

One Strike Will Do: A Lucretian Puzzle¹

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1.

Lucretius, more conspicuously than Epicurus in what we have of book 2 of *On Nature*, argues that perception, as channelled through the eyes and other physical organs, is produced by trains or strings of *simulacra*, films, with each film pushed by its successor, *sequenti concita plaga*, to fashion something like a *protelum*: DRN 4.189-194; cf. Epicurus 23.42-43 (Arrighetti).²

To be sure, the passage I have cited is about the light and the heat of the sun, arriving in the form of particles and communicated to our sensoria. The particles, *prima minuta*, cannot be atoms, since atoms impinging on one another are bounded off in all directions, whereas here the particles support one another and travel in the same direction; hence the analogy with a team of oxen harnessed one behind the other. The term *protelum* is rare in Lucretius; it occurs only twice, once to highlight the generative continuity of atoms (2.531), and once, in our passage, to indicate the enormous speed of the particles sent out by the sun. The movement of sunlight and its warmth are given as a paradigm for the

¹ The text of Lucretius is cited from Martin 1963. For Epicurus, DL = Diogenes Laertius, *Vitae Philosophorum*; RS = *Ratae Sententiae*. I am indebted to Tony Long, Jim Porter, David Sedley, and two anonymous readers whose many suggestions vastly improved the manuscript, though they must not be thought of as necessarily endorsing its argument; and to Victor Bers for helping with a word search. It should be clear how much I have learned from the work of Elizabeth Asmis. The faults that remain are of course entirely mine.

² Giussani 1987.289 is in error applying the term ἀνανασπλήρωσις to what is expressed by the Latin *protelum*. Epicurus, true to his repudiation of poetic language, seems to have no Greek equivalent for the figurative *protelum*. ἔξωσις or δύναμις ἔξωστική, as discussed by Barigazzi 1958.264-70, is the power that is responsible for moving the films, whether singly or in strings. In his discussion of the movement of films, DL 10.50, Epicurus adumbrates the notion of *protelum* with the formula τὸ ἐν καὶ συνεχές. I doubt that πύκνωμα can mean 'string'; it marks the mysterious process whereby a group of films, or rather of strings of films, is compacted to fit into the sensorium for the ultimate end of perception; cf. Asmis 1984.126-40.

swiftness of *simulacra; pari ratione*, 4.191, shows that at this point of the discussion the *prima minuta* are not in the first instance thought of as films. But we may assume they exemplify the mechanism of the propulsion of films, generally, and it is difficult to imagine how these particles differ from films in structure and movement (cf. 4.161-165). Indeed, at 4.211-217 the motion of light particles is immediately linked to the response of vision, with other senses — smell, hearing, taste, touch — cited by way of confirmation of the universality of the process. That the particles coming from the sun, acting on both touch and vision, can be thought of as films is made clear in 4.209-215, which continues the theme of sunlight with comments on the reflection of the light of stars in water. Usually Lucretius is thinking of vision when he uses the term *simulacrum*. But *simulacrum* is only one of the several expressions used to label films. All five senses are indebted to the work of films;³ Lucretius makes no distinction between the mechanism of vision and the mechanism of touch, except that the visual strings of films are faster than the strings of films reaching other senses. All strings of films must be affected by some collisions, both atomic and other. But because of the fineness of the films they encounter relatively few obstacles in their course (4.195-198).

The films pushing forward within a string must be separate entities to do the pushing. It may be asked whether the impact of film upon film — *quasi cuduntur*, 4.187 — is not likely to imperil the sensory identity, the shape, of the films. Lucretius does not seem to worry about that possibility; the pushing, each subsequent film moving into the space of the one ahead which is forced forward, is not a matter of bombardment over a distance, as in the case of atoms. Atoms, of course, provide the *πάλσις*, the *parvola causa*, 4.193, which makes the emission of films possible in the first place. The notion of atoms striking atoms and damaging one another is ruled out by the premises of Epicureanism. Lucretius appears to have assumed that particles or films pushing one another are similarly unscathed. On the other hand, the closely packed sequence of films is not, as has been averred, comparable to the continuous entity formed by the minima of an atom.⁴ But in spite of the separateness of the films, their sequence has its own kind of coherence; a string of films reaches all the way from the source-object to the sensorium, and functions as a replication or extension of the object.

No one film suffices to produce the *sensus*, the *αἴσθησις* or *φαντασία*,⁵ the presentation which is the end result of the process of perception.⁶ We cannot

³ For the sense of touch, see Rosenmeyer 1996.

⁴ Mansfeld 1993.193-194, discussing the films of the gods.

⁵ Striker 1977.126 thinks that *φαντασία*, prominent in DL 10.50 and elsewhere, is a term that replaced Epicurus' *αἴσθησις* under the influence of Stoicism.

⁶ Cf. also the report of Alexander of Aphrodisias, *De anima liber cum mantissa* 2. pt.1.136.17 Bruns: οὐ γὰρ ἐνὸς εἰδῶλου ἐμπῶσει τὸ ὄραν. See also below, note 25.

see the individual films that strike the eye one by one, though we must assume that they do so, discrete entities that they are.⁷ But we can see what the total complex of films represents: *DRN* 4.256-258; cf. DL 10.45-50.⁸ The Epicurean theory prescribes that a string of films is the minimal quantity of atomic matter required to set the stage for the realization of the perceptual image. But I suspect that a succession of strings or a simultaneous arrival of strings — let me call it a ‘packet of strings’ — is needed to produce an integrated visual image replicating the totality of the source-object. True, both Epicurus and Lucretius think of a film as replicating the shape, the μορφή, of an object. The comparison with cicadas, calves and snakes, *DRN* 4.57-62, would at first seem to suggest that any one solid object releases a single *simulacrum* or a succession of such single films. But in the following passage, 67-74, Lucretius speaks of

multa minuta, iaci quae possint ordine eodem
quo fuerint et formai servare figuram

many small items that may be thrown off preserving
the same structure and keeping the looks of the shape.

