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The Resistance to Stoic Blending
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Abstract

This paper rehabilitates the Stoic conception of blending from the ground up, by freeing the Stoic conception of body from three interpretive presuppositions. First, the twin hylomorphic presuppositions that where there is body there is matter, and that where there is reason or quality there is an incorporeal. Then, the atomistic presupposition that body is absolutely full and rigid, and the attendant notion that resistance (*antitupia*) must be ricochet. I argue that once we clear away these presuppositions about body, the foundations of Stoic corporealism fall into place. Body is fundamental (not hylomorphic). The two fundamental principles (*archai*) are bodies: divine active reason (*logos*) and passive matter (*hulē*); and these two bodies are two, not matter and form all over again, nor actual and potential, but agent and patient. The independence of the two *archai* is no threat to the unity of the cosmos, however, because the Stoic theory of body allows for the complete coextension of the *archai*. The hylomorphic thinker rightly asks, what relation could be tighter than that of the wax and its shape? The Stoic replies: a causal relation, the interaction of agent and patient completely coextended in a through and through blend.

I. Introduction

Scholarly resistance to the Stoic theory of through and through blending (*krasis di' holou*) runs deep. “Stoic blending” refers to the view that two (or more) bodies not only can mutually interpenetrate, while remaining whole, but also can in fact completely coextend, while remaining two. The resistance to this thesis begins at the ground level, with the Stoic conception of body as simple and fundamental. It gains strength with resistance to seeing the Stoic *archai*, the fundamental principles out of which the whole cosmos is constructed, as two individual bodies. And it culminates in the rejection of colocation, the essential characteristic of the complete coextension and mutual interpenetration by which the Stoics build their cosmos out of these two *archai*. At the heart of this scholarly resistance to blending we find strong hylomorphic and atomistic presuppositions about the nature of body, which have obscured the Stoic position.

In particular, from this hylomorphic perspective (whether Aristotelian, Academic, or Neoplatonic), all *body* is a composite of matter and form, which are entities of different ontological order: the one is material or corporeal, and the other is immaterial or incorporeal. If something is to be body, tangible and bulky, then, it must be due to the matter present in it (since form is incorporeal); and so, if Stoic *logos* is to be a body (as the Stoics do indeed claim), then it must be so because of the

other entity, matter, present in it; for only matter is extended and (hence) corporeal—since reason and intelligence is *incorporeal*.¹ A second hylomorphic presupposition that affects interpretation of the Stoics is that matter, or body, is considered intrinsically inert mass, incapable of either agency or reason; it is thick and dumb. Through this lens, if Stoic body, which is to say, matter, is to be rational (as they do say in making *logos* a body), then it must be so because another entity, an incorporeal, is present in it; likewise, if matter is to have any qualities at all, even shape and size, it must be due to the presence of incorporeal form. These twin suppositions—that where there is body there is matter, and that where there is reason or quality there is incorporeal form—are axiomatic from a hylomorphic perspective.

A third presupposition that colors our interpretation of Stoic theory is the atomistic commitment to body as *full* absolutely, and the attendant notion that resistance itself (*antitupia*) must be understood as a complete rebuffering, or ricochet. I label this commitment “atomistic,” but in fact it is shared by the hylomorphic conception of matter (which I conveyed above by describing it as “thick”). Since the notion is more developed in the atomists and distinctive of their position, I will use that label. However, it is important to bear in mind that this is a shared presupposition; as we will see, Alexander of Aphrodisias and the Neoplatonists from whom we get the majority of our evidence about Stoic blending, are trading on the assumption that body is full absolutely and resistance can only be ricochet. I will argue that once we clear away these presuppositions about body, the foundations of Stoic corporealism fall into place.

I will proceed as follows. First I will free the Stoic conception of body as *solid three-dimensional extension with resistance* from hylomorphic and atomistic assumptions, to show that body can be simple and fundamental. Then I will argue that the Stoic principles (*archai*)—divine active *logos* (God) and passive matter (*hylê*), out of which the whole cosmos is composed—are two independent individual bodies, not matter and form all over again, nor a mathematical conception of body, nor any other attenuated notion that minimizes the independence or corporeal status of the principles. Finally, I will show that the through and through blending of these two bodies is only impossible on an atomistic conception of body as absolutely full, which must take resistance (*antitupia*) as ricochet, or complete rebuffering. However for the Stoics, the density of body is not absolute, but exists in degrees of rarity and density;

¹ Notice that from the hylomorphic perspective, there is nothing surprising in using (in)corporeal and (im)material interchangeably this way, even while recognizing that strictly speaking body is a composite entity, with matter and form as its elements, or parts.

and resistance is not ricochet, but a responding blow, a kind of push-back or response, an interaction with another body. This interactive notion of resistance opens the way for bodies to interpenetrate rather than merely repel and, ultimately, for them to completely coextend. Blending and the collocation it entails are thus respectable physical notions, once understood on the Stoics' own terms. With the resistance to Stoic resistance (*antitupia*) set aside, we can see that the Stoics have the resources they need to build the cosmos out of *two* fundamental bodies: the unity of the cosmos does not consist in the *archai* being one and the same body, but in the complete *blend* of one body, a divine rational agent, with another body fit to be acted upon, its patient.

II. Stoic Body

The Stoics define body as *solid, three-dimensional extension with resistance*. We know this from the testimony of Diogenes Laertius that body is “what has three-fold extension—length, breadth and depth; this is also called solid body” (7.135 (45E)); from Galen, who reports the Stoic definition as “what has three-fold extension together with resistance (*antitupia*)” (*Qual. inc.*, 19.483,13-16 (45F)); and from Plotinus, who confirms this account (*Enn.* VI.1.26 (passage A below), VI.1.28).² Note, first of all, that the solidity of body is essential to its definition, since the Stoics also recognize the phenomenon of *non-solid* three-dimensional extension in the case of place and void (Galen, *Qual. inc.* 19.464, 10-14 (49E); Themistius, *In Ar. phys.* 104,9-19 (48F)). Note, further, that the point of specifying that body is *solid* is not to give a mathematical or geometrical account of body, since its being three-dimensional already makes it a geometrical solid. Rather, the point of saying that body is solid is to establish that it is inherently capable of causal interaction: solidity enables contact.³ Crucially, solidity is not an additional, external property to three-dimensionality, such that the two together compose body; rather, solidity *just is* the kind of three-dimensionality that is unique to body. Solidity and three-dimensional extension are elements of the *definition* of body, which should not be mistaken for elements or components of body itself. Likewise, Galen's alternate definition of body in terms of *resistance* also does not introduce

² All translations are my own, unless otherwise noted. Parenthetical citations like (45F) refer to chapters in Long and Sedley (1987), hereon “Long & Sedley” in the body of the text and “LS” in the footnotes. See also Stobaeus, *Ecl.* I.14, 1a (Aetius I.12,1-3, Diels 310, SVF 2.357), and 11 (Arius Didymus, Diels 457, fr. 19). Marmodoro (2017) argues for the view that body is “extended causal powerfulness.”

