

# Alexandrian Motifs in Chinese Texts

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The presence, in classical Chinese texts, of sometimes striking similarities to themes and ideas found in classical Greek texts, has long been noticed, and has often been seen as evidence of contact or other indebtedness between these two ends of Eurasia. Such inferences, in turn, have often been held up to derision by historians and anthropologists; the issue is a sensitive indicator of current styles and preferred conclusions in these disciplines. Cultural politics also plays a role: Europeans have sometimes been disposed to see other civilizations as leftovers from Noah's Ark, and Chinese have consistently resisted the idea that classical Chinese culture is significantly indebted to anything outside itself. But the question is too important to be left to the interplay of disciplinary fads or national quirks; an answer on the evidence is required. It turns out that some of the evidence on cultural contacts between classic Greece and classic China presents a different aspect when read in the light of the new and consistent chronology of the basic classic Chinese source texts on which we have been working for some decades.<sup>1</sup> This makes possible a fresh look at the problem, and this essay will explore that possibility.

## 1. The Needham Position

From the first volume of *Science and Civilisation in China* (1954), Joseph Needham adopted the Chinese view of foreign cultural contacts in the classic period.<sup>2</sup> He is assiduous in chronicling the role of China as a source for world culture, and he is justly celebrated for having made that point among world historians, but he is reluctant to acknowledge cultural movements in the opposite direction. As reviewers have noted, his treatment of early ideas and techniques is frequently marked by acceptance of sources of disputed date or value, which tend to imply Chinese priority, and his presentation of results is not consistently chronological, thus inhibiting scrutiny of the *evidence* for priority. His caricature of the influence hypothesis, in particular,<sup>3</sup> seems to have had a damping effect on the discussion of these issues for the past half century.

I am grateful to my colleague A Taeko Brooks for her contribution to the joint research on whose results I here freely draw. For dating of the classic texts, see Brooks **Prospects** (1994) and Brooks **Original** (1998). (Short citations in the form Author Surname **Title Keyword** are expanded in the concluding list of Works Cited). The present paper partly replaces our earlier joint effort, Brooks **Equations** (1995).

Spellings of Chinese words are in the Common Alphabetic system: consonants as in English and vowels as in Italian, plus æ as in "cat," v as in "cut," r as in "bird," z as in "adz," and yw (after n- or l-, simply w) for the "umlaut u" vowel sound. This convention, which is compatible with the unproblematic one long in use for Japanese, and which is capable of extension to other modern and premodern forms of Chinese, is recommended herewith to the consideration of both scholars and teachers.

Years BC are given with a zero prefix, as "0320," years AD simply as the number. This culturally neutral form is recommended over the alternates BC and BCE (and their even more overt equivalents in French and other languages) in the interest of a more assumptionally inclusive international dialogue.

<sup>1</sup>The first general statement of this theory was in Brooks **Prospects** (1994). For a fully worked out portion of the theory, namely the textual relations of the *Analects*, see now also Brooks **Original** (1998).

<sup>2</sup>For Needham's socialism and his contribution to general history, see Boyd **Encyclopedia**. Sivin **Review** 860 rebuts accusations of Marxist bias, but ignores Needham's Sinocentrism ("The now long discredited theories of a Terrien de Lacouperie or a Ball no longer need to be combated by upholders of the essentially autochthonous character of Chinese civilisation," 1/151). Rudolph **Review** 466 points to Needham's uncritical acceptance of dubiously early or clearly fantastical texts, this being one of his means of attributing an early date to Chinese ideas or inventions. For the politics of "autochthonous China" see most recently Puett **Eurasian**.

<sup>3</sup>Needham **Science** 1/ 150-157.

**Transmission Medium.** Needham considers chiefly the mechanism of stimulus diffusion, and in the case of Greek/Chinese parallels, he considers it as operating from Greece to China. Stimulus diffusion of objects or techniques requires only that they have readily perceived value or utility for successive recipients; some cases would require little linguistic intermediation.<sup>4</sup> The stimulus diffusion of ideas is more demanding. It requires successive contact between pairs of individuals, one possessing the idea or fact, and the other interested in adopting or remembering it. Since ideas are not physically manifest, the assumed length of interpersonal contact and degree of interpersonal acquaintance is greater than with diffusion of objects. Needham notes that the lunar-cycle size changes of the sea-urchin were known by Aristotle (**Partibus** 4:5, **Historia** 544a 16) and are also mentioned in the *Gwǎndǔ* (GZ) 37 [sic], paralleled by *Lǚ-shì Chūn/Chyōu* (LSCC) 9:5. Needham's visualization of the transmission of this bit of sea-urchin lore is amusing if disingenuous: "What could be the relation between two such observations at the opposite ends of Asia appearing simultaneously? Could the observations have been independently made by Greek and Chinese fishermen?<sup>5</sup> Or is it conceivable that a Greek-speaking Scyth might have conversed with a Chinese-speaking Hun about such matters, so that a rapid transfer of the idea took place over thousands of miles among peoples who had never seen the sea? The latter possibility is difficult to believe." And so it is, as thus expressed. Apart from the intrinsic absurdity of such a thing as a "Greek-speaking Hun," once we admit that the two ideas are simultaneous, the need for transmission, and indeed the possibility of transmission, simply vanishes. The dates of the respective texts are thus essential, and it is on dates, in this and five other cases cited by Needham, that we will here concentrate.

