

I N T E R L U D E III.

Bookseller. **P**OETRY has been called a sister-art¹ both to Painting and to Music; I wish to know, what are the particulars of their relationship?

Poet. It has been already observed, that the principal part of the language of poetry consists of those words, which are expressive of the ideas, which we originally receive by the organ of sight; and in this it nearly indeed resembles painting; which can express itself in no other way, but by exciting the ideas or sensations belonging to the sense of vision. But besides this essential similitude in the language of the poetic pen and pencil,² these two sisters resemble each other, if I may so say, in many of their habits and manners. The painter, to produce a strong effect, makes a few parts of his picture large, distinct, and luminous, and keeps the remainder in shadow, or even beneath its nature size and colour, to give eminence to the principal figure. This is similar to the common

manner of poetic composition, where the subordinate characters are kept down, to elevate and give consequence to the hero or heroine of the piece.

In the south aisle of the cathedral church at Lichfield,³ there is an antient monument of a recumbent figure; the head and neck of which lie on a roll of matting in a kind of niche or cavern in the wall; and about five feet distant horizontally in another opening or cavern in the wall are seen the feet and ankles, with some folds of garment, lying also on a matt; and though the intermediate space is a solid stone-wall, yet the imagination supplies the deficiency, and the whole figure seems to exist before our eyes. Does this not resemble one of the arts both of the painter and the poet? The former often shows a muscular arm amidst a group of figures, or an impassioned face; and, hiding the remainder of the body behind other objects, leaves the imagination to compleat it. The latter, describing a single feature or attitude in picturesque words, produces before the mind an image of the whole.

I remember seeing a print, in which was represented a shrivelled hand stretched through an iron grate, in the stone floor of a prison-yard, to reach at a mess of porrage, which affected me with more horrid ideas of the distress of the prisoner in the dungeon below, than could have been perhaps produced by an exhibition of the whole person. And in the following beautiful scenery from the *Midsummer-night's dream*, (in which I have taken the liberty to alter the place of a comma), the description of the swimming step and prominent belly bring the whole figure before our eyes with the distinctness of reality.

When we have laugh'd to see the sails conceive,
And grow big-bellied with the wanton wind;

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Which she with pretty and with swimming gate,
Following her womb, (then rich with my young squire),
Would imitate, and sail upon the land.⁴

There is a third sister-feature, which belongs both to the pictorial and poetic art; and that is the making sentiments and passions visible, as it were, to the spectator; this is done in both arts by describing or portraying the effects or changes which those sentiments or passions produce upon the body. At the end of the unaltered play of *Lear*,⁵ there is a beautiful example of poetic painting; the old King is introduced as dying from grief for the loss of Cordelia; at this crisis, Shakespear, conceiving the robe of the king to be held together by a clasp, represents him as only saying to an attendant courtier in a faint voice, "Pray, Sir, undo this button,—thank you, Sir,"⁶ and dies. Thus by the art of the poet, the oppression at the bosom of the dying King is made visible, not described in words.

B. What are the features, in which these Sister-arts do not resemble each other?

P. The ingenious Bishop Berkeley, in his *Treatise on Vision*,⁷ a work of great ability, has evinced, that the colours, which we see, are only a language suggesting to our minds the ideas of solidity and extension, which we had before received by the sense of touch. Thus when we view the trunk of a tree, our eye can only acquaint us with the colours or shades; and from the previous experience of the sense of touch, these suggest to us the cylindrical form, with the prominent or depressed wrinkles on it. From hence it appears, that

there is the strictest analogy between colours and sounds; as they are both but languages, which do not represent their correspondent ideas, but only suggest them to the mind from the habits or associations of previous experience. It is therefore reasonable to conclude, that the more artificial arrangements of these two languages by the poet and the painter bear a similar analogy.

But in one circumstance the Pen and the Pencil differ widely from each other, and that is the quantity of Time which they can include in their respective representations. The former can unravel a long series of events, which may constitute the history of days or years; while the latter can exhibit only the actions of a moment. The Poet is happier in describing successive scenes; the Painter in representing stationary ones: both have their advantages.