³ Thus I differ from Gourinat (2009), p. 55-56, that Diogenes' definition of body is mathematical and therefore out of place in the context of the principles.

an additional component of body in addition either to solidity or to three-dimensionality; rather, Galen reiterates Diogenes' definition. Solidity and resistance are one and the same thing: the capacity to interact.⁴

Note, next, that the Stoic conception of resistance is not the same as the Epicurean conception; *ex hypothesi*, Epicurean atoms are full absolutely, impenetrable and indivisible, so that their notion of resistance *must* be one of ricochet (SE, *M.* 10.219-27, (7C4)).⁵ However, as continuum physicists for whom all body is infinitely divisible without reaching minima (Stobaeus 1.142,2-6 (50A), DL 7.150-51 (50B), Plutarch, *Comm. not.* 1078E (50C1)), the Stoics have available and, as we will see in the discussion of blending, make use of, a weaker notion of resistance as pushback, reaction, or, in the most literal sense of *antitupia*, a responding blow, rather than the complete rebuffering or ricochet required by atomism. Because of this corporeal capacity for resistance, any two bodies in contact with one another are *interacting*: they are in *sumpatheia*.⁶ When resistance takes place, it is a joint activity between two bodies, and so all action is reciprocal; wherever two bodies are in contact there is both action and passion in both, just insofar as both are bodies. This reciprocity does not imply that one body cannot be agent and the other patient, but it does imply that when two bodies are in contact they will push back on each other and thus interact wherever they are in contact, resulting in a joint *pathos*, or *sumpatheia*.⁷ This conception of resistance as interactive push-back rather than total ricochet is entirely compatible with (and indeed required for) the Stoic commitment to blending, a mixture such that two (or more) bodies completely interpenetrate so as to be in constant reciprocal contact everywhere, through and through their three solid dimensions.

⁴ I leave to the side here discussion of the Stoic criterion for existence, whether something can act or be acted upon, which is not an alternative (or, perforce, competing) definition of body, but the hallmark of being or existence. This point is made in LS, I p. 273-4, and developed in de Harven (2015).

⁵ Cooper (2009), p. 97-8 makes the point that the Stoics are not using the Epicurean notion of resistance but goes on to understand Stoic *resistance* as merely *occupying space*; it will become clear that I intend something much stronger.

⁶ As attested by Nemesius 78,7-79,2 (45C) and underscored by LS, I p. 273; cf. Simplicius, *In Ar. Phys.* 420.6-11 (SVF 2.339), who reports that for the Stoics every mover is moved.

⁷ Thus, I disagree with LS, I p. 274 that the principles are capable only of either action or passion, and that the criterion for existence must therefore be understood as an exclusive disjunct; and with Todd (1976), p. 33 ff., 43, 48, et passim that the passive principle cannot interact, and that the relation between the active and passive principles is non-reciprocal (35, 43, 82), as well as with Marmodoro (2017) that *hulé* has “no powers or dispositions for causal interaction” and that matter is entirely changeless and indeed not what gets qualified except by association, as a “sharing subject.” Thus I take Alexander to be correct when he says that it follows for the Stoics that God is acted on by matter (226.30-33b); Hierocles 4.38-53 (53B5-9) illustrates this commitment in ample detail in his account of the relation between soul and body, on which see de Harven (2018).

I have led with the negative, saying what solidity and resistance are *not*—mathematical notions, components of body, absolute impenetrability—in order to signal certain ancient and enduring interpretive difficulties surrounding the role of solidity and resistance in the definition of body. As we will see shortly, the Stoics’ two *archai*, matter (*hylē*) and divine reason (*logos*), are themselves individual bodies; but as foundational principles they are meant to be simples (i.e. non-composite), so, as the charge goes, the principles cannot be bodies, if bodies have solidity and resistance, since those are qualities of a hylomorphic composite. For example, Plotinus, in a series of complaints about the Stoic commitment to matter as one of the principles, says the following:

- A. (1) Next, how can matter, being a body, be a principle? For it is not a body unless it is many, i.e. every body is composed out of matter and quality. And if body be other than this [i.e. not hylomorphic], then they say that matter is a body homonymously. And if three-dimensional extension is the common characteristic of body, they speak mathematically; but if it is three-dimensional extension with resistance, then they do not speak of one thing. (2) Next, resistance is either a qualified thing or issuing from a quality. But whence resistance? And whence what is three-dimensional or what is extended? For matter is not in the definition of three-dimensional extension, nor is three-dimensional extension in the definition of matter. Now then, partaking of size it would no longer be simple. (3) Next, whence its unity? For it is certainly not itself one, but sharing in unity (itself).

Plotinus, *Ennead* VI.1.26,17-28 (SVF 2.315)

Plotinus’ objection is that including resistance in the account of body as the Stoics do (hence, we can confirm, *not* speaking mathematically), they “do not speak of one thing,” i.e. they speak of something composed of matter and quality (two things). Further, he objects that resistance and three-dimensionality are either qualities or qualified entities, so that a principle with three dimensions and therefore size, i.e. a quality, would no longer be simple; and likewise for the unity of matter as a principle, which from Plotinus’ hylomorphic perspective can only be due to its participating in the Form of Unity, never something that matter can have per se. Plutarch complains in a similar vein that in making God (the active, rational principle) corporeal, the Stoics run afoul of the commitment to principles as simple (Plutarch, *Comm. not.* 1085B-C).⁸

However, the Stoics need not accept this hylomorphic analysis of body; they are free to posit body as fundamental, not itself composed out of matter and form (or anything else), but simply existing as ungrounded, primitive, and basic. Thus, they can reject Plotinus’ statement that “every body is composed out of matter and quality.” They can also reject his question, *Whence resistance and extension?* For the question presupposes an answer in terms of prior entities; but the Stoics can reject the assumption that there must be something prior, positing instead, as they do, two fundamental