**Parallels.** Of the cases of possible influence considered in Needham's not very neutrally titled section "The Originality of Chinese Culture," we here single out those which involve Greek/Chinese parallels, and are stable in terms of extant texts at both ends. We give each example as Needham states it,<sup>6</sup> and add such doubts as might readily have occurred to a reader, not especially versed in text chronology, in the publication year 1954.

1. **The Paradoxes of Zeno.** This Needham takes from Waley,<sup>7</sup> who compares three of the paradoxes of *Hwèidǔ* quoted in *Jwāngdǔ* 33 with themes attributed to Zeno. They are: (1) The Tortoise is Longer Than the Snake. Waley suggests that this is merely a difficulty over the senses "long in time" and "long in space" of *cháng* 長, and concludes "There is no reason to think that we have here a confused echo of Achilles and the Tortoise." (2) "Something about an arrow which, as it stands, makes no sense. It is true that by supplying words which are not there, we can easily make the topic appear to have something to do with the arrow of Zeno; but such a proceeding is very unscientific." (3) "The proposition about halving a stick . . . It is another way of stating the problem of Achilles and the Tortoise; but at the same time it belongs entirely to Chinese thought, being merely part of a general demonstration that the world of language is quite a different place from the world of reality. In the latter, infinities do not exist."

<sup>4</sup>Needham at 1/244f, as the last subject in that volume, finally discusses stimulus diffusion as such, taking possible examples from both early and recent times. He concedes its possibility in several cases of technical innovation, the possible west-to-east examples in the early period being (1) the idea of paper being suggested by *Jāng Chyēn*'s report of the use of parchment by Parthians and other Westerners, and (2) the idea of disc coinage being suggested from the Lydian prototype via an intermediate Indian version (Magadha; late 07c). Needham concludes ambiguously: "It seems hard to believe that there could have been much culture-contact between the *Jōu* people, the Indians before Buddha's time, and the Lydians, yet the time-relations remain troubling." One can only suspect that this "troublesome" *material* culture instance was intentionally deferred to the end of the volume, where it would not affect the discussion of possible *intellectual* influences at 1/151f.

<sup>5</sup>Peck ad **Historia** 544a 16 notes that the trait is possessed by Red Sea but not Mediterranean sea-urchins.

<sup>6</sup>Conventions of date and romanization are silently adjusted throughout to those used in this essay.

<sup>7</sup>Waley **Way** 109-115, Appendix II / Foreign Influence. Zeno occupies pp 112-113.

Needham comments that Waley discusses the matter “without attaining any definite conclusion – the correspondence is, indeed, another example of that extraordinary simultaneity between phenomena which we sometimes find at the two ends of the Old World. For the date of Hwèi Shī is mid 04c, and Eleatic Zeno’s floruit is placed about 0460. The parallelism here is at least as remarkable as the case of the lunar periodicity of marine invertebrate reproduction, with which we began.” Whether Zeno at c0460 and Hwèi Shī at c0350 are simultaneous, let alone “extraordinarily” simultaneous, is surely open to doubt. Interestingly, it is obvious to anyone who has checked Needham’s reference that Needham himself is much more tempted by the parallel than was Waley in his Appendix. A genuinely neutral reader might also wonder about Waley’s rejection of a parallel which presents itself as a “confused echo” or otherwise as garbled, incomplete, or inaccurate. *Why should not* an item of thought at the end of a long transmission line have become confused or garbled, or (to take an objection repeatedly urged against claims of cultural influence) appear out of its original context? Does borrowing an idea require also the borrowing of its entire original contexting system of ideas? Does the fact that the Buddhist deity Gwān-yīn becomes female rather than male in China somehow disable the prior fact of its ultimate Indian origin? It would be untenable to maintain anything of the kind. Loan ideas in a receptor culture need not pass a doctoral examination in their source culture. They need only have inspired interest – of some kind or other – in the receptor culture.

2. **The Ladder of Souls.** “Another case which seems to me comparable is the Aristotelian doctrine of the ‘ladder of souls’ in which plants were regarded as possessing a vegetative soul, animals a vegetative and a sensitive soul, and man a vegetative, a sensitive and a rational soul. . . . a very similar doctrine was taught by Sywǎndž. Aristotle lived from 0384 to 0322, Sywǎn Chīng from 0298 to 0238. If transmission of the conception occurred, therefore, it must have been very rapid, though the conditions of travel at this period would make such movement most unlikely. We may prefer to believe that the idea originated independently, since it constitutes after all an obvious reflection on the *scala naturae*, a more or less intuitive recognition of the fact that some living organisms are much less complex than others.”

But the *scala naturae* is a concept and not an observation; it must be framed before it can be reflected upon. Aristotle and Sywǎndž were both “philosophers,” but there is no reason to suspect Sywǎndž of a special knowledge of biology, whereas Aristotle, the son of a doctor, was a systematic student of animals. Either might have seen the philosophic interest of the concept once it had been arrived at, but Aristotle is far more likely to have conceived it. As to dates, Needham puts the respective death dates a century apart, and the respective floruits are probably also a century apart. Whether travel across Asia in 100 years is “very rapid” may be a matter of taste; Zeno is there to warn us of the problematic nature of the velocity concept.

3. **Amateurism in Government.** “Arendt long ago pointed out similar parallels of a not very convincing nature, the most interesting being a criticism of men who are willing to accept political office without special training, though not undertaking the exercise of trades and professions when untrained – this occurs in Mwòdž and in Xenophon’s Memorabilia, where it is told of Socrates and Euthydemus. Mwò Dí and Xenophon were contemporaries.”

