

Self-Causation and Unity in Stoicism

Reier Helle

(This is a final draft. Please cite the published version: *Phronesis* 66.2, 178-213, 2021)

Abstract: According to the Stoics, ordinary unified bodies – animals, plants, and inanimate natural bodies – each have a single cause of unity and being: *pneuma*. *Pneuma* itself has no distinct cause of unity; on the contrary, it acts as a cause of unity and being for itself. In this paper, I show how *pneuma* is supposed to be able to unify itself and other bodies in virtue of its characteristic tensile motion (τονική κίνησης). Thus, we will see how the Stoics could have hoped to account for corporeal unity by positing another body (*pneuma*) apparently itself in need of unification.

Keywords: Stoicism, Stoic Physics, Unity, Causation, Self-causation

0. Introduction¹

According to Stoic physics, unified bodies (ἡνωμένα)² – centrally, animals, plants, and inanimate natural bodies – each have a single cause of unity and being: a ‘state’, ἔξις.³ In animals, this is soul

¹ The material presented in this paper stems from a larger project concerned with the notion of a unified body in Stoicism, “Corporeal Unity in Stoic Philosophy” (ms.). I am grateful to Brad Inwood, Verity Harte, Allison H. Piñeros Glasscock, David Sedley, Michael Della Rocca, and David Charles for comments and criticism. The paper also benefited from feedback from the Ancient Philosophy Workshop at the University of Oslo, for which I am grateful. I would moreover like to thank an anonymous referee for helpful comments and questions.

² Unified bodies are distinguished from bodies composed of conjoined parts (ἐκ συναπτομένων), such as ships and towers, and from bodies composed of distinct parts (ἐκ διεστώτων), such as flocks, choirs, and armies. This threefold division is the only general division of kinds of body preserved in our sources. Key reports are S.E. *M* IX 78-9 Mutschmann; Seneca, *ep.* 102.6-7 (cf. *Nat. Quest.* 2.2.2-4); Plutarch, *Prae. Conj* 142E, *Def. Orac.* 426A; Simplicius, *In Cat.* 214.24-37 Kalbfleisch; Achilles, *Isagoge* 14 (SVF II 368).

³ S.E. *M* IX 78-9; Simplicius, *In Cat.* 214.24-37; Alexander, *De Mixtione* 15.3-10 Groisard; Achilles, *Isagoge* 14 (SVF II 368). I will be translating ἔξις as ‘state’ throughout. It is important to emphasize, however, that Stoic ἔξεις are active, not passive; they are corporeal causes which continuously act on the body whose state they are by means of contact.

(ψυχή), in plants, it is nature (φύσις), and in inanimate natural bodies such as rocks and metals, it is a 'mere state' (ψιλή ἕξις).⁴ In each of these cases, however, it is a certain sort of body, *pneuma* ('breath'), which plays the causal role of ἕξις.⁵ Pneuma does this by blending with the matter of the body in question, which is accordingly seen as a whole composed of pneuma and matter.⁶ The Stoics think that pneuma is able to play the role of ἕξις *self-sufficiently*. There is no need for further causes: the animal is unified simply by its soul, the plant simply by its nature, and likewise *mutatis mutandis* for each body unified by a pneumatic state.

In contrast to animals, plants, and inanimate natural bodies, pneuma itself does not have a distinct cause of unity. Our sources indicate that pneuma is thought to be its own cause of unity and being, that is, to be *self-unifying* and so *self-causing*. Thus, it seems the Stoics mean to ground the unity of an animal, plant, or inanimate natural body in a single, self-unifying cause.

This pneumatic self-causation is a critical part of the Stoic view of corporeal unity. It is supposed to explain why there is no need for further unifiers beyond pneuma (removing the threat of regress) and how pneuma is able to function as a self-sufficient cause of unity.⁷ Despite its

⁴ See S.E. *Mix* 81; DL VII 138-9; Alexander, *De Mix.* 8.23-9; Galen, *Intr.* 14.726.7-11; Philo, *Leg. alleg.* 2.22-3, *Quod deus sit immutabilis* 35-6; cf. Origenes, *De Orat.* 6.1.1-9 (SVF II 989). Besides rocks, our sources give metals, as well as pieces of plant matter removed from a living plant, e.g. pieces of timber, as examples of inanimate natural bodies; inanimate pieces of metal are apparently likened to dead plant matter, removed from living veins of metal (Origenes, *De Orat.* 6.1.1-6; cf. Origenes, *De Princ.* 3.1.2 [SVF II 988]; Seneca, *Nat. Quest.* 3.15.1-3; Plutarch, *St. rep.* 1053F-1054A Westman).

⁵ The terms 'soul', 'nature', and 'mere state' are also used by the Stoics for the three most general kinds of pneuma, i.e. the ones which play the role of the corresponding states; I return to this briefly in section 2 below. The general term, ἕξις, is sometimes used to refer specifically to the state of inanimate natural bodies (or the corresponding kind of pneuma), ψιλή ἕξις (for an example, see T2 below). In order clearly to mark the difference, I will in what follows refer to the state of inanimate natural bodies as 'mere *hexis*' (for more on which, see section 2 below).

⁶ Pneuma blends not with prime matter (DL VII 134), but structured matter; in an animal for instance, the soul blends with the body (Nemesius, *Nat. hom.* 5.52.18-19 Morani; Galen, *Plen.* vii. 525.9-14 Kühn; Plutarch, *Comm. not.* 1085C-D Westman; DL VII 150). For my account of soul-body blending, see Helle 2018. See also Long 1982, 39-40 and Gourinat 2009, 48, 58.

⁷ A self-sufficient cause is a cause that is sufficient by itself for its effect. So, soul, for instance, is a self-sufficient cause insofar as it is sufficient by itself for ensouling the animal (i.e. causing it to be alive). (See e.g. Stobaeus, *ecl.* I.138.14-139.4 Wachsmuth [LS 55A]; Clement, *Strom.* 8.9.33-9 [LS 55I].) Self-sufficiently, then, is a way in which a body may operate as a cause. Being a cause for oneself, by contrast, is not a way for a body to operate as a cause; rather, it is being a cause (in one way or another) for a certain body, namely oneself. We will see below that pneuma, as it turns out, is conceived as a self-sufficient cause for itself *and* other bodies.

importance for Stoic physics, we currently have no clear account of pneumatic self-causation. In this paper, I begin to develop such an account: I present our main evidence that pneuma is its own cause of unity and being, and thus self-unifying and self-causing; I articulate the role of pneumatic self-causation in the Stoic understanding of corporeal unity; and I offer an interpretation of precisely how pneuma may be thought to be capable of self-causation.

Pneuma, I argue, is thought to be self-causing in virtue of its distinctive *tensile motion* (τονική κίνησης) (or *tension*, τόνος).⁸ Our sources characterize pneumatic tensile motion as inward and outward motion at once (ἄμα). This motion, then, is supposed to explain both that pneuma is a cause for itself and that it is able (self-sufficiently) to unify other bodies. Indeed, pneuma is conceived as a self-moving mover, in a way which recalls the description of soul in *Phaedrus* 245c-246a.

Contrary to the *Phaedran* soul, however, Stoic pneuma is a body, and this causes certain special difficulties. In particular, as one of our sources (Simplicius) astutely notes, the Stoic account of pneuma and its tensile motion makes it difficult to see how pneuma can be the self-causing, self-sufficient unifier it is supposed to be. For pneuma is a composite of air and fire, specifically a blend, and it has tensile motion because of the air and fire which compose it and their characteristic motions (inward and outward respectively). Consequently, it is not clear how pneuma may properly be conceived either as *self-causing* or as a *self-sufficient* cause of unity, in virtue of its tensile motion; it may rather seem that air and fire are the more fundamental causes, responsible for tensile motion and pneuma's ability to unify.

I will argue that the Stoic theory of blending (κράσις) offers a solution to this problem. For as we shall see in detail below, it gives us a way to understand tensile motion as belonging to pneuma *in its own right* (καθ' αὐτό), even though pneuma has tensile motion because of the air and fire which

⁸ There is no apparent distinction, for the Stoics, between pneuma being in tensile motion and its tension; rather, the tension of pneuma seems to be understood as its being in tensile motion. What that amounts to will be discussed in section 3 below. I will use 'tensile motion' and 'tension' interchangeably throughout.

(blend to) compose it. Accordingly, it will also be possible, on my interpretation, correctly to conceive pneuma as self-causing (and as a self-sufficient cause of unity) in virtue of its tensile motion.

This account of pneumatic self-causation, then, will show how the Stoics could have hoped to explain corporeal unity by positing another body, apparently itself in need of unification.⁹ Indeed, it will turn out that the Stoics have a sophisticated and distinctive understanding of pneumatic self-causation and the grounds of corporeal unity, rooted in their theories of blending and tensile motion.

I will proceed as follows: I begin in section 1 by introducing certain features of Stoic thinking on causes and causation. This will prepare the ground for the subsequent inquiry, and allow us clearly to articulate the Stoic view and its difficulties. Then, in section 2, I specify the role and character of pneumatic self-causation. I show that pneuma is thought to be a self-sufficient cause of unity because it is a cause for itself, and that the Stoics appear to be driven to this view by a need to avert certain causal regresses. Further, I argue that pneuma is thought to be self-causing specifically in virtue of its tensile motion. Finally, in section 3, I present an account of tensile motion, and I show how pneuma may be seen to have tensile motion in its own right, because it is a blend of fire and air.

Before I begin, let me offer a brief preliminary remark on the scope and target of my interpretation. I shall be concerned with what appears to have been the standard, mature Stoic theory, primarily associated with Chrysippus. It is on this view that unified bodies each are said to have a single state (ἕξις) as cause of unity and being, and pneuma, understood as a blend of fire and air, is thought to play this causal role. Though it seems likely that Chrysippus was the first to formulate precisely this way of thinking, it is difficult to determine what his predecessors Zeno and Cleanthes held, and thus also how much Chrysippus took over from them and what he changed.¹⁰

⁹ This is an ancient objection against the Stoics: that their view fails because positing pneuma as a cause of unity is simply to posit another body in need of unification (see Nemesius, *Nat. hom.* 2.18.2-10 [T5]; cf. Simplicius, *In Cat.* 217.36-218.4 [T7]; I discuss these texts below in sections 2 and 3). A similar objection was recently endorsed by Nawar (2017, 148-9).

¹⁰ For this view and its association with Chrysippus, note for instance, Alexander, *De Mix.* 5.26-6.10, 8.23-9, 15.3-10, 19.12-23, 20.17-21.7, 21.24-7; Plutarch, *St. rep.* 1053F-1054B; cf. S.E. *M IX* 78-9, 81; Simplicius, *In Cat.* 214.24-37, 237.25-238.32. We also have some evidence of a different view apparently connected to Cleanthes,

Further, since our sources often report simply ‘the Stoic view’ and what ‘the Stoics’ say, it is not clear exactly how and to what extent Chrysippus’ thinking was later refined and developed, or whether a given point of detail is the result of such refinement. Because of these uncertainties, it will be convenient also for us to refer to ‘the Stoic position’ (*et. sim.*) – meaning, the orthodox, mature (presumed) Chrysippean position.

From our sources, it seems clear that the central and paradigm cases of unified bodies (ἡνωμένα) are ordinary animals, plants, and inanimate natural bodies. My focus in this paper will be these central cases, and understanding how pneuma, in the role of state (ἔξις), is meant to be able to unify animals, plants, and inanimate natural bodies self-sufficiently and without the need for further causes.¹¹ I will not, then, be discussing Stoic elemental theory or their two basic principles (god and unqualified matter), nor shall I attempt to determine in detail how this theory of pneuma as unifier stand in relation to the elements and the principles within Stoic physics; for present purposes, these topics may safely be set aside.

1. Causation, Causes, Qualities, and States

The Stoics conceive causation as an active bringing about (ποιεῖν/*facere*) by means of contact. Since only bodies are capable of contact, every cause (αἴτιον) is therefore a body, and indeed an active body; similarly, everything on which a cause acts is a body.¹² Thus, there are no final, formal, or

according to which bodies are sustained by heat (Cicero, *ND* II 23-30). I will not consider this view here. For a discussion of the evidence of Zeno’s and Cleanthes’ thinking, see Hensley (forthcoming).

¹¹ Pneuma does not play the same role with respect to all bodies. Besides the non-unified bodies (such as ships, houses, armies, and choirs), which do not have a state, pneuma notably also does not unify the active elements, air and fire, of which it itself is composed (see section 3 below). Air and fire will either be causes for themselves (though not in the same way as pneuma) or be caused by reference to the active principle (as it acts on the parts of the passive principle that are their matter). One conjecture that seems attractive to me is that air and fire are causes for themselves, at least in the (minimal) sense that they cause themselves to have their principal attributes of being cold and hot respectively, by having a certain kind of motion in their own right, which they have simply because they are specified as being precisely the bodies that move in the relevant ways (see sections 2 and 3 below).