Where the passions are introduced, as the Poet, on one hand, has the power gradually to prepare the mind of his reader by previous climacteric⁸ circumstances; the Painter, on the other hand, can throw stronger illumination and distinctness on the principal moment or catastrophe of the action; besides the advantage he has in using an universal language, which can be *read* in an instant of time. Thus where a great number of figures are all seen together, supporting or contrasting each other, and contributing to explain or aggrandize the principal effect, we view a picture with agreeable surprize, and contemplate it with unceasing admiration. In the representation of the sacrifice of Jephtha's Daughter,⁹ a print done from a painting of Ant. Coypel,¹⁰ at one glance of the eye we read all the interesting passages of the last act of a well-written tragedy; so much poetry is there condensed into a moment of time.

B. Will you now oblige me with an account of the relationship between Poetry, and her other sister, Music?

P. In the poetry of our language I don't think we are to look for any thing analogous to the notes of the gamut;¹¹ for, except perhaps in a few exclamations or interrogations, we are at liberty to raise or sink our voice an octave or two at pleasure, without altering the sense of the words. Hence, if either poetry or prose be read in melodious tones of voice, as is done in recitativo,¹² or in chaunting, it must depend on the speaker, not on the writer: for though words may be selected which are less harsh than others, that is, which have fewer sudden stops or abrupt consonants amongst the vowels, or with fewer sibilant¹³ letters, yet this does not constitute melody, which consists of agreeable successions of notes referable to the gamut; or harmony, which consists of agreeable combinations of them. If the Chinese language has many words of similar articulation, which yet signify different ideas, when spoken in a higher or lower musical note, as some travellers affirm, it must be capable of much finer effect, in respect to the audible part of poetry, than any language we are acquainted with.

There is however another affinity, in which poetry and music more nearly resemble each other than has generally been understood, and that is in their measure or time. There are but two kinds of time acknowledged in modern music, which are called *triple time*,¹⁴ and *common time*.¹⁵ The former of these is divided by bars, each bar containing three crotchets,¹⁶ or a proportional number of their subdivisions into quavers¹⁷ and semiquavers.¹⁸ This kind of time is analogous to the measure of our heroic or iambic verse.¹⁹ Thus the two following couplets are each of them divided into five bars of *triple time*, each bar consisting of two crotchets and two quavers; nor can they be divided into bars analogous to *common time* without the bars interfering with some of the crotchets, so as to divide them.

3 Soft-warbling beaks | in each bright blos | som move,

4 And vo | cal rosebuds thrill | the enchanted grove, |²⁰

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In these lines there is a quaver and a crotchet alternately in every bar, except in the last, in which *the in* make two semiquavers; the *e* is supposed by Grammarians to be cut off, which any one's ear will readily determine not to be true.

3 Life buds or breathes | from Indus to | the poles,
4 And the | vast surface kind | les, as it rolls. |²¹

In these lines there is a quaver and a crotchet alternately in the first bar; a quaver, two crotchets, and a quaver, make the second bar. In the third bar there is a quaver, a crotchet, and a rest after the crotchet, that is, after the word *poles*, and two quavers begin the next line. The fourth bar consists of quavers and crotchets alternately. In the last bar there is a quaver, and a rest after it, viz. after the word *kindles*; and then two quavers and a crotchet. You will clearly perceive the truth of this, if you prick²² the musical characters above mentioned under the verses.

The *common time* of musicians is divided into bars, each of which contains four crotchets, or a proportional number of their subdivision into quavers and semiquavers. This kind of musical time is analogous to the dactyle verses²³ of our language, the most popular instances of which are in Mr. Anstie's Bath-Guide.²⁴ In this kind of verse the bar does not begin till after the first or second syllable; and where the verse is quite complete, and written by a good ear, these first syllables added to the last complete the bar, exactly in this also corresponding with many pieces of music;

2 Yet | if one may guess by the | size of his calf, Sir,
4 He | weighs about twenty-three | stone and a half, Sir.²⁵

2 Master | Mamozet's head was not | finished so soon,
4 For it | took up the barber a | whole afternoon.²⁶

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In these lines each bar consists of a crotchet, two quavers, another crotchet, and two more quavers: which are equal to four crotchets, and, like many bars of *common time* in music, may be subdivided into two in beating time without disturbing the measure.