Again, a claim of contemporaneity as the best defense against an “interesting” parallel. But the point is not whether two *individuals* were contemporary; it is whether their *writings* were contemporary. Though a Constitution of Athens was wrongly attributed to Xenophon, there is no doubt that most of his works are indeed his. But whether the little-known Mwò Dí personally composed all of the huge corpus that is now called Mwòdž is very much open to suspicion. Xenophon lived from c0428 to c0354.<sup>8</sup> Parts at least of the Mwòdž have been dated to Hàn.

<sup>8</sup>Here and elsewhere I silently rely on the Oxford Classical Dictionary, often preferring the 2ed to the 3ed.

4. **The Sea-Urchin.** Needham's exposition was summarized above. There is a difficulty with his Chinese references. The claimed material does occur in LSCC 9:5, but there is no reference to a sea-urchin in all of Gwǎndǔ, and the nearest seemingly apposite line in that text is not in GZ 37 but in GZ 38: 月滿則虧 "when the moon is full it begins to wane."<sup>9</sup> We must thus take LSCC 9:5 (c0239) as our Chinese text, and on Aristotle's side, the genuine portions of the **Historia** are usually dated to 0345-0342. This, again, is about a century of difference. And as between the biologist Aristotle and the merchant and political opportunist Lǚ Bù-wéi, it is far more likely that Aristotle made, or first recorded, the sea-urchin observation. LSCC is in general a quotative work, not without a system or even a philosophy of its own, but on the whole not making up its material. It is not a likely place in which to look for a record of its sponsor's personal observations, let alone its inland sponsor's observations of marine animals.

5. **Music in Education.** "Phelps has discussed parallels between the Confucian and Platonic treatment of the place of music in education." Music as an element in Greek life is attested in Homer. If we look for a more philosophical expression of the role of music in the life of the ideal individual, then Plato (c0429-0347) comes to mind; the most conservative (that is, most challenging) terminus a quo will then be c0350. Music as a highly-developed part of Chinese court life goes back to the earliest Warring States period and beyond.<sup>10</sup> If we look for evidences of music as one of the gentleman's accomplishments, then Confucius (conventionally given as 0551-0479) comes to mind. That theme turns up in the Analects, including a passage (17:3) where the musical education of the masses is seemingly laughed at as an exaggeration of a perhaps sound idea: "In trimming a chicken, why would you use an ox-knife?" LY 17 belongs to the part of the Analects which Tswēi Shù proved is later than the rest of the book; unfortunately, neither he nor any of his successors until our own time gave a clear statement of *how much* later, and we defer this evidence for the moment. For a philosophized view of music in the technical sense, we must go to Sywǎndǔ, who has a chapter (SZ 20) on music, inspired partly by an attack on it from the school of Mwòdǔ. We found, above, that the lag from Aristotle to Sywǎndǔ was not fatal to the possibility of a transmission scenario, allowing as it did a century of road time, and pending a judgment on the Analects evidence, we may tentatively conclude that the lag from Plato to Sywǎndǔ is not fatal either.

6. **A Son Informing on His Father.** "Martin, too, has drawn attention to the argument about whether it is the duty of a son to inform against his father if the latter has been guilty of some crime, or to give evidence against him. The fact that this occurs implicitly in the Syàu Jīng (Filial Piety Classic) is not very significant, since this book is generally regarded as having been forged in the name of the disciples of Confucius as late as the 01st (or even the 1st) century; but the argument itself is as old as the 06th, as may be seen from the Lún Yǔ [13:18] and the Mencius [7A35]. Since Confucius died half a century before Plato was born, and since the teaching activity of Mencius was at its height only some twenty years after his death, there is certainly interest in the parallel which Martin draws between the Chinese formulations of this argument, and the discussion of the same question in the Platonic dialogue Euthyphro. The treatment is of course very different, but Martin adds an observation that the meaning of the name used as title is very similar to the Chinese expression jí rǎn 直人, which occurs in the same connection."

The name of the son in LY 13:18 is more precisely Jí Gūng 直躬 "Upright Gūng," but unless the Analects chronology contains surprises unknown to the public in 1954, this passage, which is not in the Tswēi Shù layer, seems difficult to fit into a stimulus diffusion scenario.

<sup>9</sup>GZ (SBBY text) 38/10v4, Rickett **Guanzi** 2/90.

<sup>10</sup>For an idea of the degree of its early technical development, see von Falkenhausen **Suspended**.

**Summary.** Needham undeniably presents a very biased picture. His title for the section (“The Originality of Chinese Culture”) gives the game away, his delay in discussing stimulus diffusion until later in the book prejudices the influence discussion, and his claims of synchronicity at both ends of the continent do not stand up to even casual scrutiny. In five of six cases the facts as known to standard reference books allow a century of transit time, which even by ancient standards seems enough not to refute the possibility of influence. In one case (#5), the Analects as conventionally understood was not consistent with a hypothesis of outside influence, and that hypothesis rested on more developed material in the Sywǎndž. In another case (#6) depending more directly on the Analects, influence seemed precluded. It was noted in passing that Tswēi Shù, for one, had challenged the integrity of the Analects, and identified some chapters as late, but also that no dates had been definitively assigned to these or any other possible strata in the text. The Analects thus emerged as a pending problem, whose solution might affect the result. Pending that solution, there seemed to be no chronological difficulty with the hypothesis of Greece > China transmission in all but one of the cases.