⁸ Other places where Stoics and their critics disagree over hylomorphism include Calcidius, *In Tim.* 221 and 315; Plotinus *Enn.*, VI.1.26-27; Alexander, *Mixt.* 216.1-217.9 (48C part), 222.26-223.6, 223.30-34, 224.27-32, 225.5-226.24.

bodies (*logos* and matter) that are eternal and ungenerated. Accordingly, they can agree with Plotinus that matter is not in the definition of three-dimensionality (since the active principle *logos* is solid three-dimensional extension without being matter), but disagree that three-dimensional extension is not in the definition of matter (since matter *is* a body). Finally, to the question of size and unity, which Plotinus thinks must derive from participating in the Forms of Greatness and the One, the Stoics are free, again, to reject this hylomorphic analysis and maintain that these properties are fundamental to body as solid three-dimensional extension. To be a body just is to be a continuous mass of a certain size and shape, much like some lump of wax will have a certain size and shape even when it is otherwise amorphous. A lump of wax, even melted to liquid, will have some finite extension in three dimensions, and therefore *some* definite shape or boundary (of its own, i.e. not from the imposition of some external limit).⁹ As we will see, there is good evidence that the Stoics did think of their corporeal principles this way, as inherently amorphous and yet not, for all that, entirely without properties or limit. Thus, at the heart of Stoic corporealism is an alternative to hylomorphism and the move to body as fundamental.

Before turning to the principles, note one last crucial distinction in the Stoic concept of body. The Epicureans will agree with the Stoics in rejecting hylomorphism and making body fundamental. However, that marks the end of their common ground because the Stoics not only reject the notion of resistance as ricochet, but they deny atomism altogether and embrace instead a continuum physics. So, in defining body as *solid three-dimensional extension* (as opposed to *the full*) the Stoics also signal their commitment to body as continuous and homogeneous, i.e. non-atomistic mass that is infinitely divisible without reaching minima (Stobaeus 1.142,2-6 (50A), DL 7.150-51 (50B), Plutarch, *Comm. not.* 1078E-1080E (50C)). Body is thus for the Stoics a mass term—so it is always acceptable to speak of some body in a mass sense. However, being three-dimensional extension in this way, as captured by mass terms, does not rule out being an individual, i.e. a finite, countable entity—thus it is also always acceptable to speak of a body, a blob of molasses (that is also some molasses). Indeed, there is nothing about being designated by a mass term that threatens the individuality of the entity designated. So, it is open to the Stoics not only to treat body as fundamental (rejecting hylomorphism), but also to designate body both by mass nouns and by count nouns (rejecting atomism).

⁹ Koslicki (2007), p. 136, makes the same point in saying that even a bit of glue has a principle of unity.

III. Two Principles

This is precisely what the Stoics do in declaring their two principles, *archai*, to be formless bodies, i.e. individuals (as conveyed by the plural count noun, *bodies*) describable by mass terms (as conveyed by their being formless, i.e. just solid extension), as Diogenes Laertius attests:

- B. It seems to them [sc. the Stoics] that there are two principles of the whole [cosmos], the active (*to poioun*) and the passive (*to paschon*). (2) Now, the passive is unqualified substance, matter, while the active is reason (*logos*) in it [sc. matter], God; for the latter, being everlasting and through the whole of matter, crafts each and every thing that is [...] (3) They say the principles and the elements differ; for the former are ungenerated and indestructible, while the elements are destroyed at the conflagration. (4) But also, the principles are bodies (*somata*) and without form (*amorphous*), while the elements have been endowed with form. DL 7.134 (44B)¹⁰

Let me unpack this report and begin untangling some threads. First, there are *two* principles, *archai*, of the whole, and they are *both* bodies (as confirmed by Aristocles ap. Eusebius, *Ev. praep.* 15.4.1 (45G), Origen, *Cels.* 6.7 (SVF 2.1051)).¹¹ This point I am emphasizing, that the Stoic *archai* are two distinct bodies, is controversial, despite the fact that it is a literal, face value reading of the texts. The dominant view of the principles is that they are aspects, or merely conceptual, or at any rate somehow not “really” two distinct bodies. Even Long & Sedley, although they emphasize that the principles are corporeal rather than incorporeal or mere aspects, nevertheless minimize their distinctness in the context of blending: “The active principle of the world is a different kind of body from the passive principle (44-45). In the form of ‘breath’ the active principle constitutes the shape and structure of matter (the passive principle), and a body’s shape and structure do occupy the same place as its bulk. [...] In order to do justice to Stoic intuitions, we should regard the two things that occupy the same place not as two determinate and independently existing bodies, but as the two bodily functions (breath and matter) which jointly constitute every determinate and independently existing body.”¹² I will argue against the deep-rooted hylomorphic assumptions that stand in the way of a

¹⁰ There is some difficulty concerning the report in B4 that the principles are bodies: there is a variant reading of this passage transmitted in the *Suda*, which has *qsomata* for *somata*; the bibliography for this debate is too vast to cite here. The most elementary and inescapable reason the principles cannot be incorporeal is that they would thereby be unable to interact, i.e. unable to perform their essential active and passive functions (SE, *M.* 8.263 (45B), Nemesius 78,7-79,2 (45C)), as LS, I p. 274 point out.

¹¹ For evidence from Hyppolitus and Galen that God, in particular, is corporeal see SVF 1.153.

¹² LS, I p. 274. Others who minimize the corporeality of the principles include Bronowski (2015), Frede (2005), Lapidge (1989), Mansfeld (1978, p. 174); Mikeš (2015); Rheins (2016), Rist, (1977, p. 204); Scade (2013, p. 147-54); Sorabji (1988, p. 94 ff.), Todd (1978, p. 139), Weil (1964), and White (2003, p. 136). Notable exceptions, insisting that the *archai* are

literal reading of the texts that embraces the principles as distinct bodies blended through and through in complete interaction, or *sumpatheia*.

The second thing to note about the Diogenes passage is that, in defining the two principles as the active (*to poioun*) and the passive (*to paschon*), i.e. agent and patient, the Stoics make causation fundamental in two ways: first, in that each of these fundamental bodies qua body (solid extension) is capable of causal interaction, and secondly, in that the fundamental bodies are cast in explicitly causal roles that go beyond their mere corporeality. Crucially, the agent-patient distinction is not to be assimilated to the Aristotelian distinction between actual and potential, or to any hylomorphic distinction between matter and form. This latter point is especially tricky because the active principle *is* responsible for imbuing the world with its determinate form, and the passive principle *is* called “matter.” I will explain how this is possible outside a hylomorphic framework.

