Integration and the liberal arts: a historical overview

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Abstract

Purpose – The traditional liberal-arts curriculum of the word-based Trivium (grammar, dialectic/logic, rhetoric) and the number-based Quadrivium (arithmetic, geometry, astronomy, music) has an intrinsic unity. Used in an integrated way, it provides a tool for self-development, self-realisation and self-integration. The purpose of this paper is to outline the core nature of the integrative quality of the liberal-arts curriculum, trace the gradual disintegration of the curriculum from its adoption in classical Greece, and provide practical suggestions for the re-integration of the curriculum in the context of modern educational practice.

Design/methodology/approach – The paper presents a philosophical survey of the history of the theory and practice relating to the intrinsic integrated quality of liberal-arts education from pre-classical Greece to the present day.

Findings – The integrated quality of the liberal-arts curriculum has experienced a gradual disintegration from its adoption in classical Greece to the twenty-first century. The paper provides practical suggestions for the re-integration of an integrated approach to the curriculum in the context of modern educational practice.

Practical implications – Re-engaging with the integrated quality of the liberal-arts curriculum is vital for fulfilling the purpose of education as a practice: that of enabling a human being to flourish in a holistic way, in order to take an active role within a civil society.

Originality/value – The paper provides a valuable antidote to overly rational thinking by arguing for the need to restore the intrinsic integrative quality of the liberal-arts curriculum in educational practice in order to support the flourishing of individuals, society in order for the emergence of a mutually supportive interaction between them to appear.

Keywords Integration, Liberal arts, Adler, Henosis, Quadrivium, Trivium, Grammar, Logic, Rhetoric
Paper type Conceptual paper

The integrated nature of the traditional liberal-arts curriculum

In 1936, Mortimer Adler argued for the re-integration of the Trivium – the traditional Liberal Arts of grammar, logic and rhetoric. He outlined how the Trivium's intrinsic unity and integrated quality had suffered from the development of formal and material approaches to logic[1].

In his lecture, Adler outlined two types of integration, which I see as horizontal and vertical:

1. Horizontal integration, in practice, is about using the Trivium as an integrated Organon in a holistic, inter-disciplinary approach to the intellectual cross-fertilisation of ideas, and analytical thinking[2]. It helps you understand how things fit together.

2. Vertical integration, in practice, leads to philosophy via (as Adler puts it) metaphysics and rational psychology. It helps you connect your intellectual understanding of how things fit together with the source of how you understand in the first place.

The ultimate integrated position is where you, as knower, and the known, the object of your sensory and intuitive thought transcend intellectual analysis to merge into one, the ultimate expression of which is *henosis*.

The integrated approach applies as much to the word-based Trivium as to the number-based Quadrivium.

The word-based Trivium, described in Aristotle's *Organon* (*De interpretatione*, 16b 24-25), leads to vertical integration and metaphysical contemplation through a focus on syncategorematic words (e.g. the pure copula, ''and,'' ''or,'' ''if''), words impossible to define on their own which depend on categorematic words (e.g. nouns, verbs, adjectives).

In the Quadrivium, clearly integrated in Plato's *Republic* (VII.524d–531d), the unit acts in the same way, for any unit in the physical world is arbitrary, but metaphysically, depends on intuitive understanding of the concept of unity as a starting point from which all number-based activities derive.

In Plato's mathematical world, there were neither negative numbers nor zero. It is likely that he recognised the same number line as the Ancient Egyptians did:

$$\frac{1}{5}, \frac{1}{4}, \frac{1}{3}, \frac{1}{2}, \frac{1}{1}, \frac{2}{1}, \frac{3}{1}, \frac{4}{1}, \frac{5}{1}$$

Everything for him was a contemplation of the Monad, the indescribable unity behind creation. When contemplating whole numbers, unity was seen as manifesting as unified duality, trinity, quadruplicity, etc. When contemplating fractions, unity was seen manifested in binary, tertiary, quadruple, etc. division (Gardner, 2008).

The two divisions can be seen in terms of Lakoff and Johnson's two main grounding metaphors: containment and continuum[3]. In my view, the former relates to word, the latter to number; with regard to words: the former to noun, the latter to verb; with regard to number: the former to magnitude, the latter to multitude; in geometry: the former to ''point'', the latter to ''line''; the former to space, the latter to time; the former to being, the latter to becoming: *ousia* and *energeia*[4].