## 2. The Analects And Other Texts

It would unduly delay the present investigation to derive here *de novo* our conclusions about the chronology of the Analects.<sup>11</sup> In brief: (1) The Analects does not all derive from Confucius. (2) A core of genuine sayings now included in LY 4 is followed by successive increments (corresponding to chapters of the received text) which were added at intervals between the death of Confucius in 0479 and the extinction of his state Lǔ, in 0249. (3) The proprietors of the text were Confucius’s successors at the head of an increasingly organized movement, conventionally called his “school,” these being disciples or second-generation disciples, and later members of the Kǔng family. (4) Adding to the text in this way gave an opportunity to provide pronouncements by “Confucius” on problems of a later period, which had not arisen during the lifetime of the historical Confucius. (5) Most chapter modules were added after the LY 4 core, but three of them were for special reasons positioned in front of it, these being LY 3-2-1. (6) Doctrinal consistency was maintained by interpolating individual passages into the previously written chapters, these amounting in the end to 142, or 27% of the 530 passages of the present text. (7) Of dates assigned to Analects chapters, some relevant to the present discussion are: LY 12 (c0326), LY 13 (c0322), LY 16 (c0285), and LY 17 (c0270). It will be seen that we view the Tswēi Shù layer as more precisely *the 03c portion* of the text.

The Mician writings, similarly, are an expansion of a single document validly attributable to Mwò Dí (in c0390). The separate ethical, logical, anecdotal, and military chapters form separate series with separate chronologies. The anecdotal chapters resemble and were composed in parallel with the Analects; their time span is c0325-c0250.

The Dzwǒ Jwàn (DJ), a commentary and narrative associated with the Lǔ court chronicle Chūn/Chyōu (CC, “Spring and Autumn,” covering the period 0721-0479), is generally conceded to have been compiled in the late 04c. We date it to c0312, and find by comparison with the CC itself that the DJ often describes or presumes a different society, which resembles that of the middle and late 04c. The DJ is thus not a source for the Spring and Autumn period unless confirmed by the CC; it is rich in details projected back into that period from the 04c.

The career of Mencius began in 0320; half of MC 1 is genuine interviews from that period. The rest of the text is the supplementary writings of his successor school, from c0300 to c0250.

The earliest portions of the Jwāngdž (JZ) do not seem to go back earlier than c0285; the last chapter of the present text, JZ 33, is a retrospective summary dating from c0138.

<sup>11</sup>See now Brooks **Original**, Appendix 1, and presently Brooks **Word** in extenso.

### 3. Reconsideration in the Light of Text Redating

These and other datings affect the above impressions at several points, sometimes by confirming them. It will be convenient to keep the numbering of the previous section:

1a. **The Paradoxes of Zeno.** The JZ 33 Hwèidž paradoxes, being of Hàn date, are less authoritative for Hwèidž than those credited to him in SZ 3:1. The SZ 3 paradoxes are seven in number, none of them resembling those attributed to Zeno.<sup>12</sup> They are of the type “Eggs have feathers” (#7), and are solved by collapsing the different time segments which egg and chicken inhabit, whereas the Zeno paradoxes tend to be variations of the infinite divisibility paradox. We may then dismiss the idea that the historical Hwèidž, who seems to have lived before the death of Lyáng Hwèi-wáng in 0320, was influenced by Zeno. The Zeno echoes do not become part of Hwèidž’s historical persona until Hàn. Our question does not concern Hwèidž; it asks whether the Zeno echoes, to whomever attached, do echo Zeno. We find no such echoes before JZ 33 in c0138 This gives ample time for transmission, which thus remains an option.

2a. **The Ladder of Souls.** Nothing new in this category. Transmission remains an option.

3a. **Amateurism in Government.** We can add that in addition to the appearance of this theme in Mwòdž (the actual reference is MZ 47:8), it also turns up in the Analects (LY 15:34) and in the Mencius (MC 1B9). The last is from the genuine Mencius interviews, and is thus from the span of his stay in Chí, 0319/0313. MZ 47:8 is from the series of chapters (MZ 46-50) which both emulate the Confucian Analects in form and parallel them in date; this and the Analects remark (15:34) seem to be of similar date, and that date is determined by LY 15, which for other reasons is c0305. The popularity of the theme among Chinese ministers or would-be ministers is not particularly surprising. For purposes of estimating the possibility of transmission, the Mencius version (c0316) is the earliest. This leaves ample time after the death of Xenophon. Transmission thus remains an option.

4a. **The Sea-Urchin.** Only the first twelve chapters of LSCC are from c0239, but the sea urchin reference occurs in that group. There is thus no change. Transmission remains an option.

5a. **Music in Education.** Our Analects theory makes clearly visible many lines of gradual development,<sup>13</sup> among them the evolving Confucius persona. The role of music in that persona is first hinted at in 7:14 (c0450), and later in 9:11 (c0405) and 3:1-2 and 25 (all 0342). All these involve Confucius’s appreciation of court music. Music *played* by gentlemen is absent from the householder rules of LY 10 (c0380). It is first attributed to disciples in 11:15 (c0360, Dž-lù) and \*11:24 (c0294, Dzvng Dyěn). Only in\*14:39 (c0262) is it predicated of Confucius. This is already within the range of SZ 20, which makes music philosophically respectable.