¹² Seneca, *ep.* 106.4 (SVF II 346a); Plutarch, *Comm. not.* 1073E, 1080E-F; Cicero, *Acad.* 1.39 (LS 45A); S.E. *M* VIII 263 (LS 45B), *M* IX 211 (LS 55B), *M* IX 258; Stobaeus, *ecl.* I.138.14-139.4 (LS 55A); Simplicius, *In Cat.* 302.28-32

material causes; Stoic causation is efficient causation. And the fundamental case appears to be specifically that of body pushing or striking against body.¹³

Moreover, the Stoics seem to think that there are no unmoved movers: to bring something about, a body must be moving and be moved by something (specifically, a body).¹⁴ As we will see below, this view (together with the regress to which it may lead) was likely one reason why they posited pneumatic self-causation.

Formally, causation is analyzed as a three-place relation, involving an agent (τὸ ποιοῦν), a patient (τὸ πάσχον), and an effect brought about by the agent in the patient. The agent and the patient are both bodies, while the effect is an incorporeal, specifically an incomplete sayable (λεκτόν), a 'predicate' (κατηγορημα), which the agent causes to belong to (ὑπάρχειν with dative) the patient.¹⁵ On this analysis, the agent is a cause *to/for* (dative) the patient, and a cause *of* (genitive) the effect (commonly marked with an articular infinitive). So, for instance, a knife may be a cause to some flesh of *being cut* (τὸ τέμνεσθαι), and a fire may be a cause to some wood of *being burnt* (τὸ καίεσθαι) (S.E. *M* IX 211). Predicates that belong to bodies are referred to as 'attributes' (συμβεβηκότα).¹⁶ So, when the fire burns the wood, being burnt is an attribute of the wood, and when the knife cuts the flesh, being cut is an attribute of the flesh; likewise, *being qualified* (τὸ ποιὸν εἶναι) is an attribute of the qualified body (ποιόν) (Plutarch, *St. rep.* 1053F-1054A [T1]), and when someone walks, *walking* (τὸ περιπατεῖν) is an attribute of theirs (Stobaeus, *ecl.* I.106.20-3). In this regard, there is an important distinction between attributes (συμβεβηκότα), seen as incorporeal

(SVF II 342); Proclus, *In Plat. Parm.* 841.1-6 (SVF II 343); Nemesius, *Nat. Hom.* 2.21.6-9 (LS 45C), 22.3-6 (LS 45D); Aetius, *plac.* IV 20.2 Diels (SVF II 387).

¹³ Several terms are used to describe basic corporeal interaction, on the Stoic picture: 'blow/strike' (πληγή), 'approach and contact' (πέλασις καὶ ἄψις) (Simplicius, *In Cat.* 302.29-32), 'push' (ῥῆσις, *In Cat.* 302.29; ὠθισμός, Proclus, *In Plat. Parm.* 841.4), 'pressure' (ἐπέρεισις, *In Plat. Parm.* 841.5; προσέρεισις, Hierocles, *Elements of Ethics* IV 1), 'striking' and 'striking back/in turn' (προσβάλλειν, ἀντιπροσβάλλειν, *Elements of Ethics*, IV 45-7).

¹⁴ Simplicius, *In Cat.* 306.13-18 (with 306.18-307.1); Simplicius, *In Cat.* 302.28-32 (SVF II 342) (cf. Simplicius, *In Phys.* 1320.19-21 Diels [SVF II 496], Stobaeus, *ecl.* I.165.15ff [SVF II 492]); Proclus, *In Plat. Parm.* 841.1-6 (SVF II 343); S.E. *M* X 76-7, *M* IX 75-6 (T4).

¹⁵ Here predicates are not linguistic items; rather, they are the items predicated in language and because of which linguistic predications are true (when they are). See DL VII 63-4; S.E. *M* VIII 11-12, 70; Stobaeus, *ecl.* I.106.20-3.

¹⁶ Stobaeus, *ecl.* I.106.5-23, 138.14-139.4; cf. S.E. *M* VIII 100.

predicates belonging to bodies, and qualities (ποιότητες), which are not incorporeal, but rather causes and bodies (on which more presently).

Alongside the causal relata, there are the attributes *in virtue of which* a body is able to act and acts (as the case may have it) in a given way. When a knife cuts, for instance, it acts (and is able so to act) in part in virtue of having its characteristic shape (Simplicius, *In Cat.* 306.19-21); and as a state (ἔξις), pneuma acts (and is able to act) in virtue of having its own distinctive character (Simplicius, *In Cat.* 238.12-13, on which more in section 2 below). Equally, there are the attributes in virtue of which a body is affected (and can be) in a given way; when the flesh is cut by the knife, for instance, it is so affected partly in virtue of having a certain shape and material structure.¹⁷ In our sources, the in-virtue-of relation is picked out variously by means of the dative, κατά + accusative, or ἐκ.¹⁸ Importantly, this relation is not causal in the Stoic sense; it does not hold between bodies acting on and being affected by one another. Rather, it seems to hold between incorporeal predicates/attributes, such as the knife having a certain shape and its cutting.¹⁹

¹⁷ Our evidence concerning the body being affected (the patient) is slight. However, there are general reasons for thinking that bodies act (on something) or are affected (by something) in virtue of certain attributes/predicates (see note 19). Some further support for the claim that the patient is affected in virtue of certain attributes/predicates may perhaps be garnered from S.E. *M IX* 241-4, 249-251; Clement, *Strom.* 8.9.29.1-2; cf. Gourinat 2018.

¹⁸ See for instance Alexander, *De Mix.* 21.2-7; Simplicius, *In Cat.* 165.37-166.1, 166.6-7, 166.13, 166.16-17, 187.31-3, 238.12-13, 238.15-16, 306.19-21.

¹⁹ That bodies act (on something) or are affected (by something) (or are able to) in virtue of certain attributes/predicates belonging to them is an instance of the general claim that bodies are relative (πρός τι) in virtue of certain attributes/predicates. (For the claim that causes are relatives, see: S.E. *M IX* 207, 239; Clement, *Strom.* 8.9.29.1-2; Stobaeus, *eccl.* I.138.23-139.2; cf. Bobzien 1998, 18-20; Gourinat 2018, 95-7.) The general claim follows from what I take to be the most plausible interpretation of Simplicius, *In Cat.* 165.32-166.29 and 188.31-3. It is also, crucially, of a piece with the standard view that bodies belong to the so-called Stoic categories – ‘subject’ (ὑποκείμενον), ‘qualified’ (ποιόν), ‘somehow disposed’ (πως ἔχον), and ‘relatively disposed’ (πρός τί πως ἔχον) – insofar as they fall under certain descriptions, i.e. insofar as certain predicates/attributes belong to them (see Sedley 1982; Menn 1999, 222 note 10; Brunschwig 2003). Indeed, the fourth category, ‘relatively disposed’ (πρός τί πως ἔχον), is one of the two kinds of relatives distinguished by the Stoics; that the categories and the relative (as well as its contradictory, καθ’ αὐτό) are understood in the same way, that is, roughly as highly general descriptions under which bodies fall insofar as (the right kind of) predicates belong to them (or: *in virtue of* these predicates belonging to them) may be gleaned from Simplicius’ account of this distinction and the general Stoic notion of πρὸς τι (*In Cat.* 165.32-166.29; cf. 188.31-3). This again is closely linked to Stoic view that bodies are what they are/belong to their kinds, in virtue of their attributes/predicates: see especially S.E. *M XI* 8-11 (with S.E. *M VIII* 100; Stobaeus, *eccl.* I 106.20-3, 136.21-137.6; DL VII 60-1). (On the Stoic understanding of a kind (γένος/εἶδος), see Sedley 1985, Bailey 2014, and Caston 1999; I am broadly in agreement with the accounts of Sedley and Bailey.) And notably, it is in the context of distinguishing kinds of causes and specifying that in virtue of which bodies belong to the kinds in

It is worth noting in this connection that there are several indications in our surviving evidence that motions (or: changes, κινήσεις), on the Stoic view, are seen as incorporeal predicates/attributes (συμβεβηκότα/κατηγορήματα) – which is to say that motion is understood as being moved or moving (active, passive, or intransitive: τὸ κινεῖν/κινεῖσθαι).²⁰ If that is right, since there are no unmoved movers for the Stoics, it is natural to suppose that (at least) one of the items in virtue of which a cause acts in each case is a motion, namely the motion in virtue of which the body in question *is active*. So, the knife for instance, will cut partly in virtue of its cutting motion. It is admittedly difficult to confirm this supposition, given the available sources. But as we will see below, it seems to hold at least for the central case of pneuma, which acts in virtue of its distinctive tensile motion.

Within this general Stoic framework, qualities (ποιότητες) are considered to be causes. Thus, a quality is a body, specifically, it is a body causally responsible for (the predicate/attribute) *being qualified* (τὸ ποιὸν εἶναι). And this causal role is in general played by pneuma. So, if there is wisdom in Socrates for instance, it will be the pneuma in him – the soul blended with his body – which causes him to be wise. For us, this point is important because states (ἕξεις) are qualities. The Stoic position is described by Plutarch at *St. rep.* 1053F-1054A.

T1: In *On Hexis* he [Chrysippus] says that states are nothing other than portions of air:²¹ for bodies are sustained by these; and the air sustaining it is causally responsible (αἴτιος) for each of the

question that we find the reports that the knife cuts in virtue of its shape and that pneuma is a state in virtue of its character (Simplicius, *In Cat.* 306.21-3, 238.12-13).

²⁰ See for instance: Simplicius, *In Cat.* 394.31-6 (SVF II 179) (with 307.1-6 [SVF II 498], and 388.20-389.4 [SVF II 173]; cf. Stobaeus, *ecl.* I.138.14-139.4); Clement, *Strom.* 8.9.26.1-2; Simplicius, *In Cat.* 306.13-16 (with 307.1-6 [SVF II 498]), *In Cat.* 306.18-27 (SVF II 499). Further, our evidence of how the Stoics defined motion suggests that it belongs to bodies without itself being a body (Stobaeus, *ecl.* I.165.15ff [SVF II 492]; cf. Simplicius, *In Cat.* 436.3-12 [SVF II 500]). Motions also appear to be effects of causes, which are predicates/attributes (e.g. Alexander, *De Fat.* 191.30-192.28 [LS 55N, SVF II 945]; Plutarch, *St. rep.* 1050C-D, 1045C). For a good discussion of Stoic motions and their status as predicates/attributes, see Bobzien 1998, 19-27.

²¹ That ἀήρ is being used to refer to pneuma here can be seen from *St. rep.* 1054A-B (cf. also Stobaeus, *ecl.* I.153.24-154.2 [contained in SVF II 471]; Long and Sedley 1987 vol. i, 288-9).

[bodies] that are sustained by a state being so qualified, which [air] they call hardness in iron, and density in rock, and whiteness in silver (my translation).²²

States, on the Stoic view, are corporeal *F*-nesses, as it were, such as density and hardness, which cause the bodies they are in to be qualified (ποιά), that is, as *F*s;²³ and in doing so they are specifically said to sustain (συνέχειν) these bodies.²⁴ This is significant for understanding the claim that bodies are unified by their states. When a state is said to be the cause of unity for a body, what this means is that the state causes the body in question to be a *single qualified subject* (in its own right, καθ' αὐτό) of the relevant kind.²⁵ An animal, for instance, is a single qualified subject (namely a single animal) because of its soul (the state in question), and likewise *mutatis mutandis* for each body unified by a pneumatic state.²⁶ And insofar as it is qualified and unified in this way, each body is sustained (συνέχεσθαι) by its state. Hence, if we ask how pneuma can be a cause of unity according to the Stoics, we are asking about pneuma's ability to function as a certain kind of quality, and we are asking how it can cause a body to be a single qualified subject (in its own right).²⁷

²² ἐν τοῖς περι' Ἐξων οὐδὲν ἄλλο τὰς ἕξεις πλήν ἀέρας εἶναι φησιν· ὑπὸ τούτων γὰρ συνέχεται τὰ σώματα· καὶ τοῦ ποιὸν ἕκαστον εἶναι τῶν ἕξει συνεχομένων αἴτιος ὁ συνεχῶν ἀήρ ἐστιν, ὃν σκληρότητα μὲν ἐν σιδήρῳ πυκνότητα δ' ἐν λίθῳ λευκότητα δ' ἐν ἀργύρῳ καλοῦσι.

²³ Cf. Simplicius, *In Cat.* 212.19-28, 214.26-37, 276,30-3 (T3 below), 238.9-32; Stobaeus, *ecl.* I.138.14-139.4 (LS 55A). See also Rieth 1933, 23-4, 42; Menn 1999, 217-221.

²⁴ Along with *St. rep.* 1053F-1054A (T1), see S.E. *M IX* 78-9, 81-2; cf. Simplicius, *In Cat.* 217.36-218.4 (T7), 237.25-238.32; Alexander, *De Mix.* 15.8-9, 19.12-23, 21.2-5 (T6c); Nemesius, *Nat. hom.* 2.18.2-10 (T5). The relation of a state to a body is also sometimes referred to in terms of controlling and ruling (κρατεῖν, διοικεῖν; S.E. *M IX* 78-9, 81-4; Achilles, *Isagoge* 14 [SVF II 368]; Cleomedes, *Caelestia* 1.1.11-19).