The integration of the liberal-arts in antiquity

According to Hadot (1984), the Trivium/Quadrivium divisions were probably only formalised around the third Century AD by Porphyry (Hadot, 1984, pp. 99-100).

In extant works, the proper noun Quadrivium is used by Boethius in the sixth century AD; Trivium, as a proper noun, appears first in the ninth Century AD (Luhtala, 2007, p 68).

However, the origins of the curriculum can be traced back much further. Hadot (1984) associates the birth of the spirit of a liberal-arts curriculum with the teachings of the Sophists in the late fifth/early fourth Centuries BC (Hadot, 1984, pp. 11-13). Recent scholarship traces the roots of their approach further back to the work of Pre-Socratic philosophers such as Protagoras, Parmenides, Heraclitus, and Pythagoras.

Bryson of Heraclea (late fifth century BC) is credited with working on both Pi and the meaning of words[5]. His contemporary, Antiphon of Rhamnus, credited with being the first speech-writer, wrote a treatise on rhetoric (now lost) at the same time as the value of Pi was being thought about, and used to resolve the question of squaring the circle[6]. Clement of Alexandria (late second, early third Century AD) gives special emphasis to the integration of words and music, in particular to the innovations of Terpander in early seventh century BC, one of which was to set a series of laws to music[7]. I find it hard to think of a more telling example of both vertical and horizontal integration combined. The further back we go, the greater the focus on vertical integration[8].

It is my view that with Parmenidean logic came a break in the integrated approach that was part and parcel of an Ancient Egyptian philosophy of life, expressed through and in *Maat*. Lipson (2004) attempts to define the elusive term as a standard of behaviour based on [manifesting] ''what is right'' (Lipson, 2004, p. 80, and note 4). It is worth bearing in mind that

it may have formed a precursor to the liberal-arts curriculum which was developed in Ancient Greece, which perhaps featured a crack in total integration at its inception[9]. It just depends on your view of where the starting point is.

The gradual disintegration of the liberal-arts

After the sack of Athens and the dissolution of the academies, the general approach to an integrative liberal-arts education was continued to a certain extent by the Stoics. Seneca integrates metaphysical and physical by seeing divinity (in his case, Jupiter) as synonymous with fate, providence, nature, and the world[10], and Marcus Aurelius sees no division between divine creative force and the soul[11]. However, perhaps fuelled by the intellectual ideas which emerged from the cultural melting pots of Alexandria, Miletus, Rhodes, and Rome, the Stoic view of *logos* – reported by Diogenes Laertes as a carrier of meaning, a subset of *lexis* (writable sounds), in turn, a subset of *phōnē* (all sounds), thereby applying the term in a more limiting way to all linguistic units of meaning[12] – as distinct from Aristotle's and Aurelius's views, may provide the first signs of vertical disintegration in the Hellenistic approach to the Liberal Arts.

The attempt to reconcile the Hellenistic approach with the emerging Christian doctrine came about through so-called Neo-Platonic philosophy, especially in the works of Marius Victorinus, the first to translate many works by Plotinus, Porphyry, and other Neo-Platonists from Greek to Latin (see Bruce, 1946; Hardy, 1968; Copeland and Sluiter, 2009, pp. 104 ff.). His commentary on Cicero's *De Inventione* echoes themes of the descent and ascent of the soul, and the role of philosophy in cultivating wisdom ultimately helping the soul 'return … to its natural order'[13]. Victorinus, a professor of rhetoric in Rome, who converted to Christianity around 355, influenced the merging of classical and Christian outlooks in the works of Clement of Alexandria[14], Origen[15], and St Augustine (Hadot, 1995, pp. 107, 128 ff; Hadot, 1984, pp. 101-136; Heidl, 2009, pp. 27-36).

While the resultant hybrid helped people explore the purely spiritual and integrative aspects of Christianity to a certain point through engaging with the essence of the liberal-arts approach (Hadot, 1995, pp. 107 ff.), religious doctrine now only sanctioned the possibility of *henosis* through an act of faith or divine grace[16]. The Christian view of Christ as *logos* was not the same as Marcus Aurelius's active, ever-present *logos spermatikos*, universally present, available to, and accessible by all.