By itself this may mean no more than that the visual object sends out a succession of films which cooperate to effect a perception that preserves the contours of the object. But a little later, 72-74, he adds that these same items come both from within and from the surface of the objects. The wording of *non solum ... verum* in fact indicates that emission from below the surface is at least as common and plausible as emission from the surface, if not even more so. In spite of the emphasis on *tunicae* and *membranae* and *vestis* in the introductory lines, the whole argument, 54-89, treats surface emission as a special case, brought in to confirm the more general proposition; in 87-89, the summing up, there is no further reference to surface. It emerges, therefore, that the films streaming from an external object need to emanate from the various segments and, at least in the case of some of the sense experiences, from the various layers of that object. In seeing the sun, the sense of sight receives strings of films from the rim as well as the center of the disk, and also from within the sun’s body; in seeing a tower, sight obtains strings of films from its top as well as its base; in hearing a sound, the films reach our hearing not just from one sharply defined source but

⁷ In my argument, the eye and its function will stand for all physical sensation.

⁸ For an assessment of the section of Epicurus’ *περὶ φύσεως* on which Lucretius’ discussion of films is based, see Sedley 1998.110-116 and 138-141. I do not, in this context, wish to take a position on the controversial question whether the object of perception is the source-object (among many, Asmis 1984.130, and Furley 1993.91 note 37) or the strings of films (Bailey 1947.1214, on *DRN* 4.258, and others). Perhaps the conciliatory formulation of Lee 1978.49 is best: ‘perceptions *are* object-representations stimulated and sustained by a stream of *eidola* from those objects that are presented *in* them.’

from a composite of tones and overtones. The same assumption appears to underly the difficult language of Epicurus, DL 10. 52, on hearing and the συμπαθεια on which it is based. And the oar resting in water helps to subvert the notion that an object as a whole sends out films answering to its total configuration. It is only a packet of strings of films that replicates the totality of the source object; we must assume that individual films or even individual strings of films represent only parts of the object, and hence cannot, as a rule, produce the perception of a whole object.⁹ True, the poem has *protelum* only in the singular. I suggest that this highlight on the single string reflects a focused concern with the nub of the perceptual process, and is to be taken as a case of synecdoche.¹⁰ The larger necessities of image-forming call for a multiple thrust extending from all parts of the source-object, if that object is to be perceived as one.

I am aware of the speculativeness of the concept of packets, and so in what follows I will talk only of films and strings of films.

Now in book 4, lines 745-8 of Lucretius' *De rerum natura* we read the following:

quae cum mobiliter summa levitate feruntur,
 ut prius ostendi, facile uno commovet ictu
 quae libet una animum nobis subtilis imago;
 tenuis enim mens est et mire mobilis ipsa.

Since they (sc. the films) move rapidly and with extreme lightness,
 as I have shown before: easily, with one strike,
 any one delicate film moves our mind; for the mind
 is itself refined and wondrously mobile.

The statement is part of, or follows upon, a larger whole, 722-744, on how films impact on the mind.¹¹ In the lines that follow our quotation, 749-751, Lucretius asserts that what he has said, *haec fieri ut memoro*, can be understood in the light of the fact that the operation of the mind, as an organ of perception, is similar to that of the eyes:

quod mente videmus / atque oculis, simili fieri ratione necesse est.¹²

⁹ Individual films are like digital impulses, whose sums need to be converted into images; cf. Lee 1978.42-43.

¹⁰ Cf. also below, note 27.

¹¹ For the fact that films affect both physical organs and the mind, see DL 10.49-50; Cicero, *Fin.* 1.21; Cicero, *Nat.deor.* 1.108.

¹² Though I believe that the distinction, at DL 10.31, between Epicurus and the Epicureans concerning the competence of *διάνοια* is mistaken, that issue is of no consequence for what Lucretius says. For the mind as an organ of perception, see Rist 1972.32-34 and 88; and Asmis 1984.86-91, 105-106, and 118-140. It

Here we have two choices. *Either* the visual analogy goes with all of 722-744, the general discussion of mental perception, or intuition, as I would like to call it here.¹³ *Or* the analogy goes only with 745-748, in which case Lucretius is claiming that the proposition that the mind is moved by a single film is analogous to what happens in the case of sight. On either supposition, there is trouble. The general discussion includes a passage, 728-731, to the effect that the films that reach the mind are of a more refined texture than those that snare the eyes. This appears, at the least, to qualify the comparison of intuition with sight, though the indecisiveness of *simili* rather than *pari* or *eadem* might provide an alibi. On the other hand, if the reference is only to what appears in our quotation, the discrepancy is even more remarkable, for we know that visual perception is *not* triggered by a single film. We are told that the mind, in its capacity as the instrument of thinking and imagining and dreaming and other processes not specifically channelled through the physical organs, behaves in a manner similar to that of the physical organs. Why then should one film, striking the mind with one stroke, be sufficient to do its work?¹⁴ This denial of the need for strings to accomplish perception is unique and remains a puzzle even if we conclude that lines 749-751 are designed to embrace all of 722-744.

But must *imago* in line 747 mean film? That it *can* have that meaning is clear (note 4.110); *imago* is one of the many terms besides *simulacrum* which Lucretius, matching Epicurus' non-technical language, uses to identify the effluxes constantly emitted by source-objects.¹⁵ Moreover, *subtilis*, which occurs

is unfortunate and misleading that Lucretius brings in the terror images of dreams at the very moment when he introduces us to the notion of *simulacra*, *DRN* 4.29ff., as if the principal purpose of films was to frighten us. For the idea that book 4 was originally designed to deal with ghosts rather than *simulacra*, see now Sedley 1998.148-150.

¹³ My use of 'intuition' to designate mental perception should not be confused with that of De Witt 1954, whose 'intuition' is contingent on vestiges of innate ideas. Epicurus' term is, perhaps, διανοητική σύγκρισις; see Pap. Herc. 1420 col.1.i = Arrighetti 1973.35.1, and the discussion by Cantarella 1936.289.