²⁵ See especially Seneca, *Nat. Quest.* II.2.4; S.E., *M IX* 78-9 (cf. Plutarch, *Def. Orac.* 425F-426A); Plutarch, *St. rep.* 1054E-F. Unified bodies are not substances on the Stoic view (the term 'substance', in its strict sense, is reserved for prime matter); they are qualified subjects (ποιὰ ὑποκείμενα) (in their own right, καθ' αὐτά). See also Brunschwig (2003), Menn (1999); cf. Gourinat (2009).

²⁶ As Menn puts it, "soul here is treated as living-ness, just as prudence is prudent-ness" (1999, 220).

²⁷ It is sometimes claimed by commentators that the individual quality (ἰδίᾳ ποιότης) is responsible for unification on the Stoic view (Nawar 2017, 132-5, 138-9; Irwin 1996, 468-9, with note 24). An individual quality, roughly, is the quality responsible for a particular body being qualified as the particular body that it is, distinct from every other body (Socrates' individual quality, for instance, causes him to be the particular human being that he is). (On the distinction between individual and generic qualities, see Simplicius, *In Cat.* 48.11-16 [LS 28E], 237.25-238.20, *In De An.* 222.30-3 [LS 28I, SVF II 395]; Stobaeus, *ecl.* I.177.21-179.17 [LS 28D]; Syrianus, *In Met.* 28.18-19 [LS 28G, SVF II 398]; Dexippus, *In Cat.* 30.20-6 [LS 28J]; Plutarch, *Comm. not.* 1077C-E; Philo, *Aet. mundi* 47-51 [LS 28P, including SVF II 397]; P. Oxy. 3008 [printed as LS 28C].) There is to my knowledge no text reporting that individual qualities cause bodies to be unified; that function is attributed to (certain) states (see

Bearing in mind the general Stoic conception of causation and its application to qualities and states (as causes of unity), we may now turn to pneumatic self-causation and address this topic with some precision.

2. Self-Causation and Tensile Motion

We know that animals, plants, and inanimate natural bodies, on the Stoic view, each have a single self-sufficient cause of unity, which is pneuma, operating as the state (ἔξις) of the body in question. Further, we are told that pneuma can be such a cause – a state – in virtue of its own peculiar character (ιδιότης καὶ χαρακτήρ: the attributes in virtue of having which the pneuma is what it is) (Simplicius, *In Cat.* 238.11-13, with 238.13-32; cf. 222.30-3).²⁸ When we grasp pneuma in this role, then, we grasp it as bringing about a certain effect in a body by virtue of its own character, or, equivalently: by virtue of itself. So, for instance, the pneuma that is the nature of a plant or the soul of an animal has a character of its own that enables it to be the soul of the animal and nature of the plant, and when we grasp it as such, we grasp it as having that character and acting in virtue of it.

note 3 above). This, it seems to me, is as one might expect, because being the particular individual one is, distinct from other individuals, is different from being a single, determinate subject (in one's own right, see note 25); and a different story is needed for understanding how a body will be responsible for the one or the other. Note, however, that this does not mean that distinct bodies are responsible for individuation and unification; qualities (including states and individual qualities) are not simply bodies; rather, they are bodies standing in certain relations, i.e. playing certain causal roles (S.E. *M IX* 207, 239; Clement, *Strom.* 8.9.29.1-2; Stobaeus, *eccl.* I.138.23-139.2; cf. Bobzien 1998, 18-20; Gourinat 2018, 95-7). And the causal role of a state is different from that of an individual quality. Thus, one may for instance say (as I think the Stoics did) that one and the same body is responsible for Socrates being unified and for his being a particular human being, namely his soul, without saying that an individual quality causes Socrates to be unified (and one might go on to specify which features of his soul are relevant for its doing the one or the other). Precisely how individual qualities operate, on the Stoic view, is a difficult and controversial question. Since we will not be concerned with the individuation of particular bodies and the sources are clear that states are causally responsible for sustaining and unification, it is not necessary for present purposes to answer it, nor do we need to specify exactly how states and individual qualities are related.

²⁸ In the context of *In Cat.* 238.9-32, it is clear that 'peculiarity and character' (ιδιότης καὶ χαρακτήρ) must be referring to the attributes/predicates by having which the pneuma in question (i.e. the one playing the role of any given state) is what it itself is. The pneuma is 'made into the kind of thing it is' (εἰδοποιεῖσθαι) by this character (238.12) in the same way as a human being is a human being in virtue of its character as a mortal, rational animal, i.e. in virtue of having these attributes (see S.E. *M XI* 8-11). (For the relevant notion of character, cf. also Simplicius, *In Cat.* 165.37-166.24 (especially, 166.13-17); 222.30-3.)

Since states are qualities (*F*-nesses), the general view may then be expressed as follows: pneuma is able to be a given state, *F*-ness, in virtue of having a certain (pneumatic) character of its own, namely the character involved in being that state (*F*-ness); so when a body is said to be unified by a certain state (e.g. an animal by soul), the relevant pneuma is able to be that state (and so to sustain and unify the body at issue) in virtue of its own character, which is the character involved in being that state (e.g. soul).²⁹

This view naturally raises a question: *how* does pneuma have such a character by which it may function as a self-sufficient cause of unity? Given that pneuma itself is a specific kind of qualified body (ποιόν) (indeed a unified body, as we will see below), with extension and resistance, which moves and changes, persists under some conditions but not under others, and generally acts and is affected in its own distinctive ways, the question is pressing; one may well worry that pneuma is unsuited to explain why bodies are unified, since it itself would seem to require a cause of unity (cf. Nawar 2017, 148-9). The Stoic answer, as we will see shortly, appears to be that pneuma is a cause to itself.

Self-sufficiency, Self-causation, and the Character of Pneuma

Our best evidence that pneuma is causally responsible for its own peculiar character stems from Hierocles and Simplicius. Consider first Hierocles *Elements of Ethics* VI 10-18:

²⁹ Being a state on the Stoic view involves having a certain character, which is the relevant pneuma's own peculiar character, and being related in a certain way, i.e. as a (certain kind of) cause to the body being acted on. And the character is what enables the pneuma to operate as the relevant kind of cause, when it does. This means that a state is what the Stoics call πρὸς τι κατὰ διαφορὰν – a relative that is related partly in virtue of its own character, like the knife which cuts (partly) in virtue of having its distinctive knife shape (see section 1 above) – as opposed to what they call πρὸς τι πῶς ἔχον, i.e. a relative that is related solely in virtue of an external relation, such as the one standing to the right (of something or someone). On this distinction, see Simplicius, *In Cat.* 165.32-166.29, noting especially 165.37-166.1, 166.28-9; cf. 212.12-213.1.

T2: And generally we should not be unaware that every ruling power begins from itself; in this way indeed, *hexis*, in holding together what is according to it, is first such as to hold itself together;³⁰ for in fact it would not hold any other object together, attaching its parts to itself,³¹ if it did not first provide this to its own parts; and nature, indeed, holding together, preserving, nourishing, and growing the plant, itself first participates in these things themselves from itself (my translation).³²

Every ruling power (ἡγεμονική δύναμις), Hierocles tells us, begins from itself (ἀφ' ἑαυτῆς ἄρχεται), that is, it begins by acting on itself: prior to playing its causal role for something else, it does so for itself.³³ Thus, in particular, mere *hexis* (see note 5), which sustains inanimate natural bodies (rocks, metals etc.) and nature (φύσις), which sustains plants, begin from themselves in this way.

Importantly, these terms, along with 'soul', are used by the Stoics both to refer to the most general kinds of pneuma and to the corresponding states, i.e. these kinds of pneuma insofar as they sustain bodies. Thus, we may talk for instance about soul *simpliciter* (a kind of pneuma) and the soul *of* an

³⁰ I am transliterating ἕξις because it is being used here specifically for the state of inanimate natural bodies, i.e. mere *hexis* (ψιλή ἕξις) – or rather, the pneuma which plays this causal role (on which more presently; see also notes 4, 5 above). Further, συνέχειν is translated not as 'sustain', but as 'hold together' to mark the fact that the term is not being used to refer to the general relation which holds between a state and the body it belongs to, but rather for a more specific relation of holding together parts, that is, it seems, the specific sustaining at issue for mere *hexis*.

³¹ For this translation of προσπαραδεγμένη, I am indebted to Ramelli and Konstan (2009, 17: "when it has attached its parts to itself"). What is being referred to is presumably the effect of the relevant state (ψιλή ἕξις), on the inanimate body, namely that its parts as well as the body itself are bound together in a certain way, that they only change in certain limited ways, and that they resist dispersal (cf. DL VII 138-9; S.E. *M* IX 81-3; Philo, *Leg. alleg.* 2.22-3, *Quod Deus sit immutabilis* 35-6).

³² τοῖς δ' ὅλοις οὐκ ἀγνοητέον, ὡς ἡγεμονική πᾶσα δύναμις ἀφ' ἑαυτῆς ἄρχεται· ταύτη καὶ ἡ μὲν ἕξις, συνέχουσα τὸ καθ' ἑαυτήν, πρότερον ἑαυτῆς ἐστὶ συνεκτική· καὶ γὰρ οὐδ' ἂν συνεῖχε ἄλλο τι πρᾶγμα, τὰ μόρια προσπαραδεγμένη, εἰ μὴ τοῖς ἑαυτῆς τοῦτο προπαρεῖχε μορίοις· ἢ τε φύσις, δὴ, συνέχουσα καὶ σώζουσα καὶ τρέφουσα καὶ αὐξουσα τὸ φυτόν, αὐτῶν τούτων πρότερον αὐτῆ μετέχει παρ' αὐτῆς. (This is the text printed in Ramelli 2009, 16, accepting the emendation to Bastianiani and Long 1992: ἢ τε φύσις, δὴ, συνέχουσα instead of ἢ τε φύσις, ἢ συνέχουσα.)

³³ Although Hierocles does not explicitly say so, the relation in question here is the one standardly referred to as *sustaining* (συνέχειν), which holds between a state (ἕξις) and the body to which it belongs (see note 24). (Hierocles uses συνέχειν in T2 *not* for this relation, but for a more specific relation, notably holding between mere *hexis* and inanimate natural bodies.) Our sources indicate that for the Stoics, ἕξεις are δυνάμεις (Plutarch, *St. rep.* 1053F-1054B; Alexander, *De Mix.* 23.22-24; Seneca, *ep.* 113.7; Simplicius, *In Cat.* 224.22-8 (cf. 237.25-238.32)). A 'ruling power' (ἡγεμονική δύναμις) is nothing other than a certain ἕξις. The precise relationship between these designations, on the Stoic view, is not important for present purposes. I intend to discuss it in greater detail elsewhere.

animal (a state), and nature *simpliciter* (a kind of pneuma) as well as the nature of a plant (a state). Hierocles makes it clear (by repeated use of *πρότερον*) that he is concerned with the character of the kinds of pneuma themselves; and specifically, he is concerned with what it is that makes nature and mere *hexis* able to sustain plants and inanimate natural bodies.³⁴

Hierocles' view involves two claims: first, mere *hexis* and nature *cause themselves* to have the characters involved in being the states of inanimate natural bodies and plants respectively; secondly, this is the very same character as they cause these bodies to have. So, mere *hexis* holds itself together (attaching its own parts to itself) prior to holding together inanimate natural bodies; and nature additionally grows and nourishes itself prior to growing and nourishing the plant. In the lines following T2, Hierocles extends this account to soul.³⁵ Thus, for all the most general kinds of pneuma, it appears that the character of pneuma is the same as the character it brings about when it sustains another body as its state, and, importantly, pneuma is a prior cause for itself of having this character. Schematically, we may say that in these cases pneuma is able to be the state *F*-ness by itself being *F*, and it is *F* because it is a cause for itself of so being (prior to being *F*-ness for anything else).

This account is closely related to a more general Stoic view preserved by Simplicius in *In Cat.*

276.30-3:

T3: And the Stoics too make qualities of qualities by making states havables of themselves. For they need no further qualities to provide them with differences. For the qualities themselves are different

³⁴ The reason the Stoics use the same terms for the state and for the kind of pneuma is evidently that each kind is precisely the pneuma with the character involved in being the corresponding state. It is generally clear in our sources whether the focus is on the pneumatic character (kind of pneuma), as here in T2, or the corresponding state, as in Plutarch, *St. rep.* 1053F-1054A (T1 above).