The following verses from Shenstone²⁷ belong likewise to common time:

2 A | river or a sea |
4 Was to him a dish | of tea,
And a king | dom bread and butter.

The first and second bars consist each of a crotchet, a quaver, a crotchet, a quaver, a crotchet. The third bar consists of a quaver, two crotchets, a quaver, a crotchet. The last bar is not complete without adding the letter A, which beings the first line, and then it consists of a quaver, a crotchet, a quaver, a crotchet, two quavers.

It must be observed, that the crotchets in triple time are in general played by musicians slower than those of common time, and hence minuets²⁸ are generally pricked in triple time, and country dances generally in common time. So the verses above related, which are analogous to *triple time*, are generally read slower than those analogous to *common time*; and are thence generally used for graver compositions. I suppose all the different kinds of verses to be found in our odes,²⁹ which have any measure at all, might be arranged under one or other of these two musical times; allowing a note or two sometimes to precede the commencement of the bar, and occasional rests, as in musical compositions: if this was attended to by those who set poetry to music, it is probable the sound and sense would oftener coincide. Whether these musical times can be applied to the lyric and heroic verses of the Greek and Latin poets, I do not pretend to determine; certain it is, that the dactyle verse of our language, when it is ended with a double rhyme, much resembles the measure of Homer and Virgil, except in the length of the lines.³⁰

B. Then there is no relationship between the other two of these sister-ladies, Painting and Music?

P. There is at least a mathematical relationship, or perhaps I ought rather to have said a metaphysical relationship between them. Sir Isaac Newton³¹ has observed, that the breadths of the seven primary colours in the Sun's image refracted by a prism are proportional to the seven musical notes of the gamut, or to the intervals³² of the eight sounds contained in an octave,³³ that is, proportional to the following numbers:

Sol.	La.	Fa.	Sol.	La.	Mi.	Fa.	Sol.
Red.	Orange.	Yellow.	Green.	Blue.	Indigo.	Violet.	
$\frac{1}{9}$	$\frac{1}{16}$	$\frac{1}{10}$	$\frac{1}{9}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{9}$	

Newton's *Optics*, Book I. part 2. prop. 3 and 6.³⁴ Dr. Smith, in his *Harmonics*,³⁵ has an explanatory note upon this happy discovery, as he terms it, of Newton. Sect. 4. Art. 7.

From this curious coincidence, it has been proposed to produce a luminous music, consisting of successions or combinations of colours, analogous to a tune in respect to the proportions above mentioned. This might be performed by a strong light, made by means of Mr. Argand's lamps,³⁶ passing through coloured glasses, and falling on a defined part of a wall, with moveable blinds before them, which might communicate with the keys of a harpsichord;³⁷ and thus produce at the same time visible and audible music in unison with each other.

The execution of this idea is said by Mr. Guyot to have been attempted by Father Casse³⁸ without much success.

If this should be again attempted, there is another curious coincidence between sounds and colours, discovered by Dr. Darwin of Shrewsbury, and explained in a paper on what he calls *Ocular Spectra*, in the *Philosophical Transactions*, Vol. LXXVI.³⁹ which might much facilitate the execution of it. In this treatise the Doctor has demonstrated, that we see certain colours, not only with greater ease and distinctness, but with relief and pleasure, after having for some time contemplated other certain colours; as green after red, or red after green; orange after blue, or blue after orange; yellow after violet, or violet after yellow. This he shews arises from the *ocular spectrum* of the colour last viewed coinciding with the *irritation* of the colour now under contemplation. Now as the pleasure we receive from the sensation of melodious notes, independent of the previous associations of agreeable ideas with them, must arise from our hearing some proportions of sounds after others more easily, distinctly, or agreeably; and as there is a coincidence between the proportions of the primary colours, and the primary sounds, if they may be so called; he argues, that the same laws must govern the sensations of both. In this circumstance, therefore, consists the sisterhood of Music and Painting; and hence they claim a right to borrow metaphors from each other; musicians to speak of the brilliancy of sounds, and the light and shade of a concerto; and painters of the harmony of colours, and the tone of a picture. Thus it was not quite so absurd, as was imagined, when the blind man asked if the colour scarlet was like the sound of a trumpet.⁴⁰ As the coincidence or opposition of these *ocular spectra*, (or colours which remain in the eye after having for some time contemplated a luminous object) are more easily and more accurately ascertained, now their laws have been investigated by Dr. Darwin, than the *relicts* of evanescent sounds upon the ear; it is to be wished that some ingenious musician would further cultivate this curious field of science: for if visible music can be agreeably produced, it would be more easy to add sentiment to it by the representations of groves and Cupids, and sleeping

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nymphs amid the changing colours, than is commonly done by the words of audible music.