The formal classification of the seven liberal-arts first appears in Martianus Capella's highly influential work, *De nuptiis Philologiae et Mercurii* (*c*. fifth Century)[17]. Capella tells the story of the preparation for the wedding of the mortal, Philology, and the god, Mercury, in which the seven arts are described as Philology's handmaidens. The wedding, which brings them together, changes Philology from mortal to god. The union helps both become stars.

The transmission of works such as Capella's was largely the result of people like Cassiodorus, who took over from Boethius as *magister officiorum,* or head of the Ostrogothic administration in Italy, under Theoderic the Great. He founded a monastery school, where he wrote his *Institutiones divinarum et saecularium litterarum* as a textbook outlining the analytical method he had applied to the analysis of the Book of Psalms in his earlier *Expositio psalmorum* (Copeland and Sluiter, 2009, pp. 210-211). In his approach, we see once again the horizontal integration of word and number leading the soul to vertical integration with the divine. The means he outlines for achieving this are the seven Liberal Arts[18]. Capella's *De nuptiis* influenced the teaching of the liberal-arts curriculum through to the twelfth century via the monastic centres of learning set up by Charlemagne in the late eighth century to address the need for integration within a monastic context, paving the way for the development of cathedral schools, such as that of Chartres, where integration literally vitalised the thought and creative life of its members. To try to understand the extent to which this was the case, Hiscock puts forward the following linguistic examples:

[…] modern English takes it for granted that a collection of monasteries subscribing to a particular *Rule* constitutes an *Order*. Yet behind this commonplace seems to lie the concept of universal order being achieved through observance of rule. By extension . . . the giving and taking of commands has become synonymous with giving and taking orders. If something actually breaks down, it is out of order.

[…] An agreeable experience is usually synonymous with one that is pleasant, yet it is only pleasant because all the elements are in agreement with each other, everything fits and therefore harmony is the result. Both the Lain for art, *ars*, and the Greek for virtue, *arête*, are derived from the Indo-European *ar-* which again means ''fitting'' . . . the liberal-arts are components which fit together to form a whole. Yet mathematics included the study of music, which had little to do with making nice tunes, except among professional entertainers, but was that imparted by the Muses to him who was ''guided by intelligence . . . as an ally against the inward discord''. Arithmetic . . . was concerned . . . with the theory of number. Something of the real importance of the order of numbers is still conveyed in English whenever something is dismissed because ''it does not count.'' Something is also conveyed of the close identity of arithmetic with geometry and the concept of figurate numbers in the complete lack of ambiguity in the term ''number'' compared with ''figure,'' which mean number or shape (Hiscock, 2000, p 139).

The Chartres era also saw the rise of integrative disciplines such as Modist grammar, *Grammatica speculativa,* and work on *syncategoremata* in the thirteenth century. Where reason was concerned, while there was an increasing shift from dialectic to logic, there also was an emphasis on the connection between content and form, particularly in Kilwardby's *De ortu scientorum*, in which he distinguishes between logic as a ''science of words'' and a ''science of reason'', ultimately uniting them in a definition of logic as not a science but ''sciences of words.'' Thus language, reasoning, and the number-based disciplines were explored in ways which embodied horizontal and vertical integration.

However, both theoretically and practically, the liberal-arts approach was disintegrating. St Thomas Aquinas, Siger of Brabant, and John Duns Scotus tried in different ways to reconcile the Liberal Arts with Christian doctrine. While *henosis* was seen as achievable, integration was increasingly seen as only achievable by grace rather than an engagement with the Liberal Arts as means to an end in themselves.

Plotinus's paradoxical view of the One which is the ''principle of all things,'' and the goal of becoming ''one with the One'' (Hadot, 1995, p 101), in unified transcendence of both containment and continuum, was modified by Augustine, who says, ''trinities occur within us and are within us,'' and that through contemplation of them, the soul can experience itself as an image of the trinity[19], in a doubly reflected continuum relationship. If taken metaphorically, it acts as a stepping stone to *henosis*; if taken literally, it becomes a separation from the source.

The line between faith and reason, which Augustine conceived as a permeable reflective membrane, metamorphosed into a solid partition wall when it was taken as a literal dogmatic boundary leading to disputation – the extreme articulation of which is found in the Inquisition's attempts through coercion and the use of force to control both what people believed and how[20].