Third, Diogenes tells us that the two principles are eternal and ungenerated, answering Plotinus’ question above: *Whence resistance and three-dimensionality?* There is no whence because they are ungenerated. In this, the principles differ importantly from what the Stoics call *elements* (earth, air, fire, water), which are not fundamental, but rather downstream entities that are made from the principles and come into being and pass away with each world cycle. One of the Stoics’ most intriguing commitments is to an everlasting recurrence of world cycles (*diakosmēseis*): for the Stoics there is no beginning or end to the world’s motion, just an everlasting recurrence of cosmic cycles punctuated by periods of conflagration when the world turns into a primordial fiery blend of matter and *logos*. So, while the principles themselves are eternal, the cosmos is not.

And, fourth, we are told that the *archai* are “bodies and without form.” The principles are described as *bodies*, in the plural, implying that *each* is an individual body, and *each* is also formless. Although there is some difficulty with the text here, the contrast of principles to the elements generated from them, which have a determinate character in having been enformed (*memorphēsthai*), shows that both principles are meant to be formless in contrast to the elements.¹³ So now the question

themselves bodies, include Gourinat (2009), LS, I p. 245, and Sedley (2002); my goal is to develop what they insist on but do not pursue, that both *archai* are bodies.

¹³ The description of the principles as *amorphous* is related to the textual debate over whether Diogenes reports the principles are incorporeal; thus, the *Suda* reading makes them *asōmatous kai amorphous*, whereas the DL MSS read *sōmata kai amorphous*. Because the text goes on to characterize “the others,” i.e. elements, as “having been formed,” *memorphēsthai*, we can be sure that *amorphous* contrasts with what precedes (and is thus correct as it stands), but some have proposed reading *amorphā* to agree with *sōmata*; it is possible that *amorphous* may have gotten into the text to parallel the incorrect *asōmatous*, which could then have been mistakenly retained while its correlate *sōmata* was correct.

at hand concerning Diogenes 7.134 (B4), is what it *means* for the principles to be bodies that are formless.

The answer, I suggest, is that the Stoics embrace the *archai* as unqualified (*apoiios*) and formless (*amorphous*) bodies insofar as they lack the further, determinate qualities of the elements and bodies that they compose.¹⁴ Being unqualified is not the same as being entirely property-less. On the contrary, to be a body is already to be a solid, continuous three-dimensional mass of a definite shape and size, however unstable and indeterminate that shape and size may be.¹⁵ The image of the wax is apt, again, in showing that a body will always be of *some* definite shape and size, even if it is not structured or organized into a determinate form, e.g. water, a stone, or even Socrates. The unity and limitedness of both principles consists in the fact that for the Stoics the cosmos (and hence, perforce, what it is made from) is finite, in contrast to the Epicureans for whom there are infinitely many atoms (and infinite void). Thus, in being solid three-dimensional extension, matter and *logos* are not just corporeal, but in fact individual bodies; a finite corporeal mass, no matter how rare or slack it is (e.g. how melted the wax), will have some boundary—not because it is limited by some external container or additional entity called “a limit,” but because it is substance (*ousia*), a finite body that cannot extend infinitely (DL. 7.150, Calcidius, *In Tim.* 295, 312).¹⁶

Thus the Stoics can agree with their critics that what is *definite* has magnitude and shape, without assimilating those properties to the further *determinate* qualities of elements and qualified individuals. The *archai* are shapeless and quality-less in not yet having determinate properties, but, for all that, they are not entirely devoid of properties, just as the wax is receptive and patient by nature, but for all that is still solid, definite, of a certain density, etc. It will always be in some shape or another, but there is no particular shape that belongs to it per se, as Posidonius says: “the substance, i.e. the matter of the whole, is unqualified and shapeless inasmuch as it has no determinate shape or quality unique to it per se” (Stobaeus, 1.133.18-20 (EK fr. 20, LS 28q)).¹⁷

But what does it even mean to say that *logos* is a body, one might still wonder. From the hylomorphic perspective, *logos* is not viewed as a body of its own, but as getting its corporeality from the matter with which it is combined. Of course, if both matter and *logos* are bodies, this cannot be

¹⁴ For agreement on this point, see Cooper, (2009, p. 100-1) and Gourinat (2009, p. 57-8). See Todd (1978, p. 140-41) for the suggestion that *apoiios* should be read as *inert* or *not acting*, rather than unqualified.

¹⁵ I will observe this terminological distinction moving forward, between “definite” to describe the properties that a body has even while it is formless or shapeless, and “determinate” to mark the downstream properties that it has once shaped and enformed.

¹⁶ For agreement on this point, see Drozdek (2002). DL 7.150 is vexed and merits its own treatment; cf. Rashed (2009).

¹⁷ Cooper (2009, p. 99-100) captures this point nicely.

what the Stoics are saying: *logos* is not body *because* it is blended with matter. Rather, the Stoics posit two principles that are individual masses whose union is *not* to be conceived as a conjoining of material with immaterial, or of two *kinds* of body (the one, structure, the other bulk), that together compose a single body, but instead as a literal through and through blending (*kerasis di' holou*) of two independent bodies, one agent and the other patient, to yield a new, composite body. The hylomorphic lens distorts the Stoic position here by taking *logos* as immaterial, assimilating it to the *form* of the matter, and then rendering *logos* otiose as a distinct principle in virtue of matter already being imbued with reason (assimilated to form). Thus, the hylomorphic critic will recognize (correctly) that *logos* is a body for the Stoics, but then (incorrectly) take that corporeality to derive from its combination with matter (thus not really recognizing it as a body in its own right); at the same time, in (correctly) recognizing the blend of *logos* with matter, the critic (incorrectly) will see matter itself as having been imbued with reason, rendering *logos* as a distinct principle superfluous (e.g. Calcidius, *In Tim.* 311). It is true that for the Stoics *logos* is blended through and through with matter, and to that extent accurate to say (literally) that *logos* is in matter (as Diogenes also puts it, in 7.134 (B2)). However, it is not true that form and qualities are *latent* in the properties of matter (since reason and matter are distinct entities). To say that reason is *in* matter is not to say that matter itself has reason; and to say that reason is a body is not to say that its corporeality derives from matter, or that matter has reason. This, again, is one of the Stoics' boldest moves: to reject hylomorphism and make body and causation fundamental.¹⁸