Our previous inference, then, is justified, but so are its qualifications. The Analects data agree with the Sywndž data, that the philosopher-musician is a phenomenon of the 03c. The humorous 17:3 (c0270) attests an intent to extend the musical education of the gentleman to the wider public, an idea which seemed excessive to the Analects people. Thus far the parallel. But it must be emphasized that the idea of *appreciation* of music by the Chinese gentleman goes back to the 05c. It is only the idea of *executive skill* in music as part of a gentleman’s equipment that could reflect the Platonic precedent. This does not appear *in Confucius* until late, but several elements of the Confucian persona appear first in disciples, and only later in the Master. Then Dž-lù in 11:15 (c0360) is the first Analects instance of this association. Since this date precedes the death of Plato (0347), it is best to abandon #5 as an instance of transmission. The similarities, as stated by Needham (that is, Martin), are best attributed to parallel development.

<sup>12</sup>See Knoblock **Xunzi** 1/174.

<sup>13</sup>For examples, see Brooks **Original**, Appendix 2.

6a. **A Son Informing on His Father.** The crucial passage, which evokes the situation of Plato's Euthyphro, is LY 13:18 (c0322). The similarity of name is indeed striking: Greek εὐθύ- "straight, upright, frank" is as close as one need come to 𠄎 直 "straight, upright." The son in Plato is criticized for his unfilial accusation of his father before the law. "Confucius" says sarcastically of the son in the Analects passage, who has denounced his father for stealing a sheep, "The upright ones *in our country* are different from this; a son will screen a father and a father will screen a son. A sort of uprightness is involved in this also." MC 7A35 (c0253), cited also by Needham, involves a conflict between public and filial duty resolved in favor of filiality. It does not affect the transmission equation, which rests on LY 13:18. Euthyphro is a relatively early dialogue of Plato, and might be dated to c0380. From there to LY 13:18 (c0322) is some sixty years; not ample, but possible. Transmission remains an option.

**Summary.** Of six cases of possible Greek > Chinese transmission taken from Needham, five remain chronologically possible. Given the improbable scenarios suggested by Needham, and his own and others' manifest disapproval of the whole idea, readers may well still hesitate to opt for the probability of transmission versus independent evolution, which in any case seems likelier on the merits in the "music" case. The precision of the "Euthyphro" match, and its hint ("in our country") of a comparative consciousness in the receptor text, or for that matter the garbled "Zeno" match, and not less so *because* garbled, remain tempting. Needham himself is evidently tempted. But in the end he resists. Readers too will likely keep their temptations to themselves, and publicly support the politically still popular idea of an autochthonous China.

This however is not quite the end of the matter. The survey of Chinese text dates according to our new chronology does more than confirm that five of our six cases involve plausible times for transmission by diffusion. They make a very suggestive pattern. The *earliest* appearances of the five possibly valid motifs in Chinese texts, regardless of their date within Greek culture, are as follows:

1. Paradoxes of Zeno	JZ 33	c0138
2. The Ladder of Souls	SZ 9	c0270
3. Amateurism in Government	MC 1B9	c0316
4. The Sea Urchin	LSCC 9:5	c0239
6. The Informing Son	LY 13:18	c0322

The point for present purposes is that *none* of these possible echoes turns up in any Chinese text *earlier than c0322*.

### 3. Aristotle

As to the dates of the Greek motifs *within Greek culture*, our presumptive sources range from Zeno (fl c0460) through Plato and Xenophon (died 0357 and c0354) and Plato's pupil Aristotle (died 0322), about a 150-year spread. Contemplative readers may well ask: Why this spotty selection from the high period of the Greek intellect? Not to mention names not on the list, is Plato adequately represented by the plot of the Euthyphro (and not the doctrine of forms), or Aristotle by the sea-urchin (and not the syllogism)? It is surely a beggarly lot of *curiosa* which make up this list. If classic Greece were reduced to what is here offered as the Chinese idea of it, it could hardly hold its place in the curriculum, or in the hearts of posterity generally.

This is important, since it eliminates certain transmission options. This list is not Greece as debriefed from a traveler who had been astonished by the architectural splendors and dazzled by the forensic brilliancies of Athenian life as Athenians knew it. It is mere gee-whiz trivia, such as might imaginably have figured in conversations held in dark taverns of no great repute: "Here's this tortoise, which is a really slow animal, and over here's this famous runner . . ." The price of a drink might easily change hands under these conditions.

A second striking fact about the Greek sources collectively is that though the individuals are rather well distributed over time, they all relate in some sense to Plato: Plato himself, his fellow Socratean pupil and rival Socratean heir Xenophon, and his prize student Aristotle. Zeno, the seeming exception, actually figures prominently in the Platonic dialogue *Parmenides*, and was thus within Plato's range of philosophical concerns. All of these motifs but Aristotle's sea-urchin and his ladder of souls were thus arguably present in the mind of Plato. All of them *without exception* can be presumed to have been present in the mind of Aristotle.<sup>14</sup>

We may then proceed to ask: Aristotle *of what period?* Certain chapters and strata and even whole titles within the Aristotelean corpus are subject to some degree of suspicion. Aristotle in his last years at Athens presided over a school which was also a research institute; this continued after his death under a series of later heads, the first few being Theophrastus, Straton, Lyco, and Ariston. A number of students were presumably also present at all stages. This situation implies sufficient structure to provide for clerical help, in research as well as writing, to Aristotle and his successors. Text production was certainly an important function of the school, and all texts produced would in some measure have benefited from the prestige of Aristotle's name. Not all of it need have come from his hand.