The emphasis on disputation as part of a tradition going back to classical dialectic is important, inasmuch as Luther's theses, while distributed widely in print, were initially posted up as starting points for truth-seeking dialectical dispute, as were Giovanni Pico della Mirandola's 900 theses. Perhaps as a result of gradual calcification of the previously permeable barrier to freedom of expression, in terms of vertical integration, caused by the imposition of religious doctrine, vertical integration found other outlets in the early modern era. To cite one example, from music: Guido d'Arezzo's notation system and hand-based figuration developed the practical side of music from the eleventh century, leaving theory behind. Theory taught with the monochord and the relationships of Pythagorean harmony gave way in the sixteenth century to experiments with new tuning patterns, and a rapprochement with words in the development of opera from 1600 (Isacoff, 2002), which integrated music and words in horizontal terms and allowed vertical integration to be pursued in a more universal way within a secular context. Other examples include the influence of classical Neo-Platonic thought on secular architecture

and city planning, in the work of Alberti and Vitruvius; the influence of astronomy on court culture; the interaction between astrology, alchemy and craftsmanship[21]; and the metamorphosis of *arête* into *sprezzatura* in works such as Castiglione's *Book of the Courtier*.

The two approaches co-existed in the liberal-arts in the early modern era, the cultural output of which can probably be fruitfully viewed as a result of the tension between them. On the one hand, we see a shift in which Boethius's *Practica/Theoretica* metamorphoses into *Philosophy/Theology*, with the initial Greek letter *pi* changing to *phi*[22]. On the other, we see Vergerio's tolerant secular approach to the Liberal Arts in *De ingenuis moribus* of 1402-3, where he puts History, Moral Philosophy, and Eloquence at the top of his list of subjects, integrating word-based and number-based approaches by foregrounding proportional relationships within the word-based activities, as well as emphasising the integrative character of his approach as a whole.

The secularisation of the liberal-arts curriculum, along with its growing practical emphasis on such elements as epistolary art, stylistic copia, and composition within rhetoric, continued through the Counter-Reformation[23]. Logical innovations by Peter Ramus, Ramon Llull, and Roger Bacon influenced the eventual development of symbolic logic – which, as Adler pointed out in his lecture, confuses grammar and logic[24]; and grammatical innovations by emerging linguists such as Bullokar, who, along with other vernacular grammarians, tried to build a vernacular grammar on the basis of Latin grammar: both contributed to the further disintegration of the Trivium.

Scientific rationalism resulted in the eventual development, separation, and multiplication of the subjects of the Quadrivium, particularly through the work of René Descartes. As a result of his work, word- and number-based subjects were increasingly thought of as different, particularly in the way university curricula were organised, although successful practitioners continued to integrate both in their practice.

Through the so-called ''age of enlightenment'', Comenius's attempt at formalising a universal integrative educational approach, while it has much to commend it in terms of approach, can clearly be seen nowadays to have been hampered by his Christian bias against pagan thinking. Pestalozzi's approach, essentially founded on an inverted Cartesian postulate: ''I am, therefore I think,'' was a step towards greater integration following the Cartesian attempt to return to a more universal and integrated approach to exploring what it is to be human.

In a rekindling of the spirit of Neo-Platonic thought, Cardinal Newman's need to argue for a return to a liberal-arts approach within the context of a university education arose in 1852 from a long history of universities favouring Protestants which went back to the introduction of the Oath of Supremacy under Elizabeth I. Newman's argument is of its time, and should also be seen in the context of his personal struggle with issues of faith against the backdrop of a history of anti-Catholic legislative practice. His *Discourses on the Scope and Nature of a University Education* were given in Dublin just two years after the restoration of the English hierarchy in 1850 by Pope Pius IX, which resulted in the sentiments of the violent anti-Catholic demonstrations in the streets of London echoing through the parliamentary chambers in the recently rebuilt Palace of Westminster. In them, he argued for an integrated approach to the reconciliation of Catholic and Protestant theologies, of faith and reason; and that the best way of doing this was through a curriculum based on the liberal-arts[25].