I will make one final point before turning to blending. The Stoic principles are independent bodies *both* in being ungenerated, and in being distinct and independent from one another—each is a fundamental, independently existing body in its own right. Calcidius explains that matter is ungenerated because it is one of the two principles, which together compose the whole, and cautions that although they are made of the same substance, i.e. body, nevertheless they are distinct in having different powers, characters, or (most literally) virtues (*In Tim.* 289). Further, the fact that the principles are always as a matter of fact blended, does not entail that they are dependent on each other for their existence (a modal-existential analysis neither confirms nor denies ontological dependence); on the contrary, as the analysis of blending will soon show, blended bodies are always in principle separable.¹⁹

¹⁸ Cooper (2009, p. 100) thus calls the principles “non-material bodies,” or “mere body,” in contrast to those composed from the two principles together, which in having matter as an ingredient become “material bodies.”

¹⁹ Thus, I disagree with Boeri (2001, p. 729), that bodies and incorporeals are on equal ontological footing, codependent, and with Marmodoro (2017), that the principles must be interdependent and related in some way other than blending *because* they cannot come apart; cf. Mikeš (2015) for the argument that accepting the principles as ontologically dependent aspects of body yields a “more directly understandable concept of body [as something that can be present in two principles] but we lose the two principles (as principles).”

Nor does the fact that they play distinct functional roles and are hierarchically related as agent and patient put them into different ontological categories, as a hylomorphic analysis sees it. The ontological complexity required from an Aristotelian perspective is precisely what the Stoics reject.²⁰ Each principle, as we have seen, is a finite, continuous body; and with the Stoics' novel theory of blending that offers a ready (non-hylomorphic!) account of how two distinct bodies can form a unity, the Stoics do not need any ontological complexity in their principles to generate the cosmos as a unified whole.

So, to summarize where we stand, the Stoic principles are two distinct bodies, one active and one passive, on the causal model of agent and patient (not actual and potential, not form and matter). As bodies, they are limited and definite three-dimensional extension with resistance, i.e. continuous bodies (masses) of a certain shape and size able to make contact and thus enter into causal relations—but for all that they are, as principles, formless. This is not a contradiction. As illustrated by the working image of the wax and bronze, a substance can have definite properties of its own and yet be formless in being a mere mass of a nature to become determinately formed.²¹ As principles, they are each ungenerated and indestructible (Calcidius, *In Tim.* 293 (44E), Eusebius, *Pr. ev.* 15.18.2 (46K)), i.e. ontologically independent entities. As we turn now to the unique Stoic theory of blending, we will see just how these two entities, independent and distinct as I have argued that they are, can account for the unity and structure of the cosmos in entirely corporeal terms.

IV. Blending (*krasis di' holou*)

With hylomorphism set aside and causation as the guiding principle of the natural world, one wonders what sort of relation there could be between agent and patient to deliver the sort of unity required for the cosmos to be the one true whole the Stoics recognize (Plutarch, *St. rep.* 1052D; Alexander, *Fat.* 191,30-192,28 (47N)). How can the agent and the patient, as distinct bodies, compose something that is genuinely one? The question of unity is easy for the hylomorphic theorist: the wax and its shape are separable only in thought (they are not really two). The Stoic answer begins with the theory of

²⁰ Mann (2011) and Koslicki (2008) emphasize the ontological complexity of a hylomorphic analysis.

²¹ The principles will be of a much less determinate form than wax and bronze, of course, but this should not interfere with the point of the wax image, which is to capture how something can have some properties and still be described as formless.

blending. The Stoics' predecessors and peers recognize only two kinds of combination or mixture between bodies: juxtaposition, according to which there is no unity but only contact at the surface, and fusion, according to which there is total unity but also the mutual destruction of the ingredients. Here the Stoics innovate boldly by introducing a relation they call *kerasis di' holou*, or through and through blending. It is distinct from juxtaposition in that the bodies interpenetrate and are in contact everywhere (rather than just at the surface), and distinct from fusion insofar as both ingredients preserve their identities while in the mixture. Alexander of Aphrodisias, in his work *De Mixtione*, is an important source of information for the Stoic theory of blending, and here is how he describes it.

- C. The opinion of Chrysippus about blending (*kerasis*) is as follows: (1) he posits, on the one hand, that the entirety of substance is unified, a certain breath pervading it all, by which the whole (*to pan*) holds together (*sunchei*, alt. is continuous), remains together (*summenei*), and is interactive (*sumpathes*) with itself, while, on the other hand, (2) he says that among the bodies mixed in it [sc. the entire substance], (a) some mixtures come to be by juxtaposition (*parathesis*) [...] (b) certain others come to be by fusion (*sunchusis*) [...] (c) certain other mixtures come about, he says, when particular substances and their qualities are mutually coextended with (*antiparekteinomenon*) one another through and through, with the preserving of the original substance and qualities in such a mixture—which among the mixtures he says is uniquely blending. For the interpenetration (*antiparektasis*) of two and even more particular bodies through and through one another in that way, such that each of them in such a mixture preserves both its own substance and the qualities in it, alone among the mixtures, he says, is blending. For it is unique to those things that have been blended to be capable of being again separate from one another, which only comes about by the blended entities preserving their own natures in the mixture.