The texts with which we are here concerned are fortunately not among those concerning which doubts have been raised. Though the 10th chapter of the *Historia Animalium* has been attributed to Ariston, the 4th post-Aristotelean head of the Lyceum, the 4th chapter, in which the sea urchin datum appears, has not been doubted as a genuine Aristotelean production. This and the rest of the genuine text has been assigned to 0345-0342, Aristotle's period of private study in Lesbos. So also with the ladder of souls, from *De Anima* 2:3, which D'Arcy Thompson attributes to his Lesbos researches, though the text itself reads like a lecture, and probably dates from Aristotle's term as tutor at Pella, 0342-0335. In accord with previous scholarship on the subject, we might then plausibly date the writing down of these and other fruits of the Lesbos researches to the midpoint of the Pella period, or c0338. All pre-Aristotelean motifs naturally date from before this period. This, then, is the cutoff point for the existence of the Greek halves of the five Greek/Chinese motifs which we still consider to be candidates for transmission.

This admirable degree of philological realism has one seemingly unfortunate consequence. It identifies a cutoff point for the Greek material, namely c0338. Everything potentially Greek that appears in the Chinese cultural inventory, *regardless of the date at which it first appears in Chinese texts*, existed in Greece, and in fact in the mind and/or the lecture notes of Aristotle, as of that year. We earlier found, symmetrically, that every suspected Chinese counterpart, *regardless of the date of its ultimate Greek source*, appears in the Chinese record on or after the cutoff date of c0322. On Needham's assumption of a stimulus diffusion mechanism, this is utter nonsense. Diffusion takes time. It would be impressive if the earliest Greek material turned up earliest in the Chinese texts, but it does not: the earliest of our suspected influences, namely Zeno, is the latest of the five to appear (the association with Hwèidž being bogus). This reverses the expected pattern. Further, at a minimum such a transmission mechanism should take a certain amount of time. Our first survey suggested intervals on the order of a century, which was easily imaginable. Our second survey required one interval of half a century, which also seemed not fatal to the hypothesis. But the cutoff dates at which we have now arrived are *only sixteen years apart*. Quibbles or no, the Needham conclusion seems after all inevitable: Stimulus diffusion would not make this pattern, and it could not have worked this fast.

That would appear to dispose of the subject. Unless we can find a different mechanism.

<sup>14</sup>The treatise *On Indivisible Lines*, which starts with a proposition of Zeno, is not evidence of this. It refers to Euclid (c0325-c0250) and must thus be a production of the later Lyceum (Hett **Minor** 415).



## 4. Alexander

Such a mechanism can be found. It is more turbulent than the one considered by Needham, but it has the advantage of being better documented.

**From The East.** Bactria was the transshipment point for merchants from farther east. Information about any merchants from the Chinese east is unfortunately all but lacking.<sup>15</sup> We can only make do with scraps and inferences.

Archaeology attests a highly developed trade in small metal objects with the peoples to the north of the Chinese states during the period from the 05c through the 03c.<sup>16</sup> LY 9:3 (c0405) implies that silk production has made hemp fiber obsolete even for ritual garments, implying a high-volume output. The interpolated LY \*5:22 (datable by narrative parallels to c0360) may contain a hint of tailored clothing, which in turn may suggest riding astride (the standard steppe practice, still unknown, except perhaps for servants, in China at this period).<sup>17</sup> The earliest strata of the Gwǎndǔ, four series of policy proposals to the ruler of Chí for strengthening and enriching that state, are from the early middle 04c, and may represent a new initiative associated with the accession of a new Chí ruler in 0357 (then a Prince or gūng 公; claimed the title King or wáng 王 in 0342). A stray piece of unmistakably Chinese silk, along with lacquer and a metal mirror, was found at an Altai tomb whose least unlikely radiocarbon date is c0342.<sup>18</sup> The five-chapter core of the Shān/Hǎi Jīng, from shortly before 0318, implies knowledge of lands lying far to the north and west of Chín. And a geographical romance, the Mù Tyēndǔ Jwàn, recounting a royal journey to the extreme west, was buried with King Syāng of Ngwèi and was probably written during his reign, 0319-0299. By the end of the 04c, GZ 20 recommends an organization of Chí merchants as a hereditary part of Chí society, exempted from military service and residentially confined to 6 out of 21 counties. That is to say, 29% of the population was withdrawn from production and war, and devoted to commerce.

The likeliest assumption is that long-range trade was a small proportion of total 04c trade, and that expeditions were financed by individual traders. The bulk and value of any exports reaching as far as Bactria grew more or less continually, however, into Hàn and Latter Hàn.

Greek silk produced at Cos and described by Aristotle would have been inferior to Chinese silk in quality, but more easily available. The Cos industry may have been a response to demand created by scarce foreign silk; it vanished when Chinese silk became available in quantity.<sup>19</sup>

<sup>15</sup>This may well be in part the operation of a Chinese cultural taboo. Taking the texts in the order of our chronology, it is conspicuous that references of any kind to the peoples to the north of the Chinese states begin in c0350 and are generally favorable in tone, become gradually less favorable, and cease, *in those same texts*, from c0310 onward. This may have an explanation in the more hostile feeling engendered by the rise of a late 04c predecessor of the Syūngnú confederation. It is not to be assumed that knowledge or contact ceased, but apart from inferences to be (with caution) drawn from literary works, the text record fails us here.

<sup>16</sup>So **Traders** illustrates a rich range of luxury objects from that span, as well as earlier and later.

<sup>17</sup>One traditional date for the adoption of “barbarian clothing” in Jàu, to enable Chinese warriors to meet their mounted opponents on terms of equality in battle, is 0307 (Shǐ Jì 15, 2/735, and parallels). The anecdotes associated with this event are manifestly apocryphal, but the date itself is not out of line with other indications.