¹⁴ I confess that, contrary to Asmis 1984.137-140, I do not know what to do with the disjunction (or coordination) τὸ ἐξῆς πύκνωμα ἢ ἐγκατάλειμμα τοῦ εἰδῶλου at *DL* 10.50. What does 'remainder' refer to, and why the singular εἰδῶλου? I suspect, with Furlley 1971.610-611 and Jürss 1991.70-71, that the phrase is meant to indicate what 'remains' in the memory after the perception has come to an end (but in that case, why the new term instead of Aristotle's μονή?); yet that would be an extreme case of ellipsis, and it would do nothing to explain the singular where we should expect the plural τῶν εἰδῶλων. Cicero's singular εἰδῶλον at *Fam.* 15.16.2 is an instance of ironical diminishing.

¹⁵ Cf. Rosenmeyer 1996.140; and Sedley 1998.38-42, who associates the wealth of terms, both for films and for atoms, with what he argues to be the developmental history of *DRN*.

eleven times in *DRN*, is on four occasions used to mark the delicacy of films. But could *imago* not, in this context, designate a string of films? If so, that would be of little help; the emphasis on its singleness would be just as unique and perplexing as the notion of the sufficiency of a single film. And if I am right in what I have suggested, no single string of films is capable of producing a complete perceptual image. And why *should* intuition differ in this respect from vision, for which no such singularity has been posited?

Could *imago*, then, simply bear the more obvious meaning of 'perceptual image'? After all, the notion of an image moving or exciting the mind as a result of the mobility of the films is not so far-fetched. Critics generally have disregarded that possibility, presumably on the grounds that this would issue in a redundancy: 'a single image moving the mind (to produce an image)' does not advance the argument. The logical nexus clearly is between the mobility of the films and the flexibility of the mind; further, *subtilis* is never applied to the notion of 'image'. So we will go along with the critics, and ask how we are to make sense of the clash between 'one strike' and the rest of the discourse on how films do their work.

Commentators may be said to divide into three groups. The members of the first group simply accept what appears to be the message of *DRN* 4.745-8, which is not paralleled elsewhere in Lucretius or Epicurus, in spite of Bailey's curious comment that Lucretius says something similar in his discussion of our perception of the gods.¹⁶ They conclude that the subtlety of the mind is such that no strings of films are needed to trigger the perceptual impression received by it. This of course means disregarding the message of the lines, about the analogy between intuition and vision, that follow. The members of the second group hold that though a single film may be all that is needed, intuition may also result from the input of a string or strings of films.¹⁷ Finally, there are those who choose to disregard the advice of *DRN* 4.745-8, and accept lines 749-51 as the binding formulation: both the *animus*, διάνοια, *qua* organ of

¹⁶ Bailey 1947.1187 and 1270; Luschnat 1953.22; Freymuth 1953.27; Frassinetti 1954.121. It should be emphasized that Bailey's treatment of this topic in his commentary supersedes what he offers in his earlier work, 1928.414-417, which contains a number of ambiguities. One possible parallel to the *uno ictu* of *DRN* 4.746 may be concealed in the difficult *DRN* 3.146, where against Bailey 1947.1013 I would retain the link between *res* and *una*: the *mens* can have understanding and feeling on its own even when not one thing (i.e. film) affects the *anima* and the *corpus* (i.e. the physical sensoria). For the independence of the mind, cf. below, pp. 36 ff.

¹⁷ Kleve 1963.21 and 79: the films of the gods come in streams, those of centaurs singly. Cf. also Lemke 1973.19; and Jürss 1991.78-80, who voices considerable uncertainty.

intuition, and the physical organs are in the end dependent upon strings of films for the production of perceptual images.¹⁸

I would like to align myself with the third group, though it is clear that difficulties remain whichever interpretation is advanced. The best we can do is attempt to provide an explanation that accounts for most of Lucretius' statements and does not conflict with his basic Epicurean assumptions. Allowing Lucretius and Epicurus a degree of clarity and consistency where their available arguments seem to fall short of it obviously involves a risk of reduction or overinterpretation. But without that risk no advance in this difficult matter is possible.¹⁹ Fortunately there is no need to go to Philodemus and the neo-Epicureans to settle the issue.

I suggest that when Lucretius talks about a single film, what I call the *singillatim* mode (see *DRN* 4.89; 105), he has in mind the minimal physical impulse, *commovet* in our passage, which constitutes the start of a perceptual process. Any one string of films obviously consists of individual films that register their impact on the sensoria, either physical or mental. This initial impact — Plato in his *Philebus*, 33D-34A, calls it a πάθος, and ἀναίσθησις in as much as it does not reach the soul — may be termed 'reception', to distinguish it from the 'perception' that ensues when the individual films are grouped as strings and channelled through the organ, either physical or mental, to yield a perceptual image.²⁰ Ordinarily *sensus*, both physical and mental, involves the awareness of perception, but a materialism that highlights the physiology of the process rather than its psychophysicality will be expected to distinguish between two levels, both termed *sensus*, with the (unconscious) material process, the reception experienced by the organs, favored for first attention.

The individual films, the activators of reception, perhaps corresponding to Aristotle's ἰδία,²¹ and perhaps also to the Stoic causes of ἀντίληψις,²² are raw,

¹⁸ Brunschwig 1964; Asmis 1984.136. Asmis' valuable discussion does not ask the question what precisely 'moving the mind' means if it does not mean prompting a presentation. Curiously enough, Giussani 1897, often the most thoughtful investigator of controversial issues, has nothing on the question whether one film is sufficient for any sensory process.

¹⁹ Cf. also Annas 1992.163, on the need for speculation in discussing Epicurus' 'image theory'.