³⁵ Hierocles focuses specifically on perception and on soul as a perceptive power. However, it is clear that the kind of account he offers applies to soul as such (see *Elements of Ethics* I 32-5, IV 24-27; cf. Ramelli 2009, 53-4).

from one another by virtue of themselves. But the Academics seeking differences of differences go off to infinity (my translation).³⁶

According to Simplicius, the Stoics think there are qualities of qualities, because they make ‘states havables of themselves’ (ἐαυτῶν ποιοῦντες ἐκτὰς ἑξείς). Presumably, this means that the pneuma that is a given state also has itself as a state, and so sustains itself, causing itself to have its own peculiar character, i.e. the character involved in being the state that it is.³⁷ If this is right, Simplicius is apparently reporting the claim that for any state, *F*-ness, the relevant pneuma is able to be *F*-ness because it is a cause to itself of the (pneumatic) character involved in being *F*-ness. This seems to be a generalization of Hierocles’ attribution of self-causation to mere *hexis*, nature, and soul. But notably, T3 does not specify, as Hierocles does, that pneuma is able to be *F*-ness by itself being *F*. It is not clear from T3 whether this is part of the general Stoic position or not. In fact, there is good reason to think it is not, since we are elsewhere told of cases recognized by the Stoics, where the

³⁶ καὶ οἱ Στωικοὶ δὲ ποιότητος ποιοτήτων ποιούσιν ἐαυτῶν ποιοῦντες ἐκτὰς ἑξείς. οὐ δέονται γὰρ οὐκέτι τῶν τὰς διαφορὰς παρεχουσῶν· αὐταὶ γὰρ ἐαυταῖς αἱ ποιότητες ἀλλήλων διαφέρουσιν. οἱ δὲ ἀπὸ τῆς Ἀκαδημίας διαφορῶν διαφορὰς ζητοῦντες ἐπ’ ἄπειρον ἐξέπεσον. (This is the manuscript text. Kalbfleisch emends the text from ἐαυτῶν ἐκτὰς (‘havables of themselves’) to ἐαυτῶν ἐκτικὰς (‘holding/having of themselves’). Given the Stoic account of what it is to have a state (the havable in question) (see section 1 above), the view expressed will turn out to be the same on either reading.)

³⁷ ‘Havable’ (ἐκτόν) is a general term, likely of Academic origin, used variously for items that in some sense may be had, that is, properties and relations broadly speaking; its extension was disputed (Simplicius, *In Cat.* 209.10-29). Exactly how it was used and understood by the Stoics is difficult to determine, in part because its use seems to have evolved throughout the school’s history (see Simplicius, *In Cat.* 209.10-26). However, the central case will certainly have been that of ἑξίς (see especially Simplicius, *In Cat.* 214.26-37), which is evidently the havable at issue in our T3. It is not entirely clear whether the occurrence of the term here is of Stoic origin or due to Simplicius. However, there can be little doubt that the view being expressed is genuinely Stoic (cf. Seneca, *ep.* 113.3; Hierocles, *Elements of Ethics* VI 10-18 [T2]; SVF III 306; Plutarch, *Comm. not.* 1085D). Simplicius reports this Stoic view in the context of discussing how qualities and differentiae are to be distinguished (differentiated) (*In Cat.* 275.27ff), appending T3 to his own reply that differentiae/differences differentiate themselves. The passage is also closely connected to a puzzle Simplicius raised earlier (*In Cat.* 209.3-7), whether qualities are causes for themselves or require further causes, in which case a regress is said to result; it is very tempting to suppose that Simplicius here in T3 gives us the Stoic response to that puzzle (albeit not in an overtly causal form). As we will see below, such regresses seem to have been what impelled the Stoics to posit pneumatic self-causation.

pneuma is *F*-ness, without itself being *F*.³⁸ However, for present purposes, we may set the issue aside.

Based on the evidence of Hierocles and Simplicius, then, it seems that pneuma itself will be causally responsible for the character that allows it to be a self-sufficient cause of unity (and being). Moreover, in the central case of the general kinds of pneuma (mere *hexis*, nature, and soul), pneuma is first a cause to itself of the same character it brings about. This provides the beginnings of an account of why pneuma, on the Stoic view, can be a self-sufficient cause of unity (the state of a unified body). First, it seems clear that in T2 and T3, pneuma is supposed to be a sole and self-sufficient cause to itself; there is no further cause needed for it to be what it is. Indeed, it appears that pneuma is the same kind of cause to itself as when it functions as state (ἔξις) for another body. In T2, it is said to begin from itself (ἀφ' ἑαυτῆς ἄρχεται), and in T3, it is said to have itself. These are ways of referring to the causal relation between a body and its state (see note 33). And so, it seems we can say that each pneuma is a state for itself – from which it would follow that in a sense there are qualities of qualities according to the Stoics, as Simplicius says, since states are qualities.³⁹ Secondly, then, the answer to why pneuma can be a self-sufficient cause of unity, on the Stoic view, is in general terms simply that it causes itself to have the relevant character (or, equivalently: it sustains itself). On its own, of course, this answer is of limited value, since it presupposes that pneuma is able to be a self-sufficient cause of this sort. To grasp its significance, we need to understand the Stoic account of pneumatic self-causation. However, before turning to that, let me briefly mention a consequence of the current interpretation.

³⁸ For the cases, see Plutarch, *St. rep.* 1053F-1054B (containing T1 above). They concern inanimate natural bodies, where pneuma plays the role of density for instance (in rocks), without itself being dense (on the contrary it is rare). My view of these cases is that when considered as density, for instance, pneuma is considered insofar as it is modified by blending with the matter of the body in question; the modified character of pneuma is what allows it to cause the rock to be dense, even though pneuma itself is not dense (whether modified or not).

³⁹ To be precise, the sense in which there are qualities of qualities is this: the pneuma that is the quality of another body is also a quality of itself.

Unified bodies, for the Stoics, are uniquely characterized by being sustained by a single state.⁴⁰ Accordingly, if pneuma is self-sustaining, being a state to itself as it is to other bodies, it seems that pneuma itself will be a unified body. And as we have seen, pneuma is indeed taken to be self-sustaining whether it is soul, nature, or mere *hexis* (and the same is presumably true of their subkinds).⁴¹ That pneuma is a unified body is not a point regularly emphasized in our sources, but we find it in Seneca (*Nat. Quest.* 2.1-6), and Simplicius also alludes to it (*In Cat.* 217.36-218.4). We cannot reasonably doubt that it is part of the Stoic view. Hence, our interpretation indicates that the cause of unity, for the Stoics, is a self-causing/self-sustaining unified body.

Regress, Self-causation, and Tension

The available evidence suggests that pneumatic self-causation is at least in part motivated by a desire to avoid causal regress. Consider the following passage from Sextus Empiricus (*M IX* 75-6, my translation):⁴²

T4: (a) The substance of what is, they say, being unmoving in itself and without shape, must be moved and shaped by some cause; and because of this, just as when we look at a beautiful bronze sculpture we want to learn who the craftsperson is, since on its own the matter is unmoving, so also when we see that the matter of the cosmos is moving and actually in form and order, we could reasonably inquire into the cause that is moving it and shaping it in various ways. (b) And it is

⁴⁰ S.E. *M IX* 78; Achilles, *Isagoge* 14 (SVF II 368); Simplicius, *In Cat.* 214.24-37; Alexander, *De Mix.* 15.3-10.

⁴¹ In addition to the evidence provided by Hierocles and Simplicius (T2, T3), Nemesius (*Nat. hom.* 2.18.2-10 [T5]) and Plutarch (*Comm. not.* 1085D) indicate that pneuma, as a kind of body, is generally self-sustaining.

⁴² This passage is not explicitly attributed to the Stoics. But it is widely considered to be reporting Stoic materials, correctly in my view. The parallels to other passages are many, but for our purposes we may note in particular Hierocles, *Elements of Ethics* VI 10-18 (T2), where we find the notion of a power acting on itself, Nemesius, *Nat. hom.* 2.18.2-10 (T5) for usage of 'power' (δύναμις) and 'motion' (κίνησις) in the context of a regress of causes, and Alexander, *De Mix.* 23.22-24.1, where god is said to be a power (δύναμις) in matter. For the appeal to design in what I have marked as (a), compare Cicero, *ND* II 15.

plausible that this is nothing other than a certain power coursing through it, as our soul does in us. So, this power is either self-moving or moved by some other power. And if it is moved by a different power, it will be impossible that the different power is moving except if it is moved by another power, which is absurd. Hence, there is a power that is self-moving in its own right.⁴³

The argument in this passage is concerned with the cause of matter being organized into an ordered cosmos. First, in what I have marked as (a), it is argued that matter must be moved and shaped by some (distinct) cause, since in itself (ἐξ αὐτῆς) it has no shape or motion.⁴⁴ Then, in (b), it is claimed that this is plausibly a power (δύναμις) that courses (πεφοίτηκεν) through it as the soul does in human beings.⁴⁵ For us, the part of primary interest is the subsequent argument concerning the nature of this power: either it is self-moving (αὐτοκίνητος) or it is moved by another power; but if moved by another power, then there will be a third power moving the second power (and so on), which is absurd; therefore, it is concluded, the power moving and shaping the cosmos will be self-moving in its own right (καθ' ἑαυτὴν αὐτοκίνητος).⁴⁶

The power coursing through matter is reported as being pneumatic, and specifically, as being soul.⁴⁷ So, as before, we appear to find the notion of pneuma acting on itself. In particular, the argument in (b) invokes a self-moving power to avoid a regress of moved movers (powers). The argument relies on two assumptions: first, that causes act by themselves being in motion, and

⁴³ (a) ἡ τοίνυν τῶν ὄντων οὐσία, φασίν, ἀκίνητος οὖσα ἐξ αὐτῆς καὶ ἀσχημάτιστος ὑπό τινος αἰτίας ὀφείλει κινεῖσθαι τε καὶ σχηματίζεσθαι· καὶ διὰ τοῦτο, ὡς χαλκούργημα περικαλλές θεασάμενοι ποθοῦμεν μαθεῖν τὸν τεχνίτην ἅτε καθ' αὐτὴν τῆς ὕλης ἀκινήτου καθεστώσης, οὕτω καὶ τὴν τῶν ὄλων ὕλην θεωροῦντες κινουμένην καὶ ἐν μορφῇ τε καὶ διακοσμήσει τυγχάνουσαν εὐλόγως ἂν σκεπτοίμεθα τὸ κινεῖν αὐτὴν καὶ πολυειδῶς μορφοῦν αἴτιον. (b) τοῦτο δὲ οὐκ ἄλλο τι πιθανόν ἐστὶν εἶναι ἢ δύνάμιν τινα δι' αὐτῆς πεφοιτηκυῖαν, καθάπερ ἡμῖν ψυχὴ πεφοίτηκεν. αὕτη οὖν ἢ δύναμις ἦτοι αὐτοκίνητος ἐστὶν ἢ ὑπὸ ἄλλης κινεῖται δυνάμει. καὶ εἰ μὲν ὑφ' ἑτέρας κινεῖται, τὴν ἑτέραν ἀδύνατον ἔσται κινεῖσθαι μὴ ὑπ' ἄλλης κινουμένην, ὅπερ ἄτοπον. ἔστι τις ἄρα καθ' ἑαυτὴν αὐτοκίνητος δύναμις.

⁴⁴ On this, see Plutarch, *St. rep.* 1054A-B; DL VII 134; Calcidius, *In Tim.* 292, 293 (LS 44D,E); Gourinat (2009).

⁴⁵ For this terminology, see e.g. *De Mix.* 9.3-6, 20.17-20. For the soul comparison, see e.g. Cicero, *ND* II 21-2, 37-9; DL VII 138-9; S.E. *M IX* 104; Plutarch, *St. rep.* 1053B.

⁴⁶ For the provenance of this sort of argument, see Plato, *Phaedrus* 245c-e; cf. Aristotle, *Physics* 256a13-21.

⁴⁷ DL VII 148; Alexander, *De Mix.* 6.10-13, 18.12-15, 20.17-20, 21.16-24, 22.14-16 (with 21.16-24ff); Plutarch, *St. Rep.* 1054A-B, *Comm. not.* 1085C-D.

secondly, that motion must be caused by something.⁴⁸ Thus, if there is a power in matter, shaping and moving it, it must do so by moving in some way, and there must be some cause of its so moving. What is needed here is a cause that lets us understand how the (pneumatic) power in matter is able to act on matter in the way it does. And self-causation is invoked to satisfy that need, similarly to how it is invoked by Hierocles (*Elements of Ethics* VI 10-20 [T2ff]) to explain how soul, nature, and mere *hexis* are able to be the states of animals, plants, and inanimate natural bodies. Here however, we are told that the alternative is to posit a further power, and if so a third, and so on and so forth, which is taken to be absurd. (We are not told why the regress is supposed to result unless *the first* power is self-moving, but we may guess it is because there is no reason to think subsequent powers can be self-moving if the first power coursing through matter cannot.) Furthermore, T4 introduces the claims, which will be important for us, that pneuma acts by some kind of motion, and that it must accordingly be *self-moving*, and indeed self-moving *in its own right* (καθ' αὐτό).⁴⁹ Although T4 is concerned with the specific case of the power coursing through cosmic matter, it seems that these claims ought to hold generally – as the appeal to parallelism between the power coursing through cosmic matter and the human soul indeed suggests they do.⁵⁰

We also have a report by Nemesius that connects pneumatic self-causation to a regress, and which provides crucial information about pneumatic motion. Here is *Nat. hom.* 2.18.2-10 (LS 47J):

⁴⁸ For the claim that causes act by being in motion, see note 14 above. That there is no uncaused motion is evidenced in e.g. Plutarch, *St. rep.* 1050C-D, 1045C; Alexander, *De Fato* 191.30-192.28 (LS 55N, SVF II 945); cf. Bobzien 1998, 33-58.

⁴⁹ For the claim that pneuma is self-moving, see also DL VII 148; Stobaeus, *eccl.* I.153.24-154.2; SVF II 1133.