B. You mentioned the greater length of the verses of Homer and Virgil. Had not these poets great advantage in the superiority of their languages compared to our own?

P. It is probable, that the introduction of philosophy into a country must gradually affect the language of it; as philosophy converses in more appropriated and abstracted terms; and thus by degrees eradicates the abundance of metaphor, which is used in the more early ages of society. Otherwise, though the Greek compound words have more vowels in proportion to their consonants than the English ones, yet the modes of compounding them are less general; as may be seen by variety of instances given in the preface of the Translators, prefixed to the SYSTEM OF VEGETABLES by the Lichfield Society;⁴¹ which happy property of our own language rendered that translation of Linneus as expressive and as concise, perhaps more so than the original.

And in one respect, I believe, the English language serves the purpose of poetry better than the antient ones, I mean in the greater ease of producing personifications; for as our nouns have in general no genders affixed to them in prose-compositions, and in the habits of conversation, they become easily personified only by the addition of a masculine or feminine pronoun, as,

Pale Melancholy sits, and round *her* throws
A death-like silence, and a dread repose.

*Pope's Abelard.*⁴²

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And secondly, as most of our nouns have the article *a* or *the* prefixed to them in prose-writing and in conversation, they in general become personified even by the omission of these articles; as in the bold figure of Shipwreck in Miss Seward's Elegy on Capt. Cook:⁴³

But round the steepy rocks and dangerous strand
Rolls the white surf, and SHIPWRECK guards the land.

Add to this, that if the verses in our heroic poetry be shorter than those of the ancients, our words likewise are shorter; and in respect to their measure or time, which has erroneously been called melody and harmony, I doubt, from what has been said above, whether we are so much inferior as is generally believed; since many passages, which have been stolen from antient poets, have been translated into our language without losing any thing of the beauty of the versification. {The following line translated from Juvenal by Dr. Johnson,⁴⁴ is much superior to the original:

Slow rises Worth by Poverty depress'd.

The original is as follows:

Difficile emergunt, quorum virtutibus obstat,
Res angusta domi.} ⁴⁵

B. I am glad to hear you acknowledge the thefts of the modern poets from the antient ones, whose works I suppose have been reckoned lawful plunder in all ages. But have not you borrowed epithets, phrases, and even half a line occasionally from modern poems?⁴⁶

P. It may be difficult to mark the exact boundary of what should be termed plagiarism: where the sentiment and expression are both borrowed without due acknowledgement, there can be no doubt;—single words, on the contrary, taken from other authors, cannot convict a writer of plagiarism; they are lawful game, wild by nature, the property of all who can capture them;—and perhaps a few common flowers of speech may be gathered, as we pass over our

neighbour's inclosure, without stigmatizing us with the title of thieves; but we must not therefore plunder his cultivated fruit.⁴⁷

The four lines at the end of the plant *Upas* are imitated from Dr. Young's *Night Thoughts*.⁴⁸ The line in the episode adjoined to *Cassia*, "The salt tear mingling with the milk he sips," is from an interesting and humane passage in Langhorne's *Justice of Peace*.⁴⁹ There are probably many others, which, if I could recollect them, should here be acknowledged. As it is, like exotic plants, their mixture with the native ones, I hope, adds beauty to my Botanic Garden:—and such as it is, *Mr. Bookseller*, I now leave it to you to desire the Ladies and Gentlemen to walk in; but please to apprise them, that, like the spectators at an unskilful exhibition in some village-barn, I hope they will make Good-humour one of their party; and thus theirselves supply the defects of the representation.

¹ The phrase "sister arts" refers to a tradition of aesthetic theory that likens poetry and painting as arts that both seek to imitate, and to perfect, nature. It goes back to classical times and was famously articulated in Horace's (65–8 BCE) phrase in *Ars Poetica*, "ut pictura poesis" [as is painting, so is poetry] (line 361).

² A pencil or a fine tapered paintbrush as a symbol of artistic skill or style.