²⁰ For the distinction, see the sequence suggested in *DRN* 4.691: *quae feriunt oculorum acies visumque lacessunt*; cf. also *DRN* 4.752-753. The general process, not counting the films, is already adumbrated in Plato, *Theaet.* 184C-E, *Philebus* 33D-34A and *Timaeus* 45C-D, and in Aristotle, *De anima* 3.3. For the latter, see Caston 1996.46. For the distinction see also Bernard 1988.86, commenting on Aristotle, *De anima* 2.6.

²¹ See Modrak 1987.79.

²² Sextus Empiricus, *M* 1.25.

and irrefutable.²³ The *simulacra* taken individually are *nulla vi cassaque sensu* (*DRN* 4.128), where *sensu* is an obvious reference to perception. Reception, like perception, is a function of the cooperation of *anima* and *corpus*, but because it does not engage the *animus*, its perceptual effect is nil.²⁴ That the process of reception, as I describe it, was singled out as a separate entity by at least some Epicureans is clear from a passage in Alexander of Aphrodisias who records the idea of the films ‘pricking’ or ‘stinging’ (μωπιζειν) and rousing sight and preparing it for the act of seeing. How, he says in another text bearing on the same issue, can the film be seen, if it is serviceable only for the preparation and the arousal of sight?²⁵ Alexander objects to the idea, but then he is opposed to most of the tenets and implications of Epicurean epistemology. We conclude, then, that *DRN* 4.745-748 constitute a digression, detailing reception as it occurs in the mind, within the compass of a larger paragraph on perception marked by a repeated use of *videre*.

A note on the language of our passage: *movere* and its compounds, as well as *ciere* and *laccessere* and similar verbs of stimulation, correspond to the Epicurean (and Aristotelian) κινεῖν which covers the triggering of *sensus*, via both the impacting on the physical organs and the energizing of the mind. Similarly *motus*, like κίνησις, designates the physical or mental process (or disturbance) set off by the stimulus, as well as the native atomic movement of the affected organ, the *sensiferi motus* made possible by the cooperation of body and soul.²⁶ *Commovet*, therefore, could fit either reception or perception, though in the majority of the cases it clearly marks a first order material event. The same goes for *mobilis* of line 748: it can refer either to the modifiability of the atomic structure of the mind, or to its facility for the intake of new perceptions. *Ictu*, on the other hand, is less ambivalent. Forms of *ictus* occur 43 times in the *DRN*; they designate lightning strikes, or atoms bouncing against each other, or films hitting the sensoria. In all cases the emphasis is on the physical act, not on any

²³ For reception as against perception and opinion, see the account of Sextus, *M* 10.63-64 and 7.210. Conversely, for a confusion of reception and perception, and hence a misunderstanding of Epicurus, see Sextus *M* 7.356.

²⁴ Kleve 1963.78: ‘... ἐνάργεια fehlt aber allen Vorstellungen, deren einzige Grundlage das Einzelbild ist.’ I agree that ἐνάργεια is uniquely attached to perception, but I would also argue that an individual film cannot produce any Vorstellung at all. Whether the notion that individual films cannot be perceived has its source in Aristotle, *De sensu* 6.445b28-446a18 is uncertain.

²⁵ Cited by Avotins 1980.432, reading διεγειρεσθαι for διοριζεσθαι with Wendland, and 436; cf. Asmis 1984.132-135, and above, note 6.

²⁶ Cf. Sedley 1988.300-301. The συναπτομένη δι’ ἡμῶν αὐτῶν κίνησις of Pap. Herc. 1431 col. 6 iv = Arrighetti 1973.36.16 may refer to this constitutive atomic movement, which, however, may ultimately also be contingent on earlier sensory stimuli; note the effect of combining *DRN* 4.1011-1029 with 4.967-977.

epistemic or psychological consequence. Conversely, when the language is not that of impact but that of penetration — *insinuare, percutere, perlabi, transire* and the like (e.g., *DRN* 4.246-249) — we may assume that the conversion of reception into perception is on its way: at the point at which visual films pass through a glass, they are already a *species*: *DRN* 4.602.

Lucretius alludes to the *singillatim* mode as he discusses the mirror image (*DRN* 4.98-109), and the sight of colors from the canvases in the theater (*DRN* 4.89), but only negatively: he re-emphasises that individual films cannot trigger the perception. In our passage, the special emphasis on the *force* of individual films that impact on the mind is probably prompted by Lucretius' wish to stress the subtlety of the atoms of the mind. Lucretius sees a correlation between the subtlety of the individual films and the delicate structure of the mental organ: it seems that in spite of that delicacy, with the mind atoms much further apart from one another than the atoms of the physical organs, the individual films are capable of having an impact on their mass.²⁷ That the individual films which strike the mind are more subtle than the films that reach the physical organs (*DRN* 4.756) is one of Lucretius' more awkward assumptions, for thus their job of engaging with the rare mind atoms is made the more precarious. The assumption also appears to go against the burden of *DRN* 4.758-759, that the films that stimulate the mind in sleep are the same as when we are awake.²⁸ Given the Epicurean emphasis on material processes it is difficult to credit that the films of a lion or a marble statue dreamt or imagined are different from the films of the same objects that enter the eye and ultimately, by virtue of strings, produce a visual presentation.²⁹

I have spoken of perception occurring when the strings of films are channeled *through* the organ into the mind as recorder of the *sensus*.³⁰ This may be thought to conflict with Lucretius' declaration *DRN* 3.350-369, that it is a mistake to say that the bodily organ does not sense, and to claim that the mind sees through the eyes, as if they were open doors. Bailey wishes to separate the two segments of the passage, 350-358 and 359-369, on the grounds that in the first

²⁷ Cf. *DRN* 3.425-430 where the delicacy and the mobility of the *anima* are correlated to the fact that it *a tenui causa magis icta movetur*. The application of the *singillatim* mode may be compared to what Plato has the stranger say in his imagined dialogue with the atomists at *Soph.* 247D8-E4 and 248C4-5: in trying to demonstrate a basic power, the emphasis must be on the smallest unit or occurrence.