⁵⁰ A different interpretation of T4 is possible. One might think that the passage is concerned with the power coursing through cosmic matter understood directly and only as the active principle (i.e. god), and not (at all) with the active principle understood as a pneumatic power. The reason I do not prefer this reading is that we have several texts which treat the active principle as pneuma in similar philosophical contexts, using closely parallel language, notably: Alexander, *De Mix.* 6.10-13, 18.12-15, 20.17-20, 21.16-24, 22.14-16 (with 21.16-24ff), 23.22-24.1 (with 21.16-24ff, 22.14-16ff); cf. DL VII 138-9. Given the analogy with the human soul and the resemblance to the view of pneumatic powers found in T2, it seems to me plausible that the line of thinking reported in T4 applies to the active principle (at least also) as a pneumatic power in matter, and further that the same kind of anti-regress argument may have played a part in motivating the pneumatic self-causation evidenced in T2 and T3. I thank an anonymous referee for urging me explicitly to address the alternative interpretation of T4.

T5: If the soul, then, is a body of some sort, even if it is the rarest [sort of body], what in turn is it that sustains it? For it was shown that every body needs something sustaining it, and so on to infinity, until we arrive at an incorporeal. But if they should say, as the Stoics do, that there is a certain tensile motion in the bodies, moving at once inward and outward, and the [tensile motion moving] outward is productive of magnitudes and qualities, while the [tensile motion moving] inward [is productive] of unity and substance, it is necessary to ask them, since every motion stems from some power, what is this power and in what does it have being? (my translation)⁵¹

Nemesius is here objecting to the view that the soul is a body, purporting to report from Ammonius' repertoire of arguments (*Nat. hom.* 2.17.16-18.2). He claims that every body must be sustained by something (δεῖσθαι τοῦ συνεχόντος), and that unless an incorporeal sustainer is reached – specifically, in this context, *soul* – there will be an infinite regress of bodies. We can generate the regress that he presumably has in mind by adding the assumptions (1) that sustainment is transitive, and (2) that bodily sustainers are (numerically) distinct from the bodies they sustain (if body *A* sustains body *B*, then *A* is distinct from *B*). This will entail that every body is sustained by a distinct body, and that there cannot be a circle of bodies such that *A* sustains *B*, *B* sustains *C*, *C* sustains ... *A*. Thus, either there will be an infinite regress of (distinct) bodies, or something non-bodily which sustains (i.e., for Nemesius, soul).

Now, the Stoics, Nemesius is implying, seek to explain how bodies are sustained and so avoid any such regress, through tensile motion. We are not told how the appeal to tensile motion is meant

⁵¹ εἰ τοίνυν σῶμά ἐστιν ἡ ψυχὴ οἰονδήποτε, εἰ καὶ λεπτομερέστατον, τί πάλιν ἐστὶ τὸ συνεχὸν ἐκείνην; ἐδείχθη γὰρ πᾶν σῶμα δεῖσθαι τοῦ συνεχόντος, καὶ οὕτως εἰς ἄπειρον, ἕως ἂν καταστήσωμεν εἰς ἀσώματον. εἰ δὲ λέγοιεν, καθάπερ οἱ Στωικοί, τονικὴν τινα εἶναι κίνησιν περὶ τὰ σώματα, εἰς τὸ ἔσω ἅμα καὶ εἰς τὸ ἔξω κινουμένην, καὶ τὴν μὲν εἰς τὸ ἔξω μεγεθῶν καὶ ποιότητων ἀποτελεστικὴν εἶναι, τὴν δὲ εἰς τὸ ἔσω ἐνώσεως καὶ οὐσίας, ἐρωτητέον αὐτούς, ἐπειδὴ πᾶσα κίνησις ἀπὸ τινός ἐστι δυνάμεως, τίς ἡ δύναμις αὕτη καὶ ἐν τίνι οὐσίῳται;

to halt the regress. But since we know that tensile motion belongs to pneuma and have seen that pneuma in each case is thought to sustain itself as its own state (T2 and T3 above), we may reasonably conjecture that the Stoics claim that pneuma is self-sustaining *on account of its tensile motion* – thus denying assumption (2), that bodily sustainers are distinct from the bodies they sustain. In particular, then, soul, as a kind of pneuma, will not be subject to Nemesius’ regress.

We cannot straightforwardly trust that Nemesius is preserving the original Stoic context. But it does not seem unlikely that he is: for we have other sources indicating that pneuma is thought to be self-sustaining and that it acts *generally* by means of tensile motion (on which more below); further, pneumatic self-motion appears to be invoked elsewhere to avert a regress (T4).⁵²

The threats of regress in T4 and T5 are different: the one in T4 is generated by the claims that causes act by being in motion and that motion must be caused by something; the one in T5, by contrast, relies on the claim that every body must be sustained by something. And so the threat of regress in T4 is primarily concerned with the ability of a cause to do its work, while the threat in T5 is concerned primarily with the need for bodies to be sustained. For the Stoics, however, the responses to them are going to be closely linked. The reason is that, on their view, as we have noted, the character in virtue of which pneuma acts on other bodies is also its own peculiar character. Therefore, if the pneuma in each case sustains itself (as its own state), and so causes itself to have its own peculiar character (see T2 and T3 above), it will also cause itself to be able to act on other bodies (in the relevant way). What Nemesius seems to be implying is that the characteristic tensile motion (τονική κίνησις) of pneuma is the means by which it does this, that it is what ultimately explains, for the Stoics, how bodies are sustained. Besides the structure of the passage, this is indicated by the description of tensile motion (discussed further below), which seemingly ascribes to

⁵² Nemesius’ response (or, possibly, Ammonius’ response) to the Stoic view he reports (‘what is the power from which stems tensile motion and in what does it have being?’) could well be querying the sorts of claims we have seen the Stoics make, that soul etc. are ruling powers which begin by acting on themselves (T2), that the substance of the cosmos is organized by a self-moving power (T4).

it general causal responsibility for qualification and being (and thus for being sustained, συνέχεσθαι, and being unified – see section 1 above).

This interpretation is confirmed by several other sources. We have a report from Plutarch that suggests that pneuma sustains itself ‘on account of tensility’ (δι’ εὐτονίαν) (*Comm. not.* 1085D; cf. Alexander, *De Mix.* 9.3-8). Other witnesses treat tensile motion as the feature in virtue of which pneuma sustains bodies *generally*, just as T5 does (Hierocles, *Elements of Ethics* IV 29-35; Simplicius, *In Cat.* 269.14-16 [T6b]; Alexander, *De Mix.* 19.21-3, 21.2-7). Indeed, there is no indication that pneuma sustains and unifies other than by tensile motion. And there is consequently no reason to think that it does not also sustain itself by tensile motion.

I am shortly going to examine tensile motion in detail – what it is and how it belongs to pneuma. First, however, it will be instructive briefly to indicate the general Stoic position according to which pneuma can self-sustain through tensile motion.

There is for the Stoics a close connection between a body having throughout it a certain kind of pattern of locomotion (and rest) and the body being, as they say, held in a condition (ἔχεσθαι/ἴσχεσθαι). Being held in a condition is a general designation of effects of causes that maintain a body’s having certain attributes (see section 1 above), as distinct from causes responsible for a body coming to have attributes, which it does not already have (its being in a changing condition, τὸ κινεῖσθαι). And crucially for us here, being qualified and sustained by a state is to be held in a condition.⁵³ In particular, then, whenever a body is held in some condition *F*, it is by having and being caused to have a certain pattern of locomotion (and rest).⁵⁴ (This is one reason why the Stoic theory of causation is based on direct contact and impact among bodies.)

⁵³ On the distinction between being held in a condition and being in a changing condition, see e.g. Simplicius, *In Cat.* 212.12-213.1; Stobaeus, *ecl.* I.165.19-21, 166.26-7; Plutarch, *St. rep.* 1050B-D (with 1056C, *Comm. not.* 1076E); cf. DL VII 104. The Stoic notion of a state, ἔξις, provides the clearest case of a cause of being held in a condition, on which see notably Plutarch, *St. rep.* 1053F-1054B (cf. Galen, *Syn. puls.* 9.458.8-14 [LS 55H]). For the distinction, see also Bobzien 1998, 19-26; 1999, 202; Long and Sedley 1987 vol. ii, 176, 181.

⁵⁴ Simplicius, *In Phys.* 1320.19-21 Diels (SVF II 496); Stobaeus, *ecl.* I.165.15 (SVF II 492); Galen, *Syn. puls.* ix. 458.8-14 Kühn (LS 55H, SVF II 356) (cf. LS 55F); Alexander, *De Fat.* 191.30-192.28 (LS 55N, SVF II 945);

Accordingly, the reason pneuma is a cause for itself (sustaining and qualifying itself) in virtue of its tensile motion will in general terms simply be this: on the one hand, its tensile motion *is* the pattern of motion by having which the pneuma will be what it is (that is, be qualified and sustained as what it is); on the other hand, it has its tensile motion in virtue of itself somehow, so that no other cause is needed. Pneuma sustains (and unifies) other bodies by acting on their matter (in blending) with its tensile motion;⁵⁵ it sustains itself directly simply by having its tensile motion in virtue of itself. This will be a case, then, of what was referred to in T4 above as being self-moving in one's own right (καθ' αὐτό). Indeed, it is not unlikely that pneumatic tensile motion is the motion Sextus' source has in mind here. In support of this interpretation, we have several sources reporting that the different kinds of pneuma are precisely pneuma with certain patterns of tensile motion.⁵⁶ Moreover, according to Alexander, the Stoics hold that pneuma quite generally has tensile motion καθ' αὐτό (*De Mix.* 21.2-7).

If this is right, what is needed is an account of how tensile motion belongs to pneuma καθ' αὐτό. We will see below that the Stoic theory seems to have the resources to respond to this need.

3. Tensile Motion: the Unity and Composition of Pneuma

In the remainder of the paper, then, I will be focusing on pneumatic tensile motion. I begin by presenting the best surviving evidence of what kind of motion it is, and I show that pneuma has tensile motion because it is a composite (specifically a blend) of air and fire. Next, I bring out a

Simplicius, *In Cat.* 237.30-238.32; Hierocles, *Elements of Ethics* IV 38-53; Simplicius, *In Cat.* 269.14-16 [T6c]; Nemesius, *Nat. hom.* 2.18.2-10 [T5]. On this, see also especially Bobzien 1998, 18-58 and Menn 1999, 243-7; cf. Sambursky 1959, 27 and Long 1974, 158. For the central case of pneuma and matter, see Helle 2018, 99-108.

⁵⁵ Hierocles, *Elements of Ethics* IV 38-53; T6a-c below. For discussion, see Helle 2018, 99-108.

⁵⁶ That the kinds of pneuma are pneumata disposed in a certain way (i.e. with a certain tensile motion): Plotinus, *Enn.* 4.7.4.7-16, 16-18; cf. Seneca *ep.* 113.2-3, 7, 23, 121.10 (with Plutarch, *Comm. not.* 1084A-D). That they are characterized by motion: S.E. *MIX* 81-5; Philo, *Leg. alleg.* 2.22-3 (LS 47P, SVF II 458, part); SVF II 780, 1133; given that being hot and being cold are understood principally in terms of motion (see note 66 below), also: Aetius, *Plac.* IV.3.3 (SVF II 779); Galen, *QAM* 783.10-784.13 (SVF II 787) (cf. Plutarch, *St. rep.* 1052F-1053A); cf. DL VII 138-9. On this, see also Menn 1999, 244-6.

challenge for the Stoic theory, articulated by Simplicius: the Stoics need an account of how pneuma may correctly be understood as having tensile motion καθ' αὐτό even though it seems to have tensile motion because of the air and fire which compose it and their (individually) characteristic motions.

And finally, I suggest a way the Stoics may respond to this challenge.

The Character and Source of Pneumatic Tensile Motion

Our best evidence for the character of tensile motion is Nemesius, *Nat. hom.* 2.18.2-10, which we encountered above, Simplicius, *In Cat.* 269.14-16, and Alexander, *De Mix.* 21.2-5.

T6a: ...there is a certain tensile motion in the bodies, moving at once inward and outward, and the [tensile motion moving] outward is productive of magnitudes and qualities, while the [tensile motion moving] inward [is productive] of unity and substance ... (Nemesius, *Nat. hom.* 2.18.6-8, my translation)⁵⁷

T6b: And the Stoics posit a rarifying and compacting power, or rather motion, the [compacting motion moving] inward, the [rarifying motion moving] outward; and they think the former is a cause of being, the latter a cause of being qualified (Simplicius, *In Cat.* 269.14-16, my translation).⁵⁸

T6c: And what is the motion of pneuma in opposite directions at once, in virtue of which it sustains the things in which it is, being, as they say, pneuma moving both out from itself and in toward itself ... (Alexander, *De Mix.* 21.2-5, my translation)⁵⁹

⁵⁷ ...τονικήν τινα εἶναι κίνησιν περὶ τὰ σώματα, εἰς τὸ ἔσω ἅμα καὶ εἰς τὸ ἔξω κινουμένην, καὶ τὴν μὲν εἰς τὸ ἔξω μεγεθῶν καὶ ποιότητων ἀποτελεσματικὴν εἶναι, τὴν δὲ εἰς τὸ ἔσω ἐνώσεως καὶ οὐσίας...

