Huntington Library Quarterly* 79 (1) (2016), 119–48, at p. 139.

¹⁷ TNA, MINT 19/3/288.



Anne Bounty medal, New College Library, Oxford, MS 361/2, f. 36v

However, Newton suggested that the medal draft attached—of Britannia astride the globe—actually be replaced with one of Anne seated in a chair. As Hone noted, there was decided move

away from symbolic representations over 1704, and Newton sought to conform to government anxieties about metaphor.¹⁸ In this case he clearly struggled to find a way to assert his authority, while simultaneously shielding himself from any blame should the designs fall flat:

I take [the design] to be without exception, unless it may be thought better to put the Queen in the place of Britannia.

Newton revised this to the more assured:

I take [the design] to be proper, especially if y^e Queen be put in y^e place of Britannia (361/2, f. 36v).

It was awkward to present a medal and then suggest in the cover letter that a different design would, in fact, be superior. The first draft had emphasised the original Britannia design 'to be without exception', and presented the Anne alternative as dependent on ministerial disapproval, 'unless it may be thought better'. In essence, this set his initial proposal up to fail. We can see here how Newton tried to smooth out those incongruities by no longer mentioning any 'exception', by siding in advance with the ministers, ensuring that this decision appeared inevitable ('it would be proper'), and by shifting 'especial' emphasis onto the Britannia option as the wholly reasonable choice.¹⁹

However, if Newton wanted to convey an impression of competence, he was also careful to hedge against any future criticism. 'If for saving her Maj^{ty} & yo^r L^{sp} the trouble of approving Medals' they delegated such authority to Newton 'as I shall approve under my hand in writing', Newton initially claimed that 'I am willing to be answerable for such Medals'. This savoured too much of dangerous personal responsibility amid the controversies of 1704, and, after crossing that initial draft out, Newton wrote an alternative, which expressed the same sentiment but didn't leave him as 'answerable': 'I am ready to . . . undertake this trust'. Newton was thinking carefully about the precise use of language. He considered how it could express ideas, but also how it might convey alternative readings, such as how the words 'answerable' and 'exception' already implied guilt should there be any future problems.

Newton's attitude to language was not, therefore, the blunt distrust of a man who always preferred to work with numbers. He was sensitive to its nuances, and was able to manipulate it to his advantage. No wonder he was sceptical about written records, which, as he well knew, could conceal as well as reveal. In his chronological writing, Newton assumed that state ministers in the distant past were equally adroit. These included the Amphytionic Council, a body encompassing the Greek cities. On one draft he noted that:

This Council did not use to trifle. They \always/ met upon state affairs for the welfare of Greece & therefore sent the Argonauts ~~to~~ upon an Embassy to the said Princes & coloured over their designe with the fable of the golden fleece. And probably their designe was to notify the distraction of Egypt & perswade them \Princes/ to take that opportunity to revolt & set up for themselves. And thus ended the great Empire of Egypt (361/2, f. 42r).