²⁸ 'When we are awake' must mean 'when we use our eyes', and does not include imagining; seeing a dead person is here restricted to dreaming.

²⁹ See Giussani 1897.289. Bailey 1947.1268 is probably right in suggesting that Lucretius stipulated the subtlety of the intuitional films 'without thinking out in atomic terms how this could come to be.'

³⁰ Cf. also DL 10.62: καὶ μὴν ὅτι ἡ ψυχὴ τῆς αἰσθήσεως τὴν πλείστην αἰτίαν δεῖ κατέχειν . . . Here ψυχὴ appears to be a stand-in for διάνοια.

the mind is designated by *anima*, and in the second by *animus*.³¹ And it may well be that in the first instance Lucretius is talking about mind as the empowerer of physical organs, and in the second as the recorder of information coming from them. But the two segments are closely connected in their emphasis on the capacity of the organs to have the sense objects work on them rather than allowing immediate access to the percipient mind. My distinction between reception and perception is in satisfactory agreement with what Lucretius says on this score. To say that the information is channelled *through* the eyes is not to deny the eyes their own capacity for a first level response, i.e., reception, the impact on them of films, initiating but not completing the process of perception.³²

2.

In Lucretius's thought, as in that of Epicurus, *animus* or *mens*, νοῦς or διάνοια, is employed to designate the instrument of three different operations.³³ These operations tend to shade into one another, and they cannot be differentiated in terms of the mind's basic components: wind, heat, air, and the nameless element. But for the sake of clarity and convenience it is useful to distinguish them. First, the mind works as the *organ* for the reception and distribution of films that do not impact upon the physical organs, that is, the films that come to us in thinking and in dreams, including films emanating from the dead, as well as films of non-existing objects (about these later). Films from the gods are prominent examples (in spite of Demetrius Lacon's view that οὐδὲν αἰσθητὸν

³¹ Bailey 1947.1051-1052.

³² The only difficulty is that at *DRN* 3.359 (as at *DRN* 4.496, 809; 6.165) Lucretius uses *cernere*, more properly speaking the discriminating activity of the *animus*, to designate the function of the eyes. Reception does not entail discrimination, or ἐπιβολή. *cernere* is one of Lucretius's favorite words, comparable to κρίνειν in Aristotle's *De anima* and in the Epicurean sources (but not, as far as we can tell, in Epicurus, despite his doctrine of the κριτήρια τῆς ἀληθείας). In the vast majority of the cases (my count is based on Wacht 1991) *cernere* is virtually synonymous with *videre*: note, e.g., *DRN* 6.935. In 8 cases it signals understanding or discursive thought. In the 4 cases where the eyes are credited with *cernere* we must assume that the language of perception is loosely, and under the stimulus of poetry, applied to the process of reception. That is, the organ is visualized at the critical point where the *animus* is taking over from it. The same is true when Lucretius talks of the eyes straining to see, that is, when ἐπιβολή is said to kick in (cf. *contendere*, *DRN* 4.809), or when the incoming films cause the eyes to feel pain, *DRN* 4.306, 716: pain is a *sensus*, an affection, 'perceived' by the mind.

³³ See Kleve 1963.110-111, and Jürss 1991.76; also Annas 1993.69: 'Epicurean *animus* . . . is not a single thing but a cluster of capacities.'

ἀθάνατον).³⁴ This we may call *sensus*(R), corresponding to what we have called reception. As in the case of physical reception, the impact on the mind of these films requires no assumption that the films come in the form of strings, though they normally do.³⁵ Lucretius tells us repeatedly that there are many, uncoordinated films loose in the world, and there is no reason why some of them should not be continually bouncing off against our minds. Again, as in the case of the physical organs, the individual films or strings of films do not by themselves produce images.

Second, mind works as the receiving station for films that have been processed by the organs, including mind as an organ, to produce the *perceptual* image, *sensus*(P).³⁶ That image is the outcome of the cooperation between the mind as receptor, which is struck by the films, and the mind as perceptor, which responds actively to their bundling in strings. To be sure, as Lucretius lists the various kinds of images that are perceived by the mind, *DRN* 4.754-822, he speaks of *simulacra* rather than of the strings of *simulacra*. But that is merely a shorthand; the parallel of seeing (and identifying: *cernere*) the lion and thinking the lion (*DRN* 4.752-756) which heads the list assures us that the films cited must move in strings.³⁷ With the wealth of examples heaped up in the discussion of what the mind perceives, a constant invocation of how the films move would have been awkward. Because of the force of *cernere* it is less probable that the parallel is between the initial reception of the films of a living lion, not yet transformed into a vision of it, and the reception that precedes the perceptual apprehension, the intuition, of mental images. The border line between *sensus*(R) and *sensus*(P), between the initial registration of intuitional films and the mind's work in finalizing perception, is not always observed; note that when Cotta says (*nat. deor.* 1.108): *vos autem non modo oculis imagines sed etiam animis inculcatis*, it is difficult to determine, because *imago* may mean either film or picture, whether the mental operation is meant to refer to *sensus*(R) or *sensus*(P). Obviously the former, as a theoretical construction, appears quite

³⁴ Pap. Herc. 1055 col. 21.v; cf. Bignone 1933.433.

³⁵ The wording of schol. *RS* 1, ἐκ τῆς συνεχοῦς ἐπιρρύσεως τῶν ὁμοίων εἰδώλων, is open to two different interpretations. Either it refers to the striking by individual divine films, i.e., *sensus*(R), or to the constant flow of streams of divine films, *sensus*(P). The latter is more likely, in view of the earlier τοὺς θεοῦς λόγῳ θεωρητοῦς, where λόγῳ is a synonym for νοήσει. Thus the Greek phrase matches the first part of Cotta's *fluentium frequenter transitio fit visionum, ut e multis una videatur: Nat.deor.* 1.109.

³⁶ Cf. Asmis 1984.90-95: the perceptive mind is one of Epicurus' κριτήρια.