⁵⁸ οἱ δὲ Στωικοὶ δύνανται ἢ μᾶλλον κίνησιν τὴν μανωτικήν καὶ πυκνωτικήν τίθενται, τὴν μὲν ἐπὶ τὰ ἔσω, τὴν δὲ ἐπὶ τὰ ἔξω· καὶ τὴν μὲν τοῦ εἶναι, τὴν δὲ τοῦ ποῖον εἶναι νομίζουσιν αἰτίαν.

⁵⁹ τίς δὲ καὶ ἡ εἰς τὸ ἐναντίον ἅμα κίνησις αὐτοῦ, καθ' ἣν συνέχει τὰ ἐν οἷς ἂν ᾗ, ὄν, ὡς φασί, πνεῦμα κινούμενον ἅμα ἐξ αὐτοῦ τε καὶ εἰς αὐτό ...

Tensile motion is two-fold: it moves at once (ἄμα) inward and outward, i.e., in toward (the center of) the moving body and out from it. It is apparently one motion characterized as moving in two contrary directions at once (how this should be understood will be addressed below). Simplicius (T6b) specifies that its inward motion is ‘compacting’ (πυκνωτική) and its outward motion ‘rarifying’ (μυνωτική). Furthermore, both Nemesius and Simplicius, but not Alexander, assign a certain causal role to each direction of motion: according to Simplicius (T6b), the outward (rarifying) motion is responsible for ‘being qualified’ (τοῦ ποιὸν εἶναι) and the inward (compacting) motion for ‘being’ (τοῦ εἶναι); according to Nemesius (T6a), the outward motion brings about ‘magnitudes and qualities’ (ποιότητες καὶ μεγέθη), the inward motion ‘unity and substance’ (ἔνωσις καὶ οὐσία). Simplicius is likely more reliable than Nemesius in this instance.⁶⁰ However, the two passages do not, I take it, ultimately express different views. Simplicius’ claim that the inward motion (i.e. tensile motion moving inward) is responsible for ‘being’ in contrast to ‘being qualified’ means that it causes a body to be a single determinate subject, a certain something, τι (in contrast to a single determinate subject *of a certain kind*), and this is a plausible interpretation of Nemesius’ claim that moving inward tensile motion causes substance and unity.⁶¹ Similarly, when Nemesius says that moving outward tensile motion causes qualities and quantities, he is not reporting a different view than Simplicius. For in qualifying a body, pneuma is its quality,⁶² and being qualified involves having certain magnitudes.

⁶⁰ Simplicius’ report cleaves closely to the Stoic analysis of causation (*A* is a cause to *B* of being *F*) and resembles Plutarch’s paraphrase of Chrysippus’ description of pneuma operating as a state in *St. rep.* 1053F-1054A (T1). (On the Stoic analysis of causation, see section 1 above; cf. also Gourinat 2018, Bobzien 1999, Frede 1987). By contrast, Nemesius seems to paraphrase the Stoic view in his own preferred terminology. For the Stoics, pneuma does not cause qualities – it *is* a quality, by causing the body to be qualified. Likewise, it does not strictly speaking cause substance (οὐσία); rather, it causes the body to exist (εἶναι), that is, to be a single determinate something (τι).

⁶¹ On this, see Menn (1999, 215-6 (w. notes 1, 2), 221-3). Compare also Plutarch, *Comm. not.* 1085C-D: ‘For they posit that earth and water sustain neither themselves nor other things, but preserve their unity by participation in a pneumatic and fiery power; air and fire, by contrast, are sustaining of themselves on account of [their] tensility, and being blended in with the other two, they provide them with *tension and stability and substantiality*’ (γῆν μὲν γὰρ τιθέασι καὶ ὕδωρ οὐθ’ αὐτὰ συνέχειν οὐθ’ ἕτερα, πνευματικῆς δὲ μετοχῆ καὶ πυρώδους δυνάμεως τὴν ἐνότητα διαφυλάττειν· ἀέρα δὲ καὶ πῦρ αὐτῶν τ’ εἶναι δι’ εὐτονίαν συνεκτικά, καὶ τοῖς δυσιν ἐκείνοις ἐγκεκραμένα τόνον παρέχειν καὶ τὸ μόνιμον καὶ οὐσιῶδες; my emphasis, my translation).

⁶² E.g. Plutarch, *St. rep.* 1053F-1054B, *Comm. not.* 1085E; Simplicius, *In Cat.* 217.36-218.4 [T7].

Since motions are not bodies and so, for the Stoics, likewise not causes (see section 1 above), these assignments of causal roles are not entirely perspicuous. So, in contrast to Simplicius and Nemesius, Alexander is being quite careful when he says that tensile motion is the motion *'in virtue of which* [pneuma] sustains the things in which it is' (καθ' ἣν συνέχει τὰ ἐν οἷς ἂν ᾗ). Strictly speaking, tensile motion is not a cause; rather, it is the motion in virtue of which pneuma is able to be a cause. Accordingly, the outward tensile motion is strictly the motion in virtue of which pneuma can be a cause of qualification and the inward motion the motion in virtue of which it can be a cause of being. However, if we bear this in mind, we may without harm speak of them loosely as causes.

In T6a-c, then, we seem to be given a schematic account of how pneuma through tensile motion is supposed to be able to sustain a body: since tensile motion moves inward and outward at once, and its inward motion is responsible for being a single (determinate) subject while its outward motion is responsible for being qualified, pneuma may through tensile motion cause a body to be at once *a single (determinate) qualified subject*, that is, sustain a body as its state (ἔξις, see section 1 above). Clearly, this does not explain exactly how tensile motion is thought to be able to do this. However, in general terms, the idea is that its inward motion provides a limit to its outward motion, so that by distribution throughout a body tensile motion may yield a stable shape and magnitude, with a stable structure and pattern of motion.⁶³ For our purposes here, the precise mechanics of this are less important than the fact that tensile motion is explained by reference to contrary directions of motion at once (or: together, ἄμα), inward and outward, to which is assigned responsibility for being and being qualified.

Now, we have several reports that the Stoics think pneuma is a composite of air and fire, and, specifically, that it is a *blend* of air and fire.⁶⁴ Furthermore, it seems clear that tensile motion, conceived as inward and outward motion at once, specifically belongs to pneuma *because* it is a

⁶³ For a helpful account along these lines, see Galen (*De Trem.* 616.4-618.4 [SVF II 446]). Galen's account here differs in an important respect from that of the Stoics (see below), but concerning the general role of the outward and inward motion, it is still instructive.

⁶⁴ Alexander, *De Mix.* 20.17-21.1, 21.24-7; Galen, *Plac.* 5.3.8 (LS 47H, SVF II 841).

composite of air and fire. Air and fire, for the Stoics, are the two active elements, contrasted with the two passive elements, earth and water. Air is characterized principally as being cold, and fire as being hot.⁶⁵ Consequently, each of them has a certain motion in virtue of its own character: fire expands and moves outwards because it is hot, while air contracts and moves inward because it is cold.⁶⁶ The reason pneuma has its characteristic tensile motion, moving inward and outward at once, then, seems to be that it is a composite of air, which contracts inward, and fire, which expands outward.

In this way, blending plays the same role for pneuma as it does for other unified bodies: pneuma is what it is (a certain kind of fire-air composite with tensile motion) because fire and air are blending with one another, in the same way as an animal for instance is what it is (a certain kind of soul-body composite with certain attributes)⁶⁷ because soul and body are blending with one another; and in both cases, a certain kind of blend is what the body in question is.⁶⁸ There are some notable differences, that pneuma does not have a distinct cause of being what it is, whereas other unified bodies do (namely their states), and that pneuma is a blend of two active bodies (fire and air), while in other unified bodies there is one active body – the pneuma – and one passive – the matter. But here the important point is that pneuma *is* a blend of fire and air, which cause it to be what it is (by blending with one another).

Simplicius' Challenge

On the interpretation I have defended, the Stoics hold the following two claims:

- (1) Pneuma is a cause to itself in virtue of its tensile motion.

⁶⁵ Alexander, *De Mix.* 9.3-8; Plutarch, *Comm. not.* 1085C-D; Nemesius, *Nat. Hom.* 5.52.18-19 (LS 47D, SVF II 418); Galen, *Nat. Fac.* 106.6-17, *Plen.* 7.525.7-14, 527.13-16 (LS 47F, SVF II 439, 440, part); DL VII 137.

⁶⁶ Galen, *De Caus. Cont.* 1.1-24 (LS 55F), *Nat. Fac.* 106.13-17 (LS 47E, SVF II 406); Plutarch, *De Frigido* 946B-C, 948D-E, 949B (LS 47T, SVF II 430 part), 952C-E; cf. Galen, *De Trem.* 616.4-618 (SVF II 446).

⁶⁷ What distinguishes the animal, we are told, is perception and impulse (e.g. Hierocles, *Elements of Ethics* I 32-5, IV 24-27; Philo, *Leg. alleg.* 1.30 [LS 53P, SVF II 844]).

⁶⁸ Alexander, *De Mix.* 8.23-29, 19.15-20, 20.17-21.1; DL VII 138-9; Hierocles, *Elements of Ethics* IV 4-10, 39-40; Plutarch, *St. rep.* 1053F-1054B; S.E. *M VII* 234 (LS 53F).

(2) Pneuma has tensile motion because it is a composite of air and fire.

These claims are central for the Stoic account of how pneuma is able (self-sufficiently) to sustain and unify itself and other bodies. They also give rise to an important objection. Understanding this objection and what I claim is the Stoic response to it will provide a more complete picture of how pneuma is thought to be a cause of unity (to itself and other bodies). Simplicius articulates the problem in *In Cat.* 217.36-218.4:

T7: But how is the substance of bodily qualities going to be pneumatic when pneuma itself is composite and being composed of multiple things it is divided and has its unity acquired, so that it is unified not in virtue of its being nor primarily from itself? So how could this cause other things to be sustained? (my translation)⁶⁹

Simplicius is asking how pneuma will be able to play the role assigned to it, i.e. to unify and sustain bodies, given that it itself is a composite whose own unity is 'acquired' (ἐπίκτητον). The problem is that pneuma threatens to be unified, not 'primarily from itself' (πρώτως ἀφ' ἑαυτοῦ), but rather because of the air and fire of which it is composed, and this, Simplicius contends, calls into question pneuma's ability to sustain and unify other bodies.⁷⁰ Since pneuma, as we have seen, sustains (and unifies) both itself and other bodies through its tensile motion, we may understand this more precisely as the problem that (2) appears to conflict with (1) in the following way: if pneuma, as (2) says, has tensile motion because it is a composite of air and fire, it is not clear how it can be true strictly speaking that pneuma itself is a cause to itself in virtue of tensile motion, as (1) asserts; it

⁶⁹ πῶς δὲ καὶ πνευματικὴ ἡ οὐσία ἔσται τῶν σωματικῶν ποιότητων αὐτοῦ τοῦ πνεύματος συνθέτου ὄντος καὶ ἐκ πλειόνων συνεστηκότος μεριστοῦ τε ὑπάρχοντος καὶ ἐπίκτητον ἔχοντος τὴν ἔνωσιν, ὥστε οὐ κατ' οὐσίαν ἔχει τὸ συνηνῶσθαι οὐδὲ πρώτως ἀφ' ἑαυτοῦ; πῶς οὖν ἂν τοῖς ἄλλοις τοῦτο παρέχοι τὸ συνέχεσθαι;

⁷⁰ A related objection concerning pneuma's causal role and the elements of which it is composed is raised by Alexander in *De Mix.* 20.16-21.1.

might rather seem that strictly speaking it is air and fire that sustain pneuma, by causing it to have tensile motion. Due to the double role of tensile motion, this will in turn threaten pneuma's ability to sustain (and unify) other bodies, as Simplicius says.

Thus interpreted, the objection recalls the problem we encountered in T4 above. There, it was noted that to avoid a regress of moved movers (powers), we need a power that is 'self-moving in its own right' (καθ' ἑαυτὴν αὐτοκίνητος), i.e. a power that moves itself strictly in virtue of itself, not anything else. It would seem now that pneuma will not be such a power, because its tensile motion ultimately stems from air and fire and their individually characteristic motions inward and outward. One might think that pneuma has tensile motion by virtue of relating to two further bodies, each understood as independent of it. Hence, pneuma will not furnish a stable stopping point for the regress; it appears we can push further, to air and fire.⁷¹

What the Stoic theory needs is a way to explain how pneuma has tensile motion in its own right (καθ' αὐτό), and thus strictly speaking *self*-sustains in virtue of tensile motion, even though it has tensile motion because of the air and fire composing it – that is, how both (1) and (2) can be accepted.⁷²

Blending and Pneumatic Tension

⁷¹ To be καθ' αὐτό (or have a predicate/attribute καθ' αὐτό), on the Stoic view, a body must be what it is (have the relevant predicate/attribute) independently, that is, not (even in part) by relating to something else; otherwise, it will be πρὸς τι (Simplicius, *In Cat.* 165.33-166.20). The characterization of πρὸς τι reported for the Stoic Cornutus is instructive: 'Cornutus says that relative are those things whose condition is relative to another, however not the syntactic condition, as in the case of things 'having' and 'being had', but the condition with respect to being, when something has its inclination toward another by being the very thing that it is' (Κορνοῦτος πρὸς τι εἶναί φησιν οἷς συμπροσπίπτει πρὸς ἕτερον ἢ σχέσις, οὐ μέντοι ἡ συντακτική, ὡς ἐπὶ τῶν ἐχόντων καὶ ἐχομένων, ἀλλ' ἢ πρὸς ὑπόστασιν, ὅταν αὐτῷ τῷ ᾧ εἶναι τὴν πρὸς ἕτερον ἀπόνευσις ἔχη; Simplicius, *In Cat.* 187.31-3, my translation; cf. Boys-Stones 2018, 173.)