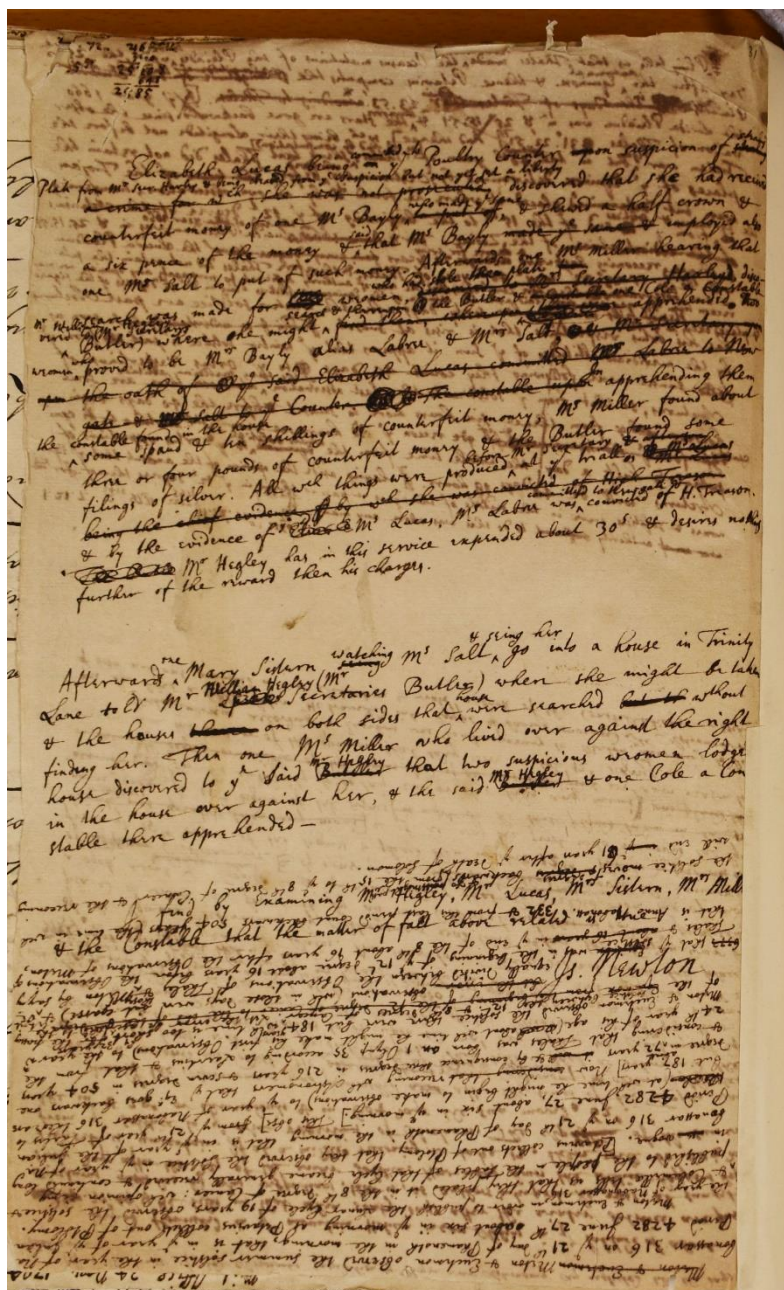
His own experience of how government officials might have 'coloured over their designe' with clever fiction and language was a strong preparation for such research. Newton understood how the dangers of an active political life might lead one to an expedient use of language.

¹⁸ Hone, 'Isaac Newton and the Medals', 139.

¹⁹ In the final version, Newton found a way to present the two options as equally viable: 'instead of Britannia on a globe the Queen may be placed in a chair', TNA, MINT 19/3/288.

EVALUATING EVIDENCE IN NEWTON'S MANUSCRIPTS

The overlap between the interpretative problems Newton faced in his scholarly research and through his work with the Royal Mint is strikingly apparent when texts from both worlds collide in the New College manuscripts. These also foreground the rhetorical strategies he used to mitigate shared problems. For example, Newton recycled a heavily revised draft giving evidence in support of William Hagley, the butler to Secretary of State Robert Harley, in early 1705.



Labree draft, New College Library, Oxford, MS 361/2, f. 43v

Hagley had ended up spearheading the prosecution of a counterfeiter named Cecilia Labree, and was claiming thirty shillings as expenses. Newton later overwrote this with a draft on ancient astronomy, going so far as to weave his new notes between the lines of the original. The Labree case shows how Newton carefully revised and adapted his statements, ensuring they conformed to what other readers considered to be reliable evidence. The same process can be found in the

astronomical draft. Newton revised his work to provide better evidence in support of conclusions which, as early drafts show, he already believed to be already self-justifying.

Labree was known to Newton as a counterfeiter, and had been in and out of the Old Bailey over the decade before 1705. Having been caught in a room full of coiners tools she was immediately found guilty in 1697 and 1700, but she managed to escape the statutory death sentence for high treason, pleading her belly in the first instance, and securing a pardon in the second, 'on condition to Transport her self out of the Queen's Dominions, and never to return'.²⁰ There was a deep reticence to execute female counterfeiters, given the sentence for female traitors—counterfeiters by usurping royal rights were considered treasonous—was to be burned to death. Even when she was caught again in 1704 she appears to have escaped.