<sup>18</sup>For a detailed argument, see Brooks **Evidence** 719 n15.

<sup>19</sup>Whether Chinese silk was known in the Greek world at this time depends on which edition of OCD one uses, the 2ed (“imported into western Asia . . . probably by the 05c and perhaps earlier”) or the 3ed (“it seems unlikely that Bombyx silk reached the Mediterranean from China . . . before Hàn expansion into central Asia in the 02c”). The difference may partly be explained by the recent prominence of a school of anthropology which disdains intercultural influence; one rubric of dismissal is “an explanation which explains nothing.” To the effects of a late 04c Chinese cultural taboo on intercultural information we may thus have to add the effects of a late 20c European cultural taboo on intercultural information. The Hàn campaigns seem more plausible as a tactic to protect a previously existing silk trade than as a speculative venture to found a wholly new one.

All things considered, and with due respect for the contemptibly scanty nature of the evidence, the economic probability is that Chinese traders were at least occasionally reaching Bactria, bearing silk, small highly-finished metal goods, and possibly lacquer by c0340, their geographical knowledge being reflected in, or perhaps rather refracted into, quasi-governmental Chinese geographical handbooks and romances beginning in c0320.

**From The West.** Aristotle, a Macedonian by birth, bearing as we have seen the complete cultural inventory for which, in this investigation, we have to account, left Lesbos in 0342 to become the tutor to Alexander, son of Philip II of Macedonia, at his court in Pella. We have noted that some of his Lesbos notes were probably converted to lectures at this time. In 0336 Philip died and Alexander became King of Macedonia. After suppressing a revolt in Thebes in 0335, he left Greece under the supervision of Antipater and began his famous campaigns; in that year Aristotle returned to Athens, but a nephew, Callisthenes, accompanied Alexander as a historian. The farthest point east reached by Alexander was Bactria, which he invaded in 0329 and had wholly subjugated by 0327. Alexander next moved into northern India, leaving behind a Greek garrison sometimes given as 30,000 men. The city which he thus instantaneously founded was wholly Greek in character. Even after Bactria broke away from Alexander's empire after his death, it continued under a series of Greek-speaking kings to be a potent force in that part of the world; at one juncture much of north India came under Bactrian domination. That Bactria in the wake of Alexander was not only Greek but Aristotelean in culture is suggested by a fragment of an "Aristotelean treatise" found at the palace of Ai Khanum.

It is this kingdom, not only Hellenized but Aristoteleanized, that any travelers from China would have encountered from 0327 on. Alexander's conquest had instantly transplanted the requisite source culture to exactly the furthest point at which enterprising Chinese travelers could have made direct contact with it. The problem of transmission, which as stated or parodied by Needham seemed so impossible of solution, is thus now reduced to this problem: How to get back to northeast China in less than five years. Simple economic necessity would undoubtedly have dictated a yet more rapid renegotiation of the intervening perils.

## 5. Transmission and Adoption

The above will suggest that there is no chronological or geographical reason why our five plausible influences should not, in fact, *be* influences from Aristotelean Greece as of 0342. There remains the question why these particular scraps of exotic culture should have attracted the notice of our sojourner in Bactria, and even more why they would have spread on his return into the higher stratum of culture which is represented by our literary echoes.

On the first point, the previous suggestion stands. The items on our list are not high philosophy. No matriculation and years of study at a transplanted Bactrian Lyceum are implied. They are gee-whiz snippets, perfectly capable of being pulled out by a possessor of the culture (not necessarily an erudite one) to amuse and amaze a stranger to the culture. "And there's this sea critter that gets bigger and smaller along with the moon." "Really?" "Yep." The joke about everybody except the government hacks knowing how to do what they do, would go over big between traders whose profit margin depended in part on their ability to judge between craft and inferior craft in their suppliers, and in part on their ability to outwit the bureaucrats in charge of taxes. More reflectively, the graded distinction between plants, animals, and men is simple and convincing enough to make an impression, and the outrageous tale of Euthyphro, with its conflict between filial duty and civic duty ("See, even his *name* means, like, straight") is of everything in Plato the best calculated to raise the eyebrows of a Chinese visitor.

These might then have passed, as casual intercultural currency, or even part of a process of intercultural exploration, between Greek and Chinese traders in Bactria, c0327.

The next stage requires fresh calculations. Why would this stuff, repeated from colleague to colleague after the Chinese trader's return, have caught the notice of those with input into the high written culture? The answer must be conjectural, but there are grounds for conjecture.

It should initially be noted that our Chinese trader was undoubtedly literate, as would have been required in anyone dealing with inventories and exit permits, and was probably less far removed from the high culture than denizens of a more differentiated culture may imagine. The circle of 04c Chinese literacy was small, and it can be shown that from c0330 on, its various strands and geographical variants were in continuous touch with each other.<sup>20</sup> The same is true of vertical differentiation. From the 05c Analects it is obvious that the older official class and the new group of less cultured but fully functional entrants into official life were in contact. The continued irritation of the Analects authors with the petty specialists of the new bureaucracy throughout the 05c and 04c layers of that work show that this contact was maintained. The 05c Analects is clearly in touch with quite ordinary people (7:29, c0450) and even makes a principle out of learning something from them (7:22), as well as being willing to argue out a point with them (9:8, c0405). The 04c Analects quotes what seems to be a local popular saying (\*13:22a, c0317). There is no reason to believe that the elite Analects proprietors were insulated from what was going on around and below them, and every reason to assume that the proprietors of other viewpoints were even more open to a wide range of input. The probable situation is one of multiple contacts among a literate or partly literate group which, though geographically and socially diverse, was never very large in absolute terms, and whose social layers will constantly have overlapped. We have in 04c China, then, in all probability, not a social gulf to be bridged, but a social continuum requiring only to be stimulated.