⁷² There is a parallel problem for ordinary unified bodies composed of pneuma and matter, which are supposed to be καθ' αὐτά, even though they are caused to be what they are by pneuma (*qua* state) as it blends with matter. The interpretation I offer below may without too much difficulty be extended to this case.

As mentioned, pneuma is not simply said to be a composite of air and fire, it is said specifically to be a blend of air and fire. This, we will see, is significant. For the theory of blending provides a way to understand tensile motion as belonging to pneuma in its own right (καθ' αὐτό), even though pneuma has it because of air and fire.

On the account I propose, tensile motion belongs to pneuma καθ' αὐτό because (a) it is a single motion not possessed by either air or fire independently but which is understood by reference to their interaction in blending; and (b) air and fire must be understood specifically as blended with one another, not as independent bodies, in order for them to explain that pneuma has tensile motion. And so, pneuma will turn out to have tensile motion precisely insofar as it is a *blend* of air and fire. Since pneuma *is* a blend of air and fire, this means that it does not have tensile motion in virtue of relating to anything else, but rather in virtue of itself. What underlies (a) and (b) is the fact that blending involves a certain sort of continuous, whole through whole interaction, in accordance with which the ingredients are modified. It is because of this that air and fire cannot be conceived as independent bodies, if we are to understand how tensile motion obtains: tensile motion is the result of a specifically blended kind of interaction between air and fire, through which they in turn must be conceived.

To begin, we may compare the Stoic conception of tensile motion with an importantly different conception found in our sources. For the Stoics it is clear that tensile motion is *a single motion*. Our passages T6a-c are all careful in this regard, even as they explain tension through inward and outward motion: there is one motion, moving in two directions at once.⁷³ This is especially evident in the lines following T6c, where Alexander continues: 'and according to what form of motion does [the tensile motion of pneuma] occur? For it is not possible according to any [form of motion]

⁷³ T6a: τονικὴν τινα ... κίνησιν εἰς τὸ ἔσω ἅμα καὶ εἰς τὸ ἔξω κινουμένην.

T6b: κίνησιν τὴν μανωτικὴν καὶ πυκνωτικὴν.

T6c: ἢ εἰς τὸ ἐναντίον ἅμα κίνησις.

to conceive something moving at once in contrary ways in its own right' (my translation).⁷⁴ Alexander is presupposing here that pneuma – paradoxically to his mind – is thought to be moving at once outward and inward, according to a single motion, and in its own right (καθ' αὐτό).

An alternative conception is reported by Galen (*De Trem.* 616.4-618.4 [SVF II 446]). On this view, the inward and outward motions of air and fire alternate, with tension consisting in their rapid succession over time. Here, air and fire are operating independently, each contributing its own motion at a different time. And tension, we may say, is understood as a diachronic conjunction of both motions. Thus, Alexander's perplexity at Stoic tensile motion is not appropriate here; there is nothing strange about motion in opposite directions at different times. However, the claim that tensile motion does not belong καθ' αὐτό is clearly appropriate for the view reported by Galen: if the Stoics conceived tension in this way, as a diachronic conjunction, to which air and fire each contribute their own motion independently, it would be true that pneuma does not unify and sustain in virtue of itself.

We might expect then that the Stoics have some way of explaining how tensile motion is a single motion, belonging to pneuma in its own right, and not the sort of conjunctive motion described by the Galenic model. The theory of blending, I contend, may be seen to provide such an explanation.

On the interpretation of the Stoic theory of blending that I have defended elsewhere (Helle 2018), blending requires (i) that the ingredients be preserved (σώζεσθαι),⁷⁵ and (ii) that they coextend whole through whole (ἀντιπαρεκτείνεσθαι δι' ὅλων ὅλα), which in turn involves (iia) that the ingredients be juxtaposed whole through whole (παράθεσις δι' ὅλων), and (iib) that no part of

⁷⁴ *De Mix.* 21.5-7: καὶ κατὰ τί εἶδος κινήσεως γίνεται; Κατ' οὐδέν γὰρ οἷόν τ' ἐστὶ νοῆσαι τι ἄμα εἰς τὰ ἐναντία κινούμενον καθ' αὐτό.

⁷⁵ The particular bodies that go into a blend are preserved in the blending and are capable of separating from one another. For each body to be preserved in the relevant way, it must retain its characteristic qualities and its own matter (Alexander, *De Mix.* 6.25-7.8; Helle 2018, 89-98). Thus, in a Stoic blending, the ingredient bodies straightforwardly persist, each with its own matter and characteristic qualities.

any ingredient fails to participate (μετέχειν) in all the ingredients.⁷⁶ Two bodies *A* and *B* are juxtaposed whole through whole just in case each part of *A* is juxtaposed with parts of *B* and vice versa, so that no part of either fails to be in contact with parts of the other (and *A* and *B* therefore are in contact whole through whole); *mutatis mutandis*, if there are more than two bodies.⁷⁷

The participation condition, then, requires that each part of each blended body participate in all *the kinds* of body involved in the blend. So in a blend of water and wine, for instance, each part of the wine is *watery* as well as wine-like, and each part of the water is wine-like and watery.⁷⁸ And this is further understood in terms of joint determination of motion through mutual interaction, as described for the case of soul and body by Hierocles in *Elements of Ethics* IV 38-53. Here is the key part of the passage for present purposes:

T8: For as it stretches outward with release, the soul strikes all the parts of the body, since it too has been blended with them all, and as it strikes, it is reciprocally struck; for the body too is resistant to blows, just as the soul is. And the affection/condition is realized as joint pressure and counterpressure (IV 44-9, my translation).⁷⁹

When soul and body are blended, soul strikes each part of body with its tensile motion, because they are juxtaposed whole through whole; the parts of body then reciprocally strike the parts of soul in

⁷⁶ A part in this context is understood to be non-identical with the whole; it is a ‘proper part’ so-called (cf. Barnes 2011, 439).

⁷⁷ Thus, if *A*, *B*, *C* are juxtaposed whole through whole: each part of *A* is juxtaposed (and in contact) with parts of *B* and with parts of *C*, and so also the parts of *B* with respect to parts of *A* and *C*, and the parts of *C* with respect to the parts of *A* and *B*.

⁷⁸ According to the Stoics, bodies are continuous and there are no smallest parts (Stobaeus, *eccl.* I.142.2-6 [LS 50A, SVF II 482, part]; DL VII 150-1; Plutarch, *Comm. not.* 1078E-1080E). Thus, blending is thorough and goes all the way down; there is no part of either ingredient, however small, which is unblended.

⁷⁹ τεινομ(έν)η γ(άρ) ἔξω ἢ ψυχῇ [μ](ετ’ ἀ)φέσ[ε]ως [πρ(ο)σ]β(άλ)]λεῖ πᾶσι τ(οῦ) σώματος τ(οῖς) μέρεσιν, ἐπειδὴ κ(αὶ) κέκρατ(αι) πᾶσι, πρ(ο)σβάλλουσα δ(ὲ) ἀν[τι]πρ(ο)σ[β(άλ)]λετ(αι)· ἀντιβατικὸν γ(άρ) κ(αὶ) τὸ σῶμα καθάπ(ερ) κ(αὶ) ἡ ψυχὴ· κ(αὶ) τὸ πάθος συνερειστικ[ὸ]ν ὁμοῦ κ(αὶ) ἀντερ[ε]ιστικὸν ἀ(πο)τελεῖτ(αι) (Bastianini and Long 1992).

turn on account of their resistance, and the parts of soul return the favor (it too being a body and so resistant), and so on and so forth. In this way, then, soul and body continuously interact whole through whole, and the parts of both participate in both soul and body, because their patterns of motion are determined by both soul and body. Accordingly, when they are blended, body is through and through *ensouled* and soul through and through *embodied* (as it were), each being modified in accordance with the other. And as a result, the blend (the animal) is wholly determined by both soul and body.

What is central here is the Hieroclean model of whole through whole interaction and interchange of motion, which gives us a way to understand pneumatic tension. Generally, on this model, the blended bodies will be reciprocally affecting one another (whole through whole) by strike and contact, each according to the kind of body it is and its corresponding motion. In the case of *pneuma*, the bodies in question are fire and air, and the motions are respectively expansion outward (fire) and contraction inward (air). So, when air and fire blend, they are juxtaposed whole through whole, and air is through and through affected (struck) by the expansive motion of fire, and fire is likewise through and through affected (struck) by the contractive motion of air. Further, each reciprocates with its own motion when struck: when air strikes fire contractively, fire strikes back expansively, and vice versa. But importantly, the motion in question will be *modified* in accordance with the motion of the other. That is, when fire is struck by air and strikes back, the motion with which it strikes back will be modified by the contractive motion of air by which it was struck. And so, it is not simply its own expansive motion with which fire strikes back, but its own motion *modified by the motion of air*, and similarly (*mutatis mutandis*) for air. This mutual modification of motion is ongoing when the two are blended. Hence, in the blend, the motion of either body is not modified by the motion of the other *simpliciter*; rather, it is modified by the motion of the other *in accordance with* this ongoing pattern of mutual interaction.

Thus, when fire and air are blended, the motion of each is determined jointly by both bodies in a particular complex way. And crucially, the way in question is understood specifically by reference to the interaction of fire and air *in blending*: since the two bodies are blended whole through whole and their mutual interchange of motion is ongoing, their precise patterns of motions are not independently specifiable; rather, we may say that the motion of each is modified insofar as they are blending with one another.

In this way, then, fire will not simply be expanding and moving outward when blended with air, nor will air without qualification be contracting; for each of them is being continuously affected (struck) by the motion of the other, air by the expansive motion of fire, and fire by the contractive motion of air. And given that bodies are preserved when they blend (per (i) above), it is not that their individually distinctive motions are destroyed and replaced by a combined inward and outward motion. Instead, we must think of the motion of fire as outward expansion, but expansion limited by contraction; likewise, the contraction of air is modified by expansion. And in that sense, both will at once be moving both inward and outward when blended.

On this way of thinking, it follows that inward and outward motion at once pervades pneuma through and through. Since pneuma is a blend entirely composed of air and fire, every part of it, whether just fire, just air, or a composite of both, will move in this way. A part that is just fire or air will do so by its motion being determined through ongoing interaction with the other; a part that is a composite of both fire and air will do so because their motions are determined by joint interaction. Parts may differ from one another with respect to the precise character of their tensile motion. One such difference is whether the motion is specifically contractive or expansive, such as for air and fire, or some kind of combination, such as for parts composed of both. There are other differences too (e.g. concerning patterns of distribution and relative strength). However, for us, the key point is that it is all tensile motion.

Now, first, pneumatic tension on this model is very different from the tension of the Galenic model that we saw above. Since it is understood in terms of the ongoing interaction and mutual modification of air and fire in blending, it is not merely a conjunction of inward and outward motion. On the contrary, it is a single motion determined by both. To conceive the motion of pneuma strictly as tensile motion, it must be conceived specifically through the complex pattern of mutual interaction involved in air and fire blending. Here, the inward and outward motions are not taken independently, rather each is understood by reference to the other. This is the consequence of the fact that the motions with which air and fire strike one another are determined according to their pattern of joint interaction in blending. Thus, when we say that tensile motion is inward and outward motion at once, we are not saying that it *decomposes* (without remainder) into inward and outward motion. Rather, insofar as we conceive tensile motion precisely, as the motion characteristic of pneuma, we conceive it as a single motion, jointly determined by both inward and outward motion, in the blending of air and fire.

Secondly, air and fire are likewise not conceived as independent bodies when conceived as bringing about tensile motion. For them to explain how tension belongs to pneuma, they must be understood specifically as modified by one another in a blended way. Thus, insofar as fire and air bring about tensile motion in pneuma, each is understood *as blended with the other*, similarly to how their motions are understood.

This, I claim, is just what the Stoics need if they are to say that pneuma has tensile motion in virtue of itself (καθ' αὐτό). For when we conceive pneuma as having tensile motion because it is a blend of air and fire, we are grasping it as moving in its own peculiar way, and as being its own peculiar kind of body. Tensile motion is to be understood specifically by reference to motion involved in air and fire blending; likewise air and fire are to be understood insofar as they blend with one another. Here we are not conceiving of independent motions and bodies. Instead, since pneuma *is* a

blend of air and fire, the motion through which tension is understood is motion involved in *being pneuma*; likewise, air and fire are understood as interacting and being modified in a *pneumatic way*.