However Labree's luck ran out in Spring 1705 during the case involving William Hagley. Hagley had been examining another woman, Elizabeth Lucas, who had been jailed on suspicion of stealing silver plate from the household of his boss, Secretary Harley. During the interview with Lucas she 'took out of he [sic] pocket a Counterfeit Sixpence and some time after a Counterfeit halfe Crown out of her Bosom' (MINT 15/17/509), and confessed to receiving counterfeit money from Labree, '& said that M^s Bayly [Labree's alias] ~~made y^e same &~~ employed also one M^s Salt to put of such money' (361/2, f. 43v). Note that Newton was careful to strike out the evidence from Lucas that Labree 'made y^e same'; in fact, the Mint's records show that Lucas had made no claim that Labree was coining herself. Newton was careful to police how his assumptions made their way into the text, but the draft also reveals the distinction between the narrative as Newton understood it, and as the evidence indicated.

He went on to describe how Hagley located Labree's house and conducted a raid, but he was anxious about resting the case on the evidence of Lucas, a suspected thief who had little credibility. He therefore struck through the claim that 'M^r Secretary upon the oath of y^e said Elizabeth Lucas committed Labree to Newgate'. Instead, Newton provided an account of the evidence found during the raid on Labree's house to provide compelling proof for her arrest:

In apprehending them \the constable found in the house/ some spand & ten shillings of counterfeit money, M^s Miller found about three or four pounds of counterfeit money & the Butler found some filings of silver. All which things were produced \before M^r Secretary & at/ y^e trial (361/2, f. 43v).

In his revisions Newton continued to play down the importance of Lucas. He further struck out the claim that at the trial 'M^s Lucas being the chief evidence by w^{ch} she was convicted of High Treason'. Instead, his final draft emphasised that Lucas's evidence was part of an intersecting network of corroborating testimonies and material evidence: 'All which things were produced \before M^r Secretary & at/ y^e trial & by the evidence of y^e M^s Lucas, M^s Labree was \committed to Newgate &/ convicted of H. Treason'.

Newton's scepticism about placing emphasis on Lucas as a key witness was warranted. A petition sent by 'Ciaciely Labree' to the other Secretary of State Charles Hedges—appealing to Harley may have seemed pointless—survives in the National Archives, arguing that Lucas was not a credible witness to convict on a capital offence:

yo^r Pet^r now lyes under Sentence of Death for High Treason, and altho she is Ignorant of y^e fact, and one Elizabeth Lucas the Principall Evidence now Standing Indicted for ffelony and Burglary; yet yo^r Pet^r must submit to that Dreadfull Sentence without her Maj:^{ties} Mercy.²¹

²⁰ *The Proceedings on the Queen's Commission of the Peace [...] in the Old Bailey, On Wednesday, Thursday and Friday being the 26th, 27th and 28th Days of April, 1704* (London: John Bradford, 1704), p. 5.

²¹ TNA, SP 34/35/49.

This time Labree was unable to have her sentence commuted, and was executed very soon after her petition. The credibility question about Lucas nonetheless continued after Labree's death, and was noted by the London press, albeit as a source of amusement:

The Town having heard sufficiently of the Burning of Cecilia Labree last Week, for Coyning, we have but one Remarkable piece of News to tell, as an Addenda to it; and that is, That whilst she was Consuming in the Flames, the main Evidence that Swore against her in Court, was surprized and Committed to Newgate, for the same Fact.²²

Newton's draft shows that he was thinking deeply about the nature of evidence and credibility. It also reveals that in his own thinking, expressed and then corrected as he drafted, he was willing to make assumptions and leaps of judgement which he knew were untenable for others. He therefore integrated such conclusions with more acceptable evidence.

This is significant, as the same behaviour appears in Newton's chronological research. The draft which overwrote this one had to deal with similar challenges. The problem was one of marshalling evidence to pinpoint the dates at which astronomical measurements were taken during the ancient world, and to convincingly argue that Newton's generous interpretation of how precisely one could pinpoint these dates was viable. Newton needed this to be possible for the astronomical calculations underlying his chronology to hold up. He therefore drafted that the ancient astronomers:

Meton & Euctemon observed the summer solstice in the year of Nabonassar 316 on y^e 21th day of Phamenoth in the morning, that is in y^e year of y^e Iulian Period 4282 Iune 27th about six in y^e morning as Petavius collects out of Ptolemy (361/2, f.43 v).

Newton was unhappy with this start, and began the paragraph again:

Meton & Euctemon, in order to publish the Lunar Cycle of 19 years, observed the solstice & \[in] the year of Nabonassar 316/ & Columella tells us that they placed it in the 8th degree of Cancer: w^{ch} opinion being published to the people in the Tables of that Cycle became generally received & continued long in vogue. (Petavius collects out of Ptolemy that they observed the Solstice in y^e year of Nabonassar 316 on y^e 21th day of Phamenoth in the morning that is in y^e year of the Iulian Period 4282, Iune 27, about six in y^e morning.) (361/2, f. 43v).