The call for integration was taken up again by Dorothy Sayers in 1947, whose writing bears faint traces of the integrative character of the liberal-arts approach – not in her inclusion of any reference to spirituality (perhaps as a reaction to Newman's legacy), but in her emphasis on subtle distinctions, such as the value of teaching general grammar as the structure of a tool we use for making sense of the world and communicating the result, rather than teaching the rules of specific (classical Latin) grammar. Whereas both visionaries aimed towards greater vertical integration, they were powerless to stop further disintegration on the horizontal level.

Seneca the Younger, in the first Century AD, wrote that ''liberal studies'' had nothing to do with the Greek curriculum of general education (*enkyklios [paideia]*) called ''liberal'' in Latin, but were concerned with the cultivation of virtue, and with meaningful engagement with the essential qualities of things. For him, the study of liberal-arts subjects was only a preparation for a truly liberal education: that which gives a man his freedom by setting the soul on its way towards virtue, the ultimate aim of which is to question the nature of the universe. Integration was definitely part of the liberal-arts approach in Seneca's view[26].

If Seneca were alive today, he would probably not only find the same divide between ''liberal studies'' and true liberal-arts education, but probably be hard pressed to find places where integration leading to transcendence of duality was the norm. To cite one example, while Proclus, in his *Commentary on Euclid's Elements*, devotes the equivalent of 12 dense pages of print to expounding Euclid's double definitions of point and line, the compiler of the University of St Andrews' History of Mathematics web site devotes four telling words to them. The four words are simply, ''This is rather strange.''

At a time when few graduates today would be capable of writing eloquently and wisely on subjects as varied as did Aristotle and Plato in classical times, it is more important than ever to restate Adler's call, and expand it beyond the Trivium, to cover an integrated liberal-arts approach which reclaims the wisdom and liberating quality inherent in its structure. It is time to remember that Descartes's paean to reason emerged from doubt, and that doubt is located in intuition, rather than reason. We often assume that numbers can be relied on, and that quantification is arbitrary and relative. Actually, the reverse is true. What is ''seven'' but the sevenfold iteration of a unit, and the definition of a unit can only be understood through an intuitive ability to quantify. We have lost something that is valuable in the privileging of reason over intuition, but this is not an invocation to reverse the balance. We cannot understand or benefit from intuition unless we apply reason in exploring it. We cannot rely on arbitrary rational approaches to understanding the universe we live in unless we acknowledge the intuitive grounding for those rational modes of trying to come to terms with the world we live in. Both need to be re-integrated on an equal footing. Through that process, we will, as Sister Miriam Joseph states, be exploring an approach which acts on a person like an intransitive verb (e.g. ''A rose blooms'') (Joseph, 2002, p. 4). This approach is not only liberal, but liberating. It is the only approach which is worthy of the association with the liberal-arts tradition. It does not need to be confined to the traditional subjects, but inevitably, where word/number, containment/continuum distinctions apply, we need to encourage the re-adoption of a liberal, integrative approach to both branches, and the Trivium, as Adler noted, provides an ideal starting point, without which one cannot even attempt to explore other subjects.

Re-integrating the liberal-arts in the twenty-first century

Re-integrating the Trivium

The Trivium is not an artificial construct which we impose on ourselves arbitrarily from outside. It is hard-wired within us, and its structure is based on how we instinctively view the world. Engaging with it helps us exercise and develop our innate faculties and thereby ourselves at the same time. One can only use words well if one has integrated them internally with the abstract or concrete terms they signify. This is where grammar and logic work together. If it is to be integrative, any approach to the study of grammar needs to include work on categorematic and syncategorematic words. It needs to foster the ability to distinguish between the subject and predicate of a sentence. How else can you literally know what you are talking about? In order to explore and come to terms with an object of study, Aristotle's ten categories of being are invaluable. In order to compare and contrast two objects of study, Cicero's 16 logical topics of invention are vital. They provide solid bases for approaching a more formal study of Logic. Exploring different ways of expressing a thought, along the lines of Erasumus's *De Copia* integrates grammar and rhetoric. Why not revive dialectic games, exploring a dialogic practice based on a mutual quest for truth, and the use of paradox to develop vertical integration, rather than the adversarial, ''Sophistic'' type of debating generally practiced today? Exploring the patterns in sounds, words, phrases,

sentences, and ideas that underpin rhetorical forms creatively help to develop eloquence and lead towards an appreciation of the forces that give rise to the Quadrivium.