³⁷ Cf. also the simple plural *simulacra* in what is said about the capacity of the *animus* to perceive the divine form: *DRN* 6.76-78. If schol. *RS* 1, with all its difficulties, proves nothing else it is that the Epicurean gods are accessible to us by way of strings of films.

unnecessary to someone like Cotta (*nat. deor.* 1.105-107).³⁸ The juxtapositions ἢ τὴν ὄψιν ἢ τὴν διάνοιαν and τῆ διανοία ἢ τοῖς αἰσθητηρίοις in DL 10.50-51 are clearly aligned with *sensus*(P); they are said to issue in a συνεχρῆς φαντασία, where συνεχρῆς marks, not a sustained continuity of the image, but its integral structure apprehended in one moment of perception.

Finally, third, mind has the privilege of applying its intellectual capacity to the perceptual image, by way of discursive thought or inference or induction:³⁹ this, strictly speaking, is no longer a case of *sensus*. The blessedness and everlastingness of the gods is not part of their perception, but the fruit of a reflection upon it.⁴⁰ Cotta appears to regard these as one and the same, under the heading of *cogitatio*, and Lucretius himself does not differentiate them as tidily as he might, perhaps because he is willing to believe that reason itself, *ratio*, is sprung from the senses (*DRN* 4.484).⁴¹ We may also want to speculate that reflection can in the long run help to sharpen our perceptions of certain sights and tastes and sounds. But if we wish to make full sense of Lucretius' treatment of *animus*, we must distinguish between the awareness of a perceptual image, which is part of *sensus*(P), and the reflection upon it, Aristotle's φρονεῖν (*De anima* 3.3.427b6), which takes us out of the realm of perception into the realm of cerebration. Both are selective and judgmental operations, above the threshold of attentiveness, if dreaming and hallucinating, by means of the *mens intenta*, can be said to be forms of attentiveness.⁴² But the judgment of *sensus*(P) is one

³⁸ Cotta says that the Epicurean entry of films into the mind is really, as other philosophers would call it, a *motus inanis* (for *motus inanis*, κενοπάθεια, see Pease 1955.484-5), and cites as an instance his visualizing an encounter between the long dead Tiberius Gracchus and Marcus Antonius.

³⁹ Cf. DL 10.32: ἐπίνοιαί.

⁴⁰ Cicero, *Nat. deor.* 1.49: *imaginibus . . . perceptis . . . in eas imagines mentem intentam infixamque nostram intelligentiam capere quae sit et beata natura et aeterna*. Without the last segment of the sentence the role of *mens* might be thought to correspond to *sensus*(P), but *intelligentia* moves the analysis on to the third level, of discursive thought. Pease 1955.323, citing a host of parallels to *intenta mens* in Epicurus, Lucretius, and Philodemus, fails to distinguish between the two levels.

⁴¹ Cf. DL 10.32: πᾶς γὰρ λόγος ἀπὸ τῶν αἰσθήσεων ἤρτηται, and the statement about ἐπίνοιαί that follows. For the Epicurean sources in general, see Kleve 1963b.

⁴² Contrast Kleve 1960.85, and Furley 1967.210-12. But cf. also Kleve 1962 and 1963b, and Lemke 1973.70, on λόγος within the realm of διάνοια. For the language of 'judging' in sense perception, see Aristotle, *De anima* 426b8ff. and Hamlyn 1993.126-129, who thinks that Aristotle here comes close to the 'notion of a person with a unity of consciousness'. But Hamlyn also doubts that Aristotle, or for that matter any Greek thinker, has a concept precisely like James' consciousness. Cf. Kosman 1975. For perceptual judgment, also see Bernard 1988.177.

of instantaneous perceptual discrimination⁴³ rather than of extended reflection. Only the latter can serve as the basis of a proposition. An Epicurean may express his perception of a god by saying 'Behold, Asclepius!'; he thereby avows his perception, but he does not *state that* he is experiencing a certain perception (he does not state anything at all).⁴⁴

As has already been noted, in addition to *animus* Lucretius also has the notion of *anima*, the life force, ψυχή, which empowers the functioning of all three activities of the *animus*, as also of the physical organs. The distinction between *animus* and *anima* is not as categorical as this formula may suggest. As is well known, Lucretius vacillates between the position that *animus* and *anima* are joined and form one nature (*DRN* 3.136-137), and the position that *animus* is a part of *anima* (*DRN* 3.143-144). At the same time, *animus* is said to be superior to *anima*, and even more important for the purposes of life (*DRN* 3.396-401). But generally speaking Lucretius regards *anima* as the animating power of the organism, while thinking and imagining and feeling and perceiving are reserved for *animus*.

3.

All perception, whether channelled through the physical organs or channeled through the mind, requires strings of films. And this raises a problem. The films emanating from a marble statue, whether seen or imagined, and in the latter case whether summoned or arriving uninvited, are apprehended as strings of films, each string credentialling part of the enduring constitution and looks of that

⁴³ See *DRN* 4.465-468: *opinatus animi*. Also *DL* 10.38, and *RS* xxiv: τὸ δοξαζόμενον κατὰ τὸ προσμένον, the accretion of opinion, which makes error possible, in the face of what is being presented; and *DL* 10.50-51, where this accretion is called προσδοξαζόμενον and ἄλλη τις κίνησις. I take τὸ προσμένον to be the equivalent of a more sustained τὸ παρόν (cf. Aristotle, *On Plants* 829b4), except that it allows filtering the perceptible presence through the screen of δόξα. For a different interpretation of τὸ προσμένον see Asmis 1984.157, who identifies it with τὸ μέλλον ἔσεσθαι in Plato, *Theaet.* 178B-179B; and Long-Sedley 1987.1.87, who, with Merlan 1936.910-912, read the τὸ προσμενόμενον of mss. BP. Merlan translates it as 'das Ungewisse'. *DL* 10.34 features Diogenes' interpretation of the term, which I do not consider authoritative. Whichever form of προσμένειν is read, the participle is found nowhere else in ancient Greek.