Alexander, *Mixt.* 216.14-217.2 (43C+)

Stoic blending can be analyzed according to four distinctive properties or characteristics. First, *kerasis di' holou* is unambiguously a case of body going *through* body; as Alexander puts it here, bodies are “mutually interpenetrating or mutually coextended (*antiparekteinomenon*) with one another through and through;” this reciprocal interpenetration (*antiparektasis*), in which body goes through body (*sōma dia sōmatos chōrein, dieenai, diatenein*), or admits another body into it (*to dechomenon sōma en autō(i) allo sōma*) is widely attested for the Stoics (e.g. Alexander, *Mixt.* 220.3, 220.15, 220.23, 225.1; DL 7.151; Plutarch, *Comm. not.* 1078 A-E; Stobaeus 154.14-155.11). Plutarch even makes explicit that this is no case of “touching on top at the surface, but diffusing everywhere together (*homou*) through depth into breadth and length” (*Comm. not.* 1078E). Thus, any two (or more) blended substances (i.e. bodies) will be in contact *everywhere*, i.e. in all three dimensions of their shared volume; they are quite literally colocated (Themistius, *In Ar. Phys.* 104,9-19 (48F)). This fact clearly shows that the Stoics are not working with an atomistic conception of resistance as total ricochet, admitting contact only at the surface—which *would* make blending and collocation paradoxical. In working with a notion of resistance as pushback, or reaction, the Stoics not only defuse this paradox, but they also give themselves a dynamic principle

of unity: in being blended, the ingredient bodies will be pushing back and forth on one another, i.e. interacting in the most literal, robustly physical sense (Alexander, *Mixt.* 226.30-33b). Thus, the unity involved in blending is not an inert or abstract kind of colocation but a dynamic causal interaction taking place everywhere in *both* bodies.²²

The second distinctive property of Stoic blending is that, because the ingredients are thoroughly coextended, they are entirely homogeneous, or *homoioimerous* (Plotinus, *Enn.* 2.7.1.5-6); there is no partition (*morion*) of the blend that does not contain both (or all) the ingredients (Alexander, *Mixt.* 213.2-5, 217.10-12). How does this work? Two bodies are able to interpenetrate and coextend because they are continuous masses, i.e. because the Stoic concept of resistance allows for penetration that does not involve dissection or cutting up. This unique kind of penetration that is not destructive of the ingredients as wholes is only possible on a non-atomistic assumption that body is not absolutely full, but rather admits of varying degrees of rarity and density. There is ample evidence that the Stoics did see body as capable of differing degrees of rarity and density, while remaining the same body (Nemesius 70,6-71,4 (47J), DL 7.142 (46C)); and, as we will see shortly, there is evidence in the criticisms of Alexander, Plotinus, and Plutarch that the Stoics must have seen blending as a function of relative rarity and density: their complaints that blending does not entail an increase in volume presuppose this conception. The possibility of *kerasis di' holou* begins with the account of body. When the Stoics define body as solid, three-dimensional extension, they leave room in the concept of solidity for differing degrees of rarity and density. Solidity *does* entail that there is no void, but it does not entail either maximum or absolute density. A body is a finite and determinate mass whose volume, i.e. size, can vary with its rarity and density. This plasticity, the capacity for a body to change volume while retaining its identity and continuity (remaining whole), explains why two bodies can blend through and through to compose a continuous and homogenous mass that is infinitely divisible into partitions that always contain both ingredients.

The third distinctive characteristic of Stoic blending is that the ingredients remain independent entities even while blended through and through—blended bodies, *while blended*, retain their identities (their own continuous substance and nature) and are at all times capable of being separated from one another (DL 7.50-1, Stobaeus 155,5-11 (48D), Alexander, *Mixt.* 217.26-32, 220.21-29). The fact that the Stoics are also described as “those who blend (*kerannuntas*) whole bodies with whole bodies”

²² Not all blends will be equally unified. A blend of wine and water does yield a new, blended substance with a certain unity, but this is not a unity in the way that a blend of *pneuma* and matter (e.g. soul and body) yields a unity (e.g. Socrates), as LS, I p. 293 observe. So far, I am saying just that blending is a principle of unity that is dynamic and causal.

(Plutarch, *Comm. not.* 1078A; cf. Alexander, *Mixt.* 218.15-24), where the relevant sense of being *whole* is that of having no part missing (Calcidius, *In Tim.* 293), tells us that blending proceeds without the blended bodies being cut up or divided. Hence, a blended body preserves not only its nature, i.e. its qualities, but also the entirety of its own corporeal substance (or, one might say, its corpulence). This is what the separability of blended bodies consists in, their complete independence from each other even while completely coextended (yet another reason to think that the *archai* are independent entities).

Now, one might think that for two whole bodies to completely interpenetrate this way, they must, at the outset, already be of the same volume. However, pressing our conceptual boundaries once again, the fourth characteristic of Stoic blending is that the ingredients that become completely coextended need not be of the same volume at the outset. In fact, the Stoics famously say that a drop of wine can coextend with the whole sea (Plutarch, *Comm. not.* 1078E (48B), DL 7.151 (48A)).²³ This is not to say that blending *must* take place between larger and smaller bodies, only that it *can* and thus that blending is not constrained by the original size or volume of the ingredients. So, according to those committed to blending, some bodies must be able to preserve their identities while their volume changes. Alexander makes this explicit for the Stoics: “many bodies preserve their own qualities in manifestly smaller and larger masses (as can be seen in the case of incense, which being rarefied by being burnt, preserves its own quality over a very large expanse)” (*Mixt.* 217.14-17). This and various other examples Alexander gives establish that bodies are capable of expanding with the help of other bodies (*Mixt.* 217.26-218.10, 220.13-23, 224.32-225.2, 225.19, 226.11, 226.24-33). So, to summarize Alexander’s testimony, there are three kinds of mixture for the Stoics: juxtaposition (where contact between wholes is at the surface), fusion (in which contact is through and through but the ingredient wholes are destroyed), and blending (in which contact is through and through but the ingredients persist as individual wholes such that no part of the blend does not contain both ingredients).

As with the notion of body as fundamental and of *archai* as two individual bodies, scholars have resisted a literal, face value reading of Stoic blending as the complete interpenetration of two bodies, primarily because of the apparently paradoxical commitment to two bodies being in the same place.

Robert B. Todd is a good example of this resistance:

If the conception of a small volume of liquid extending through a much larger one had referred to an actual process, critics like Plutarch could have justifiably extracted it from its context and ridiculed it as

²³ DL 7.151 is also famously vexed, on which see von Arnim (1905), Dorandi (2013), Hicks (1925), Lewis (1988), LS, II, and Rashed (2009).

a highly paradoxical notion. However, it seems clear that this process should be thought of as having only conceptual status; that is, it is a fiction, and not a conception representing an actual state of affairs [...] It does not offend common sense because as a mental conception it does not involve a relation between three-dimensional solids; nor on the other hand does it assert a relation between peculiarly fluid bodies, because it is not a part of a physical theory.²⁴

My suggestion is that the colocation of two bodies is only paradoxical on the same atomistic assumptions that require resistance to be a case of total ricochet.²⁵ According to the Stoics' continuum physics, there is nothing in the concept of body as solid three-dimensional extension that requires understanding resistance (i.e. solidity) as ricochet rather than interactive *sumpatheia*; thus, there is nothing in the concept of blending as the literal colocation of two distinct bodies that violates the concept of resistance. Still, the scholarly aversion to colocation is strong, so let us consider some of the objections that ancient critics have made (and modern commentators have picked up).