³ Lichfield Cathedral dates mainly from the 13th century. There are two monuments like the one ED describes, which are believed to represent clergymen of the cathedral, and pre-date the building of the nave; upon its completion they were moved into the south aisle (see John Britton, *The History and Antiquities of the See and Cathedral Church of Lichfield* (1820), p. 46). ED lived in Lichfield 1756–1781.

⁴ Shakespeare, *A Midsummer Night's Dream*, 2.1.132–36. ED's most significant alteration is the placement, not of a comma, but of the open parenthesis: Folger Digital Texts gives the line as, "Following (her womb, then rich with my young squire)." The textual problem ED seems to be trying to solve, "Following *What?*", is surveyed in the notes to the passage in *The Plays of William Shakespeare. In ten volumes. With the corrections and illustrations of various commentators; to which are added notes by Samuel Johnson and George Steevens* (2nd ed. revised, 1778; Vol. 3, pg. 40). The alteration adopted in that edition is also to move the parenthesis, but to the beginning of the line.

⁵ A substantially altered version (with a happy ending) of Shakespeare's *King Lear*, by poet and playwright Nahum Tate (c. 1652–1715), was the version predominantly produced from the late 17th through the early 19th century.

⁶ *King Lear* 5.3.373: "Pray you undo this button. Thank you, sir." Commentary on the expressiveness of the line as indicating "the swelling and heaving of the heart" can be found in *The Plays of William Shakespeare. In ten volumes. With the corrections and illustrations of various*

commentators; to which are added notes by Samuel Johnson and George Steevens (2nd ed. revised, 1778; Vol. 9, pp. 563–64).

⁷ George Berkeley (1685–1753), philosopher and bishop in the Church of Ireland. He is best known for his thesis in *A Treatise Concerning the Principles of Human Knowledge* (1710), “*esse is percipi*” [to be is to be perceived]. *An Essay Towards a New Theory of Vision* (1709, revised 1732) was an influential work on the psychology of perception, and Berkeley defended his theory against objections in *The Theory of Vision, or Visual Language, Shewing the Immediate Presence and Providence of a Deity, Vindicated and Explained* (1733). ED synthesizes and builds on Berkeley’s ideas here. The most relevant passages in *New Theory of Vision* are Section 130, “Visible Figure and Extension, not distinct Ideas from Colour” and 147, “Proper Objects of Vision the Language of Nature.” ED may also be thinking of this passage from *The Theory of Vision [...] Vindicated*: “Infinitely various are the Modifications of Light and Sound, whence they are each capable of supplying an endless Variety of Signs, and, accordingly, have been each employed to form Languages [...] And, in Fact, there is no more Likeness to exhibit, or Necessity to infer, things tangible from the Modifications of Light, than there is in Language, to collect the Meaning from the Sound. [...] But, such as the Connexion is of the various Tones and Articulations of the Voice with their several Meanings, the same is it between the various Modes of light and their respective Correlates; or in other Words, between the Ideas of Sight and Touch” (Section 40, pp. 33–4). The example of the trunk of a tree is ED’s.

⁸ Climactic. The OED cites this sentence as the first usage.

⁹ In the biblical book of Judges, the Ammonites make war against Israel, and the elders of Israel ask Jephthah to lead the fight. Jephthah vows to the Lord, “If thou shalt without fail deliver the children of Ammon into mine hands, then it shall be, that whatsoever cometh forth of the doors of my house to meet me, when I return in peace from the children of Ammon, shall surely be the Lord’s, and I will offer it up for a burnt offering.” It turns out to be his daughter, who agrees to be sacrificed after being allowed two months to “go up and down upon the mountains, and bewail my virginity, I and my fellows”; she was lamented annually afterwards by the daughters of Israel (Judges 11:4–40).

¹⁰ Charles-Antoine Coypel (1694–1752) was one of a family of French painters. He became the director of the Académie Royale and chief painter to the king in 1747. Gaspard Duchange (1662–1757) engraved a print, “Jephthah’s Sacrifice,” after Coypel’s painting.

¹¹ The full series of musical notes that are recognized to form part of a scale.

¹² A style between singing and speech.

¹³ Having a hissing sound.

¹⁴ A rhythm of three beats to the bar.

¹⁵ A rhythm of two or four beats in a bar; especially 4/4 time.

¹⁶ A quarter note.

¹⁷ An eighth note.

¹⁸ A sixteenth note.