⁴⁴ My phrasing is in imitation of a Wittgensteinian one by Jonathan Barnes 1983.14, concerning the Pyrrhonist of Sextus' *PH*.

statue, depending of course on the angle of vision from which it is seen.⁴⁵ It is the strings, the uninterrupted sequences of films, that safeguard the integrity and the reliability of perceptions. The films coming to us from a person in motion, again no matter whether seen or imagined or dreamt, by a sane person or a madman, are likewise apprehended as strings, each string reproducing a specific instant of the motion: *tantaque sensibili quovis est tempore in uno / copia particularum* (DRN 4.768-776). So when Lucretius says, DRN 4.771-772 (cf. 4.800-801):

quippe ubi prima perit alioque est altera nata
 indu statu, prior hic gestum mutasse videtur

as soon as the first one is gone and a second, of another guise,
 is born, it is the first that appears to have changed its bearing,

the subject of the feminines, *imago*, must designate, not a film but a perceptual image. The instants of the perception of a motion or a moving body cannot be produced by individual films, for as we know individual films cannot be seen or, *ex hypothesi*, imagined or dreamed. And in fact Lucretius goes on, 807-815, to compare the attention required to catch each of the mental objects with the attention required in seeing. *Copia particularum* is a quantity of atomic aggregates, that is, a crucial mass of films, perceptible at any one moment.⁴⁶ Each string supplies a sequence of identical films. Continuity of intuition is guaranteed by the continuousness of successions and combinations of strings. In the case of moving objects, and of still objects seen from different perspectives or by differently constituted sensoria, it is the strings and their combinations, not the films, that vary. The presence of *cernere* in the passage on moving objects, DRN 4.784-815, and the use of verbs corresponding to Epicurus' ἐπιβολή (802, 804, 812, 815), confirm that Lucretius is talking about perception, *sensus*(P), rather than reception, *sensus*(R).⁴⁷ The comparison with the eyes that strain to catch a clear sight of minuscule objects (DRN 4.807-810) is not intended to gainsay the doctrine that the eye as such, without the mind to which its messages are delivered, merely receives. It is a poetic comparison, introducing the ordinary language of experience into the thicket of abstract analysis. Strictly speaking, the eye by itself does not see; it prepares vision. Likewise the mind, as a receptor, does not intuit, but prepares intuition.

⁴⁵ In this context the distinction between perceiving an object from afar and perceiving it close at hand (cf. Asmis 1984.113-115) is immaterial.

⁴⁶ My analysis is not affected by the various attempts to redistribute or amend the text of DRN 4.757-822. For an exhaustive survey see Asmis 1981, whose own rearrangement is the most persuasive.

⁴⁷ My separation between reception and perception is not coterminous with the difference between seeing and observing, or hearing and listening, all of which should be grouped under perception.

But what about the sources of thinking or dreaming that are not and have never been the solid objects which Epicureans call *στερέμνια*, or gods who, we are told, are special kinds of solids?⁴⁸ Neither Lucretius nor Epicurus has a technical name for films that do not originate from ordinary solids. Lucretius talks about the spontaneous generation of films (*DRN* 4.131; 736), and about the chance confluences of films, such as centaurs, thrown off by several distinct objects (*DRN* 4.726-727 and 738-743).⁴⁹ How can these unstable chance formations, presumably prone to dissolve as soon as they have come into being, be thought to produce the strings of films needed to produce a perceptual image? How can they register on the sensoria without the continuousness and the machinery of strings, on the strength of which the films of a solid source object ultimately conform themselves into a presentation? In the case of solids, there is an enduring base, a *ὑποκείμενον*, for the release of successive replication. Spontaneously generated images and temporary confluences offer no such base; their formation is so aleatory and, one presumes, so unstable that it is difficult to believe that they are capable of sending out any films, whether individual or in strings. The suggestion⁵⁰ that in the case of hybrids the two masses of strings of films originating from separate solids merge and after merging, one must assume, change direction to reach the mind would seem to run counter to how Epicurus and Lucretius look at the motion of visual films, which always pass directly and in a straight route from their objects to the sensory organs. This is certainly the assumption of *DRN* 4.95-97: visual films cannot be dispersed; and of *DRN* 4.150-160, on films hitting a mirror.

Lucretius' comparison of clouds changing their shapes in the sky, *DRN* 4.136-142, is a lovely poetic conceit but cannot be taken seriously as a cogent analogy to the creation of phantom images.⁵¹ The phantom images are, nevertheless, perceived, and, in the case of centaurs, not only perceived but systematized in the form of a stable mythology. And if we allow that the non-solids emit, and impact on the mind in the guise of, individual films rather than strings of films, that does not solve the problem, for it would account for reception but not perception. Giussani accepts Lucretius' suggestion that in the case of dreams some of the infinitude of films around us link together to give us images of absent or dead persons; but when these phantom figures begin to move he

⁴⁸ See now Philodemus, *On Piety*, in Obbink 1996.108-121 and 287-309, particularly the view attributed to Metrodorus in col. 4 = *Apogr. Neapol.* fr. 26.

⁴⁹ Cf. DL 10.48. For the use of the non-technical term *συστάσεις* to designate hybrid films, see Giussani 1897.168 (comment on *DRN* 4.129ff.). Kleve 1961.51-52 refers to them as 'Vorstellungsidole'; see my reservation above, note 24.

⁵⁰ Asmis 1984.137.

⁵¹ For good reasons, Schrijvers 1978 and Schiesaro 1990 have no comment on the passage.

complains that ‘un idolo non sgambetta!’⁵² His complaint underscores the weakness of his acceptance of Lucretius’ hint. In actual fact, on the assumption that dream figures are the products of strings of films from στερεόμνια it is no harder to think of them in motion than to think of them as still. In this respect they do not differ from the figures seen while we are awake. It is the appeal to individual films that causes the difficulty. Likewise the cinematographical analogy often invoked to argue for a modulating flow of films is imperfect, unless each frame of the movie is meant to correspond to a string of *simulacra*.