First, in addition to the fundamental objection to the very possibility of mutual coextension based on the atomistic conception of resistance as ricochet, there is another, distinct but related, objection based on the idea that there must be *room* in each body, or at least one of the bodies, for the other body to occupy. Even if resistance is not ricochet, the argument goes, there is nowhere to “put” the other body because body is already full. Here is how Alexander puts it.

- D. For body spreading through body, whole coextending with whole not only does not fall in line with common conceptions, but is even impossible to be preconceived. For it is a natural conception that what is full is no longer able to admit anything into itself. For it is clear that what has room in itself and is capable of admitting something else like it [sc. a body] cannot yet be full, on account of which natural and common conception it already seems reasonable to some that there be something capable of receiving bodies, which we call place. For how could someone not wishing to make empty sounds conceive that body as something full of itself and having no void extension in itself, could admit into itself another body likewise full of itself?
Alexander, *Mixt.* 218.15-24

According to this complaint (levied by Plutarch as well, *Comm. not.* 1077E), body is by definition *full*—this is unambiguously the atomistic language used by Alexander's master Aristotle (*Meta.* 985b4-20, DK67A6) but also legitimate to press on the Stoics, who are committed to an intracosmic plenum. If body is full, Alexander reasons, then it must be unable to admit anything into itself; and if a body *can* admit another body, then it is not full after all. If, in response, the Stoics retain

²⁴ Todd (1976) p. 45; cf. p. 33, 44-49, 71-73; see also (Todd 1978). Others working in agreement about the paradoxality of colocation include Lewis (1988), LS, I p. 294; Marmodoro (2017), Mikeš (2015); Nolan, (2006), Rashed, (2009), Rheins (2016), and Sorabji (1988).

²⁵ For a highly illuminating history of scholarly resistance to colocation from contemporary metaphysics through the modern era (Locke, Descartes, Leibniz) to the Stoics, Aristotle, Plato, and the Presocratics (Anaxagoras, Melissus, Xenophanes), see Betegh (2016); thanks to Justin Vlasits for discussion of these issues, and for bringing this article to my attention.

their commitment to an intracosmic plenum in which there is no empty space, then blending is impossible; and if they retain blending, then there is void in the cosmos after all. This dilemma does not consider the very possibility that the Stoics countenance, namely that there could be variations in density that allow for colocation and make sense of a plenum that is not empty, to be sure, but also not full, in the sense of being maximally dense. As Gabor Betegh also notes: “What Alexander does not consider is a third option, namely that fullness is not an absolute characteristic, but can come in degrees. He does not even entertain the question whether a body which is not full, or not a composite of full and empty, but rather rare, can or cannot receive another rare body.”²⁶ Thus the Stoics have the live option to deny that body qua body is full, in the sense of being maximally and absolutely dense. Certainly nothing in the definition of body as three-dimensional extension requires it.

One might yet continue to object, as Alexander and Plotinus do, that insofar as body is penetrated, it is divided, or cut into distinct segments so that there *is*, after all, room *between* the ingredients; thus there is no true case of blending, but rather juxtaposition (*Mixt.* 219.32-220.2, 221.25-222.26; *Enn.* 2.7.1.4-6). But, as we have been seeing, the Stoics need not accept that penetration is always cutting; in particular, *interpenetration*, which is a reciprocal and symmetrical coextension between wholes, is not a case of cutting, but is what we might prefer to think of as a kind of mutual infusion (Stobaeus 1.153,24 (SVF 2.471)). Plotinus acknowledges this point directly: “but those, again, who accept the blending through wholes might also be able to say of the coming about of blending through wholes that it is not cutting and destruction into fragments” (2.7.1.32-34). The Stoics are therefore coherent in their commitment to colocation. Mutual coextension through and through, according to the letter of the textual evidence, is to be understood quite literally and physically as two whole bodies being in the same place at the same time: “For one body will pass through another body through and through, and two bodies will occupy the same place” (*In Ar. Phys.* 104.15-16 (48F part)).

I will address now one final objection that critics make to the possibility of *krasis di' holou*. As if they have the foregoing defenses of the coherence of colocation in mind, Plotinus, Plutarch, and Alexander all argue against the Stoics from considerations of volume. As before, the criticisms are driven by atomistic assumptions of ricochet and absolute fullness, which the Stoics can reject. This testimony is crucial evidence that the Stoics are working in terms of rarity and density in conscious contrast to the

²⁶ Betegh (2016), p. 403; cf. 396-98, 401-09. LS, I p. 294 say that colocation is only problematic on the atomistic assumption that there is no room for the other body, but then go on to make “room” by the distinction between two kinds of body, structure and bulk (as quoted above).

absolute fullness that entails ricochet or cutting. The first line of objection asks, how can the resulting volume of a blend *fail* to be additive, given the very nature of body as full?

- E. If they do not say that bodies admit one another in this way [sc. by cutting], but say that, insofar as they are themselves full, they spread through one another, someone might inquire, first, why ever a given body does not increase in all [dimensions] with a similar body? For the quantities according to the synthesis with each other are such that they make what is [composed] out of them greater than each of the components [...] And if those who say that some body spreads through body and makes that out of both [sc. the compound] somehow lesser and equal, they destroy this [sc. the *proprium* of bodies to increase the size of another body when compounded with it], as they would be destroying the nature of body.
Alexander, *Mixt.* 219.9-13, 219.18-20