What accounts for the stimulation? In all such cases it must be that the receiving culture is already moving along lines that are sufficiently cognate to be capable of being clarified or challenged by those specific new ideas. With most of our five items of cultural saddle-baggage, it is not difficult to see what that preparatory motion consisted of:

1b. **The Paradoxes of Zeno.** The puzzle aspect here is probably uppermost. Operations easily statable, whose outcomes seem readily predictable, turn out to have surprising outcomes. This relates to the whole question of the ability of words to control and define actions, which was a central concern of 04c bureaucracy, and also of 04c law, which in all probability was being made more exact as part of the social reorganization of the mid and late 04c. Artful speakers per se had been disapproved of since the earliest layers of the Analects (5:5, c0470). But the increasing weight being put on definability and statability in the late 04c created an atmosphere in which any challenge to clarity of statement would have had instant resonance in Chinese intellectual circles. LY 12 (c0326) is little more than a series of definitions, albeit technically naive ones, of previously undefined terms. The beginnings of Mician logic, though very difficult to date internally, may well lie in this same period. The "language crisis" spoken of by Waley<sup>21</sup> as occurring in the late 04c, though open to revision in detail in the light of later scholarship, defines another aspect of this same area of concern. Into this already roiled pond, the Zeno challenges, whether in pure or garbled form, would have been assured of a hearing.

2b. **The Ladder of Souls.** The question of inborn nature (syìng 性), which became a locus of philosophical dispute in the early 03c, was already part of late 04c discourse, occurring for instance in the DJ (c0312); its interest was increased by a major contemporary redefinition of social strata. This issue, which also shares conceptual territory with the question of definitions mentioned above, was thus ideally poised for new stimuli as of c0322 or later.

<sup>20</sup>This is the import of Brooks **Original** Appendix 3; see also Brooks **Dynamics**.

<sup>21</sup>Waley **Way** 59f.

3b. **Amateurism in Government.** The struggle between the traditional office-holding military aristocracy and the new, and from the elite viewpoint less qualified, bureaucrats, had been brewing and evolving since the 05c. Confucians of all persuasions regarded themselves as schooled by lifelong effort in the cultivation of virtue, and thus as uniquely competent in the art of government. Even the socially upstart Micicians, by the late middle 04c, had come to accept, albeit with a different ideological content and a slightly more crass career orientation, the Confucian paradigm of exacting education for high office. Xenophon's jibe was thus well calculated to get a response in both camps. The three iterations of this motif in the extant literature, all within a relatively narrow time span, testify to the hit it made.

4b. **The Sea-Urchin.** This makes nothing like the splash of the Amateurism joke, but it has its relationship to the philosophical currents of the late 04c and early 03c. The point of interest is the possibility of resonance between discontinuous bodies. Such a principle lay behind the astral/terrestrial influence system which it may be valid to attribute to Dzōu Yěn in the late 04c; it was also present in Confucian and Dàuist statecraft theories of the transforming power of the ruler. The principle was of great interest, and it was perhaps as likely as not that this humble if striking instance should be picked up eventually in Lǚ Bù-wéi's compilation.

6b. **A Son Informing on His Father.** This was just as cogent for the philosophical elite as for the trader paterfamilias. Of all cultural borrowings *not* requiring special explanation in a Chinese context, this surely takes the top place. To Needham's second example, MC 7A35, we may here add the extended confrontation between filial duty and public duty in MC 5.

## 6. Conclusion

The conditions which may fairly be imposed on a proposed instance of cultural borrowing are met in five of the six cases considered here. Physical contact was possible at both ends. There were plausible motives for the initial interest on the Chinese side of that contact. And a situation of receptivity, yet not one so advanced as to constitute redundancy, was present in the receptor culture back home. Despite gaps in the record, especially the Chinese economic record, I suggest that we may be justified in regarding these as instances of genuine borrowing.

These cases were put forward by Needham, and given his interest in the outcome, were not necessarily the only, or the most favorable, ones available. There remain to be examined, from his list, others whose sources are not Greek but Zoroastrian or Indian. That examination is not necessarily forlorn. Bactria, on which the present investigation has focused, was the original home of Zoroaster, from whence his influence spread to the Iranian empire. India was at all periods here considered a trading partner, and at some points a colony, of Bactria. Not only are more of Needham's cases likely to be validated by examination on the new basis here proposed, but others, in technical as well as intellectual areas of the culture, are likely to be found.

As prolegomena to that future investigation, it may be worthwhile emphasizing here one important aspect of the paradigmatic borrowing situation. It is this: We should expect that an item from one culture will sometimes acquire a new context and to some extent a new function on making the transition into a new cultural environment. That process can sometimes be accompanied by enhanced energy; this is a truism with later and better known implantations (one thinks of Chinese printing, gunpowder, and the compass in their European versions). Such changes are thus not a disqualification of a proposed instance; they may be among its strongest pieces of evidence. How far, for instance, Zeno's puzzles stimulated the growth of Micician logic, and how far exotic stimuli in general helped to catalyze the whole Hundred Schools ferment, are now open for future investigators. And the future investigators themselves will hopefully be open to the merits and the subtleties of transcultural implantation.

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