¹⁹ In iambic verse, a metrical foot is made up of one unstressed syllable followed by one stressed syllable. English heroic verse is iambic pentameter (five iambic feet) in rhyming couplets: the form of *LOTP*.

²⁰ *LOTP* IV:315–16.

²¹ *The Economy of Vegetation* (1791) IV:407–08. A variant on these lines is also found in ED's posthumously published *The Temple of Nature* (1803): "And every pore of Nature teems with Life / Which buds or breathes from Indus to the Poles, / And Earth's vast surface kindles, as it rolls!" (IV:380–82). The phrase "from Indus to the Pole" originates from "Eloisa to Abelard" (line 58) by Alexander Pope (1688–1744). Indus is a southern constellation, and the Pole is the Pole Star (the North Star, Polaris); ED's plural "Poles" are the two points (north and south) around which the stars appear to revolve.

²² To write music using pricks or notes.

²³ In dactylic verse, a metrical foot is made up of one stressed syllable followed by two unstressed.

²⁴ Christopher Anstey (1724–1805), poet. His major work was *The New Bath Guide: or Memoirs of the B—R—D [Blunderhead] family, in a series of poetical epistles* (1766). It used a variety of verse forms and satirized not only the fashionable resort of Bath but also such cultural figures and ideas as Dryden, Handel, Methodism, and the picturesque. It was very popular, going into five editions in one year, and forty all together.

²⁵ "But as near as I guess from the Size of his Calf, / He may weigh about twenty-three Stone and a Half" (Letter 11, p. 76).

²⁶ "His pidgeon-wing'd Head was not drest quite so soon, / For it took up a Barber the whole Afternoon" (Letter 11, p. 77). Master Marmozet is named two lines earlier.

²⁷ William Shenstone (1714–1763), writer. He is best known for *The School-Mistress* (first published 1737, revised 1742), a Spenserian parody, and for the landscape garden he created at The Leasowes in Warwickshire, with picturesque scenes, streams and waterfalls, temples, obelisks, and Gothic ruins; the route around the garden was punctuated by verse inscriptions. He was a friend of ED's fellow Lunar Society member, Matthew Boulton (1728–1809). The verses quoted by ED are from "The Rape of the Trap, A Ballad, 1737," found in *The Poetical Works of Will. Shenstone. In Three Volumes. With the Life of the Author, and a Description of the Leasowes* (1778; Vol. 2, pp. 52–5; lines 28–30). The poem is about a rat that devours knowledge by eating books; the river, sea, and kingdom in the lines are in "books of geography" in which the rat "made the maps to flutter."

²⁸ A stately dance for two in triple time; or a piece of music of similar rhythm and style, usually as part of a larger piece.

²⁹ A poem intended to be sung; or, a lyric poem, usually addressed to or apostrophizing a particular subject, and written in varied metre.

³⁰ The poetic measure used by Homer and Virgil is unrhymed dactylic hexameter: each line is made up of six feet, each containing one long syllable followed by two short.

³¹ Isaac Newton (1642–1727), natural philosopher and mathematician, was professor of mathematics at Cambridge (1669–1701) and president of the Royal Society (1703–1727). *Opticks*, one of his major works, was published in 1704, cumulatively based on work he had done in lectures and papers from the 1660s on.

³² The difference of pitch between two notes.

³³ In his chart of correspondences, ED uses the sol-fa system in which syllables are associated with pitches. Sol is the fifth note of the octave; La is the sixth; Fa, the fourth; Mi, the third.

³⁴ In Prop. 6 (p. 114), Newton gives the same correspondences as ED does, except that the fifth in the sequence (“La. Blue.”) is 1/10 instead of 1/16.

³⁵ Robert Smith (bap. 1689, d. 1768), mathematician and minister of the Church of England. He held several positions at the University of Cambridge including professor of astronomy and experimental philosophy, university vice-chancellor, and master of Trinity College. He was also a musician, accomplished on the violoncello and several other instruments. His two most important works are *Compleat System of Optics* (1738), which played a major role in disseminating Newton's theory of light, and *Harmonics, or, The Philosophy of Musical Sounds* (1749), which includes an extended discussion of equal harmonic intervals. The note ED refers to is found on pp. 42–3.