Notice that the only alternative to penetration as cutting or division that Alexander countenances is the interpenetration of two *full* bodies, which is to ignore—and thus, crucially, to establish—the Stoic alternative, according to which bodies that are not *full* (i.e. maximally dense, absolutely), but rather *rare* can interpenetrate. The Stoics can agree that two full bodies cannot blend; but *full* and *whole* are not synonymous for the Stoics, and so Alexander does not do his opponents justice. In fact, his argument is circular: if body is full, then blending cannot fail to be additive; body is full; therefore, blending is additive (contra the Stoics' claims). But, of course, what is at issue is precisely whether body is full absolutely such that blending is additive. What is challenging about this debate, and explains its persistence I think, is that for those who conceive body along these atomistic lines, it is all but analytic that body is full: all discussion proceeds from the assumption that body is full absolutely. I make this charge of circularity as an informative diagnosis of the heart of the debate, not an accusation of eristic by Stoic critics. Insofar as Alexander confirms that the Stoics did *not* take blending to entail an increase in size or volume, he thereby confirms that the Stoics (on pain of incoherence) also did not take body to be *full*, and thus that they *did* take body to admit of varying degrees of rarity and density. Plotinus confirms this same point, in the same order, and operates in terms of the same examples: having said that penetration without cutting is too difficult to conceive, he moves on to press puzzles about volume and, in the process, confirms the Stoic commitment to blending without augmentation (2.7.1.43-58). He even says explicitly that “size is as permanent as any other property” (49-50), thereby evincing his commitment to body as full absolutely (with the attendant notion of ricochet), and to a similarly circular line of reasoning: size is only a permanent property of a body if it is always maximally dense, or full absolutely, which the Stoics can deny.

Since antiquity, Stoic critics and defenders alike have seen these criticisms as decisive, which has led to interpretations that minimize face value readings of collocation, or that treat the Stoic concept of

body as somehow abstract or non-physical to avoid these apparent absurdities. I have been arguing that when the Stoic notion of body is seen aright—setting aside the hylomorphic assumption that what gives form must itself *be* immaterial form, as well as the atomistic conception of resistance as ricochet and body as fullness—the face value readings of blending and colocation fall into place and present no incoherence. I began this section with the question, how can two distinct and independent bodies combine to form the kind of unity and structure required to explain the cosmos in corporeal terms? Having rehabilitated the Stoic notion of *kerasis di' holou*, I can now say that the result of two or more independent bodies blending this way is a unifying relation, and that blending is the guiding and unifying principle of Stoic cosmogony. However, I do not mean to say that blending is a sufficient condition for the strong unity enjoyed by the cosmos and by individuals like humans, plants, and even stones (Philo, *Leg. alleg.* 2.22-23 (47P), *Quod deus sit immut.* 35-6 (47Q)). Not all blends will have the same degree of unity; a blend of water and wine, or incense and air is not unified to the same degree that a blend of *pneuma* and matter constituting an animal is. This latter kind of unity, the strongest, results when active *pneuma* (itself a blend of air and fire) blends with passive matter (itself a blend of earth and water) and becomes the sustaining case of a new individual, tarring the ark inside and out (Philo, *Quaest.* 2.4 (47R)).²⁷ As Alexander reports (above, passage C), the whole of corporeal substance is unified (*hēnōsthai*), because it is totally pervaded by *pneuma*, which is the agent by which (*huph' hou*) the whole holds together or coheres (*sunechetai*), remains together (*summenei*), and is interactive (*sumpatheis*) with itself. I cannot pursue the details of the Stoic cosmogony here, rich and instructive as they are.²⁸ In this section, I hope only to have shown how the complete coextension of Stoic blending—taken at face value, as the colocation of two independent bodies—could stand on its own two feet to underwrite such an interactive picture of unity.

V. Conclusion

I said at the outset that resistance to Stoic blending begins with body. We have seen this bear out in the hylomorphic resistance to Stoic body as simple and fundamental solidity, three-dimensional

²⁷ Although this mixture of earth and water is also called “matter,” and *pneuma* is often called “God,” there is no problem of the same entity being both prior and posterior; “matter” and “God” refer strictly to the principles, but are applicable to the downstream entities in virtue of their playing the active and passive roles at that level of the cosmogony. Gourinat (2009) shows that there is no such problem with “matter.”

²⁸ For an entry into these details and intricacies I refer the reader to Salles (2009), an essential collection of essays for anyone interested in Stoic cosmology, as well as Salles (2015).

extension with resistance in its own right. Also in the resistance to Stoic body as subject to degrees of rarity and density, as solid extension that can vary in shape and size (volume) while remaining the same individual body, i.e. whole. And, of course, in the resistance to Stoic resistance (*antitupia*) as interactive push-back rather than ricochet. We have seen it gain strength in the context of the *archai*, resisting the status of *logos* and *hylē* as two independent bodies at the foundation of all things, particularly in concert with their status as *formless* bodies. And we have seen the resistance to blending culminate in the rejection of collocation that follows from the conception of body as full and resistance as ricochet.

I hope to have cleared away some of this resistance. If I have succeeded, I think we can see the foundations of Stoic cosmology fall into place along the following, very coarse lines. First, body is fundamental, not a hylomorphic composite of matter and form: solidity is simply solid three-dimensional extension with resistance. Secondly, this resistance is not atomistic ricochet, but causal interaction; and this solidity is not absolute fullness, but solidity that admits of degrees of rarity and density. Far from being atomistic pinballs randomly bouncing off one another, Stoic bodies (as such, qua body) are more like amoebae, continuous masses interacting on a model of mutual infusion. Thirdly, there are *two* fundamental bodies, the *archai*: divine active *logos* and its patient, matter (*hylē*). These *archai* (our fundamental “amoebae”) are distinct and independent bodies in their own right, with different natures that go beyond their corporeality—the one being active and rational, the other passive and dumb. There are several ways to press this point, to bring out the Stoic departure from hylomorphism: Stoic *logos* is a body, but without reference to matter. Stoic *hylē* is a body of definite size and shape, but without the contribution of *logos*. Matter is a body, but not all body is (or contains) matter. Reason is everywhere in body, but not because it is an immaterial disposition of either matter or body. The blending of matter with *logos* is not what makes *logos* corporeal, or body intelligent. These are all different ways of getting at the Stoic commitment to the *archai* as genuinely *two*, to *both* as bodies, and to *each* as fundamentally the kind of body that it is (i.e. active and rational, passive and dumb). This robust independence of the two *archai* is no threat to the unity of the cosmos, however, because the Stoic theory of blending provides for their complete, interactive *sumpatheia*. The hylomorphic thinker rightly asks, what relation could be tighter than that of matter and form, the wax and its shape? The Stoic replies: a causal relation, the interaction of agent and patient bodies completely coextended in a through and through blend.²⁹

²⁹ I am grateful, as always, for the invaluable guidance of A. A. Long and Wolfgang-Rainer Mann. This paper has also benefitted from conversation and correspondence with Klaus Corcilius, Dimitri El-Murr, Jean-Baptiste Gourinat, Robert

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