Engaging with words in this way, as containers of meaning, which is not located in rational thought, but arrived at through it, should be the goal of any word-based teaching. The approach is not inapplicable to modern approaches to literacy teaching, such as multi-modal, digital, and visual approaches. Teaching phonics in the early years has been shown to be far less effective in teaching children to read through repeated reading aloud than traditional storytelling, a form of communication that is older than the written word. The approach is counter to the approach outlined by educationalists such as Comenius and Piaget. It disintegrates rather than integrates, and actively fosters what Piaget calls the ''harm done by that enduring curse of education – verbalism or pseudoknowledge (*flatus vocis*) associated with mere words, as distinct from the real knowledge'' (Piaget, 1993, p. 6).

The approach is intrinsically linked to core values, which are an intrinsic part of classical rhetoric, which depends on both grammar and logic for its expression. Both Joseph and Adler echo the classical emphasis on the importance of core values, on engaging with universal concepts such as truth, beauty, goodness, and justice, which provide the background and means for the application of the Trivium to lead us to philosophy, to scientific investigation of the world through a modern approach to the Quadrivium, to metaphysical and spiritual development, and to engaged civic action.

Re-integrating the Quadrivium

Re-integrating number-based, or continuum-based thought means first and foremost exploring number as extensions of unity. Why not teach the number line that Plato used, alongside more modern developments, which include operators such as zero and negative numbers? Why not explore geometry from the starting points that Euclid puts forward, in ways that are age-appropriate: stories for younger children, creative and artistic activities through junior school, intellectual exploration in secondary school, and metaphysical engagement in tertiary education? While the interpretations of the different qualities of numbers, two-dimensional shapes, and three-dimensional shapes that have been proposed down the ages are to a certain extent arbitrary, the fact remains that circles are not triangles; and an exploration of their individual qualities in order to come to an individual understanding of their particular qualities is as rewarding, in its own right, as learning to measure the circumference or area of different shapes – in fact, ultimately more meaningful and more rewarding. Observation and analysis can thus be developed and fruitfully used to explore the STEM subjects. Again, Cicero's 16 topics come into their own here, as do the basic operators of traditional logic.

While astronomy or astrology may have been dropped from general education, music has not. The principles of the former continue in the study of bodies in motion, and in engineering. The study of music, however, continues to be a central part of the educational curriculum. While practical study is important in facilitating the expression of the musical (in which the performer transcends the notes and rhythm of a piece, whether as soloist or within an ensemble), theory is often limited to conventions of notation, tonality, harmony, and form, sidestepping the basic relational qualities of sounds that lie at the heart of all music and which integrate music across all cultures, and from which arise the varied formal expressions of rhythm and tone that we know as music across the world[27]. And, following Marsilio Ficino's lead, I see no reason why artistic activity should not be included among the liberal-arts curriculum. At the end of the day, it is not so much the activity that is important, it is the integration of the person.

Integrating the person

As Lakoff and Johnson point out, the mind is embodied. Physical exercise and healthy nutrition are vital to maintaining physical health. Artistic activity is vital to expressive communication. Both are vital in developing integration, to the extent that they draw on and develop our instinctive abilities – the instinctive ability to place foot or racket to ball at

precisely the right moment through a natural sense of coordination; the ability to improvise, and react to others on stage, to find truth in a character's viewpoint when acting. Both cultivate emotional intelligence through working in partnership. It is important to foster the experience of feeling part of a whole that integrates you with others, to play a part which makes sense in a piece you present jointly to others, and through which you connect with them, becoming part of a shared experience that goes beyond the work, you, or them.

Developing the ability to integrate both containment- and continuum-based approaches in ways that integrate reason, emotion, and intuition helps develop people not just as active members of the society in which they live, but as fulfilled human beings. It allows individuals to explore metaphysical and spiritual pathways of their choosing, both in terms of applying the integrative approach to their chosen pathway, and ideally in following that pathway, as a result of an integrated act of natural selection. Developing this ability is part and parcel of an integrated liberal-arts curriculum which demands genuinely dialogic teaching for it to work. It's high time it was revived and co-re-created, as a result of being actively sought after by students, and actively practiced by providers – providers who, it would be hoped, would see themselves in the former category as well.