The question remains: how can strings of films or, for that matter, single films be emitted and reach us from nothing to emit them? Lucretius provides no answer, nor does Epicurus, and in fact the notion might be said to clash with one of Epicurus’s basic beliefs: οὐδὲν γίνεται ἐκ τοῦ μὴ ὄντος. As Lucretius observes, *DRN* 4.740: *nulla fuit quoniam talis natura animata*. What is more, Cotta cannot be right to suggest, by way of ridicule, that the gods, like centaurs, exist only *as* films, without the base that must be regarded as a necessary condition for the emission of films.⁵³ Left-over films, strayed from their original base, cannot replace authentic ὑποκείμενα and send out films of their own or regroup themselves into the necessary complex formations. Nor are conflation capable, because of their heterogeneity, of replacing and aligning themselves up alongside the organically legitimated strings emitted by ὑποκείμενα. Neither Lucretius nor Epicurus in what has come down to us undertakes to explain the mystery of the perception of non-solids. They do not, as far as we know, conjecture that the intuition of non-solids derives from strings of films appropriated and then released by προλήψεις or by memory, nor could they, given their epistemological assumptions, do so.⁵⁴ For memory and πρόληψις are derived from a sufficient frequency of previous perceptions,⁵⁵ a condition that hardly fits the hallucinations of madmen or the delusions of monstrous mythology. Nor do they suggest that the intuition of non-solids is due to strings of films emitted by solids but in the process of perception transmogrified by opinion, ψευδής or μάταιος δόξα, often associated with confusion, θόρυβος or κύκησις. Let me note, in passing, that Epicurean δόξα is itself a precarious commodity, a

⁵² Giussani 1897.286.

⁵³ See Kleve 1963.76-79. Contrast Giussani 1897.291 on intuition: ‘gli idoli sono essi stessi la cosa che rappresentano.’

⁵⁴ For the relation between perception and πρόληψις, see Annas 1992.166-168. It may, in any case, be relevant to observe that Lucretius makes little of πρόληψις.

⁵⁵ DL 10.33: μνήμη τοῦ πολλάκις ἔξωθεν φανέντος; cf. Cantarella 1936.304-314, on Pap. Herc. 1420 col. 6 ii = Arrighetti 1973.35.10; and Kleve 1963 ch. 3. Note also Aristotle’s question, *De memoria* 450b12ff., about the object of memory: is it the πάθος or the source object? In both cases the registering of an external impulse is stipulated.

concept taken over from common speech and colored by the Platonic mistrust in it, but not furnished with a properly material pedigree.⁵⁶ If opinions come out of προλήψεις, what causes them to be mostly false? Actually, of course, πρόληψις is itself a kind of δόξα (DL 10.33), a δόξα ὀρθή, so deriving opinions from προλήψεις would be a dubious endeavor.

Finally I sidestep the question whether the perception of non-solids could perhaps be linked to the affections, about whose material generation we learn few details in the Epicurean texts, in spite of their close association with the αἰσθήσεις.⁵⁷ The principal affections, pleasure and pain, are usually triggered by perceptions, and hence ultimately by films from subsisting objects: tasting honey or wormwood supplies the appropriate feelings. But then there are passages like *DRN* 3.238-245 and 269-272, in which *sensiferi motus* must refer to the affections themselves rather than to receptions or perceptions. But these are uncertain matters which our sources do not permit us to arbitrate, and are better left alone. What remains true is that all mental activity, including the making of comparisons and inferences, is ultimately dependent on input from perception, and hence from the senses, and the senses can be affected only by films arriving from ὑποκείμενα. We can conclude that Epicurean epistemology is not equipped to account for the apprehension of non-solids. Cotta was at least partly right to maintain that Epicurean epistemology had not answered all the questions that could be raised concerning its theory of films.⁵⁸

I am conscious of the precariousness of my reading. If it was Lucretius' intention to distinguish between perception, the fully realized apprehension of a sensible object, and reception, the physiological process that leads up to it, why did he not present a clearer and more sustained exposition of the difference, and why does he offer only one explicit mention of the power of a single film to move a sensorium?⁵⁹ I suspect, as I have indicated before, that neither Epicurus,

⁵⁶ I accept the view of Arrighetti 1973.627, remarking on Pap. Herc. 1056 col. 5 i, that what is said here about δοξάζειν represents the view of an opponent.

⁵⁷ Whether the disturbances of the bodily motions (and their readjustments) that we designate as παθήματα are caused by films, or how else they originate, is not made clear in the sources. When Asmis 1984.170 ascribes the origin of affections to 'immediate acquaintance . . . with inner conditions', the phrasing is close to a tautology. It is at least interesting that in Lucretius, *DRN* 4.1032, films from abroad are involved in the stimulation of the physical side of libido, and many of the dream experiences related prior to this, 962ff., represent pleasurable (or unpleasurable) affections. But then again the question of the appropriate ὑποκείμενα arises. The same is true of films stimulating action; see *DRN* 4.881-882.

⁵⁸ *Contra*, Kleve 1961.

⁵⁹ It might conceivably be argued that the fault, if there is one, is due to the fact that book 4 of *DRN* is in a radical state of incompleteness, as is argued by Sedley 1998.148-152; cf. above, note 15.

with his general term αἴσθησις, nor Lucretius, with his even more comprehensive *sensus*, had much more than a latent awareness of the distinction I have tried to uncover. But this awareness, I believe, had its antecedents in Plato's and Aristotle's differentiated treatments of αἴσθησις, and it influenced Lucretius' language sufficiently so we can see what a more explicit differentiation might have been. Perhaps he might even have been willing to admit a triple or even quadruple distinction: between (1) reception; (2) a first perception of *apertae res*, on which a claim of truth and ἐνάργεια must be based; (3) the full perception which is liable to the intrusion of error; and (4) a knowing awareness of that full perception. But this I will leave to others to explore.

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