³⁶ A type of oil lamp invented in Geneva by Pierre-François-Amedée (“Ami”) Argand (1750–1803) in 1782. It produced a much brighter light than previous lamps, due to a cylindrical wick housed between two concentric metal tubes that let a current of air pass both inside and outside a cylindrical flame; it also had a cylindrical glass chimney to further improve air flow. In England they were made by ED's fellow Lunar Society member Matthew Boulton (1728–1809). Over the years 1785–1787, ED designed improvements to the Argand lamp, in collaboration with another fellow Lunar Society member, Josiah Wedgwood (1730–1795), but they were not put into production (see King-Hele, *Life*, p. 216).

³⁷ A musical instrument somewhat like a piano, except the strings are not struck by hammers but plucked by quill or leather points in jacks connected by levers to the keys. It was at its most popular from the 16th through the 18th centuries.

³⁸ Louis-Bertrand Castel (1688–1757) was a French mathematician and a Jesuit. He developed the *clavecin oculaire* [ocular harpsichord], describing it in a letter

published in the *Mercure de France* in November 1725. He also suggested ways to incorporate flavour, scent, and touch with music. He published further articles on the subject in *Mémoires de Trévoux* in 1735, and in 1740 published a book, *Optique des couleurs*. He did not write about actually constructing a colour harpsichord, but in July 1755 wrote to the *Mercure de France* describing a demonstration of a model he considered far from embodying his intentions for his invention. (See Maarten Franssen, "The Ocular Harpsichord of Louis-Bertrand Castel: The Science and Aesthetics of an Eighteenth-Century *Cause célèbre*," *Tractrix* 3 (1991): pp. 15–77.) Edmé-Gilles Guyot (1706–1786) was a science popularizer interested in magic, illusion, and science as entertainment. ED refers to *Nouvelles Récréations Physiques et Mathématiques, Tome Troisième, Illusions de l'Optique* [New Recreations in Physics and Mathematics, Volume Three, Optical Illusions] (1770). Guyot gives Castel's correspondences between notes and colors, which are different from the Newtonian ones listed here by ED. According to Guyot, Castel sought to create an instrument that would display colors instead of sound but produce the same sensation due to the correspondence of colour to sound; however, "il a essayé vainement de composer & construire un clavecin oculaire, c'est à dire avec lequel on pût substituer aux sons les couleurs, qui, selon son système, lui paroissoient analogues" [he tried in vain to prepare & construct an ocular harpsichord, that is, with which one could substitute colors for sounds, which, according to his system, appeared to him to be analogous]. Guyot also gives instructions for making a simplified toy version of an ocular harpsichord (pp. 234–35).

³⁹ This Dr. Darwin is Robert Waring Darwin (1766–1848), ED's third son. Robert studied medicine at Edinburgh, as his brother Charles and ED had before him, and also at Leyden. He practiced medicine at Shrewsbury in Shropshire and was the father of Charles Darwin (1809–1882). "New Experiments on the Ocular Spectra of Light and Colours" by Robert Waring Darwin, "communicated by Erasmus Darwin," *Philosophical Transactions of the Royal Society of London* 76 (1786): pp. 313–48, was based on Robert's doctoral thesis at Leyden.

⁴⁰ The case ED refers to is from *An Essay Concerning Human Understanding* by philosopher John Locke (1632–1704), 3.4.11: "A studious blind man, who had mightily beat his head about visible objects, and made use of the explication of his books and friends, to understand those names of light and colours which often came in his way, bragged one day, that he now understood what scarlet signified. Upon which, his friend demanding what scarlet was? The blind man answered, It was like the sound of a trumpet."

⁴¹ *A System of Vegetables* (1783), a translation of Linnaeus's *Systema Vegetabilium* (1774), also drawing on Carl Linnaeus Jr.'s *Supplementum Plantarum* (1781), largely by ED and credited to the Botanical Society of Lichfield, which also

included Brooke Boothby (1744–1824) and William Jackson (1735–1798). See *LOTP* Preface vii–viii and editor's notes. Compound words are discussed in the "Preface of the Translators" of *A System of Vegetables*, pp. vi–x. ED wrote letters to many botanists, including Carl Linnaeus Jr., asking their advice about the translation. ED's letters to Joseph Banks (1743–1820), naturalist, patron of science, and President of the Royal Society (1778–1820), who loaned ED books for the project, give close attention to the problem of how to treat compound words (see King-Hele, ed., *Letters* 81–8, 81–11).