Notes

1. Adler (1935), p 8 IV.1.a. (CSGI), p 10 IV.1.a. (SB); p 1 I.2.a–b. (CSGI), (SB). (SB) indicates the version of Adler's lecture notes from the Scott Milross Buchanan archive at Harvard University (1935/36), which include minor revisions to the version housed at the Center for the Study of the Great Ideas indicated as (CSGI). I am particularly grateful to Max Weismann and Ken Dzugan from the Center, and John Kovach from St Mary's College for their help and generosity in sourcing and sharing Adler's notes and related material from their respective archives with me.

2. Adler (1935), p 7 III.3.c.1. (SB) For a clarification of the terms used, see Adler (1935), Joseph (2002, pp. 36-40) and Adler (1993, pp. 17-20).

3. This is an analytical interpretation of Lakoff and Johnson (1999, pp. 178-234).

4. For an argument indicating the integration of line and plane on a metaphysical level, see Lakoff and Johnson (1999, pp. 561-568); for ''being'', see Lakoff and Johnson (1999, pp. 355-357, 377). For ''becoming'', see ibid. pp. 561ff. For the integration of both, see ibid, pp. 566-568. For *ousia* and *energia*, See Milne (2013), p 31.

5. Aristotle, *Posterior Analytics*, 75b4; *Sophistical Refutations*, 171b16, 172a3; *Rhetoric*, 3.2 1405b 6–16.

6. The numerical work is attributed to Antiphon the Sophist. The question of whether or not Antiphon the Sophist and Antiphon of Rhamnus are one and the same person is unresolved. Gagarin (2002) argues for seeing them as one and the same; Pendrick (2002) argues they are different.

7. Clement of Alexandria, *Stromata*, I.16.

8. See, for example, Evangeliou (2006) and Uždavinys (2008). I am aware of the critical debate surrounding the origins of Greek culture, which include Bernal's argument for Afroasiatic roots, Kahn's argument for Shamanic origins, which are close to Kingsley's argument for Phocaean roots, and Bremmer's more cautious open-ended views, and which I have not discussed here due to restrictions in length.

9. Fox (1983) describes the integrated quality of the Ancient Egyptian approach to rhetoric, contrasting it with Greek approaches which followed.

10. Seneca, *Naturales quaestiones*, IV.45 in Clark (1910).

11. Marcus Aurelius, *Meditationes*, IV.21.

12. Law (2003, pp. 29, 41); Diogenes Laertius, *Lives of Eminent Philosophers*, VII.57.

13. Victorinus, *Commentary on the* De inventione, Book I, quoted in Copeland and Sluiter (2009), p 107.

14. Clement of Alexandria, *Stromata*, Book VI, Chapters 10-11.

15. Origen, *Philocalia*, Chapters XIII and XIV.

16. Origen, opus cit., Chapter XV, paragraphs 3-4; Clement of Alexandria, *Stromata*, Book I, Chapter 7; Hadot (1995, pp. 138-139).

17. For dating, see Copeland and Sluiter (2009), note 1, p 148. For influence and transmission, op. cit. pp. 149 ff.

18. The symbolic importance of the number seven to Cassiodorus is highlighted by Copeland and Sluiter (2009), p 221.

19. Augustine *De trinitate*, Book VII, 6.12; Hadot (1995), p 107.

20. Feldhay's balanced investigation of the complex interactions between Galileo and the inquisitorial branches of the Catholic church, and the grounds on which he was accused of heresy are particularly relevant here (Feldhay, 1995).

21. Smith (2004), especially pp. 14, 16, 129-154.

22. See Dürer's *Philosophy* from Celtis's *Libri amorum* (Nuremberg, 1502), and accompanying comments in Hope and McGrath (1996, pp. 181-2).

23. For an overview of the development of epistolary rhetoric, see Mack (2011, pp. 228-256); for stylistic copia, see Erasmus's *De Utraque Verborum ac Rerum Copia* in King and Rix (2007); on the popularity of Aphthonius's *Progymnasmata*, see Mack (2011, p. 27).

24. Adler (1935), p 7, III.3.b (SB), p 6 (CSGI); p 10, IV.1.a (SB), p 8 (CSGI).

25. Newman (1852), especially pp. v-xxx.

26. Seneca, *Epistulae morales*, 88.2, 88.20, 88.23, 88.46.

27. A good starting point is Snider (2005).

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