This second draft marshals much more evidence, and seeks to provide more sources to rigorously back up Newton's assertion that he could date the hour of the day that these measurements were taken. He repeatedly located these observations in relation to published data and the authority of a widely-received text: they were made 'in order to publish' and 'w^{ch} opinion being published to the people in the Tables of that Cycle became generally received & continued long in vogue'. In the Roman writer Columella Newton added another source to lend authority to his claim, while his reordering of the sentence on the seventeenth-century chronologer Denis Pétau (Petavius) attempts to show some of Pétau's methodology, and to properly cite his sources.

In drafts like this Newton was reframing his initial impulses to assert what he thought was correct. He tried to show more of the underlying work, to bolster claims with other sources, particularly an intersecting network of complimentary testimonies if possible, and to proof his arguments against assault. In this as in his Mint writing, Newton had to self-critically examine the fault lines in his own writing and reasoning, moderating and reframing bold claims – which he nonetheless continued to believe in—for his readers.

²² *The London Post* (7 May 1705).

NEWTON AND PANEGYRIC

The manuscripts show it was not just the case that Newton's experience with the Mint influenced his historical methodology: historical findings could also have an impact on the present. Different arenas of Newton's thought were engaged in a fluid exchange of ideas and practices. Newton's historical imagination was structured by his participation in seventeenth-century political culture; equally, his understanding of present politics was shaped by how he imagined the ancient past.

Newton's historical narrative relied on an imaginative reading of ancient mythology. He firmly believed that the stories of Egypt, Greece and their neighbours were symbolic narratives of real political events, and that the gods and heroes of myth were historical rulers and their families who had been deified, usually posthumously, through architecture, religious ritual, and poetry: 'The countries upon the Nile & Tigris being exceeding fertile were first frequented by mankind & grew first into kingdoms & therefore first began to adore their kings' (361/2, f. 203r). These narratives abided by a consistent set of imagery (a feature shared with biblical prophecy), and were so perfectly preserved that a capable interpreter could use them to reconstruct the granular nature of political events from 2,500 years ago.²³ For example, Newton believed that the story of Venus and Mars being caught in bed together by her husband Vulcan was a dressed up version of a real affair between the Egyptian ruler Sesostris and an Aegean queen, and that Prometheus was an Egyptian prince stationed at the Caucasus to oversee their mines of Philistinian slaves.²⁴

This was a common technique in early modern scholarship, and is called euhemerism, but Newton pushed the strategy much further than other researchers dared. He was wholly convinced that the mythological stories of Greco-Roman deities which all seventeenth and eighteenth-century readers were inculcated with were, in fact, complex narratives of the life and achievements of Sesostris and the royal family of Egypt:

So then the great Gods of Egypt ~~were~~ \Ammon,/ Osiris, Isis, Typhon, Apollo Diana Mercury, \Latona/ Minerva, \Pan ~~Ammon~~ Hercules/ Venus, Vulcan, Bacchus, \Pan/ ~~Hercules~~ Neptune &c were the Princes of Egypt in the reign of ~~Os~~ Sesostris ~~when the Mon~~ & his father when the Monarchy of Egypt was first erected (361/2, f. 190v).

By breaking off the stylistic crust of poetry, one would be presented with an indisputable account of a history which, though long lost, had lain hidden in plain sight. A large proportion of the Newton papers held by New College are concerned with his attempts to unpick these stories.

When considering Newton's belief that his euhemerist strategy could be consistently applied to all the variable materials of ancient myth, we should remember that he had lived through the high-water mark of a vast European culture of panegyric which described monarchs and their families in superhuman terms. Not only that, he was an active participant in this culture. Newton would have considered himself to have a very strong understanding of how royalty was represented in poetry and images, the conventions associated with such representations, and their potential limits. There are times, for example, where Newton interprets this system of deification not as a universal constant where people willingly delude themselves, but instead describes it in terms of top-down propaganda emanating from a royal court:

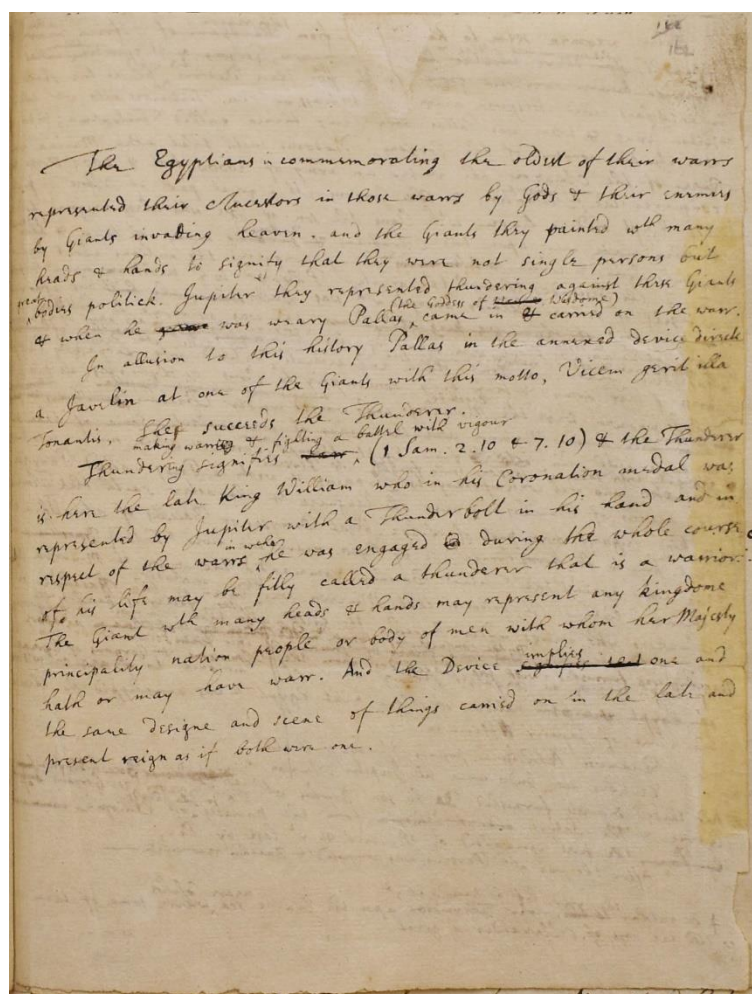
And which I pray is more likely that y^e Court should promote y^e honour of Kings among y^e people or y^e people find out these refined ways of doing it and introduce them into Courts? Was it y^e interest of y^e people to cheat themselves into slavery by such kinds of state policy or was it not rather the business of the court to do it? (361/3, f. 32r)

²³ Robert Iliffe, *Priest of Nature: The Religious Worlds of Isaac Newton* (Oxford: Oxford University Press, 2017), p. 192.

²⁴ New College Library, Oxford, MS 361/3, f. 26r; 'The meaning seems to be that for his skill in minerals & extracting metals out of them he was sent by Sesostris to preside over the Egyptians & their servants the Philistims . . . & there to imploy the Philistims as slaves in digging those mountains for gold & silver' (361/1, f. 176r).

Newton's fury had many potential resonances with the political culture of his time. The notion that extreme artistry could 'cheat' the people 'into slavery by such kinds of state policy' was a common complaint levelled at the Stuarts.²⁵ In 1687 Newton had helped spearhead resistance in the university to James II's mandate that they appoint a Benedictine Monk, Alban Francis, to Master of Arts. He was elected among the eight representatives sent to London to justify their resistance before the Ecclesiastical Commission. His own experiences as a seventeenth-century reader and activist resisting the top-down imposition of royal policies surely shaped his hostility to 'court' politics.

However, on other occasions Newton's involvement with those same courtly modes of representation is explicit in the manuscripts. A quarto sheet of paper has been pasted into one folio booklet which discusses Sesostri's establishment of an Egyptian colony at Colchis—here Newton followed the chronologer Samuel Bochart—to provide extra space for notes about Sesostri's recruitment of the Amazons.



Anne Coronation medal, New College Library, Oxford, MS 361/1, f. 162r

However, this quarto sheet was recycled from a series of draft proposals Newton made in 1702 for Queen Anne's coronation medal.²⁶ In these proposals his chronological and political interests intersect in compelling ways, and reveal Newton behaving just like one of his abhorred Egyptian priests, deifying the departed king. The language of the proposal elides smoothly with his ongoing

²⁵ Kevin Sharpe, *Rebranding Rule: The Restoration and Revolution Monarchy, 1660–1714* (New Haven: Yale University Press, 2013), p. 272.