If this interpretation is correct, it shows how the Stoics might respond to Simplicius' objection in T7 above. It is true that pneuma has tension because of the air and fire which compose it. But to understand precisely how air and fire cause pneuma to have tension, we do not grasp them independently of pneuma. So, since pneuma sustains itself and other bodies on account of its tensile motion, if indeed it has tensile motion καθ' αὐτό, it will also be sustaining itself and other bodies καθ' αὐτό.

From our surviving sources, it is difficult to determine with certainty that this is how the Stoics thought tension belongs to pneuma καθ' αὐτό. We have no text that explicitly says they did. However, there is nevertheless good reason to accept the proposed interpretation. It seems clear that tensile motion is thought to be a single motion belonging to pneuma in its own right, not to air or fire independently (Alexander, *De Mix.* 21.2-7 [T6cff]; Simplicius, *In Cat.* 269.14-16 [T6b]; Nemesius, *Nat. Hom.* 2.18.6-8 [T6a]). And even if we are not told how, it seems equally clear that it is the blending of fire and air that is meant to explain this. It is reasonable, then, to suppose that the Stoics in fact made use of the resources that the theory of blending on the present interpretation provides for this purpose. Some indirect evidence that they may have done so comes from Alexander, who reports that Chrysippus holds that in blending bodies cooperate so as to be able to act in ways they cannot on their own (καθ' ἑαυτά) (*De Mix.* 7.24-8.22). Alexander gives no specific indication that pneumatic tensile motion was explained in this way or what such an explanation would look like. Still, his report shows that the proposed explanation of tension is a special case of what happens in blending according to Chrysippus, i.e., that bodies act in ways they otherwise cannot.

Let me make two important clarifications. First, I have claimed that to understand how tension belongs to pneuma we must grasp air and fire as modified in a specifically

blended/pneumatic way. Now, when we conceive them in this way, we are not conceiving them as each is on its own. But since blended bodies, for the Stoics, are preserved (σώζεσθαι) (note 75), air and fire do not cease to be what they are in themselves, independently of each other. Hence, the claim is not that air and fire *are* not independent bodies when they blend; rather, the thought is that they behave differently in the context of blending, and it is precisely insofar as they behave in this way that they cause pneuma to have tensile motion.

An analogous point may be made about the inward and outward motions of air and fire. It is true that pneuma has both inward and outward motion, each understood straightforwardly as it belongs to air and fire respectively. (This follows from the fact that pneuma is a blend of fire and air, which are preserved, each as it characteristically is, i.e., as being hot and cold and with the outward and inward motions in terms of which so being is understood on the Stoic view.) Indeed, this is an important fact about pneuma, since we are told that tensile motion moving inward is responsible for being a single determinate subject and tensile motion moving outward for being qualified (T6a-b). But this fact does not precisely capture the characteristic way pneuma moves such that it is able self-sufficiently to sustain itself and other bodies, causing each to be at once a single (determinate) qualified subject. Pneuma does that by moving at once inward and outward in a way determined jointly by air and fire in blending, i.e. in pneumatic and tensile way. And insofar as it moves in this way, pneuma is a single cause moving with a single motion, responsible for a single effect – being a single (determinate) qualified subject.⁸⁰

⁸⁰ Because tensile motion moving outward is said to be responsible for being qualified and tensile motion moving inward for being a single determinate subject, and pneuma has inward motion because of the air in it and outward motion because of the fire in it, we could also say that pneuma can be a cause of being qualified because of the fire and a cause of being a single subject because of the air. However, importantly, on the present interpretation pneuma does neither the one or the other simply through the motions of air and fire taken independently; rather, it does both at once because of the way in which the motions of air and fire are mutually modified in blending. So, to understand precisely how pneuma functions as a cause of being a single (determinate) qualified subject, it is necessary to grasp it as moving in its own peculiar way, i.e. as moving with tensile motion.

Thus, the view is this: air and fire are preserved when they blend and retain their own motions, but it is insofar as they and their motions are modified in a peculiarly blended way that they cause pneuma to have tensile motion; and conversely, pneuma is a body in its own right, with its own motion, because it is composed of air and fire insofar as they are so blended and modified.

Secondly, it is important to distinguish the question of why pneuma *comes to have* tensile motion (or, equivalently: why tensile motion comes to be) from the question of why it *is* in tensile motion (or: why tensile motion is/obtains). The answers to both turn on interactions between air and fire. But air and fire are conceived differently in each case. The account of why tension comes to be will specify the process in which air and fire come together so that tension obtains at the end of it, that is, the process by which they come to be *in a blended state* (κεκρᾶσθαι, viz. *De Mix.* 7.5-8, 18-22, 20.17-21.1, 21.24-22.7; Hierocles, *Elements of Ethics* IV 3-10). Here, the two bodies are conceived (for the most part) as they are in themselves (each moving simply in its own way, inward and outward respectively). By contrast, the account of why tension is/obtains will focus specifically on the end of this process, i.e., on air and fire being in a blended state. It is to this second question that the current interpretation is addressed. So, it is for understanding how air and fire cause tension to be/obtain that it is necessary to conceive them specifically as modified in a pneumatic way. For understanding how tension comes to be, it is not necessary; on the contrary, it is important to grasp air and fire as they are in themselves, so as to be able to specify how they become blended.

This corresponds to the fact that the Stoics, as we have seen, think that pneuma sustains itself through tensile motion, causing itself (self-sufficiently) to be, while there is no indication that they think pneuma causes itself *to come to be*. In fact, it is clear that pneuma is thought to come to be through a process involving two independent bodies – fire and air coming to be blended (see especially Alexander, *De Mix.* 20.17-21.1). In being blended, therefore, air and fire are not conceived independently of pneuma, but in coming to be blended, they are so conceived.

4. Concluding Remarks

In this paper, I have been developing an interpretation of the Stoic position that pneuma is a self-sustaining, self-unifying cause of unity. Pneuma, I argued, can be a self-sufficient cause of unity for animals, plants, and inanimate natural bodies, according to the Stoics, because it is self-sustaining. And we have seen that the Stoics are driven to this view by the threat of certain causal regresses. It is clear, then, that the Stoic story about corporeal unity crucially depends on pneumatic self-causation. Moreover, there is good reason to think that the notorious tensile motion of pneuma is meant to explain both how pneuma can sustain itself and how it can be a self-sufficient cause of unity and being for other bodies. And as Simplicius recognizes, since pneuma is caused to have tensile motion by the fire and air of which it is composed, the Stoics need an account of how pneuma through tensile motion nevertheless can act as a cause in virtue of itself. On my interpretation, the Stoic theory of blending provides resources to answer this challenge. In particular, I argued that the theory of blending gives the Stoics a way to say that pneuma has tensile motion *in its own right* (καθ' αὐτό), although it has tensile motion because of the air and fire of which it is composed.

This interpretation also shows how the kinds of causal regress found in our T4 and T5 may be halted. In T4 it is said that the power coursing through cosmic matter must be self-moving in its own right, since otherwise there would be a regress of moved powers. Again, what is needed here is a motion that explains how the power in question may play its causal role, but which is not caused by yet another power. If pneuma sustains itself and other bodies in virtue of its tensile motion, and tensile motion, as I have argued, belongs to pneuma in its own right, then pneuma is well suited to be a self-moving power in its own right. For the tensile motion of pneuma will then explain its ability to play the relevant causal role, and there will be no need for a further cause of tensile motion, because it belongs to pneuma in its own right. Now, the threat of regress presented by Nemesius in T5 concerns the need for bodies to be sustained by something. I claimed that the Stoic strategy for avoiding this kind of regress is to deny that the sustaining body in each case must be distinct from

the body being sustained, on the grounds that pneuma is self-sustaining. The current interpretation straightforwardly explains the Stoic response: because pneuma sustains itself and other bodies in virtue of tensile motion, which belongs to it καθ' αὐτό, there is no need for a further sustainer.

Furthermore, we have at least the beginnings of an account of what tensile motion is and what it is for pneuma to be in tensile motion. On the current interpretation, tensile motion is a single motion in two directions at once, inward and outward, precisely such as occurs in the pneumatic blending of fire and air. And what it is for pneuma to be in tensile motion is for each of its parts – whether it be air, fire, or composed of both – to move at once outward and inward because of the interaction of fire and air in blending; through this interaction, the expansive motion of fire (and its parts) is modified and limited by the contractive motion of air, and the contractive motion of air (and its parts) is modified by the expansive motion of fire – in a pneumatically blended way. No part of pneuma, therefore, will move simply as fire and air do independently; rather, each will move in a characteristically pneumatic way, jointly determined by fire and air in blending. Thus, we may say that pneuma and its parts are in (a state of) tension, because of the continuous interaction of the air and fire of which it is blended.

Notably, I have not here tried to explain exactly how pneuma by means of tensile motion is thought to play its role as cause of unity; for that we would need a careful articulation of the connection posited by the Stoics between being qualified and having a certain pattern of locomotion, and indeed a more detailed understanding of the Stoic concept of motion (κίνησις). Nevertheless, if the account I have defended is correct, it is clear that the Stoics have a distinctive and sophisticated account of corporeal unity, rooted in their theories of blending and tensile motion, which surpasses what scholars and critics commonly ascribe to them.

Bibliography

von Arnim, H. 1903-1905. *Stoicorum Veterum Fragmenta*. Teubner: Leipzig

- Bailey, D.T.J. 2014. "The Structure of Stoic Metaphysics". *Oxford Studies in Ancient Philosophy* 46, 253-309.
- Barnes, J. 2011. "Bits and Pieces". In *Method and Metaphysics: Essays in Ancient Philosophy I*. Clarendon: Oxford, 429-484.
- Bastianini, G., Long, A.A. 1992. "Hierocles: *Elementa Moralia*". *Corpus dei papiri filosofici*, pt. 1, *Commentari*, Florence, 268-451.
- Bobzien, S. 1999. "Chrysippus' Theory of Causes". In *Topics in Stoic Philosophy*. Ierodiakonou, K., (ed.) Clarendon: Oxford, 196–242.
- Bobzien, S. 1998. *Determinism and Freedom in Stoic Philosophy*. New York: OUP.
- Boys-Stones, G. 2018. *L. Annaeus Cornutus: Greek Theology, Fragments, and Testimonia*. SBL Press: Atlanta.
- Brunschwig, J. 2003. "Stoic Metaphysics." In Inwood, B. ed., *Cambridge Companion to the Stoics*, Cambridge University Press: Cambridge, 206-232.
- Caston, V. 1999. "Something and Nothing: the Stoics on Concepts and Universals". *Oxford Studies in Ancient Philosophy vol. XVII*, 145-213.
- Frede, M. 1987. "The Original Notion of Cause". In *Essays in Ancient Philosophy*, University of Minnesota Press, 125-150.
- Gourinat, Jean-Baptiste. 2018. "The Ontology and Syntax of Stoic Causes and Effects". *Rhizomata* 6.1, 87-108.
- Gourinat, Jean-Baptiste. 2009. "The Stoics on Matter and Prime Matter: 'Corporealism' and the Imprint of Plato's *Timaeus*". In Salles, R. (ed.), *God and Cosmos in Stoicism*. Oxford University Press: New York, 46–70.

- Groisard, J. 2013. *Alexandre D'Aphrodise: Sur La Mixtion et La Croissance (De Mixtione)*. Les Belles Lettres: Paris.
- Helle, R. 2018. "Hierocles and the Stoic Theory of Blending". *Phronesis* 63.1, 87-116.
- Hensley, I. Forthcoming. "The Physics of Pneuma in Early Stoicism". In Coughlin, S., Leith, D., Lewis, O. (eds.), *The Concept of Pneuma after Aristotle, Berlin Studies of the Ancient World 61*, Edition Topoi: Berlin.
- Irwin, T. 1996. "Stoic Individuals". *Philosophical Perspectives* 10, 459-480.
- Long, A.A., Sedley, D.N. 1987. *The Hellenistic Philosophers vol. 1-2*. Cambridge University Press: New York.
- Long, A.A. 1982. "Soul and Body in Stoicism". *Phronesis* 27, 34-57.
- Long, A.A. 1974. *Hellenistic Philosophy*. Charles Scribner's Sons: New York.
- Menn, S. 1999. "The Stoic Theory of Categories". *Oxford Studies in Ancient Philosophy vol. XVII*, 215-247.
- Nawar, T. 2017. "The Stoics on Identity, Identification, and Peculiar Qualities". *Proceedings of the Boston Area Colloquium in Ancient Philosophy* 32.1, 113-159.
- Ramelli, I. 2009. *Hierocles the Stoic: Elements of Ethics, Fragments, and Excerpts*. Translated by David Konstan. Brill: Leiden.
- Rieth, O. 1933. *Grundbegriffe der Stoischen Ethik*. Weidmann.
- Sambursky, S. 1959. *The Physics of the Stoics*. Routledge: London.
- Sedley, D. 1985. "The Stoic Theory of Universals". *The Southern Journal of Philosophy* 23 Supplement, 87-92.
- Sedley, D. 1982. "The Stoic Criterion of Identity". *Phronesis* 27, 255-275.