⁴² "Eloisa to Abelard" (1717) by Alexander Pope (1688–1744). ED accurately quotes lines 165–166. Pope's poem is written in the voice of Eloisa, or Héloïse (c. 1098–1164), who fell in love with her tutor, the philosopher and theologian Peter Abelard (1079–1142). She became pregnant and they secretly married, but when her uncle, Canon Fulbert, found out, he had Abelard castrated. Abelard became a monk and she a nun. The correspondence of these iconic tragic lovers (which ranges from erotic to theological) was much admired in the seventeenth and eighteenth centuries.

⁴³ Anna Seward (1742–1809) was a prolific writer of poems, letters, and criticism. Known as "the Swan of Lichfield," she was a friend of ED from her youth, when her home was the center of the local literary circle; in 1804 she published her *Memoirs of the Life of Dr. Darwin. An Elegy on Captain Cook* (1780) was her first publication and met with great success; it was probably a collaboration with ED (see Teresa Barnard, *Anna Seward: A Constructed Life* (Ashgate, 2009), pp. 118, 122–23). ED quotes lines 155–56: "But round the steepy rocks, and dangerous strand, / Rolls the white surf, and shipwreck guards the land" (p. 13).

⁴⁴ Samuel Johnson (1709–1784), author and lexicographer. ED quotes line 177 from "London: A Poem, in Imitation of the Third Satire of Juvenal" (first published anonymously in 1738): "SLOW RISES WORTH, BY POVERTY DEPREST." The original Latin verses quoted by ED are from lines 164–65 of Juvenal's third satire. Johnson, in a footnote, quotes the lines as follows: "Haud facile emergunt, quorum Virtutibus obstat / Res angusta Domi"; "It is no easy matter, anywhere, for a man to rise when poverty stands in the way of his merits" (Trans. G. G. Ramsay, Loeb Classical Library). (Johnson's note additionally quotes lines 166, 183–84, and 189).

⁴⁵ Inserted 1791, 1794, 1799

⁴⁶ 1794, 1799: "poets?"

⁴⁷ In *Memoirs of the Life of Dr. Darwin*, Anna Seward quotes this passage (from "Where the sentiment" to "cultivated fruit") and remarks, "Dr. Darwin forgot that just restraint when he took, unacknowledged, forty-six entire lines, the published verses of his friend, for the exordium of the first part of his work. That extraordinary, and in a Poet of so much genius, unprecedented instance of plagiarism excepted, not one great Poet of England is more original than Darwin" (pp.

354–55). She refers to her own “Verses Written in Dr. Darwin’s Botanical Garden Near Lichfield” being used for the opening lines of *The Economy of Vegetation*. See Appendix 4.
⁴⁸ Edward Young (bap. 1683, d. 1765), writer, is best known as the author of *The Complaint, or, Night-Thoughts on Life, Death, and Immortality* (1742–1746), a long poem made up of nine “Nights” published serially. In it a nocturnal speaker laments loss and finds Christian consolation. As the poem goes on, it addresses other theological topics and tries to persuade a sceptical addressee of the blessings of Christian salvation. It was popular and remained widely read into the nineteenth century. ED refers to *LOTP* III:255–58, and lines 191–96 from Young’s “Night the First”: “Each *Moment* has its Sickle, emulous / Of *Time*’s enormous Scythe, whose ample Sweep / Strikes Empires from the root; each *Moment* plays / His little weapon in the narrower sphere / Of sweet domestic Comfort, and cuts down / The fairest bloom of sublunary Bliss.”

⁴⁹ John Langhorne (1735–1779), poet, translator, and editor; he was also a clergyman and a justice of the piece at Blagdon in Somerset. *The Country Justice: a Poem, by one of Her Majesty’s Justices of the Peace for the County of Somerset* is made up of three parts published 1774–1777. The passage ED refers to as the source for *LOTP* III:430 is in Part the First, in a section titled “*Apology for Vagrants*”: “Cold on Canadian Hills, or Minden’s Plain, / Perhaps that Parent mourn’d her Soldier slain; / Bent o’er her Babe, her Eye dissolv’d in Dew, / The big Drops mingling with the Milk He drew, / Gave the sad Presage of his future Years, / The Child of Misery, baptiz’d in Tears!” (1774, p. 18).