²⁶ This is part of a wider corpus of documents on this theme held at the National Archives.

research. In explaining to the Treasury how 'the Egyptians in commemorating the oldest of their warrs represented their Ancestors in those warrs by Gods & their enemies by Giants invading heaven', Newton described how the 'many heads & hands' of the giants 'signify that they were not single persons but \great/ bodies politick' (361/1, f. 162r). This recalls his statements in his history that 'the Giants were feigned to have many heads & hands to signify that they were not single persons but bodies politick or squadrons of Typhon's army' (361/3, f. 154r).

The echoes continued as Newton described how he intended to represent Anne and commemorate William on the medal. First, his description of William:

Thundering signifies ~~warr~~ \making warring & fighting a battel with vigour/ (1 Sam. 2.10 & 7.10) & the Thunderer is here the late King William who in his Coronation medal was represented by Jupiter with a Thunderbolt in his hand and in respect of the warrs \in wch/ he was engaged ~~in~~ during the whole course of his life may be fitly called a thunderer that is a warrior (361/1, f. 162r).

This description of William correlates closely with Newton's highly visual description of the representation of Jupiter-Sesostris:

And hence the Iupiter for whom Vulcan & his \three principal/ workmen the Cyclopes made thunderbolts is Sesostris. He carries a thunderbolt in his \right/ hand to signify his power in war (361/1, f. 165r).

William III and Sesostris meet in the figure of Jupiter, Newton's ancient conqueror merging with the Protestant warrior prince of modern times. This was nonetheless a medal for Anne, and proposed an 'annexed device' representing the queen, where Pallas 'directs a Javelin at one of the Giants with this motto, Vicem gerit illa Tonantis, She succeeds the Thunderer'. The Thunderer being William, the giants therefore:

may represent any kingdome principality nation people or body of men with whom her Majesty hath or may have warr. And the device ~~signifies that~~ \implies/ one and the same designe and scene of things carried on in the late and present reign as if both were one (361/1, f. 162r).

Newton argued that the commemorative materials of modern monarchy reiterated the same mythological narrative, and drew on the same universal rhetorical toolkit, as their ancient antecedents. There is little room for ambiguity or double-meaning here: Newton assumed that these metaphors were timeless, easily readable to experts, and could transcend cultural context, functioning as well in ancient Egypt and Greece as in modern England and Scotland.

This goes some way to explaining Newton's critical strategies. If such conventions were universal, he could simply reverse engineer the representative methods of early modern neoclassical panegyric and apply those principles to the folk tales of the ancient Mediterranean, working in full confidence that they would be consistent. He could then use this key to demonstrate how forms of praise highly familiar to his contemporaries came to be mistaken for religious truth in the ancient world. For example, he argued elsewhere that in depictions of Neptune (Sesostris's untrustworthy brother and naval commander, and thus the James II to his Charles II) 'ye Trident . . . signified their force & strength in war, that is their fleet consisting of three squadrons' (361/3, f. 238v). In this case Newton anachronistically applied the conventional division of early modern fleets into three squadrons to the Theban navy, an institution whose existence he had only derived over multiple steps from vague sources. Newton thus used a reading of symbolism which only worked when applied to early modern military systems and, because such representations were supposed to be consistent, imagined that it also applied in the ancient world.

CONCLUSION

By providing an opportunity to focus on the interactions between texts which, despite often physically overlapping, are separated and differentiated by scholarship, the Newton manuscripts at New College are an invaluable resource for scholars. They can obliterate the hierarchies which still govern studies of Newton's writing, and demonstrate how interpretative concerns and methodologies were shared between different aspects of his thinking. This firmly roots Newton's research within his political and cultural context: Newton was an active participant in the modern versions of the universal processes that he believed were also at work in ancient history. The manuscripts likewise record the care Newton took to make his arguments acceptable, and allow us to discover a more imaginative and evasive Newton.²⁷ They reveal a researcher struggling with contradiction, distrusting the written word, including his own, but relying on the incidental details of ancient poetry and mythology to substantiate his argument. Newton's attempt to reconcile these problems have left an exceptionally rich trove for researchers today.

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²⁷ See my forthcoming publication *Newton at New College* for a more extensive description of Newton's historical imagination, and the background of the papers he recycled.